

CASE 4335: Application of GULF
FOR A WATERFLOOD PROJECT, LEA
COUNTY, NEW MEXICO.

Case Number

4335

Application
Transcripts.

Small Exhibits

ETC.

209 SIMMS BLDG. • P.O. BOX 1092 • PHONE 241-6691 • ALBUQUERQUE, NEW MEXICO

REGULAR HEARING

IN THE MATTER OF:

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

Case No. 4335

BEFORE: A. L. Porter, Secretary-Treasurer
David F. Cargo, Governor
George Hatch, General Counsel

Daniel S. Natter, Examiner

TRANSCRIPT OF HEARING

MR. MURPHY: Call Case 4225.

MR. HART: Case 4225. Application of Gulf Oil Corporation for a waterflood project, Lea County, New Mexico.

MR. KASTLER: If the Examiner please, I am Bill Kastler from Roswell, representing Gulf and our witness is J. L. McGill.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 3 were marked for identification.)

J. L. McGill

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KASTLER:

Q For the record, will you please state your name, your address, state for whom you work and what your current position is?

A My name is J. L. McGill. I work for Gulf Oil Corporation in Roswell, New Mexico, as a senior petroleum engineer.

Q Is that McGil-1-12?

A Yes, sir.

Q Mr. McGill, have you previously appeared before the New Mexico Oil Conservation Commission or an examiner

hearing and been qualified as an expert witness?

Q Yes, sir, I have.

Q Now, DIRECTOR: Are the witness' qualifications satisfactory?

Q Now, DIRECTOR: Yes, they are. You may proceed.

Q (By Mr. Tackler) Would you please briefly outline the purpose of this hearing?

A I am operator of the four well 160-acre Lea "EE" State Lease in the Vacuum Pool, located in the northwest quarter of Section 11, Township 17 South, Range 34 East, Lea County, New Mexico. Gulf proposes to waterflood this lease on an 80-acre five-spot pattern in cooperation with the offset operators.

You might please refer to Exhibit Number 1. Gulf's proposed input wells are Wells No. 2 and No. 4, located in "C" and "E", respectively, of Section 11. We have come to terms with the offset operators as to type of pattern. As a matter of fact, there is an active flood to the south of the Lea "EE" State Lease that has been active for several years and it has expanded to within one-half mile of Gulf's lease line.

Gulf and the other operators in the vicinity are simply expanding the existing 80-acre five-spot pattern

already established.

Q Will you briefly describe the reservoir conditions?

A The pay interval is located approximately thirty-five feet below the top of the San Andres formation at a depth of about 4700 feet and consists of a highly permeable interval of about 14 feet of net pay. This lease produces 100 percent pipeline oil and no water.

We don't have a bottom hole pressure. However, it is estimated to be in the range of 100 to 150 PSI. Thus far, the lease has produced approximately 200,000 barrels of oil or 50,000 barrels of oil per well, which represents 20 percent of the original oil in place and leaving about 80 percent of the oil in place.

Q Where is the project area located with reference to the structure?

A It's at the extreme upper end of this structure, this plat number -- Exhibit Number 1 doesn't have the whole structure on there, but this lease, 160-acre lease is located on a little structural nose that extend out there and the only thing that curtails the reservoir up there is limitation of permeability.

Q Will you please outline the completions and producing history of these four wells?

Q All four wells were completed in 1956 in open hole with large volumes of sand, up to 15,000 gallons per well. The average potential per well was about 20 bbls and no water by pumping. You might refer to Exhibit Number 2 for the oil producing performance of this lease and our present producing rate is approximately 210 barrels of oil per month with the GOR of 2000 to 1.

Q Mr. McGill, what benefits does Gulf expect to gain from waterflooding this lease?

A This lease is in a late stage of depletion. It is felt that secondary recovery efforts by waterflooding are required to recover additional oil, to prevent waste and is in the interest of conservation.

Q If permitted to make this injection, what kind of water will you inject and what is the source of this water?

A We will produce or -- excuse me. We will inject produced salt water from the lines of one of our offset operators. It's already pressured up to 2200 PSI. We plan to inject it directly into our wells.

Q What plans have you made for disposal of any salt water?

A At present there is no salt water production. However, when the water production commences, we have an agreement

with the same offset separator for well water disposal by laying a disposal line to their injection plant.

Q How does Gulf plan to inject water into the San Andres reservoir?

A Referring to Exhibit Number 3 --

Q That's the schematic diagram?

