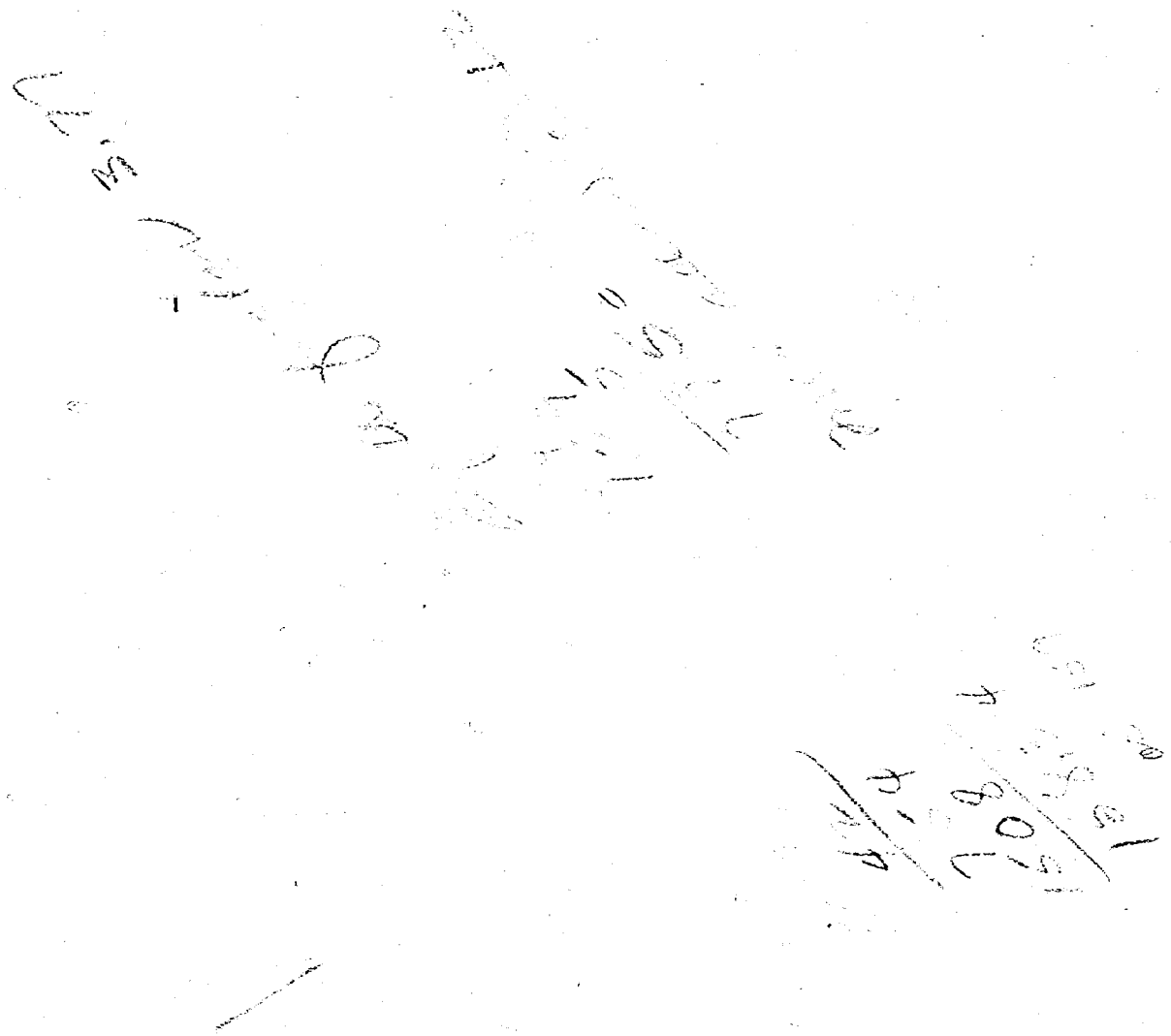
CASE 3631: Application of GULF OIL CORP. FOR A WATERFLOOD PROJECT, LEA COUNTY, NEW MEXICO.



Case Number

3631

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. 3631
Order No. R-3297

APPLICATION OF GULF OIL CORPORATION
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 August 9, 1967, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 15th day of August, 1967, 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, Gulf Oil Corporation, seeks permission to institute a waterflood project in the Teague-Simpson Pool by the injection of water into the McKee zone of the Simpson formation through two injection wells on its C. E. LaMunyon Lease in Section 22, Township 23 South, Range 37 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.

IT IS THEREFORE ORDERED:

(1) That the applicant, Gulf Oil Corporation, is hereby authorized to institute a waterflood project in the Teague-Simpson Pool by the injection of water into the McKee zone of the Simpson formation through the following-described wells on its C. E. LaMunyon Lease in Section 22, Township 23 South, Range 37 East, NMPM, Lea County, New Mexico:

C. E. LaMunyon Well No. 8, located in Unit N
C. E. LaMunyon Well No. 10, located in Unit L

(2) That the subject waterflood project is hereby designated the Gulf LaMunyon Teague Waterflood Project and shall be governed by 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 Gulf LaMunyon Teague 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 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

esr

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO

August 15, 1967

C Mr. Richard S. Morris
Montgomery, Federici & Andrews
Attorneys at Law
Post Office Box 2307
O Santa Fe, New Mexico

Dear Sir:

D Enclosed herewith is Commission Order No. R-3297, entered in Case No. 3631, approving the Gulf LaMunyon Teague Waterflood Project.

P Injection is to be through the two authorized water injection wells, each of which shall be equipped with a string of 2-inch internally plastic-coated tubing set in a packer, the packer to be located in
Y the 7-inch casing as near to the top of the 5-inch liner as is practicable.

As to allowable, our calculations indicate that when both of the authorized injection wells have been placed on active injection, and all wells in the project area have been placed on production from the Teague-Simpson Pool, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 795 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 both of the aforementioned Commission offices by letter of

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO

Mr. Richard S. Morris
Montgomery, Federici & Andrews
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

C 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.

O 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,

P

A. L. PORTER, Jr.
Secretary-Director

Y Enclosures
ALP/DSN/ir

cc: Oil Conservation Commission
Hobbs, New Mexico

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

dearnley-meier reporting service, inc.
SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS
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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 9, 1967

EXAMINER HEARING

In the matter of:

Application of Gulf Oil Corporation for a waterflood project, Lea County, New Mexico.

Case No. 3631

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Case Number 3631.

MR. HATCH: Case 3631, application of Gulf Oil Corporation for a waterflood project, Lea County, New Mexico.

MR. MORRIS: Mr. Examiner, I am Dick Morris of Montgomery, Federici and Andrews, Santa Fe, New Mexico. It is my unique pleasure today, to represent Gulf Oil Corporation in this case. We have on witness, Mr. Charles E. Mace and ask that he be sworn, please.

(Witness sworn.)

CHARLES E. MACE, called as a witness by the Applicant, having first been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. MORRIS:

Q Mr. Mace, will you please state you~name, and where you reside?

A Charles E. Mace, Roswell, New Mexico.

MR. NUTTER: How do you spell that last name, please sir?

THE WITNESS: M-a-c-e.

MR. NUTTER: Thank you.

Q (By Mr. Morris) By whom are you employed and in what capacity, Mr. Mace?

A Gulf Oil Corporation, District Reservoir Engineer.

Q Mr. Mace, have you previously testified before the Oil Conservation Commission or one of its Examiners and had your qualifications established as a matter of record?

A Yes, sir.

Q Are you familiar with the application of Gulf in this case?

A Yes, sir.

(Whereupon Applicant's Exhibit 1 was marked for identification.)

Q What is it that Gulf seeks by this application?

A To obtain approval of the Oil Conservation Commission to install a waterflood project on the C. E. LaMunyan Lease in the Teague-Simpson Pool. At this time I might refer to Exhibit A, which is a regional map of the area.

Q This is part of Exhibit 1 and you are referring to Page 5 of that exhibit?

A Yes, sir.

Q All right, would you point out the features in that

plat?

