MERCURY PRODUCTION COMPANY
FORT WORTH NATIONAL BANK BUILDING
FORT WORTH, TEXAS
ED 6-4753

FRANK DARDEN
~~EXXXXXXXXXXXXXXXX~~

255

January 27, 1967

Mr. Dan Nutter
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Re: Application for Expansion of a
Pilot Waterflood Project
Approved by Oil Conservation
Commission Order No. R-1433
Brown Pool, Chaves County
New Mexico

Dear Sir:

In accordance with our telephone conversation of this week, we are herewith applying for permission to convert wells E-92 No. 13, No. 18 and No. 19 to water injection as an expansion of the subject waterflood, which was commenced by Mr. J. W. Brown in July of 1959. Mercury Production Company has purchased all of the leases in the subject field from the State of New Mexico and from the estates of Mr. Brown and his partner, Mr. Coll.

For the past year we have been diligently analyzing the results of Mr. Brown's injection in order to determine why his project had not been successful. In our opinion, the principal reason for its failure has been a highly permeable thief zone in the base of the oil sand. We have identified this thief zone as being present throughout the productive area of the field from our drilling during the past two months, and we have taken special precautions in our drilling and cementing program to assure the proper re-entry of water into the pay zone in our future waterflood development.

We have drilled eight new wells in the project (State E-92 wells 12, 13, 14, 15, 16, 17, 18 and 19) and have used the same completion procedure on all of these wells. The wells were drilled and cored through the pay zone, utilizing a 7-7/8" hole. Four and one-half inch 9.5# J-55 casing was then set through the pay zone and cemented with sufficient Incor cement to completely fill the annulus space from total depth to the surface. The joints of casing opposite the pay zone were coated with an epoxy granular substance to improve bonding and 18% salt and 3/4% fluid loss additive were added to the cement slurry to further improve the bonding characteristics of the cement. These wells were selectively perforated with jet shots and fracture treated by the limited re-entry technique, and from the results of the treatment to date we feel certain that we have contained our fracture treatment to the pay zone while excluding the troublesome thief zone.

Injectivity tests indicate that wells E-92 Nos. 6 and 9 (present active injection wells) are not in communication with this thief zone, but we have determined that wells E-92 Nos. 2, 7 and 8 are in direct communication to the extent that injection into them channels in a period of days to offset producing wells. It is, therefore, respectfully requested that we be granted administrative approval to plug with cement wells E-92 Nos. 2, 7 and 8 and to convert wells E-92 Nos. 13, 18 and 19 to injection so that we can go ahead with water injection in the project. These wells are marked in red on the attached plat and we have attached a schematic diagram of a typical new well completion for your information.

A copy of this application is being sent to Mr. Frank Irby, office of the State Engineer in Santa Fe.

Your kind cooperation in this matter will be greatly appreciated.

