

CO-OPERATIVE WATERFLOOD AGREEMENT
CAPROCK FIELD
LEA AND CHAVES COUNTIES, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT No. 1191 ✓
CASE 879

This Agreement, made and entered into this 16 day of November, 1956, by and between GRARIDGE CORPORATION, hereinafter referred to as "Graridge" or as "Operator", and GULF OIL CORPORATION and GREAT WESTERN DRILLING COMPANY, hereinafter referred to respectively as "Gulf" and "Great Western" and collectively as "Nonoperators",

WITNESSETH: That,

WHEREAS, the above parties are each the owners of certain oil wells situate in the Caprock Field, of Lea and Chaves Counties, New Mexico, and in the interest of conservation of crude petroleum, each party desires to conduct a pilot waterflooding project on certain of its separate leases, and, to further such purpose, desires to cooperate with the other parties in providing facilities for such project, all in accordance with the terms and provisions hereof;

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, it is agreed:

1. The oil and gas bearing formation into which water is to be injected is known as the "Queen Sand" or "3,000 Foot Sand" that occurs in the Caprock Field in the sub-sea interval between plus 1,300 feet and plus 1,400 feet, and which has an approximate thickness of 10 feet to 30 feet, which formation is hereinafter referred to as the "Queen Sand."

2. Each of the parties hereto shall convert into water injection wells for injecting water into the Queen Sand its following listed presently producing Queen Sand oil wells, all located in Lea County, New Mexico, as follows, to-wit:

Graridge - Malco State No. 5, located in SE/SW, Section 31, T-12-S, R-32-E.

Graridge - Livermore Maxwell State Nos. 5 and 7, located in NW/SE, Section 31, T-12-S, R-32-E, and SE/SE, Section 31, T-12-S, R-32-E, respectively.

Graridge - Manry and Company State No. 2, located in NW/NE, Section 6, T-13-S, R-32-E.

Gulf - State "B" No. 2, located in SE/NE, Section 6, T-13-S, R-32-E.

Great Western - State "R" No. 1, located in NW/NW, Section 5, T-13-S, R-32-E.

Each such well shall be temporarily abandoned as a producer of oil, and shall be so equipped as to permit water to be injected through such well into the full thickness of the Queen Sand presently penetrated by such well. Each such well shall have casing set and cemented into the top of the Queen Sand or a suitable liner cemented to the same point. Each party shall stand all costs in connection with so converting its own wells, and in maintaining them as injection wells.

In the event any of the parties hereto should, for any reason, be unable to satisfactorily convert any of the above listed wells as injection wells, then such party shall drill a replacement well, at its own expense, at a location as near as possible to the well which it was unable to convert, to be used as an injection well in lieu of the well that it was unable to convert.

3. The parties shall construct facilities for producing, treating, pressuring, and distributing to a water meter at each injection well the water to be used for waterflooding purposes, the plan of which facilities is shown generally on Exhibit "A" attached hereto, and in detail on Exhibit "B" attached hereto, and both made a part of this agreement. These facilities are hereinafter referred to as the "Plant." The costs of constructing said "Plant" shall be borne by Graridge 54%, Gulf 25% and Great Western 21%.

4. Water for injection purposes shall be fresh water produced from two wells presently completed in the 350 foot water gravel and sand formation on Graridge leases in Section 31, T-12-S, R-32-E. Graridge agrees to secure any necessary permission for the use of such water contemplated by this agreement from the Commissioner of Public Lands of the State of New Mexico, the

State Engineer of the State of New Mexico, any water district or any other agency or department claiming jurisdiction over such water or the use thereof; and Graridge further agrees to indemnify and save the Nonoperators harmless in the event it should fail to secure such permission.

It is contemplated there will be available for injection from the two wells mentioned above approximately 4,000 to 5,000 barrels of water per day. Should the contemplated amounts from the above source prove inadequate, supplemental water wells may have to be drilled later or an additional source of water developed. Should it become necessary to drill additional wells or to develop additional sources of water supply, such drilling or the nature of such additional source and the sharing of costs incident thereto shall be by mutual agreement of the parties hereto.

5. Graridge shall be the operator of the plant, and shall construct, or cause to be constructed, and shall operate said Plant for the mutual benefit of the parties in accordance with the provisions of this agreement. Construction of the Plant by Operator, and conversion of injection wells by the parties, shall be commenced within thirty (30) days after approval of this waterflooding project by the Oil Conservation Commission of New Mexico.