A Right, schematic diagram. We plan to clean out the open hole of Wells No. 2 and No. 4 and apply a light acid treatment. Then, run internally plastic coated tubing with tension type packer to a point just above the open hole with inhibited fresh water in the tubing casing annulus. In this manner, we will confine the injected water to the intended pay zone.

Q If this application is approved, when does Gulf expect to start work on its project?

A We expect to start work on the project so as to commence the injection of water into the wells at the same time as our lease line partners. I would anticipate that all operators will be ready within a -- about four months after Commission approval.

Q Does Gulf intend to operate this waterflood project under Statewide Rule 701 with the allowable -- set in accordance with that rule?

A Yes, sir, we do.

Q Were Exhibits 1, 2 and 3 prepared by you or at your direction and your supervision?

A That is correct; they were.

Q In your opinion, if this application were granted, would it be in the interest of prevention of waste?

A It would; yes.

Q Would it, in any way, impair any correlative rights?

A It would not; no, sir.

Q Have you circulated copies of this application to all offset operators?

A They have been; yes, sir.

MR. KASTLER: This concludes our questions on direct examination, Mr. Nutter. At this time I would like to move that Exhibits 1, 2 and 3 be entered.

MR. NUTTER: Gulf's Exhibits 1 through 3 will be admitted in evidence.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. McGill, what rate of injection do you anticipate for each of these two wells?

A Based on the flood operating to the south of us we would anticipate between 200 and 250 barrels of water

per well at a pressure of around 2200 PSI.

Q That's barrels per day?

A That is barrels of water per day per well.

Q Now, have you made any estimate as to the additional recovery that will be obtained as result of secondary recovery here?

A A concrete estimate, we have not. We based our calculations on around 50 percent of the primary ultimate oil.

Q You mentioned the lease has produced around 200,000 ---

A Around 200,000 barrels of oil.

Q So, you might make another hundred thousand then; is that what you are --

A We hope. As you might know, the floods in that area are a little lean.

MR. NUTTER: Are there any other questions of Mr. McGuill? He may be excused.

(Witness excused).

MR. NUTTER: Do you have anything futher, Mr. Kastler?

MR. KASTLER: Nothing more.

MR. MUTTER: Does anyone have anything they wish
to offer in Case 43352? Take the case under advisement and
call Case 4336.

I N D E X

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E X H I B I T S

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STATE OF NEW MEXICO)
)
 COUNTY OF BERNALILLO)

I, BRUNDA BUCKS, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Branda Bucks
 Court Reporter

I do hereby certify that the foregoing is a correct and true copy of the transcript of the hearing before the New Mexico Oil Conservation Commission held by me on _____.

_____, Secretary
 New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

April 21, 1970

Mr. Bill Kastler
Gulf Oil Corporation
Post Office Box 1938
Roswell, New Mexico 88201

Dear Sir:

Enclosed herewith is Commission Order No. R-3951, entered in Case No. 4335, approving the Texaco Vacuum Lea "FE" Waterflood Project.

Injection shall be through the two authorized water injection wells, each of which shall be equipped with plastic-lined tubing set in a packer. Packers shall be located as near as is practicable to the casing shoe. The casing-tubing annulus shall be loaded with corrosion-inhibited fluid and equipped with a pressure gauge.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 168 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 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.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

-2-

Mr. Bill Kastler
Gulf Oil Corporation
Post Office Box 1938
Roswell, New Mexico 88201

April 21, 1970

C
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,

O
A. L. PORTER, Jr.
Secretary-Director

P
ALP/DSN/ir

cc: Oil Conservation Commission
Hobbs, New Mexico

Y
Mr. D. E. Gray, State Engineer Office
Santa Fe, New Mexico

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. 4335
Order No. R-3951

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 April 15, 1970,
at Hobbs, New Mexico, before Examiner Daniel S. Matter.

NOW, on this 22nd day of April, 1970, 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 permis-
sion to institute a waterflood project in the Vacuum (Grayburg-
San Andres) Pool by the injection of water into the San Andres
formation through its Lea "FE" State Wells Nos. 2 and 4, located
in Units C and E, respectively, of Section 11, Township 17 South,
Range 34 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.