A Briefly, there are two producing areas in the Teague-Simpson Pool. The area outlined in orange is the Gulf operated area, and the area outlined in green is the Carter Foundation Production Company area. All the producing wells, whichever produced from the Teague-Simpson Pool, are included within these two outlines, with three exceptions. There are three plugged and abandoned wells, -- I will locate them. One is Section 21. It will be Unit I. and Unit P. of 21, both of those are plugged and abandoned McKee Wells and the other plugged and abandoned well is in Section 27, Unit N. All of these sections are in 23 South, 37 East.

Q And with the exception of those three wells that you have just designated, all of the wells that are producing or have produced from this pool, are located either in your project outline or in the Carter Foundation project?

A Yes, sir. The only two operators in the pool at this time are Gulf Oil Corporation and the Carter Foundation Company.

Q Would you further explain the legend and identify the wells as depicted on this plat?

A The two injection wells which we are seeking approval of at this time, are shown in red, and they are Wells Numbers 9 and 13, and they are shown just in a red circle, not completely

shaded in. Down on the Carter project, two active injection wells, at this time, are shown in green.

Q Mr. Mace, will you refer to the first several pages of this Exhibit Number 1 and briefly describe the characteristics of the Teaque-Simpson Pool?

A The main reservoir is the Simpson, actually it is the McKee Sand member of the Simpson formation. The location of the reservoir, we have just discussed, is shown on Exhibit A. The reservoir is a white to tan, fine to coarse grain sand, interbedded with green shale and shaley sand. The Structure of the reservoir is a northwest-southeast trending anticline and it is shown on Exhibit B.

Q Is there anything in particular with respect to Exhibit B that you would like to point out at this time?

A Not particularly, other than the high, tight area, which is about in the center of Section 27, which separates the two producing areas.

Q Will you describe the characteristics of the producing formation in this pool?

A The number of productive acres in the project area to be flooded initially will be two hundred and eighty acres, again shown on Exhibit A.

Q Now, excuse me, which two hundred and eighty acres are

you referring to?

A I am referring to the area outlined in orange on Exhibit A, with the exception of Well Number 13, which would be in Unit N of Section 27. Well Number 13 is currently an Ellenberger producer and down ultimately we hope to convert it to a McKee producer. It did produce ten thousand barrels many years ago, before it was drilled to the Ellenberger.

MR. NUTTER: It was a former McKee well, then?

THE WITNESS: Yes, sir, so all the wells inside the orange outline have produced McKee Oil. Well Number 11 just north of 13, it is in Unit C of Section 27, just recenly received permission for dual completion from the Commission and Well Number 11, which is an Ellenberger single zone well, is currently being dualed in the McKee, right at the moment. So, when this well is completed in the McKee, then all the wells inside the orange area have or did produce , or are now producing McKee oil.

Q Go ahead.

A The average depth to the top of the pay is about 93 hundred feet, as shown on Exhibit C and an Exhibit C, in the back of the brochure, are the four well logs for the four proposed injection wells, the two initially proposed wells and the two subsequent wells. The estimated average of effective thickness is seventy-eight feet; estimated average porosity eleven

percent, and the estimated average permeability, twenty-one millidarcie. Permeability ranges from 0.1 to four hundred millidarcies.

Q Will you briefly summarize the primary operations that have been conducted in this pool with emphasis on the project area, Gulf's project area?

A The primary production history, and the present status of the project area, the first well was completed March 22, 1948. The oil and water production history by months, has been tabulated on Exhibit D and plotted on Exhibit E in the booklet. The type of depletion is solution gas drive. The original reservoir pressure was 3741 PSIG, at a minus 5850. The saturation pressure was two thousand and 19 PSIG. The original gas and solution was 788 cubic feet per barrel. The oil gravity, 45.7 API. The project area in stage of depletion is late. Number of wells in the project area, there are three producing wells, wells 9 and 12 and Number 11, which is in the process of completion as a dual. There are three temporarily abandoned wells and two former producers now completed in other horizons. The temporarily abandoned wells and two former producers now completed in other horizons. The temporarily abondoned wells, 8 and 10 will be reactivated and utilized as injection wells, while temporarily abandoned well Number 6 will be returned to production. Well

Number 7 currently temporarily abandoned in the Teague-Abo Pool will be recompleted in the Teague-Simpson Pool.

Then, Well Number 13, an Ellenberger producer, will be converted to a Simpson injection well at a later date. The average daily oil production per well at the present time, from the three producing wells, the three wells being the Number 9, Number 12, and Number 11, currently in the process of completion, twenty-six barrels a day per well. The cumulative oil production as of June the 1st 1967, from the area to be flooded, one million four hundred twenty-eight thousand and eleven barrels.

Q What is the per-well allowable in this pool at the present time?

A The August 1967 proration schedule showed a top allowable of two hundred and eight barrels.

Q And what is your best well producing at this time?

A Our best well has an allowable of fifty-one barrels, and the Number 9 Well has an allowable of thirty-four barrels, and, then, Well Number 11 is in the process of completion and has been estimated to have an allowable of nine barrels, although the potential has not yet been taken.

Q Now, despite the fact that you have, oh, relatively good production from two of your wells, do you still classify this entire project area as being in an advanced stage of depletion?

A Yes, I do, in view of the temporarily abandoned wells that are no longer economically able to produce.

Q How long ago were those wells temporarily abandoned?

A As shown on Exhibit D, the number of producing wells in operation, we dropped down to two producing wells in about mid-year, 1963, and actually we had just three producing wells since '61, so the wells have been, the last time we had six wells producing was about in early '59. So, since '59, and as shown on Exhibit E, production since '59 has been trailing off and getting quite marginal.

Q Would you state what the source of your water will be for this waterflood project and give the Examiner some information on how the water will be injected, what pressures will be used and what the rate of injection will be?

A The source of injected water will be produced water from Gulf's C.E. LaMunyan Lease wells Number 11 and 13 completed in the Teague-Ellenberger Pool. These two Ellenberger wells produce approximately eleven hundred barrels a day. The water is salt water and the injection system will be corrosion resistant.

The treatment of injected water, none is anticipated, however, if water analysis after inauguration of project, indicates treatment is needed, appropriate action will be taken.

The pattern and spacing of the project, the four

injection wells form an incomplete eightyaacre five spot pattern as shown on Exhibit A. The initial injection pressure to be used, is estimated at two thousand PSI, and an injection plan will be designed for thirty-five hundred PSI.

The estimated initial per-well rate of injection will be five hundred and fifty barrels a day for the two injection wells.

Q Now, you have discussed your pattern here, Mr. Mace, and are your two subsequent wells, that is Wells 9 and 13, are those -- has it been definitely established that those wells will be put on as injection wells?

A It will be dependent on the success of the first two injection wells, and if everything goes right, we probably would like then to put Wells Number 9 and 13 on, but we would have to see the performance first, of 8 and 10.

MR. NUTTER: Has the Carter Foundation had success with their flooding?

THE WITNESS: Yes, sir. I have a graph here that will depict that.

MR. NUTTER: You are going to get to that?

THE WITNESS: Yes, sir.

Q (My Mr. Morris) Would you state how you plan to equip your wells for injection purposes?

A The injection well construction, water will be injected through internally plastic-coated tubing, below a packer, situated in the casing as shown on Exhibit F. Exhibit F depicts the four injection wells., the initial wells 8 and 10 and the subsequent wells, 9 and 13.

Q Now, in your opinion, Mr. Mace, will these wells be sufficiently cased to protect the fresh water zones and other oil producing zones in the area?

A Yes, sir.

Q Now, I believe you said that the source of your water was going to be the produced water from your Ellenberger formation which, at the present time, is eleven hundred barrels of water per day?

A Yes, sir.

Q And that is the amount of water that you anticipate that you will need to operate your flood?

A Initially, yes, sir.

Q Do you have any plans for supplementing that water supply, should that be necessary?