6. Upon completion of the Plant, conversion of the injection wells, and commission approval, flooding shall commence. Water shall be brought from its source, treated to a compatible condition for waterflooding purposes, and distributed in approximately equal volumes to each injection well. The parties recognize that, due to formation conditions in the various injection wells, there will be some variations between wells, both as to total water volume receivable and as to rate of injection. It is the intent, however, that approximately the same volume of water shall be injected into the Queen Sand each day, at the same rate, through each injection well, and each party shall diligently attempt to accomplish such results as regards its injection wells. The

plant shall commence operations on a gravity system. If, and when the wells fail to take the available supply of water on gravity, the pressure facilities shall be put into operation.

7. After installation, each party shall bear that proportion of the costs of operating and currently maintaining the plant which the volume of water injected by it into the Queen Sand bears to the total volume of water so injected. Such costs of operation and maintenance, as well as costs of construction and installation, shall be computed, billed, and paid in accordance with the provisions of the accounting schedule attached hereto and marked Exhibit "C". A betterment or addition to the Plant shall be a Plant charge; repairs to, or replacement of, a part of the Plant shall be considered as operating charges.

8. As Operator, Graridge:

(A) Shall carry (1) Workmen's Compensation as required by law; (2) Public Liability Insurance in the amount of \$50,000/\$100,000 for personal injury or death to persons and \$5,000 for damage to property; and (3) Automotive Public Liability Insurance in like amounts as Public Liability Insurance.

(B) Shall not make an expenditure in expanding or operating the Plant in excess of \$1,500.00 without the agreement of all parties, but this limitation shall not apply to current monthly operating expenses.

(C) Shall advise with the other parties as to methods of treating water, injection rates, and other problems in connection with Plant operation.

(D) Shall at all reasonable times give to the other parties access to the Plant and records pertaining thereto.

(E) Shall use its own employees, and such employees shall for all purposes be considered employees of Graridge.

(F) Shall use reasonable judgement and skill, but shall not be liable for damages to the other parties, or to their property resulting from Graridge's services as Operator, except such damages

which result from the negligence of Graridge or its employees. ✓

9. The parties shall freely exchange information as to water injected, performance of injection wells, performance of production wells and production therefrom, and any other information that may be of value in determining the effectiveness of the water flooding operation. As Operator, Graridge shall each month furnish to the other parties a summary of information regarding Plant operation and water furnished for injection, and each month each of the parties shall furnish to the other parties information as to performance of its own wells, both injection and producing.

10. This agreement shall in no manner affect the obligations of any party to produce oil from its own wells, and each party shall be entitled to all production from its own wells and leases. The duties, liabilities, and obligations of the parties are intended to be several and not joint or collective, and nothing herein shall ever be construed to impose a partnership obligation or liability with regard to any of the parties. Each party shall be individually responsible for only its obligations as set out herein and shall be liable only for its proportionate share of the costs and expenses herein stipulated.

11. The parties agree that the creation, or attempted creation, of an artificial water drive as herein provided for is a reasonable producing and engineering practice. Each of the parties hereby releases the other parties from any liabilities or damages to its leases, subject hereto arising from or growing out of the injection of water into the Queen Sand pursuant to the terms of and conditions hereof.

12. It is contemplated that if the pilot flood is successful that it will be expanded into a field-wide project. In order to help evaluate the pilot flood, the parties agree that during the term hereof they will not drill additional Queen Sand wells within the "Assumed Drainage Boundary" shown on Exhibit "A" unless such wells are required in order to comply with the express or implied covenants of their leases.

13. It is believed that it will require approximately eighteen (18) months of actual water injection before the value of the waterflooding operations can be fully determined. For such reason, this agreement shall be and remain in full force and effect for a period commencing as of the date hereof and continuing thereafter for a period of eighteen (18) months after the day on which the Plant is first put into operation, which is the Primary Term hereof, and thereafter subject to the right of any party to terminate the agreement as to its participation in the project by thirty (30) days written notice to the other parties; provided that, if before the end of the Primary Term, the injection of water into the Queen Sand reasonably appears to be of no benefit to any party, such party shall have the right to stop water injection into its wells and to be relieved of participating in operating costs by thirty (30) days written notice to the other parties.