-2-

CASE No. 4335
Order No. R-3951

(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 Vacuum (Grayburg-San Andres) Pool by the injection of water into the San Andres formation through the following-described wells in Section 11, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico:

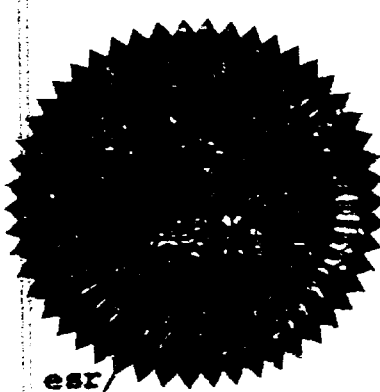
Lea "FE" State Well No. 2, located in Unit C
Lea "FE" State Well No. 4, located in Unit E

(2) That the subject waterflood project is hereby designated the Gulf Vacuum Lea "FE" Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(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
DAVID F. CARGO, Chairman

Alex J. Armijo
ALEX J. ARMILLO, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

esr/

ROUGH DRAFT FOR WATERFLOOD LETTERS

Mr. Bill Kastler
Gulf Oil Corporation
Post Office Box 1938
Roswell, New Mexico 88201

Dear Sir:

Enclosed herewith is
Commission Order No. R-3951, entered in Case No.
4335, approving the *Texas Vacuum Co. "FE"*
Waterflood Project.

*Injection shall be through the two
authorized water injection wells, each of
which shall be equipped with electric-lined
tubing set in a packer. Packers shall
be located as near as is practicable to the
casing shoe. The casing-tubing annulus shall
be loaded with corrosion-inhibitor.*

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 16.8 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 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.

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,

A. L. PORTER, Jr.
Secretary-Director

cc: OCC: Hobbs X
Artesia
Latex

~~USCC~~

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

Mr. D. E. Gray

*fluid and equipped with a pres-
sure gauge.*

DOCKET: REGULAR HEARING - WEDNESDAY - APRIL 15, 1970

OIL CONSERVATION COMMISSION - 9 A.M. - THE HOLIDAY INN, 200 SOUTH LINAM,
HOBBS, NEW MEXICO

- ALLOWABLE: (1) Consideration of the oil allowable for May, 1970;
- (2) Consideration of the allowable production of gas for May, 1970, from fifteen prorated pools in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for May, 1970.

THE FOLLOWING CASES WILL BE HEARD BY THE COMMISSION OR BY
A. L. PORTER, Jr., EXAMINER OR DANIEL S. NUTTER, ALTERNATE
EXAMINER:

CASE 4332: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider the inclusion of the NW/4 of Section 10, Township 9 South, Range 36 East, Lea County, New Mexico, in the Allison-Pennsylvanian Pool or the Vada-Pennsylvanian Pool, whichever is proper.

CASE 4333: Application of Phillips Petroleum Company for a dual completion and salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Marley "A" Well No. 1, a wildcat well, located in Unit P of Section 3, Township 11 South, Range 31 East, Chaves County, New Mexico, in such a manner as to permit the production of oil from the San Andres formation through perforations from 4148 feet to 4165 feet and the disposal of produced salt water into the San Andres formation through the perforated interval from 4344 feet to 4800 feet.

CASE 4084: (Reopened)

In the matter of Case No. 4084 being reopened pursuant to the provisions of Order No. R-3732, which order established 160-acre spacing units and an 80-acre proportional factor of 4.77 for the Feather-Wolfcamp Pool, Lea County, New Mexico. All interested parties may appear and show cause why the said pool should not be developed on less than 160-acre spacing units and to show cause why the 80-acre proportional factor of 4.77 should or should not be retained.

- CASE 4334: Application of Pan American Petroleum Corporation for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to recomplete its State Gas Com "BG" Well No. 1 at an unorthodox location 1450 feet from the North line and 1490 feet from the West line of Section 2, Township 29 North, Range 10 West, Blanco-Mesaverde Pool, San Juan County, New Mexico, the N/2 of said section to be dedicated to the well.
- CASE 4335: Application of Gulf Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Vacuum (Grayburg-San Andres) Pool by the injection of water into the San Andres formation through its Lea "FE" State Wells Nos. 2 and 4, located in Units C and E, respectively, of Section 11, Township 17 South, Range 34 East, Lea County, New Mexico.
- CASE 4336: Application of Byron McKnight for an exception to Order No. R-3221, as amended, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil or gas on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties. Said exception would be for applicant's lease comprising all of Section 19, W/2 Section 20, NW/4 Section 29, and NW/4 Section 30, Township 19 South, Range 34 East, undesignated Yates-Seven Rivers gas pool, Lea County, New Mexico. Applicant seeks authority to dispose of salt water produced by wells on said leases in unlined surface pits on the leases.
- CASE 3859: (Continued from the October 15, 1969, Regular Hearing)
Application of Wilson Oil Company for an exception to Order No. R-3221, as amended, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Commission Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico, after January 1, 1969. Said exception would be for applicant's leases in Sections 13, 23, and 24 of Township 21 South, Range 34 East, and Sections 7 and 18 of Township 21 South, Range 35 East, Wilson Yates-Seven Rivers Pool, Lea County, New Mexico. Applicant, seeks authority to continue to dispose of produced water in seven unlined surface pits located in the center of the W/2 of said Section 13, center of the W/2 SE/4 of said Section 13, SW/4 NE/4 of said Section 23, center of SW/4 of said Section 24, center of the NE/4 of said Section 7, NE/4 SW/4 of said Section 7, NW/4 NW/4 of said Section 18.