A Yes, sir. If waterflood performance justifies the conversion of Wells 9 and 13 to injection, we tentatively plan to abandon the Ellenberger and singly complete Well Number 13. Consequently, our water supply is then limited to one Ellenberger

Well, Number 11, which is further limited due to it being a dual. Accordingly, we plan to obtain supplemental water from the San Andres Reservoir.

Q Now, is that necessary, Mr. Mace, in order to start your Pilot Project, for which you are requesting approval in this case?

A It is not necessary to use San Andres water initially, no, sir.

Q All right. Has your plan of waterflood been presented to the office of the State Engineer for approval?

A Yes, sir, it has. The Plan has also been presented to the USGS, who are the only royalty owner.

Q Have you received any indication from the USGS as to their feeling on this matter?

A The USGS has approved the project, subject to the Commission's approval.

Q If the Commission sees fit to approve this application, when do you plan to intiate work on the project?

A Immediately.

Q What results do you expect from this project?

A The Carter Foundation Production Company, the only other operator in the Teague-Simpson Pool, is now conducting waterflood operations on their E. C. Hill M. Lease, and as shown

on Exhibit G, the oil production has responded substantially to injection, although ultimate secondary recover is yet unknown, it is hoped that an installation of a similar project on Gulf's LaMunyan Lease will recover additional oil in the order of cumulative recovery to-date.

Q The Carter Foundation Project has been a successful project to the present time?

A Yes, sir, Carter initiated injection in April of 1965 and within six months, received a substantial response to injection. Carter's production as shown on Exhibit G, increased from around a thousand barrels a month to, in the neighborhood of nearly five thousand barrels a month.

Q On the basis of the Carter Foundation experience, when would you expect initial response to waterflood operations on your project?

A We might anticipate response as early as six months.

Q I would like to clarify just what we are referring to as the project area, Mr. Mace. If you will refer back to your Exhibit A, will your project area initially, include all of the acreage within the orange boundary?

A No, sir, the project area, as thought of in terms of the Commission, would not include wells Number 6, 12, and 13. That is correct, isn't it?

Q Yes.

A That's right.

Q In other words, the forty acre tracts on which those three wells are located, would not be within the initial project area?

A The initial project area, as thought of in Commission terms, would be Wells Number 8 and 10, the two injection wells, and then three offset producing wells, being Numbers 7, 9, and 11, and that would leave wells 6 and 12 outside the Commission project area, and the, of course, Well Number 13, would still be an Ellenberger well and outside of the area.

Q In your opinion, Mr. Mace, will approval of this application be in the best interest of conservation, prevent waste and protect correlative rights?

A Yes, sir.

Q What recommendations do you have of the Commission with respect to this application?

A The Teague-Simpson Pool produces by a solution gas drive mechanism, and as a result, a considerable quantity of oil will remain unrecovered at the end of primary depletion, unless some type of fluid injection project is inaugurated to increase the ultimate oil recovery.

Water injection appears to be the most practical,

supplemental recovery type project to inaugurate. Therefore Gulf Oil Corporation respectfully requests the Oil Conservation Commission to approve installation of the proposed waterflood facilities and grant a lease oil allowable equal to the sum of the allowables for wells not offset by water injection wells, plus the allowable earned by wells situated in the waterflood area, as provided in Rule 701 E, Sub-paragraph 3 of the Commissions Rules and Regulations.

Q Does Exhibit 1 also contain a series of well logs on wells in this area?

A Yes, sir, it contains the well logs on the four proposed injection wells.

Q Aside from the logs, Mr. Mace, were the other portions of Exhibit Number 1 prepared by you or under your direction?

A Yes, sir.

MR. MORRIS: We offer Applicant's Exhibit Number 1 into evidence.

MR. NUTTER: Applicant's Exhibit Number 1 will be admitted in evidence.

(Whereupon, Applicant's Exhibit Number 1 was admitted into evidence.)

MR. MORRIS: That's all I have of Mr. Mace.

MR. NUTTER: Are there any questions of Mr. Mace?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Hace, I understand your project pretty well, except the last statement that you made with regard to the allowables. You want to lease an oil allowable equal the sum of the allowables for wells not offset by water injection wells. What do you mean there?

A Well, actually, I have got the sentence backwards. It should be the wells offsetting the injection wells, like a normal waterflood allowable.

Q You want an allowable for the injection wells, plus the producing wells that offset the injection wells?

A Yes, sir, and, then, plus the two remaining allowables which you would grant us anyway, I mean, they are outside the project area.

Q They would stand on their own --

A Stand on their own feet.

Q -- and produce by themselves?

A Yes, sir.

Q Okay, we understand it.

A Fine.

MR. NUTTER: Are there any other questions of Mr. Hace? You may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Morris?

MR. MORRIS: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 3631? We will take the case under advisement.

STATE OF NEW MEXICO)
) SS.
COUNTY OF BERNALILLO)

I, JERRY POTTS, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission Examiner at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 11th day of Sept, 1967.

Court Reporter * Notary Public

My Commission Expires:

7-10-70

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3631, heard by me on Aug 9, 1962.

....., Examiner
New Mexico Oil Conservation Commission

From
D. S. NUTTER
CHIEF ENGINEER

Memo

To

write order
approving wtr fld
for Gulf;
injection to be into
the McKee zone of
the Simpson formation
thru
CE La Munyon #8 N
" " #10 L
" "

name of flood La Munyon Teague
Gulf

Gulf Oil Corporation

EXPLORATION AND PRODUCTION DEPARTMENT--U. S. OPERATIONS
ROSWELL DISTRICT

W. B. Hopkins
DISTRICT MANAGER
M. I. Taylor
DISTRICT PRODUCTION MANAGER
F. O. Mortlock
DISTRICT EXPLORATION MANAGER
H. A. Rankin
DISTRICT SERVICES MANAGER

P. O. Drawer 1938
Roswell, New Mexico 88201

July 5, 1967

For 1st Ex hearing in August
Case 3631

'67 JUL 6 AM 8 10

Secretary Director
New Mexico Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Application of Gulf Oil Corporation for the Approval of the C. E. LaMunyon Lease Waterflood Project, Teague Simpson Pool, Lea County, New Mexico

Dear Sir:

Gulf Oil Corporation, as the operator and sole working interest owner, respectfully herein requests the Commission's approval of the C. E. LaMunyon Lease Waterflood Project on the grounds that the proposed plan will in principle tend to promote the conservation of oil and gas and the prevention of waste. In support of the application, Gulf states as follows:

(1) The Project Area shall be:

T. 23 S., R. 37 E.
Section 22: NW/4 SW/4, S/2 SW/4
Section 27: NW/4
Section 28: NE/4 NE/4
containing 320 acres, more or less, more fully shown on the enclosed plat.

(2) That the Project Area described above includes all producing Teague Simpson Pool wells except Carter Foundation Production Company wells in Sections 34 and 35-23S-37E, and that no producing Teague Simpson Pool wells are contiguous to the Project Area.

(3) That the average daily production for the wells in the proposed Project Area has declined to approximately 26 barrels per day per well and that said wells have reached an avanced stage of depletion as described in Rule 701(E) (1).

(4) That applicant proposes to convert two (2) wells, No. 8 and No. 10 to water injection wells initially and two (2) wells, No. 9 and No. 13 at a later date after evaluation of performance. Detailed descriptions of well construction are summarized and outlined on the enclosed schematic diagrams. A copy of a log on a typical injection well is also enclosed.

DOCKET MAILED
Date 7/27/67

(5) That applicant plans to inject 550 barrels per day of salt water into each injection well into the Simpson formation in the approximate depth interval 9200 - 9400 feet. The source of water will be water produced in conjunction with oil from wells completed in the Teague Ellenburger Pool, located within the Project Area.

(6) Prior to any expansion of the Project Area, applicant will request that the expansion be authorized by administrative approval.

A copy of this application, complete with all attachments, has been sent to the State Engineer Office, Santa Fe, New Mexico (transmittal letter attached).

It is requested that this matter be set for hearing before an examiner at the first available date after August 1, 1967.

Yours very truly,

GULF OIL CORPORATION

M. I. Taylor

Attachments
CEM:sz

cc: State Engineer Office
State of New Mexico
Post Office Box 1079
Santa Fe, New Mexico 87501

New Mexico Oil Conservation Commission
Post Office Box 1980
Hobbs, New Mexico 88240

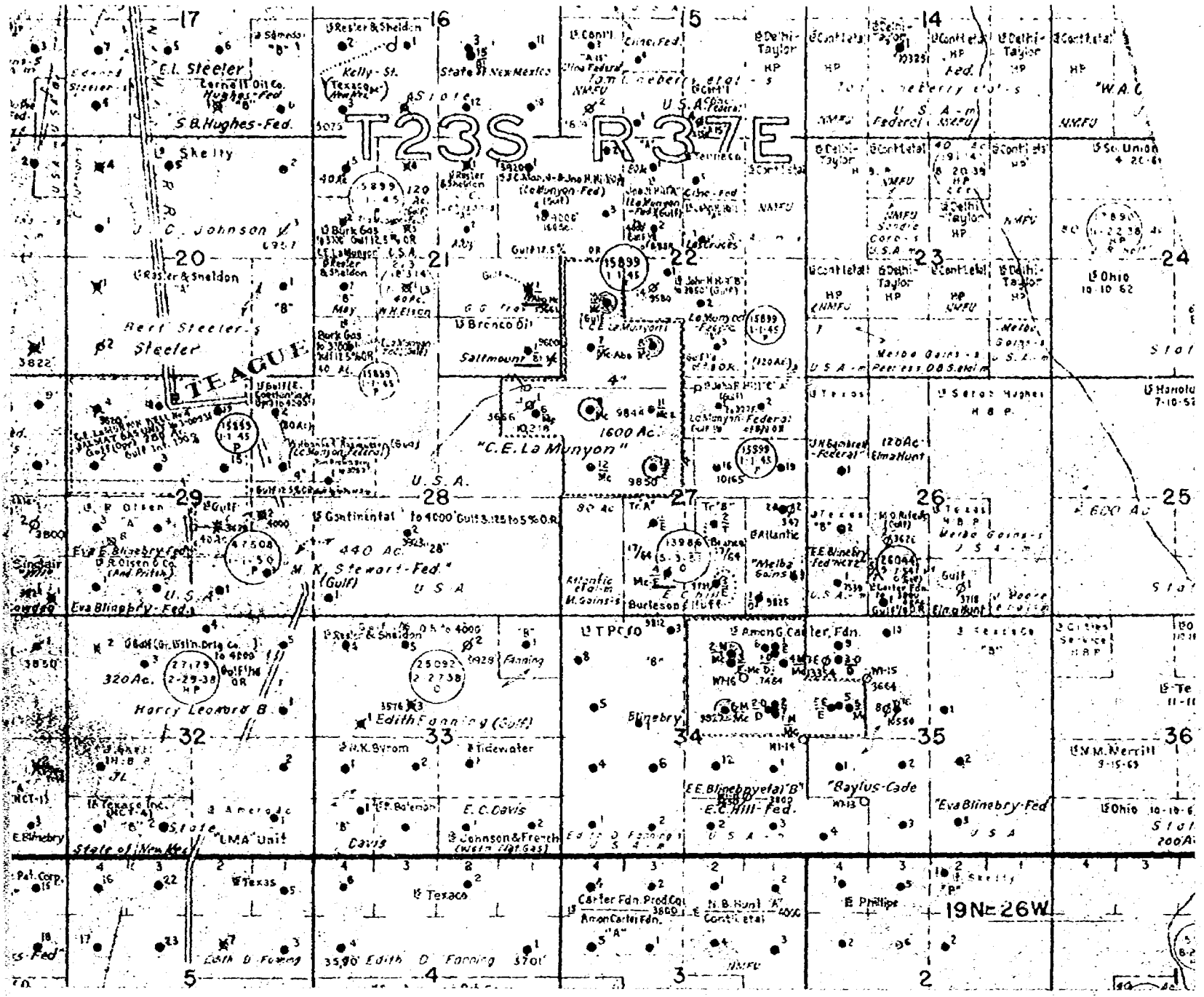


EXHIBIT A

REGIONAL MAP

PROPOSED C. E. LaMUNYON LEASE
WATERFLOOD PROJECT

TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

GULF OIL CORP. ROSWELL DISTRICT

..... PROPOSED PROJECT AREA

(I) PROPOSED INITIAL INJECTION WELL

( ) PROPOSED SUBSEQUENT INJECTION WELL

..... CARTER PROJECT AREA

(I) ACTIVE INJECTION WELL

— ABANDONED PRODUCER

June 22, 1967

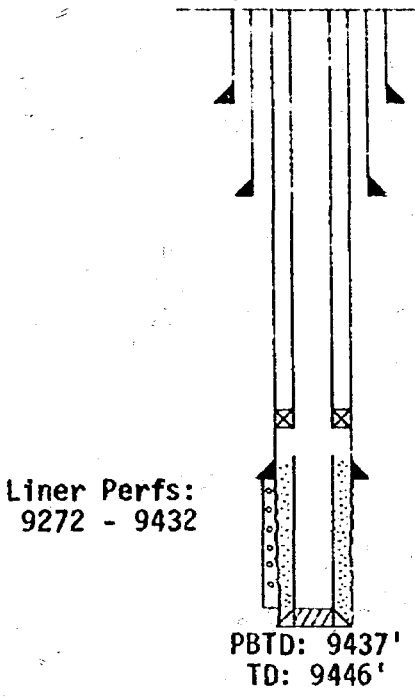
MAIN OFFICE OCC
'67 JUL 6 AM 8 10

Case 3631

EXHIBIT F

SCHEMATIC DIAGRAM
PROPOSED WATER INJECTION WELLS
C. E. LaMUNYON LEASE
TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

WELL NO. 8
UNIT N, SEC. 22-23S-37E



13-3/8"OD 48#Csg.@ 293'
Cmt.w/300 Sacks
Cmt.Circulated

9-5/8"OD 36#Csg.@ 2900'
Cmt.w/1500 Sacks TSITS @ 1930'

Proposed Packer @ 9200'

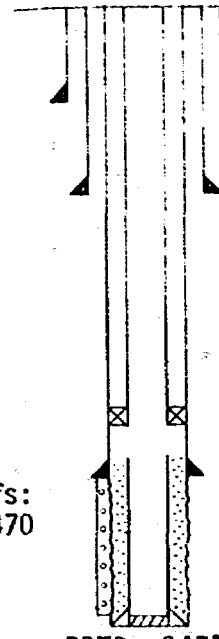
7"OD 23#Csg.@ 9265'
Cmt.w/700 Sacks TSITC @ 4280'

Liner Perfs:
9272 - 9432

5"OD 6.08#Liner @ 9446'
Top of Liner @ 9229'
Cmt.w/75 Sacks. Cmt.Circulated

PBTD: 9437'
TD: 9446'

WELL NO. 10
UNIT L, SEC. 22-23S-37E



13-3/8"OD 48#Csg.@ 303'
Cmt.w/300 Sacks
Cmt.Circulated

9-5/8"OD 36#Csg.@ 2900'
Cmt.w/1640 Sacks

Proposed Packer @ 9250'

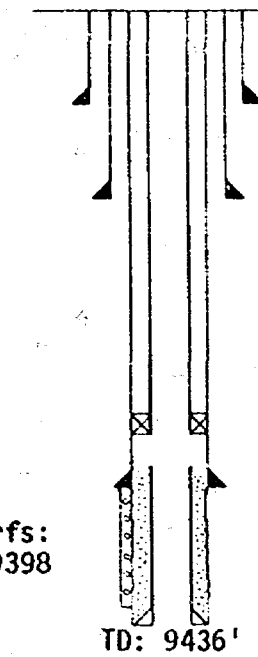
7"OD 23#Csg.@ 9311'
Cmt.w/800 Sacks TSITC @ 4875'

Liner Perfs:
9362 - 9470

5"OD 6.08#Liner @ 9475'
Top of Liner @ 9276'
Cmt.w/44 Sacks. Cmt.Circulated

PBTD: 9471'
TD: 9475'

WELL NO. 9
UNIT D, SEC. 27-23S-37E



13-3/8"OD 48#Csg.@ 303'
Cmt.w/300 Sacks. Cmt.Circulated

9-5/8"OD 36#Csg.@ 2900'
Cmt.w/700 Sacks TSITC @ 1050'

Proposed Packer @ 9200'

7"OD 23#Csg.@ 9278'
Cmt.w/700 Sacks TSITC @ 5700'

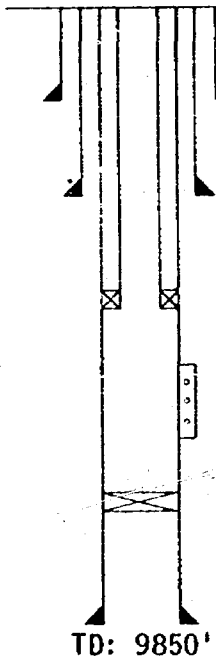
Proposed
Liner Perfs:
9272 - 9398

Proposed 5"OD 13#Liner @ 9436'
Top of Liner @ 9250'
Cmt.w/75 Sacks

TD: 9436'

Completed OH: 9278 - 9436'

WELL NO. 13
UNIT F, SEC. 27-23S-37E



13-3/8"OD 48#Csg.@ 295'
Cmt.w/300 Sacks. Cmt.Circulated

9-5/8"OD 36#Csg.@ 2900'
Cmt.w/1625 Sacks TSITC @ 265'

Proposed Packer @ 9190'

Proposed Perfs: 9216 - 9366'

Proposed PBTD: 9400'

7"OD 23 & 29#Csg.@ 9844'
Cmt.w/975 Sacks TSITC @ 5630'

TD: 9850'

Completed in Teague
Ellenburger Pool

NOTE: 2-3/8" OD 4.70# EUE 8 RT J-55 Tubing Plastic-Coated Internally, Baker Model "R" Retrievable HW Injection Packer (or equivalent), Casing-Tubing Annulus to be loaded with Inhibited Salt Water.

Gulf Oil Corporation

EXPLORATION AND PRODUCTION DEPARTMENT—U. S. OPERATIONS
ROSWELL DISTRICT

W. B. Hopkins
DISTRICT MANAGER
M. I. Taylor
DISTRICT PRODUCTION MANAGER
F. O. Mortlock
DISTRICT EXPLORATION MANAGER
H. A. Rankin
DISTRICT SERVICES MANAGER

July 5, 1967

P. O. Drawer 1938
Roswell, New Mexico 88201

Case 3631

Mr. Frank E. Irby, Chief
Water Rights Division
State Engineer Office
State of New Mexico
Post Office Box 1079
Santa Fe, New Mexico 87501

MAIN OFFICE

'67 JUL 6 AM 8 10

Dear Mr. Irby:

Attached is a copy of our application to the New Mexico Oil Conservation Commission to install the C. E. LaMunyon Lease Waterflood Project in Southeastern New Mexico.

Supplementing the information contained in the application, we wish to make the following additional comments:

(1) The injection system will be closed and corrosion resistant, incorporating internally plastic coated lines and injection strings, with injection confined downhole by packer.

(2) The injection water will not be treated; however, if analysis after inauguration of project indicates treatment is necessary, appropriate action will be taken.

(3) The estimated initial injection pressure is 2,000 psi. The injection plant will be capable of 3,500 psi.

We believe the proposed injection system will adequately protect and safeguard the various water bearing reservoirs which you are interested in, and if acceptable to you, your approval is respectfully requested.

Yours very truly,

M. I. Taylor

Attachment
CEM:sz

cc: New Mexico Oil Conservation Commission
Post Office Box 1980
Hobbs, New Mexico 88240

EXHIBIT NO. 1

DATA FOR

PROPOSED C. E. LaMUNYON LEASE

WATERFLOOD PROJECT

OIL CONSERVATION COMMISSION HEARING

CASE NUMBER 3631

Gulf Oil Corporation

August 9, 1967

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 1
CASE NO. 3631

Operator Gulf Oil Corporation Date August 9, 1967

Project C. E. LaMunyon Lease Waterflood Project

Pool Teague Simpson County Lea

I. Reservoir Characteristics

A. Information on Reservoir

1. Name of Reservoir McKee Sand of Simpson formation

2. Location See Exhibit "A"

3. Composition White to tan, fine to coarse grained sand, interbedded with green shale and shaly sand.

4. Structure Northwest-southeast trending anticline. See Exhibit "B".

B. Information on Proposed Project Area

1. Number of Productive Acres in Project Area to be Flooded Initially - 280 acres. Subsequently - 320 acres.

2. Average Depth to Top of Pay 930[illegible] See Exhibit "C"

3. Estimated Average Effective Thickness 78'

4. Estimated Average Porosity 11%

5. Estimated Average Permeability 21 md. Range: 0.1 to 400.0 md.

II. Primary Production History and Present Status of Project Area

A. Date First Well Completed March 22, 1948

B. Oil and Water Production History by Months See Exhibit "D" for tabulation of performance statistics and Exhibit "E" for graph of performance statistics.

C. Type of Depletion Solution Gas Drive

D. Original Reservoir Pressure 3741 psig @ -5850 Saturation Pressure 2019 psig

E. Original Gas in Solution 788 CF/B

F. Oil Gravity 45.7° API

G. Stage of Depletion of Project Area Late

H. Number of Wells in Project Area 3 Producing (Wells No. 9, 11 & 12) 3 Temporarily Abandoned, and 2 former producers now completed in other horizons. Temporarily abandoned Wells No. 8 & 10 will be reactivated and utilized as injection wells while T.A. Well No. 6 will be returned to production. Well No. 7, currently temporarily abandoned in the Teague Abo Pool will be recompleted in the Teague Simpson Pool. Well No. 13 an Ellenburger producer, will be converted to a Simpson injection well at a later date.

I. Average Daily Oil Production Per Well at Present Time 26

J. Cumulative Oil Production as of June 1, 1967 from Area to be Flooded 1,428,011 barrels

III. Injection Information

A. Source of Injected Water Produced water from Gulf's C. E. LaMunyon Lease Wells No. 11 and 13, completed in the Teague Ellenburger Pool.

B. Type of Water Salt Water - Injection System will be corrosion-resistant.

C. Treatment of Injected Water None is anticipated; however, if water analysis after inauguration of project indicates treatment is needed, appropriate action will be taken.

D. Pattern and Spacing Incomplete 80-acre 5-spot pattern, as shown on Exhibit "A".

E. Initial Injection Pressure to be Used Estimated - 2000 psi. Plant will be capable of 3500 psi.

F. Estimated Initial Per Well Rate of Injection 550 B/D

G. Injection Well Construction Water will be injected through internally plastic-coated tubing below a packer situated in the casing as shown on Exhibit "F".

IV. Results Expected

Carter Foundation Production Company, the only other operator in the Teague Simpson Pool, is now conducting waterflood operations on their E. C. Hill "M" Lease, and as shown on Exhibit "G", oil production has responsed substantially to injection. Although ultimate secondary recovery is as yet unknown, it is hoped that installation of a similar project on Gulf's LaMunyon Lease will recover additional oil in the order of cumulative recovery to date.

V. Reasons and Recommendations

The Teague Simpson Pool produces by a solution gas drive mechanism and, as a result, a considerable quantity of oil will remain unrecovered at the end of primary depletion unless some type of fluid injection project is inaugurated to increase the ultimate oil recovery. Water injection appears to be the most practical supplemental recovery type project to inaugurate. Therefore, Gulf Oil Corporation respectfully requests the Oil Conservation Commission approve the installation of the proposed waterflood facilities and grant a lease oil allowable equal to the sum of the allowables for wells not offset by water injection wells plus the allowable earned by wells situated in the waterflood area as provided in Rule 701 (E), Subparagraph 3 of the Commission Rules and Regulations.

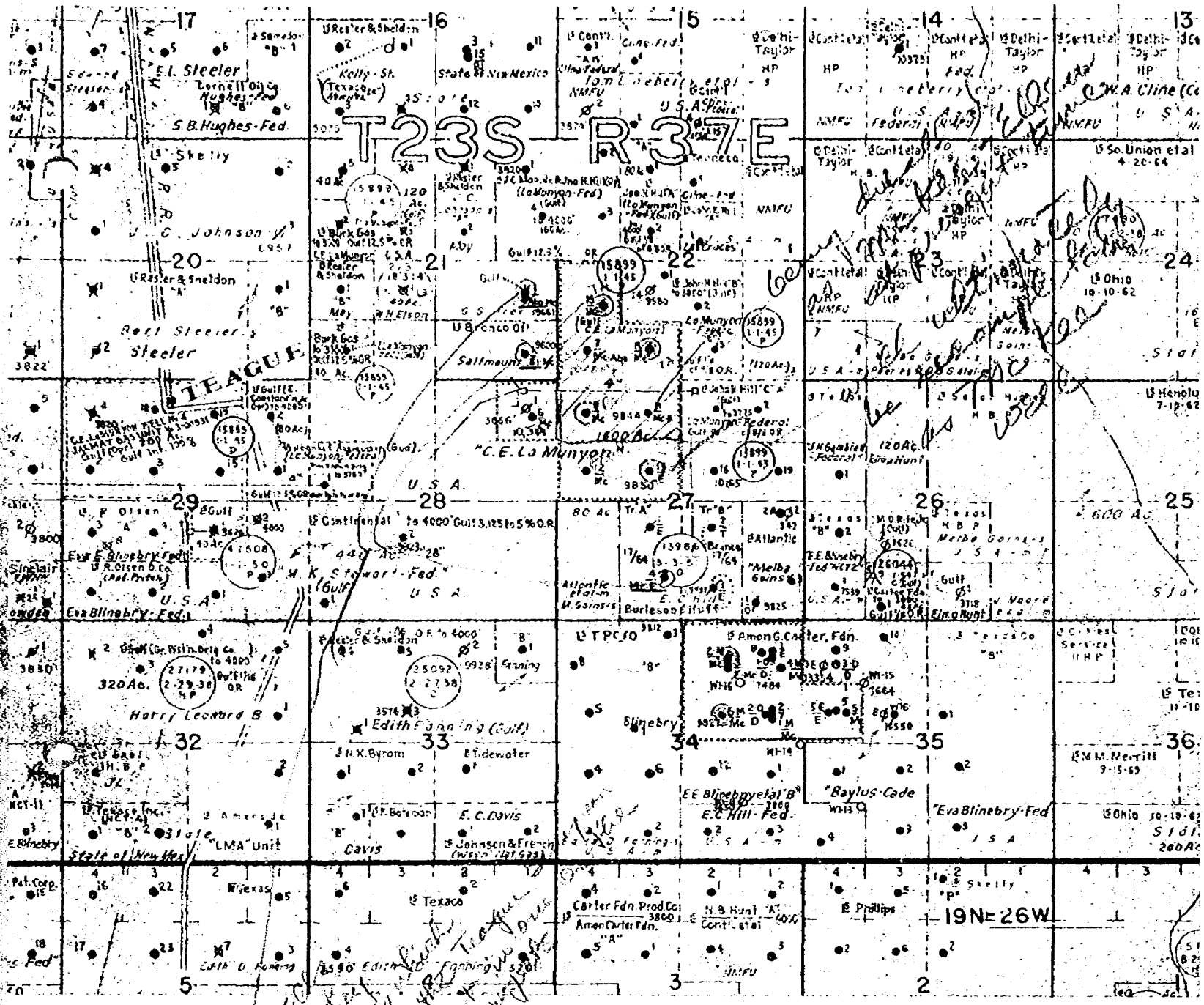


EXHIBIT A

REGIONAL MAP

PROPOSED C. E. LaMUNYON LEASE
WATERFLOOD PROJECT

TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

GULF OIL CORP. ROSWELL DISTRICT

..... PROPOSED PROJECT AREA

⊗ PROPOSED INITIAL INJECTION WELL

○ PROPOSED SUBSEQUENT INJECTION WELL

..... CARTER PROJECT AREA

⊙ ACTIVE INJECTION WELL

— ABANDONED PRODUCER

June 22, 1967

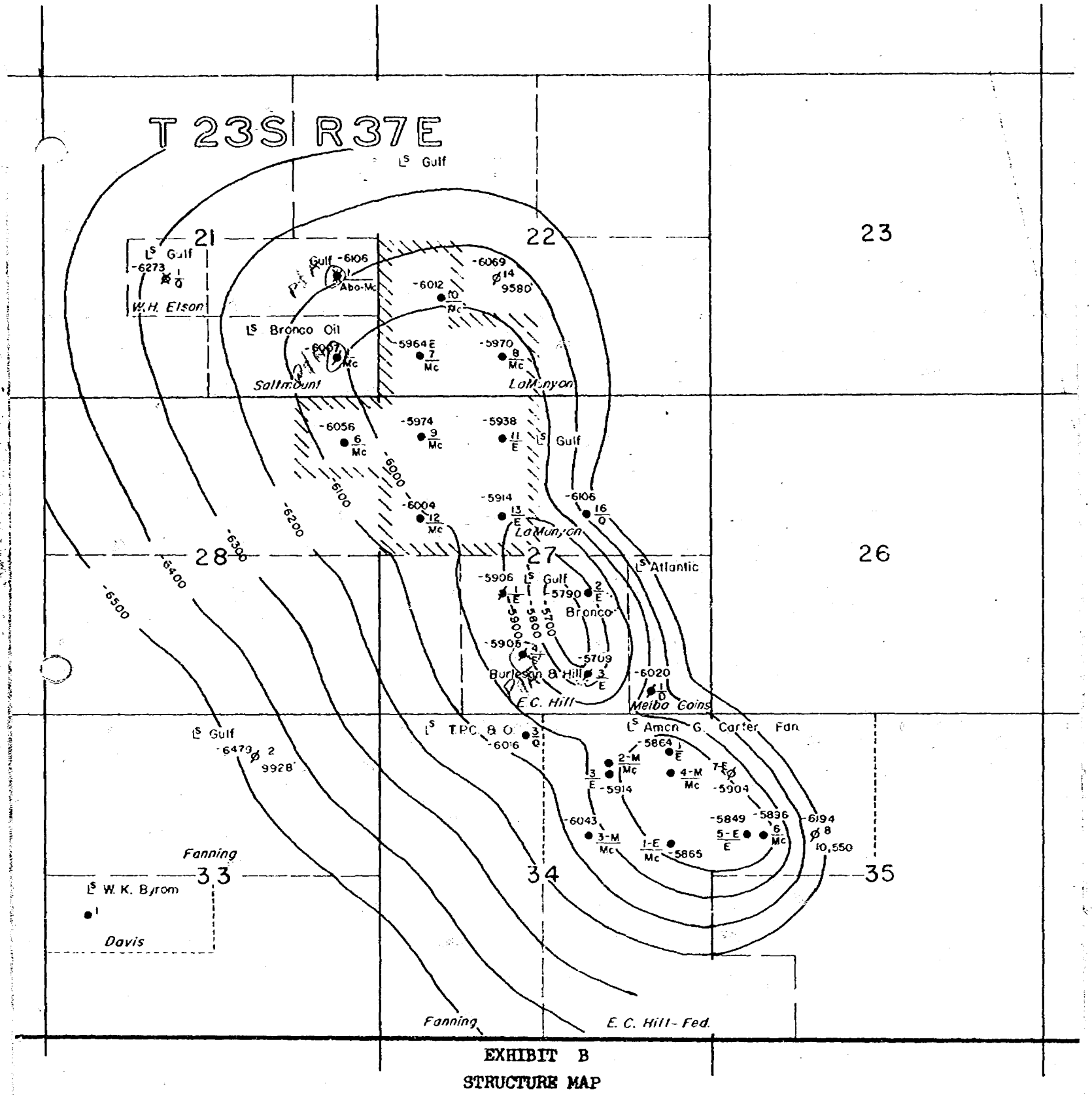


EXHIBIT B

STRUCTURE MAP

PROPOSED C. E. LaMUNYON LEASE - WATERFLOOD PROJECT
TEACUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

\\\\\\\ PROJECT AREA

CONTOURS ON TOP OF FIRST McKEE SAND
CONTOUR INTERVAL: 100'

SCALE: 1" = 2000'

GULF OIL CORPORATION — ROSWELL DISTRICT

JUNE 13, 1967

Exhibit "C"

Logs of Proposed Injection Wells

C. E. LaMunyon Lease

See Back Envelope

Included (X) Excluded ( )

EXHIBIT "D"

PERFORMANCE HISTORY
GULF OIL CORPORATION
C. E. LaMUNYON LEASE
TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

Month and Year	No. of Wells Prod.	Oil Production Barrels	Water Production Barrels	Gas Production MCF	GOR CF/B	Reservoir Press. PSIG @ -5850'
1948						
Apr.	1	5,037				
May	1	5,083				3,741
June	1	4,790				
July	1	5,293				3,476
Aug.	1	5,313				
Sept.	1	5,233				
Oct.	1	5,445				
Nov.	1	5,247				
Dec.	1	5,425				
Yearly Total		46,866				
Cumulative		46,866				
1949						
Jan.	2	8,344				
Feb.	2	9,658				3,050
Mar.	2	10,654				3,137
Apr.	2	9,918				
May	3	15,807				2,876
June	3	15,031				2,925
July	3	13,936				2,792
Aug.	3	13,988				2,606
Sept.	3	14,051				
Oct.	5	17,621				
Nov.	5	24,013				2,515
Dec.	5	21,339				
Yearly Total		174,360				
Cumulative		221,226				
1950						
Jan	5	16,488				
Feb.	5	15,021				
Mar.	6	21,713				2,304
Apr.	6	19,234				
May	7	21,364				
June	7	21,008				
July	7	19,309				
Aug.	7	20,959				
Sept.	7	20,794				
Oct.	7	21,360				
Nov.	7	22,039				
Dec.	7	20,906				
Yearly Total		240,195				
Cumulative		461,421				

EXHIBIT "D"

PERFORMANCE HISTORY (CONTINUED)
GULF OIL CORPORATION
C. E. LaMUNYON LEASE
TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

Month and Year	No. of Wells Prod.	Oil Production Barrels	Water Production Barrels	Gas Production MCF	GOR CF/B	Reservoir Press. PSIG @ -5850'
1951						
Jan.	7	19,805		18,230	920	
Feb.	6	17,425		15,575	894	1,647
Mar.	6	19,388		18,330	945	
Apr.	6	19,855		16,160	814	
May	6	19,258		21,069	1,094	
June	6	18,784		20,322	1,082	
July	6	19,168		20,264	1,057	
Aug.	6	17,585		7,364	419	
Sept.	6	16,618		10,602	638	
Oct.	6	18,385		17,959	977	
Nov.	6	16,828		17,482	1,039	
Dec.	6	17,001		6,924	407	
Yearly Total		220,100		190,281		
Cumulative		681,521				
1952						
Jan.	6	16,947	0	18,101	1,068	
Feb.	6	15,009	704	14,981	998	
Mar.	6	12,657	842	18,440	1,457	
Apr.	6	13,674	1,343	26,215	1,917	
May	6	4,994	1,421	5,607	1,123	
June	6	13,192	3,150	26,405	2,002	
July	6	13,414	1,343	15,658	1,167	
Aug.	6	12,912	1,370	21,007	1,627	
Sept.	6	10,991	996	24,274	2,209	1,070
Oct.	6	12,039	996	21,002	1,744	
Nov.	6	9,575	789	23,111	2,414	
Dec.	6	10,922	811	22,067	2,020	
Yearly Total		146,326	13,766	236,868		
Cumulative		827,847				
1953						
Jan.	6	11,477	830	20,382	1,776	
Feb.	6	9,425	569	10,034	1,065	
Mar.	6	8,598	403	13,388	1,557	1,063
Apr.	6	11,015	698	23,500	2,133	
May	6	10,471	597	20,901	1,996	
June	6	9,912	525	17,648	1,780	
July	6	10,230	548	17,994	1,759	
Aug.	6	10,277	544	18,186	1,770	
Sept.	6	9,633	1,028	10,531	1,093	
Oct.	6	9,536	515	17,251	1,809	
Nov.	6	9,193	971	14,742	1,604	
Dec.	6	9,019	998	11,463	1,271	
Yearly Total		118,786	8,226	196,020		
Cumulative		946,633				

EXHIBIT "D"

PERFORMANCE HISTORY (CONTINUED)
GULF OIL CORPORATION
C. E. LaMUNYON LEASE
TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

Month and Year	No. of Wells Prod.	Oil Production Barrels	Water Production Barrels	Gas Production MCF	GOR CF/B	Reservoir Press. PSIG @ -5850'
1954						
Jan.	6	9,292	1,038	6,534	703	
Feb.	6	8,387	1,188	7,604	907	
Mar.	6	9,047	1,198	6,975	771	1,134
Apr.	6	8,883	1,350	8,999	1,013	
May	6	8,187	1,237	5,536	676	
June	4	7,742	1,189	12,848	1,660	
July	6	4,733	120	11,481	2,426	
Aug.	5	6,714	1,046	10,064	1,499	
Sept.	5	7,400	899	10,330	1,396	
Oct.	5	7,769	1,029	19,948	2,568	
Nov.	5	8,364	1,227	12,540	1,499	
Dec.	5	8,199	648	13,384	1,632	
Yearly Total		94,717	12,169	126,244		
Cumulative		1,041,350				
1955						
Jan.	5	7,918	1,186	15,112	1,909	
Feb.	5	6,766	816	9,175	1,356	
Mar.	6	7,506	1,264	4,955	660	1,074
Apr.	6	6,584	0	11,188	1,699	
May	6	5,933	786	6,725	1,133	
June	6	6,395	1,173	5,621	879	
July	6	6,495	1,370	3,403	524	
Aug.	6	5,900	123	3,180	539	
Sept.	6	6,039	119	3,732	618	
Oct.	6	5,270	107	5,271	1,000	
Nov.	6	5,788	131	5,214	901	
Dec.	6	5,659	114	5,211	921	
Yearly Total		76,253	7,189	78,787		
Cumulative		1,117,603				
1956						
Jan.	6	5,121	3,367	7,323	1,430	
Feb.	6	2,939	1,664	3,839	1,306	
Mar.	6	2,776	201	3,911	1,409	1,136
Apr.	6	3,026	181	3,009	994	
May	6	2,722	127	7,938	2,916	
June	6	2,446	136	9,238	3,777	
July	6	2,978	149	8,739	2,935	
Aug.	6	4,071	280	9,808	2,409	
Sept.	6	3,908	209	8,706	2,228	
Oct.	6	4,047	199	7,679	1,897	
Nov.	6	3,871	299	10,477	2,707	
Dec.	6	3,860	187	4,206	1,090	
Yearly Total		41,765	6,999	84,873		
Cumulative		1,159,368				

EXHIBIT "D"

PERFORMANCE HISTORY (CONTINUED)
GULF OIL CORPORATION
C. E. LaMUNYON LEASE
TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