Yours very truly,

Frank Darden

Frank Darden for
Mercury Production Company

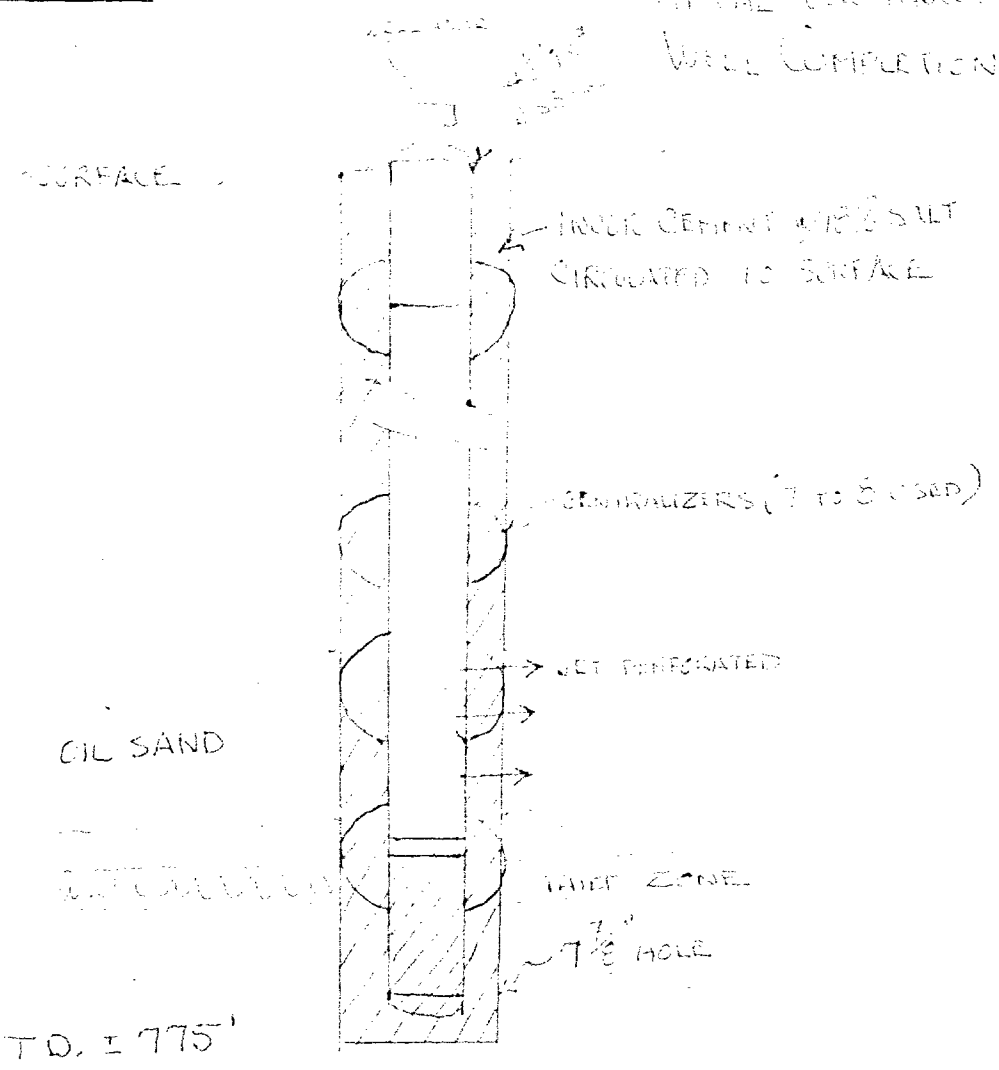
FD:lhm
Encls.

cc: Mr. Frank Irby
Office of State Engineer
Santa Fe, New Mexico

ILLEGIBLE

[illegible]
[illegible] PROJECT
[illegible]

TYPICAL [illegible] INJECTION
WELL COMPLETION



GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

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

P. O. BOX 871
SANTA FE

January 22, 1964

ILLEGIBLE

Mr. J. W. Brown
Nickson Hotel
Roswell, New Mexico

Re: State E-92 Well No. 9

Dear Mr. Brown:

Reference is made to your letter of December 19, 1963, wherein you request authority to convert your State E 92 Well No. 9, located 1310 feet from the North line and 1590 feet from the West line of Section 26, Township 16 South, Range 26 East, Brown Pool, Chaves County, New Mexico, to a water injection well. It is our understanding that this well was originally drilled as a producer, but that it is now needed to fill out the desired water injection pattern for the waterflood project which you are operating in the aforesaid pool. It is our understanding further that the well was drilled to a total depth of 800 feet, that 800 feet of 4 1/2-inch casing was set at total depth and cemented with 100 sacks of cement. Water injection will be into the Penrose member of the Queen formation through 144 perforations from approximately 750 to 785 feet.

Inasmuch as the aforesaid casing and cementing program appear to be adequate for water injection purposes in this waterflood, the conversion of the subject Well No. 9 to water injection at the aforesaid unorthodox location is hereby approved.

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/esr

cc: Oil Conservation Commission - Artesia
Mr. J. M. Kapteina, Oil Conservation Commission - Santa Fe
OCC Case No. 1699 File

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103
(Rev 3-55)

MISCELLANEOUS REPORTS ON WELLS

(Submit to appropriate District Office as per Commission Rule 1106)

Name of Company	Address
J. M. BROWN	c/o Hickson Hotel, Roswell, New Mexico

Lease	Well No.	Unit Letter	Section	Township	Range
Brown	9	C	25	10 South	26 East

Date Work Performed	Pool	County
	Brown	Eddy

THIS IS A REPORT OF: *(Check appropriate block)*

- [ ] Beginning Drilling Operations
- [ ] Casing Test and Cement Job
- [x] Other *(Explain)*: Change from Producer to Water Injector
- [ ] Plugging
- [ ] Remedial Work

Detailed account of work done, nature and quantity of materials used, and results obtained.

Attention: Mr. Ben Nutter

Request permission to change this well from producer to water injection well, due to the fact that production has fallen so low, and the well is needed to fill in our waterflood pattern.