(Case 3859 continued)

In the alternative, applicant seeks an extension of time in which to comply with the provisions of said order.

CASE 4337: Application of Petroleum Corporation of Texas for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's Dexter Hanagan Graridge Federal Well No. 1 located in Unit J, Section 22, Township 17 South, Range 30 East, Jackson-Abo Pool, Eddy County, New Mexico. Applicant seeks authority to dispose of salt water produced by said well in an unlined surface pit in the vicinity of said well.

CASE 4338: Application of Skelly Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Lea "D" Lease by selective injection of water into various zones of the Grayburg-Jackson Pool through three wells located in Units B, H, and J of Section 26, Township 17 South, Range 31 East, Eddy County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.

CASE 4339: Southeastern nomenclature case calling for an order for the creation of certain new pools and the assignment of oil discovery allowables and the contraction and extension of certain other pools in Lea, Chaves and Eddy Counties, New Mexico.

(a) Create a new pool in Chaves County, New Mexico, classified as an oil pool for San Andres production and designated as the Tower-San Andres Pool comprising the following:

TOWNSHIP 11 SOUTH, RANGE 31 EAST, NMPM
SECTION 3: SE/4

(Case 4339 continued)

Further, for the assignment of approximately 20,740 barrels of oil discovery allowable to the discovery well Phillips Petroleum Company's Marley "A" Well No. 1, located in Unit P of said Section 3.

(b) Create a new pool in Lea County, New Mexico, classified as an oil pool for Pennsylvanian production and designated as the Tres Papalotes-Pennsylvanian Pool, comprising the following:

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM
SECTION 33: NE/4

Further, for the assignment of approximately 52,340 barrels of oil discovery allowable to the discovery well Lone Star Producing Company's New Mexico (80) State Well No. 1 located in Unit B of said Section 33.

(c) Create a new pool in Eddy County, New Mexico, classified as an oil pool for Cherry Canyon production and designated as the Sand Dunes-Cherry Canyon Pool. The discovery well is Texas American Oil Corporation's Todd 26 Federal Well No. 2 located in Unit G of Section 26, Township 23 South, Range 31 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
SECTION 26: SW/4 NE/4

(d) Create a new pool in Lea County, New Mexico, classified as an oil pool for Devonian production and designated as the Warren-Devonian Pool. The discovery well is Continental Oil Company's SEMU Burger B No. 58 located in Unit C of Section 29, Township 20 South, Range 38 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
SECTION 29: NW/4

(e) Extend the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 27 EAST, NMPM
SECTION 26: S/2

(Case 4339 continued)

- (f) Extend the East Caprock-Devonian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 32 EAST, NMPM
SECTION 23: NE/4

- (g) Extend the Eagle Creek-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 25 EAST, NMPM
SECTION 23: NW/4 NW/4

- (h) Extend the South Eunice-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 11: NE/4

- (i) Extend the Maljamar Grayburg-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM
SECTION 9: NE/4
SECTION 10: NW/4

- (j) Extend the Quail Ridge-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM
SECTION 20: All

(k) Extend the Round Tank-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM
SECTION 30: W/2 NW/4 and NW/4 SW/4

(l) Extend the Shugart Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM
SECTION 25: W/2 NW/4

(m) Contract the Bough Permo- Pennsylvanian Pool in Lea County, New Mexico, by the deletion of the following described area:

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
SECTION 14: S/2

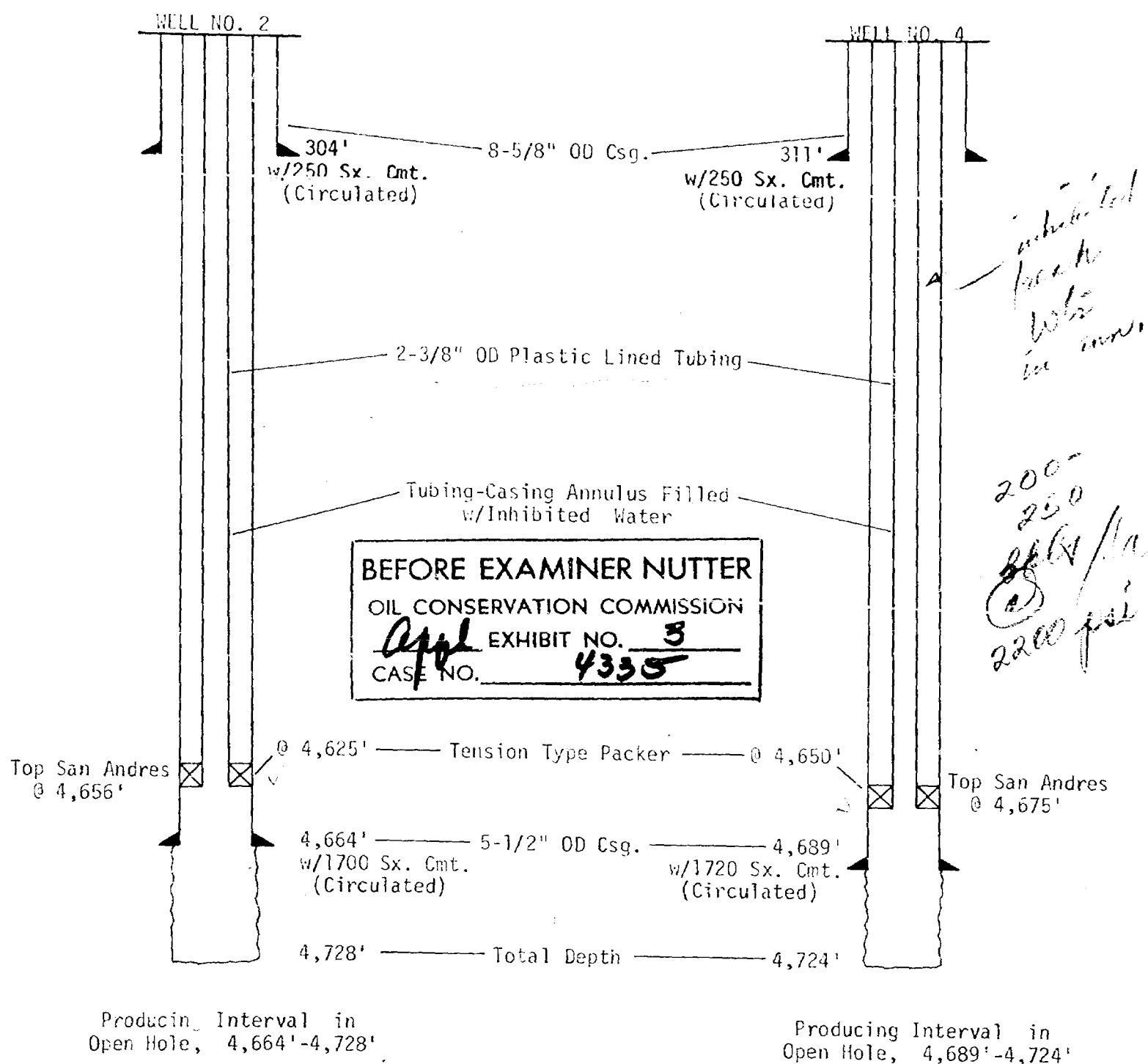
(n) Extend the Vada-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 33 EAST, NMPM
SECTION 13: S/2

TOWNSHIP 9 SOUTH, RANGE 34 EAST, NMPM
SECTION 18: S/2

TOWNSHIP 9 SOUTH, RANGE 35 EAST, NMPM
SECTION 10: SE/4
SECTION 14: S/2
SECTION 15: NE/4
SECTION 23: NW/4

DIAGRAMMATIC SKETCH OF DOWN-HOLE EQUIPMENT
IN PROPOSED WATER INJECTION WELLS NO. 2 AND NO. 4
LEA "FE" STATE LEASE, VACUUM POOL, LEA COUNTY, NEW MEXICO
GULF OIL CORPORATION - ROSWELL DISTRICT.



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 3
CASE NO. 4335

CASE NO. 4335
EXHIBIT NO. III
APRIL 15, 1970

10 3 25
Gulf Oil Company - U.S.

EXPLORATION AND PRODUCTION DEPARTMENT
ROSWELL DISTRICT

T. W. Kidd
DISTRICT MANAGER
M. I. Taylor
DISTRICT PRODUCTION
MANAGER
P. E. Wyche
DISTRICT EXPLORATION
MANAGER
H. A. Rankin
DISTRICT SERVICES MANAGER

March 10, 1970

P. O. Drawer 1938
Roswell, New Mexico 88201

Case 4.3.35

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 a Secondary Recovery Project on
the Lea "FE" State Lease in a Portion of
the Vacuum Pool, Lea County, New Mexico

Dear Sir:

Gulf Oil Corporation, as Lease Operator, seeks the Commission's approval for a Secondary Recovery Project on the Lea "FE" State Lease on the basis that the proposed plan for waterflooding certain wells in the Vacuum Pool will promote the conservation of oil and gas and prevent waste. Information supporting this application is as follows:

- (1) The Lea "FE" State Lease is located in the NW/4 of Section 11, Township 17 South, Range 34 East, and contains 160 acres, more or less, as shown on the attached plat (Figure I).
- (2) Average daily oil production for the four producing wells on the Lea "FE" State Lease in the proposed waterflood project has declined to less than two barrels per day per well as shown by the attached plot of performance history (Figure II) and these wells "have reached an advanced state of depletion" as described in Rule 701(E)(1).
- (3) Applicant proposes to convert two wells to water injection service. The attached diagrammatic sketch shows the details of each of the proposed injection wells, Wells No. 2 and 4. Well No. 2 is located 1980 feet from the west line and 330 feet from the north line, and Well No. 4 is located 1980 feet from the north line and 660 feet from the west line of Section 11.
- (4) Applicant plans to inject up to 300 barrels per day of salt water into each injection well. Injection will be into the San Andres formation in the approximate depth interval 4664 feet to 4728 feet. Copies of logs on both proposed injection wells are attached.



A DIVISION OF GULF OIL CORPORATION

DOCKET MAILED

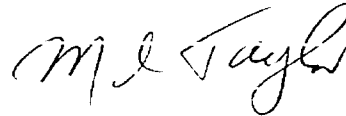
Date 4-2-70

- (5) Source of the injection water will be from Mobil's water injection system whose plant is located in the NW/4 of Section 23, approximately two miles south of Gulf's Lea "FE" State Lease. Gulf and Mobil are executing agreements for both purchase of water and salt water disposal into Mobil's existing plant.

It is requested that this matter be set for hearing before an examiner.