Month and Year	No. of Wells Prod.	Oil Production Barrels	Water Production Barrels	Gas Production MCF	GOR CF/B	Reservoir Press. PSIG @ -5850'
1957						
Jan.	6	4,576	1,199	2,725	595	
Feb.	6	4.280	1,002	2,619	612	
Mar.	6	4,392	809	4,009	913	
Apr.	6	5,810	905	5,271	907	
May	6	5,718	889	4,278	748	
June	6	4,864	753	3,709	763	
July	6	5,180	751	2,765	534	
Aug.	6	4,791	256	2,408	503	
Sept.	6	3,016	132	1,691	561	
Oct.	6	5,601	238	3,154	563	
Nov.	6	4,545	201	2,502	550	
Dec.		4,807	221	2,648	551	
Yearly Total		57,580	7,356	37,779		
Cumulative		1,216,948				
1958						
Jan.	6	4,003	No Water	2,272	568	
Feb.	6	2,280	Figures	1,140	500	
Mar.	6	4,337	Available	2,529	583	1,189
Apr.	6	4,286	For	2,637	615	
May	6	3,200	1958	3,372	1,054	
June	6	3,607		4,434	1,229	
July	6	4,839		5,445	1,125	
Aug.	6	3,080		3,115	1,011	
Sept.	6	4,713		1,765	374	
Oct.	6	4,645		4,008	863	
Nov.	6	4,371		5,150	1,178	
Dec.		3,024		5,406	1,787	
Yearly Total		46,385	0	41,273		
Cumulative		1,263,333				
1959						
Jan.	6	1,770	566	3,480	1,966	
Feb.	6	2,205	162	1,496	597	
Mar.	4	1,272	248	1,425	1,120	1,074
Apr.	3	1,427	115	4,873	3,415	
May	3	3,349	728	4,793	1,431	
June	3	663	59	876	1,321	
July	3	2,192	217	3,123	1,425	
Aug.	4	3,349	860	25,020	7,471	
Sept.	4	2,986	95	3,327	1,114	
Oct.	4	3,564	1,022	20,755	5,824	
Nov.	4	1,157	285	19,553	16,900	
Dec.		1,540	416	8,812	5,722	
Yearly Total		25,774	4,773	97,533		
Cumulative		1,289,107				

EXHIBIT "D"

PERFORMANCE HISTORY (CONTINUED)
GULF OIL CORPORATION
C. E. LaMUNYON LEASE
TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

Month and Year	No. of Wells Prod.	Oil Production Barrels	Water Production Barrels	Gas Production MCF	GOR CF/B	Reservoir Press. PSIG @ -5850'
1960						
Jan.	5	1,862	409	24,820	13,330	
Feb.	5	1,777	384	3,614	2,034	
Mar.	5	2,760	574	21,174	7,672	
Apr.	5	3,059	715	37,049	12,111	
May	6	3,339	790	4,443	1,331	
June	5	2,582	998	8,954	3,468	
July	6	2,281	1,156	1,848	810	
Aug.	5	1,102	706	3,944	3,579	
Sept.	5	1,059	756	6,540	6,176	
Oct.	6	473	362	521	1,101	
Nov.	5	302	227	330	1,093	
Dec.		923	548	981	1,063	
Yearly Total		21,519	7,625	114,218		
Cumulative		1,310,626				
1961						
Jan.	4	759	566	836	1,101	
Feb.	3	1,191	713	1,228	1,031	
Mar.	3	1,656	1,016	1,719	1,038	
Apr.	3	1,806	1,101	186	103	
May	3	1,993	506	199	100	
June	3	1,829	402	6,120	3,346	
July	3	1,105	1,022	581	526	
Aug.	3	1,488	1,367	5,254	3,531	
Sept.	3	1,781	1,642	4,565	2,563	
Oct.	3	2,040	825	7,142	3,501	
Nov.	3	1,924	1,722	6,733	3,499	
Dec.		2,083	1,859	170	82	
Yearly Total		19,655	12,741	34,733		
Cumulative		1,330,281				
1962						
Jan.	3	1,578	1,449	245	155	
Feb.	3	1,952	1,801	514	263	
Mar.	3	1,837	1,713	896	488	
Apr.	3	1,742	1,621	3,034	1,742	
May	3	2,006	1,732	3,076	1,533	
June	3	1,534	1,347	4,559	2,972	
July	3	1,207	976	8,039	6,660	
Aug.	3	1,402	1,270	6,515	4,647	
Sept.	3	1,308	1,474	6,452	4,933	
Oct.	3	1,384	1,555	5,052	3,650	
Nov.	3	1,619	1,787	2,789	1,723	
Dec.		2,019	2,219	3,292	1,631	
Yearly Total		19,588	18,944	44,462		
Cumulative		1,349,869				

EXHIBIT "D"

PERFORMANCE HISTORY (CONTINUED)
GULF OIL CORPORATION
C. E. LaMUNYON LEASE
TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

Month and Year	No. of Wells Prod.	Oil Production Barrels	Water Production Barrels	Gas Production MCF	GOR CF/B	Reservoir Press. PSIG @ -5850'
1963				474	429	
Jan.	3	1,106	929	0	0	
Feb.	1	0	0	1,897	1,251	
Mar.	3	1,516	1,320	3,296	2,281	
Apr.	3	1,445	1,264	4,728	3,464	
May	3	1,365	1,182	6,682	5,805	
June	2	1,151	1,029	4,384	3,558	
July	2	1,232	1,875	4,015	2,784	
Aug.	2	1,442	2,148	2,216	1,833	
Sept.	2	1,209	1,822	588	1,551	
Oct.	2	379	68	1,227	1,571	
Nov.	2	781	18	2,546	1,492	
Dec.		1,707	2,833	32,127		
Yearly Total		13,333	14,488			
Cumulative		1,363,202				
1964				1,025	707	
Jan.	2	1,449	2,074	862	544	
Feb.	2	1,585	2,369	2,215	1,424	
Mar.	2	1,555	1,649	3,862	3,850	
Apr.	2	1,003	1,082	1,528	985	
May	2	1,552	1,677	1,636	1,838	
June	2	890	971	526	410	
July	2	1,283	1,307	706	667	
Aug.	2	1,058	1,178	2,429	2,083	
Sept.	2	1,166	1,231	943	653	
Oct.	2	1,445	1,505	1,169	833	
Nov.	2	1,404	1,458	3,288	1,959	
Dec.		1,678	1,748	20,895		
Yearly Total		16,075	18,309			
Cumulative		1,379,277				
1965				423	339	
Jan.	2	1,246	1,267	2,176	1,824	
Feb.	2	1,193	1,266	2,419	2,098	
Mar.	2	1,153	1,132	3,843	2,984	
Apr.	2	1,288	1,314	3,608	3,283	
May	2	1,099	1,095	2,680	2,391	
June	2	1,121	720	4,539	4,006	
July	2	1,133	1,147	5,606	3,284	
Aug.	2	1,707	1,036	5,312	3,069	
Sept.	2	1,731	1,807	7,765	4,141	
Oct.	2	1,875	1,968	5,517	3,167	
Nov.	2	1,742	1,768	4,464	2,469	
Dec.		1,808	1,859	48,352		
Yearly Total		17,096	16,379			
Cumulative		1,396,373				

EXHIBIT "D"

PERFORMANCE HISTORY (CONTINUED)
GULF OIL CORPORATION
C. E. LaMUNYON LEASE
TEAGUE SIMPSON POOL
LEA COUNTY, NEW MEXICO

Month and Year	No. of Wells Prod.	Oil Production Barrels	Water Production Barrels	Gas Production MCF	GOR CF/B	Reservoir Press. PSIG @ -5850'
1966						
Jan.	2	1,665	1,729	5,109	3,068	
Feb.	2	1,648	1,689	7,653	4,644	
Mar.	2	1,623	1,705	6,273	3,865	
Apr.	2	2,070	2,119	1,420	686	
May	2	2,029	2,090	2,228	1,098	
June	2	2,357	1,238	2,713	1,151	
July	2	1,552	803	1,663	1,072	
Aug.	2	2,100	1,087	2,909	1,385	
Sept.	2	843	430	588	698	
Oct.	2	861	438	1,574	1,828	
Nov.	2	2,348	1,190	2,887	1,230	
Dec.	2	2,056	1,275	2,692	1,309	
Yearly Total		21,152	15,793	37,709		
Cumulative		1,417,525				
1967						
Jan.	2	1,889	1,292	3,259	1,725	
Feb.	2	1,419	977	4,372	3,081	
Mar.	2	2,390	1,642	4,556	1,906	
Apr.	2	2,333	1,610	6,660	2,855	
May	2	2,455	1,713	6,248	2,545	