ILLEGIBLE

Witnessed by	Position	Company

FILL IN BELOW FOR REMEDIAL WORK REPORTS *ONLY*

ORIGINAL WELL DATA

D F Elev.	T D	P B T D	Producing Interval	Completion Date

Tubing Diameter	Tubing Depth	Oil String Diameter	Oil String Depth

Perforated Interval(s)

Open Hole Interval	Producing Formation(s)

RESULTS OF WORKOVER

Test	Date of Test	Oil Production BPD	Gas Production MCFPD	Water Production BPD	GOR Cubic feet/Bbl	Gas Well Potential MCFPD
Before Workover						
After Workover						

OIL CONSERVATION COMMISSION	I hereby certify that the information given above is true and complete to the best of my knowledge.
Approved by [illegible]	Name [illegible]
Title [illegible]	Position Owner

SFOCC

WFX-255

MERCURY PRODUCTION COMPANY
FORT WORTH NATIONAL BANK BUILDING
FORT WORTH, TEXAS
ED 6-4753

FRANK DARDEN
~~C.W. STUMHOFFER~~

January 27, 1967

Mr. Dan Nutter
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Re: Application for Expansion of a Pilot Waterflood Project Approved by Oil Conservation Commission Order No. R-1833 Brown Pool, Chaves County New Mexico

Dear Sir:

No. 9

In accordance with our telephone conversation of this week, we are herewith applying for permission to convert wells State E-92 No. 12, No. 18 and No. 19 to water injection as an expansion of the subject waterflood, which was commenced by Mr. J. W. Brown in July of 1959. Mercury Production Company has purchased all of the leases in the subject field from the State of New Mexico and from the estates of Mr. Brown and his partner, Mr. Coll.

For the past year we have been diligently analyzing the results of Mr. Brown's injection in order to determine why his project had not been successful. In our opinion, the principal reason for its failure has been a highly permeable thief zone in the base of the oil sand. We have identified this thief zone as being present throughout the productive area of the field from our drilling during the past two months, and we have taken special precautions in our drilling and cementing program to assure the proper re-entry of water into the pay zone in our future waterflood development.

We have drilled eight new wells in the project (State E-92 wells 12, 13, 14, 15, 16, 17, 18 and 19) and have used the same completion procedure on all of these wells. The wells were drilled and cored through the pay zone, utilizing a 7-7/8" hole. Four and one-half inch 9.5# J-55 casing was then set through the pay zone and cemented with sufficient inner cement to completely fill the annulus space from total depth to the surface. The joints of casing opposite the pay zone were coated with an epoxy granular substance to improve bonding and 10% salt and 3/4% fluid loss additive were added to the cement slurry to further improve the bonding characteristics of the cement. These wells were selectively perforated with jet shots and fracture treated by the limited re-entry technique, and from the results of the treatment to date we feel certain that we have contained our fracture treatment to the pay zone while excluding the troublesome thief zone.

Jim Kapteina

Can find no objection (mechanically) to this Application. However, The operator has not filed completion reports on No 18 & 19 as required. Suggest you hold application until reports in.

Dick

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

RECEIVED
JAN 24 1964
O. C. C.
ARTESIA, OFFICE

January 22, 1964

COPY

Mr. J. W. Brown
Nickson Hotel
Roswell, New Mexico

Re: State E-92 Well No. 9

Dear Mr. Brown:

Reference is made to your letter of December 19, 1963, wherein you request authority to convert your State E-92 Well No. 9, located 1310 feet from the North line and 1980 feet from the West line of Section 26, Township 10 South, Range 26 East, Brown Pool, Chaves County, New Mexico, to a water injection well. It is our understanding that this well was originally drilled as a producer, but that it is now needed to fill out the desired water injection pattern for the waterflood project which you are operating in the aforesaid pool. It is our understanding further that the well was drilled to a total depth of 800 feet, that 800 feet of 4 1/2-inch casing was set at total depth and cemented with 100 sacks of cement. Water injection will be into the Penrose member of the Queen formation through 144 perforations from approximately 750 to 785 feet.

Inasmuch as the aforesaid casing and cementing program appear to be adequate for water injection purposes in this waterflood, the conversion of the subject Well No. 9 to water injection at the aforesaid unorthodox location is hereby approved.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/esr

cc: Oil Conservation Commission - Artesia
Mr. J. E. Kapteina, Oil Conservation Commission - Santa Fe
OCC Case No. 1699 file

Jim

Here is authority for well No 9 to inject

MERCURY PRODUCTION COMPANY
FORT WORTH NATIONAL BANK BUILDING
FORT WORTH, TEXAS
ED 6-4753

FRANK DARDEN
~~XXXXXXXXXXXX~~

February 8, 1967

Mr. J. E. Kapteina
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Subject: State E-92 Well No. 9
Brown Field
Chaves County, New Mexico

Dear Jim:

Since our telephone conversation of the other day, I have dug into the well file on Well E-92 No. 9, and found the attached correspondence pertaining to authorization for injecting water in that well. I am enclosing a copy of the approved application to convert this well and a copy of Mr. Potter's letter concerning the casing program.