Respectfully submitted,

GULF OIL CORPORATION



M. I. Taylor

Attachments
JLM:sz

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

Mobil Oil Company
Post Office Box 633
Midland, Texas 79701

Yates Petroleum Corporation
Yates Building
Artesia, New Mexico 88210

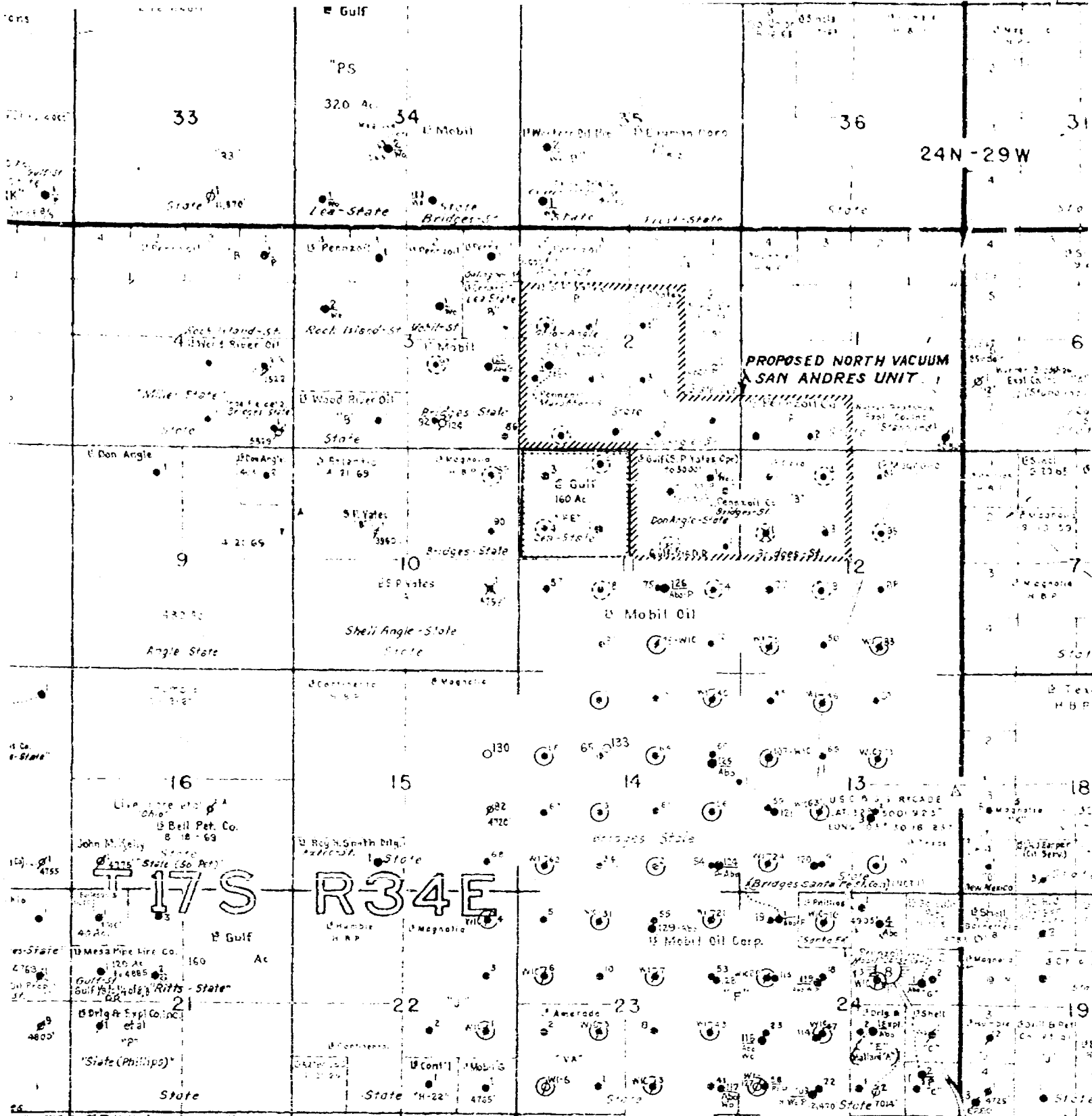


FIGURE NO. I

PROPOSED WATER INJECTION PROJECT
LEA "F" STATE LEASE
VACUUM POOL, SAN ANDRES FORMATION
LEA COUNTY, NEW MEXICO

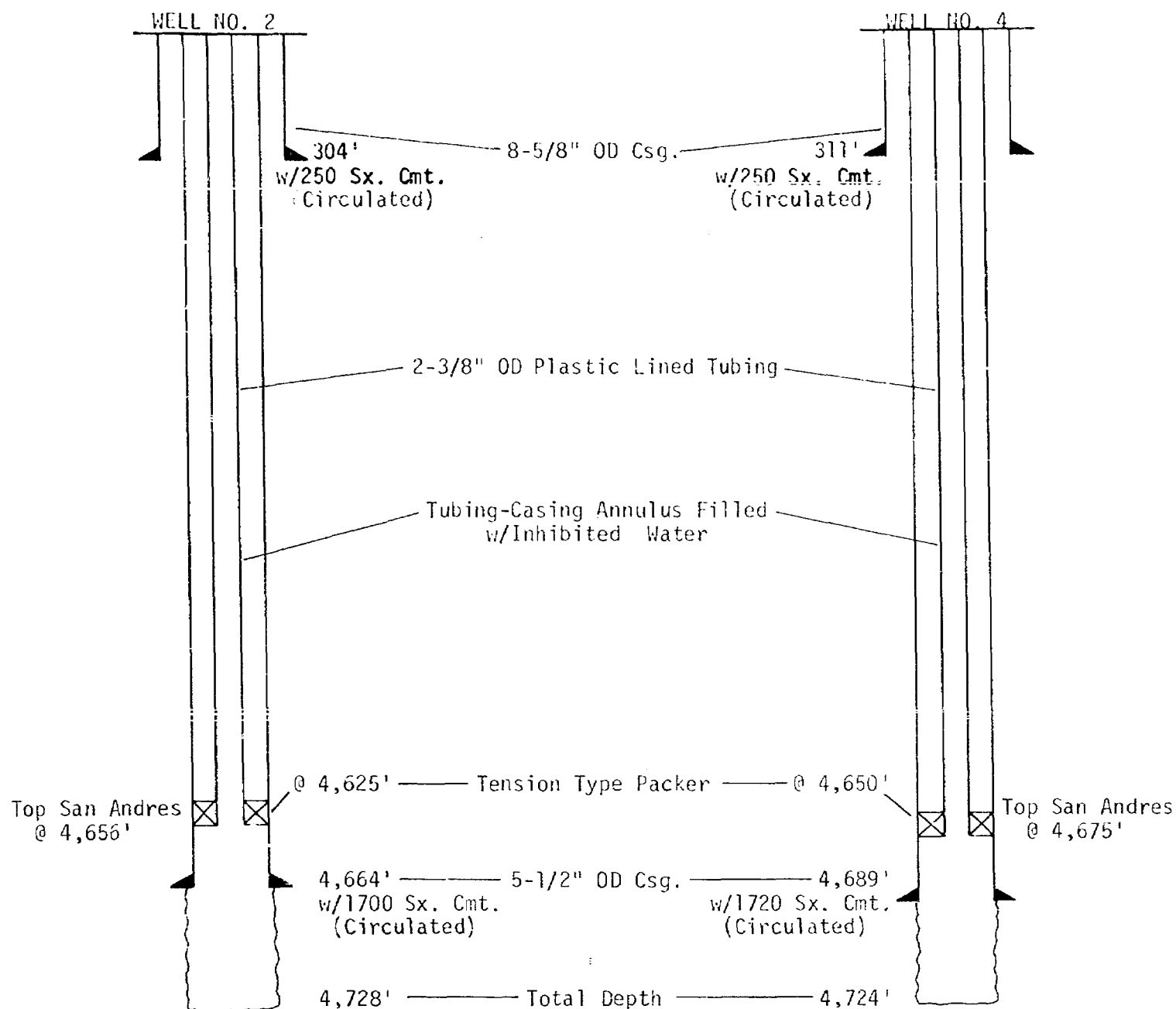
- LEGEND -

- Lease Boundary
- Vacuum Pool Oil Producer
- ⊙ Proposed Water Injection Well in Vacuum Pool
- ⊙ Active Water Injection Well in Vacuum Pool

GULF OIL CORPORATION

ROSWELL DISTRICT
3-2-70

DIAGRAMMATIC SKETCH OF DOWN-HOLE EQUIPMENT
 IN PROPOSED WATER INJECTION WELLS NO. 2 AND NO. 4
 LEA "FE" STATE LEASE, VACUUM POOL, LEA COUNTY, NEW MEXICO
 GULF OIL CORPORATION - ROSWELL DISTRICT.



Producing Interval in
 Open Hole, 4,664'-4,728'

Producing Interval in
 Open Hole, 4,689'-4,724'

Case 4335

DRAFT

GMH/esr

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:

John R. E.
Spec
Examiner

CASE No. 4335

Order No. R- 3951

GMH

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 April 15, 1970,
at Hobbs, New Mexico, before Examiner .

NOW, on this day of April, 1970, 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
 Vacuum (Grayburg-
 ~~Unit Area~~ San Andres) Pool by
the injection of water into the San Andres formation
through its Lea "FE" State Wells Nos. 2 and 4, located in Units
C and E, respectively, of Section 11, Township 17 South, Range
34 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
Vacuum (Grayburg-
===== Unit Area San Andres) Pool
by the injection of water into the San Andres formation
Section 11.
through the following-described wells in/Township 17
~~North~~, South, Range 34 ~~West~~, East, NMPM, Lea
County, New Mexico:

Lea "FE" State Well No. 2, located in Unit C
Lea "FE" State Well No. 4, located in Unit E

(2) That the subject waterflood project is hereby designated
the Gulf Vacuum "FE" Lea "FE" Waterflood Project and shall
be governed by the provisions of Rules 701, 702, and 703 of the
Commission Rules and Regulations.

(3) That monthly progress reports of the waterflood project
herein authorized shall be submitted to the Commission in accor-
dance with Rules 704 and 1120 of the Commission Rules and Regula-
tions.

(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.

CASE 4336: Application of BYRON
McKNIGHT FOR AN EXCEPTION TO
R-3221, AS AMENDED, LEA COUNTY.

H. H. H.