14. If either before or after the end of the Primary Term hereof, a party withdraws from the waterflooding project as set forth above, such party shall transfer to the remaining parties, in their ratio of ownership, its interest in the Plant, for which it shall be paid the reasonably depreciated cost (i.e. 5% per annum) of its interest in the Plant, but not including labor and installation and other intangible costs, and such other parties shall have the right to continue with the project insofar as their wells are concerned. If the waterflooding project is abandoned by mutual agreement of all parties, the Plant shall be salvaged for the best price obtainable, and the proceeds thereof distributed to the parties in the ratio of their proportionate share.

15. Notices and reports to be made hereunder may be given by mail or telegram addressed to the parties as follows:

Graridge Corporation
Attention: Mr. O. H. Reaugh
Box 752
Breckenridge, Texas

Gulf Oil Corporation
P. O. Drawer 1290
Fort Worth, Texas

Great Western Drilling Company
Attention: Mr. O. H. Crews
Box 1659
Midland, Texas

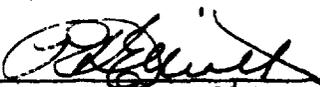
16. "Force Majeure" is any cause or event not within reasonable control, including, but not limited to: fire, flood, windstorm, lack of water supply, or other acts of God, strikes or industrial disturbances, inability to obtain material or equipment, wars, insurrection, riots, or governmental decrees. Whenever as a result of any cause normally covered by "Force Majeure," either party is prevented from complying with any obligation of this agreement, it shall not be held in default or liable for damages and such obligation shall be suspended so long as such cause persists. The party so prevented, however, shall use due diligence and good faith in an attempt to eliminate the cause so preventing his compliance with this agreement.

17. This Agreement shall be a covenant running with the lands and leases, and shall be binding upon the successors and assigns of the parties hereto.

18. This Agreement may be executed in counterpart with the same effect as if all parties had executed one instrument.

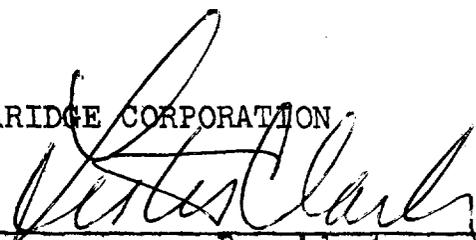
IN WITNESS WHEREOF, this Agreement has been executed as of the date aforesaid.

ATTEST:


Secretary

GRARIDGE CORPORATION

By


President

ATTEST:


Assistant Secretary
H. M. CRAIG

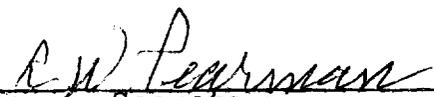
GULF OIL CORPORATION

By



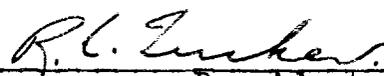
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Compt	<i>KER</i>
Exp.	
Prod.	<i>12/70</i>

ATTEST:


Secretary

GREAT WESTERN DRILLING COMPANY

By


President

STATE OF TEXAS }
COUNTY OF YOUNG }

On this 23rd day of November, 1956, before me personally appeared Lester Clark, to me personally known, who, being by me duly sworn, did say that he is President of GRARIDGE CORPORATION, a Delaware Corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said Corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said Lester Clark acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this the day and year first above written.

Paul C. ...
Notary Public in and for ~~Young~~ Stephens
County, Texas

My Commission expires:
June 1, 1957

STATE OF TEXAS }
COUNTY OF TARRANT }

On this 16 day of November, 1956, before me personally appeared H. M. Bayer, to me personally known, who, being by me duly sworn, did say that he is VICE PRESIDENT of GULF OIL CORPORATION, a Pennsylvania Corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said Corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said H. M. Bayer acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this the day and year first above written.

M. B. Chippeaux M. B. CHIPPEAUX
Notary Public in and for Tarrant
County, Texas

My Commission expires:
June 1, 1957

STATE OF TEXAS

COUNTY OF Midland }

On this 29 day of Nov., 1956, before me personally appeared R. C. Tucker, to me personally known, who, being by me duly sworn, did say that he is President of GREAT WESTERN DRILLING COMPANY, a Texas Corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said Corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said R. C. Tucker acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this the day and year first above written.

Marguerite Hanson
Notary Public in and for
Midland County, Texas.

My Commission expires:

6-1-57

CEU:eap
11-6-56