I am also sending a copy of this correspondence to Mr. Irby in the State Engineer's Office.

I trust this will be sufficient for going forward with the injection in this well.

Very truly yours,

Frank Darden

Frank Darden for
Mercury Production Company

FD:lhm
Encls.

cc: Mr. Frank Irby
State Engineer's Office
Santa Fe, New Mexico

On page 11 of the transcript of the above mentioned hearing on this matter, the witness stated that it was the intention of the operator to follow the recommendations of Treat-rite Water Lab and that he thought the next sample of water from the water supply well would show less contamination than the sample entered as Exhibit #4. If the quality of the source water has improved with pumping, please so advise me and forward a copy of the most recent analysis of this water.

After receiving the above requested information I feel I will be in position to make my recommendations to the Oil Conservation Commission.

Best regards.

Yours truly,

S. E. Reynolds
State Engineer

By:
Frank E. Irby
Chief
Water Rights Div.

FEI/ma
cc-Oil Conservation Comm.

'67 FEB 9 AM 8 5

February 8, 1967

Mercury Production Company
508 Fort Worth National Bank Building
Fort Worth, Texas 76102

Attn. Mr. Frank Darden

Dear Mr. Darden:

Reference is made to your application to the Oil Conservation Commission which seeks authority for expansion of your Pilot Waterflood Project approved by Order R-1433 in the Brown Pool, Chaves County. In examining the typical new injection well completion, it is noted that no depths are given except for the total depth which is 775 feet. Please furnish the approximate depth to the top of the oil sand, the bottom of the oil sand, the top of the Thief Zone and the bottom of the Thief Zone, and the approximate depth of the perforations which will naturally be in the oil sand. Please state the type of formation between the oil sand and the Thief Zone, i.e., sandstone, limestone, shale, etc.

In reviewing the transcript and exhibits of the original hearing held on June 24, 1959, it is noted that you expected to obtain the water supply for the project from the M. G. Peters #1 Gulf State well in the SE¼SE¼SW¼ of Sec. 23, T. 10 S., R. 26 E., which was then being tested in a zone at 400 feet. It is also noted that the Treat-rite Water Lab report shows this water to be highly corrosive and that it must be kept in a closed and lined system and that the well was expected to produce approximately 240 barrels per day and that the drilling of additional wells in the same aquifer was contemplated. Please advise as to whether this source of water is being used. If this source is not being used, please advise as to the source of water and its analysis. Please also advise as to whether the water is being injected through cement lined tubing and is in a closed system as originally proposed.

On page 11 of the transcript of the above mentioned hearing on this matter, the witness stated that it was the intention of the operator to follow the recommendations of Treat-rite Water Lab and that he thought the next sample of water from the water supply well would show less contamination than the sample entered as Exhibit #4.
If the quality of the source water has improved with pumping, please so advise me and forward a copy of the most recent analysis of this water.

After receiving the above requested information I feel I will be in position to make my recommendations to the Oil Conservation Commission.

Best regards.

Yours truly,

S. E. Reynolds
State Engineer

By:
Frank E. Irby
Chief
Water Rights Div.

FEI/ma
cc-Oil Conservation Comm.

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

February 16, 1967

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, NEW MEXICO 87501

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
Santa Fe, N. M.

Attn. Mr. Dan Nutter

Gentlemen:

Reference is made to the application of Mercury Production Company which seeks authority for expansion of the waterflood project in the Brown Pool of Chaves County, which was approved by Order R-1433. Further reference is made to my letter of February 8, 1967 addressed to Mercury Production Company and to Mercury Production Company's reply to my letter pertaining to the subject application. There is no indication that you received a copy of the February 10th letter of Mercury Production Company addressed to me. Therefore, I am reproducing and sending to you a copy of the letter and a copy of the analysis report which is attached to the letter. It appears that the original proposed water supply well is not being used and that the water supply wells in Sec. 25 are of much higher quality than the well in Sec. 23.

In view of the answers to the questions contained in my letter of February 8, 1967, it does not appear that the approval of the application would constitute a threat to any fresh waters which may exist in the area. Therefore, this office offers no objection to the granting of the application.

FEI/ma
encl.
cc-Mercury Production Co.

Yours truly,

S. E. Reynolds
State Engineer

By: Frank E. Irby
Frank E. Irby
Chief
Water Rights Div.

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE