

WFA X-1170  
WATER FLOOD ASSOCIATES, INC.

2211 CONTINENTAL NATIONAL BANK BUILDING  
FORT WORTH 2, TEXAS

MAIN OFFICE OCC

CURTIS MCBROOM  
PRESIDENT

MARCH 13, 1964

1964 MAR 13 AM 8:24

PHONE ED 6-2425

MR. DAN NUTTER  
CHIEF ENGINEER  
OIL CONSERVATION COMMISSION  
Box 871  
SANTA FE, NEW MEXICO

RE: APPLICATION TO CONVERT  
WATER-FLOOD ASSOCIATES, INC.  
WELL NO. 5 STATE TO WATER  
INJECTION.

DEAR MR. NUTTER:

UNDER OIL CONSERVATION COMMISSION ORDER NO. R-2270 DATED JUNE 21, 1962, WATER-FLOOD ASSOCIATES, INC. WAS GRANTED PERMISSION TO INITIATE WATERFLOOD OPERATIONS IN THE GRAYBURG-SAN ANDRES RESERVOIR OF THE ~~GRAYBURG-JACKSON~~ <sup>Robinson</sup> POOL <sup>now</sup> MALJAMAR-GRAYBURG-SAN ANDRES POOL IN SECTION 35, T-16-S, R-31-E, EDDY COUNTY, NEW MEXICO. WATER INJECTION ON THIS PROJECT AS SPECIFIED IN THE ABOVE ORDER WAS COMMENCED ON SEPTEMBER 13, 1962.

THIS APPLICATION IS MADE TO ACQUIRE ADMINISTRATIVE APPROVAL TO EXPAND THIS WATERFLOOD OPERATION BY CONVERTING WATER-FLOOD ASSOCIATES, INC. WELL NO. 5 STATE LOCATED IN THE NE/4 NW/4 SECTION 2, T-17-S, R-31-E, EDDY COUNTY, NEW MEXICO TO WATER INJECTION. A PLAT OF THE AREA SHOWING EXISTING INJECTION AND PRODUCING WELLS AND LEASE OWNERSHIP IS ATTACHED. THIS WELL FALLS INTO THE EXISTING WATERFLOOD DEVELOPMENT PATTERN AS A WATER INJECTION WELL.

WATER-FLOOD ASSOCIATES, INC. WELL NO. 4 CARPER JOHNSON "A", NORTH OFFSET TO THE PROPOSED INJECTION WELL, HAS SHOWN RESPONSE TO WATER INJECTION OPERATIONS WITHIN THE PAST SIXTY DAYS BY INCREASING FROM APPROXIMATELY 3 BARRELS OF OIL PER DAY TO 8 BARRELS OF OIL PER DAY. WELL TESTS FOR THIS WELL ARE SHOWN ON THE ATTACHED C-116.

THERE IS NO LOG AVAILABLE ON THE PROPOSED INJECTION WELL. THE CASING PROGRAM FOR THE PROPOSED INJECTION WELL IS SHOWN ON THE ATTACHED DIAGRAM. ALSO ATTACHED IS A COPY OF A LETTER WRITTEN TO THE STATE ENGINEER REQUESTING PERMISSION TO INJECT DOWN CASING INSTEAD OF THROUGH TUBING SET ON A PACKER.

MR. DAN NUTTER

-2-

MARCH 13, 1964

FRESH WATER FROM THE OGALLALA FORMATION WILL BE INJECTED INTO THE GRAYBURG-SAN ANDRES ZONES FOUND PRODUCTIVE IN THIS WELL AT VARIOUS INTERVALS BETWEEN THE DEPTHS OF 3500' - 3830'. INJECTION RATES WILL AVERAGE APPROXIMATELY 300 BARRELS PER DAY AT AN APPROXIMATE SURFACE PRESSURE OF 2400 PSI.

YOURS VERY TRULY,

WATER-FLOOD ASSOCIATES, INC.

BY:

*C. W. Stumhoffer*

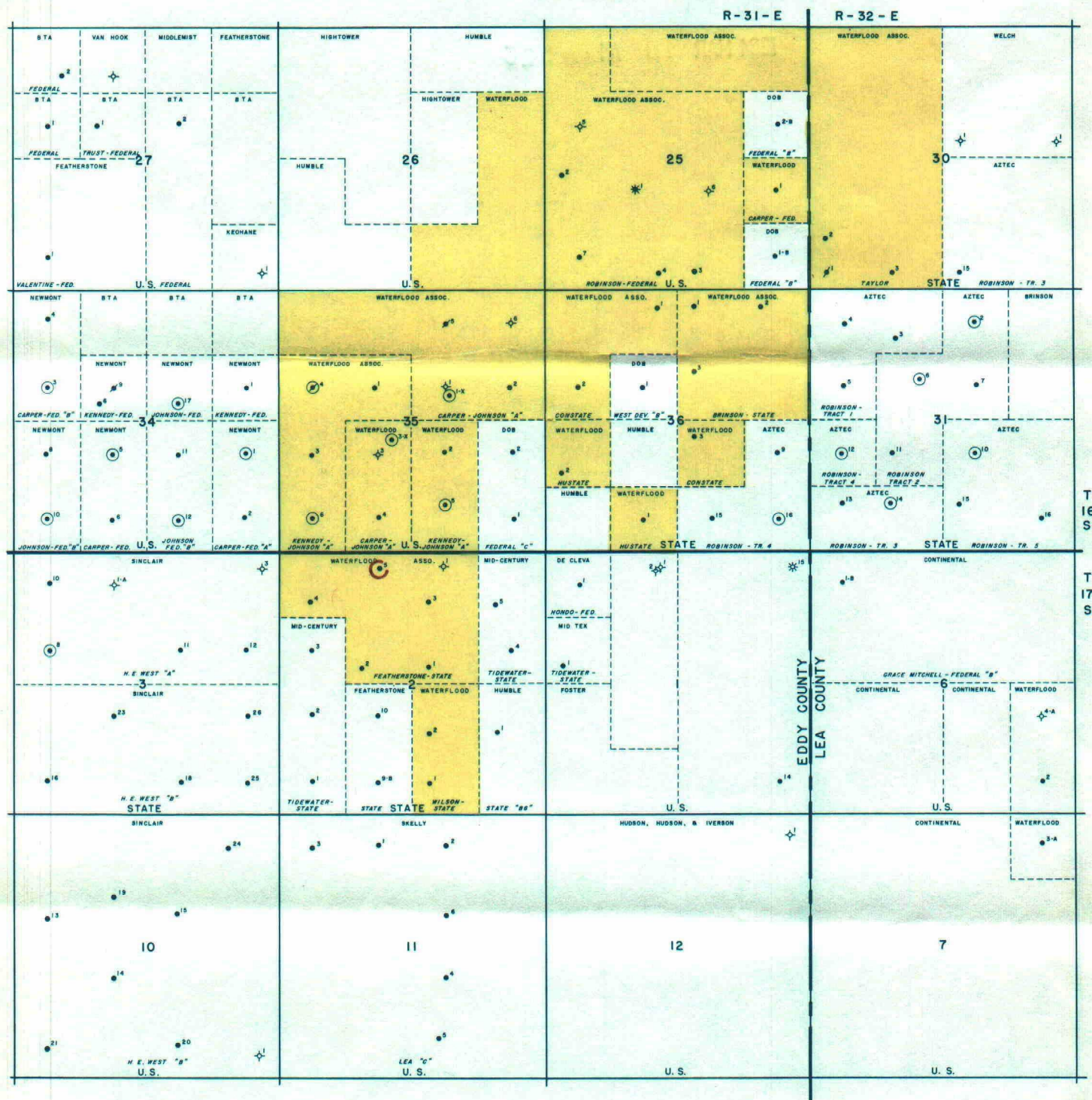
C. W. STUMHOFFER  
CO-ORDINATOR WATER-FLOOD  
OPERATIONS

CWS:BV

CC: OIL CONSERVATION COMMISSION  
Box 871  
SANTA FE, NEW MEXICO

STATE ENGINEER OFFICE  
Box 1079  
SANTA FE, NEW MEXICO

MID-CENTURY OIL AND GAS COMPANY  
833 SAN JACINTO BUILDING  
HOUSTON 2, TEXAS

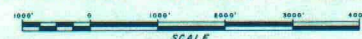


# LEGEND

- Oil Well
- ✦ Dry Hole
- ✦ P & A
- Location
- ⊙ Injection Well
- ⊙ Proposed Inj. Well

WATER FLOOD ASSOCIATES, INC.

GRAYBURG - JACKSON FIELD  
LEA & EDDY COUNTIES, NEW MEXICO



NEW MEXICO OIL CONSERVATION COMMISSION

MAIN OFFICE OCC

GAS-OIL RATIO REPORT

1964 MAR 18 AM 8:24

OPERATOR WATER-FLOOD ASSOCIATES, INC. POOL GRAYBURG-JACKSON  
ADDRESS 2211 CONTINENTAL NAT'L Bk. BLDG. MONTH OF JANUARY, 19 64  
FORT WORTH, TEXAS 76102  
SCHEDULED TEST COMPLETION TEST SPECIAL TEST X (Check One)

(See Instructions on Reverse Side)

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	
CARPER JOHNSON A	4	10-6-63	PUMPING	-	24	4	0	2.76	TSTM	
CARPER JOHNSON A	4	2-8-64		-	24	4	0	8.0	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 MARCH 2, 1964

WATER-FLOOD ASSOCIATES, INC.  
Company

By CO-ORDINATOR  
WATER-FLOOD OPERATIONS  
Title

# WATER FLOOD ASSOCIATES, INC.

2211 CONTINENTAL NATIONAL BANK BUILDING  
FORT WORTH 2, TEXAS  
MARCH 13, 1964  
TELEPHONE OFFICE 000

CURTIS McBROOM  
PRESIDENT

ED 6-2425

1964 MAR 18 AM 8:24

MR. FRANK IRBY  
CHIEF  
WATER RIGHTS DIVISION  
STATE ENGINEER OFFICE  
Box 1079  
SANTA FE, NEW MEXICO

RE: APPLICATION WATER-FLOOD  
ASSOCIATES, INC. TO CONVERT  
WELL No. 5 STATE TO WATER  
INJECTION.

DEAR MR. IRBY:

IN OUR LETTER DATED MARCH 3, 1964 TO THE OIL CONSERVATION COMMISSION, WE REQUESTED ADMINISTRATIVE APPROVAL TO CONVERT OUR WELL No. 5 STATE LOCATED IN THE NE/4 NW/4 SECTION 2, T-17-S, R-31-E, EDDY COUNTY, NEW MEXICO TO WATER INJECTION. A SUBSEQUENT AMENDED APPLICATION IS ATTACHED.

YOUR LETTER OF MARCH 10, 1964 TO MR. A. L. PORTER, JR., SECRETARY-DIRECTOR OF THE OIL CONSERVATION COMMISSION APPROVED OUR APPLICATION PROVIDED INJECTION IS MADE THROUGH TUBING UNDER A PACKER SET IMMEDIATELY ABOVE THE PERFORATIONS AT 3500'.

WE WISH TO REQUEST THAT WE BE ALLOWED TO INJECT WATER INTO THE PRESENT PRODUCING HORIZON, GRAYBURG-SAN ANDRES PERFORATIONS AT VARIOUS INTERVALS BETWEEN 3500' AND 3830', DOWN THE CASING. THIS REQUEST IS MADE WITH THE FACT IN MIND THAT IT MAY BE NECESSARY TO COMPLETE THIS WELL FOR DUAL INJECTION TO OBTAIN EFFICIENT DISTRIBUTION OF INJECTION WATER. ON THE EVENT THAT THIS IS NECESSARY, WE PROPOSE TO SET TUBING ON A PACKER BELOW THE GRAYBURG PERFORATIONS AT 3670' AND INJECT INTO THE GRAYBURG ZONES DOWN THE CASING ANNULUS AND INTO THE SAN ANDRES THROUGH THE TUBING UNDER THE PACKER.

WATER-FLOOD ASSOCIATES, INC. WELL No. 5 STATE HAS 8-5/8" O.D. CASING SET TO THE TOP OF THE SALT, THROUGH THE OCHOA SERIES, AND CEMENTED WITH 50 SACKS. SEVEN INCH O.D. CASING IS SET AND CEMENTED AT 3022' WITH 100 SACKS. DETAILS OF WELL COMPLETION AND CEMENT TOPS ARE SHOWN ON THE ATTACHED DIAGRAM.

ANY SURFACE WATER WHICH MAY BE PRESENT IS ADEQUATELY PROTECTED. SEVERAL TEST HOLES HAVE BEEN DRILLED IN THE AREA WITH AN AIR RIG SEARCHING FOR WATER. NO WATER WAS ENCOUNTERED TO A DEPTH OF 500'. THIS AREA IS NOT INSIDE A DECLARED WATER BASIN.

**ILLEGIBLE**

MAIN OFFICE OCC

1964 MAR 10 AM 8:26

MAIN OFFICE OCC

March 23, 1964 <sup>1964 MAR 25 AM 8:20</sup>

Water Flood Associates, Inc.  
2211 Continental National Bank Building  
Fort Worth 2, Texas

Attn. Mr. C. W. Stumhoffer

Dear Mr. Stumhoffer:

Reference is made to the application of Water Flood Associates, Inc., dated March 13, 1964 which seeks administrative approval of the Oil Conservation Commission to convert well No. 5 State to water injection.

In your paragraph 4 you state that 8 5/8 inch O. D. casing is set to the top of the salt through the Ochoa series and cemented with 50 sacks of cement. If I understand the geology correctly, this statement cannot be true. The Ochoa series includes the entire salt section. Further, the best information I have been able to obtain indicates the top of the salt to be at approximately 800 feet below surface at the location of the subject well and the information received from you indicates that the 8 5/8 casing was set at 758 feet which would be 42 feet short of the top of the salt.

Your 5th paragraph states that several holes have been drilled in the area with air rigs searching for water and no water was encountered to a depth of 500 feet. This does not mean that no water exists between 500 feet and the top of the salt section, nor does it mean that any leakage water could not move through the Dockum group to a point where water does exist. The fact that this area is not inside a declared water basin does not mean that any water existing in the area will not be protected. The information you have given does not substantiate your statement that any surface water which may be present is adequately protected. I have no information whatever on the age and condition of the casing and I am therefore unable to determine whether the casing will withstand the pressures at which injection will be made, and will continue in good condition until the termination of the flood.

✓ In paragraph 6 you state that injection water will be obtained from the Ogallala formation but you do not state whether produced water will be reinjected.

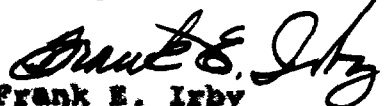


It is possible that I might be able to withdraw any objection to the granting of this application provided the casing is pressure-tested at 500 pounds in excess of the maximum injection pressure prior to commencement of injection and subsequent periodic tests be made throughout the life of the flood until the well is properly plugged.

By copy of this letter, the Oil Conservation Commission is notified that this office objects to the granting of your application until the above matters are cleared with this office.

Yours very truly,

S. E. Reynolds  
State Engineer

By:   
Frank E. Irby  
Chief  
Water Rights Div.

FEI/na  
cc-Oil Conservation Comm.

# WATER FLOOD ASSOCIATES, INC.

2211 CONTINENTAL NATIONAL BANK BUILDING  
FORT WORTH 2, TEXAS

CURTIS McBROOM  
PRESIDENT

1964 MAR 26 PM 1 54  
MARCH 26, 1964

ED 6-2425

MR. FRANK E. IRBY  
CHIEF  
WATER RIGHTS DIVISION  
STATE ENGINEER OFFICE  
SANTA FE, NEW MEXICO

RE: APPLICATION WATER-FLOOD  
ASSOCIATES, INC. TO CONVERT  
WELL NO. 5 STATE TO  
WATER INJECTION

DEAR MR. IRBY:

THIS LETTER IS TO CONFIRM OUR TELEPHONE CONVERSATION OF  
MARCH 26, 1964 PERTAINING TO WATER-FLOOD ASSOCIATES, INC. APPLICATION  
TO CONVERT TO WATER INJECTION WELL NO. 5 STATE LOCATED IN THE NE/4  
NW/4 SECTION 2 T-17-S R-31-E, EDDY COUNTY, NEW MEXICO.

IN VIEW OF YOUR OBJECTIONS TO INJECTION DOWN THE CASING IN  
THIS WELL, WE WISH TO ADVISE YOU THAT TUBING WILL BE SET ON A PACKER  
IMMEDIATELY ABOVE LINER PERFORATIONS BEGINNING AT 3500', AND INJECTION  
WILL BE INTO THE OIL PRODUCTIVE GRAYBURG-SAN ANDRES UNDER THIS PACKER.

VERY TRULY YOURS,

WATER-FLOOD ASSOCIATES, INC.

By:

*C. W. Stumhoffer*  
C. W. STUMHOFFER  
CO-ORDINATOR WATERFLOOD  
OPERATIONS

CWS:BV

cc: OIL CONSERVATION COMMISSION ✓

*Verbal approval received  
from Mr. Irby 3/24/64  
4:10 PM  
fk*