

CASE 3742: Application of TEXACO  
INC. for a waterflood project,  
Lea County, New Mexico.

Case No.

3742

Application, Transcript,  
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. 3742  
Order No. R-3398

APPLICATION OF TEXACO INC.  
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 3, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 9th day of April, 1968, 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, Texaco Inc., seeks permission to institute a waterflood project in the Eunice Pool by the injection of water into the Grayburg-San Andres formation through its State "C" NCT-2 Well No. 7, located in Unit G of Section 19, Township 20 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, Texaco Inc., is hereby authorized to institute a waterflood project in the Eunice Pool by the injection of water into the Grayburg-San Andres formation through its State "C"

-2-

CASE No. 3742  
Order No. R-3398

NCT-2 Well No. 7, located in Unit G of Section 19, Township 20 South,  
Range 37 East, NMPM, Lea County, New Mexico.

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

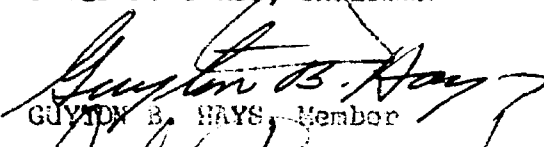
(3) That monthly progress reports of the waterflood project herein  
authorized shall be submitted to the Commission in accordance with Rules  
704 and 1120 of the Commission Rules and Regulations.


(4) That jurisdiction of this cause is retained for the entry  
of such further orders as the Commission may deem necessary.

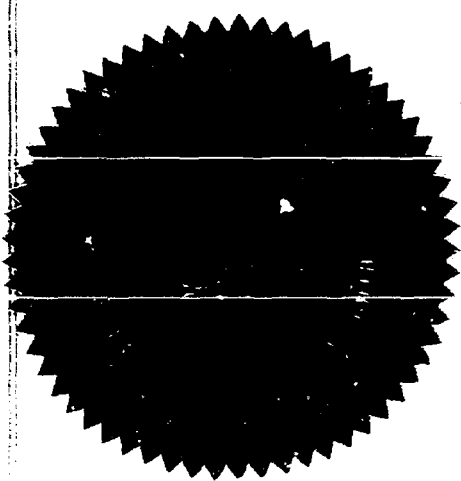
DONE at Santa Fe, New Mexico, on the day and year hereinabove  
designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

  
GUYTON B. HAYS, Member

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



OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

April 10, 1968

C  
O  
P  
Y

Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

Dear Sir:

Reference is made to Commission Order No. R-3398, recently entered in Case No. 3742, approving the Texaco Eunice Water-flood Project.

Initial injection is to be through the one injection well authorized, which shall be equipped with 2-inch internally plastic-coated tubing set in a packer at approximately 3620 feet. The casing-tubing annulus shall be loaded with an inert fluid and left open or equipped with a pressure gauge to facilitate detection of tubing or packer leaks.

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

OIL CONSERVATION COMMISSION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

-2-

Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Santa Fe, New Mexico

April 10, 1968

C  
O  
P  
Y  
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 appre-  
ciated.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/DSM/ir

cc: Oil Conservation Commission  
Hobbs, New Mexico

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

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 3, 1968

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

---

The following cases will be heard before Elvis A. Utz, Examiner, of Daniel S. Nutter, Alternate Examiner:

CASE 3741: Application of Signal Oil and Gas Company to directionally drill, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill the J. C. Williamson T.P. State Well No. 1 located 2126 feet from the South line and 1887 feet from the East line of Section 1, Township 16 South, Range 38 East, Lea County, New Mexico. Said well was drilled to a total depth of 13,140 feet and plugged back to 10,080 feet. Applicant proposes to set a whipstock at 10,310 feet and directionally drill to a depth of approximately 13,000 feet and to bottom said well in the Devonian formation at a point 2,160 feet from the South line and 1,250 feet from the East line of said Section 1.

CASE 3742: Application of Texaco Inc. for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg-San Andres formation through its State "C" NCT-2 Well No. 7 located in Unit G of Section 19, Township 20 South, Range 37 East, Eunice Pool, Lea County, New Mexico.

CASE 3743: Application of Benson-Montin-Greer Drilling Corporation for a pressure maintenance project, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in the West Puerto Chiquito-Gallup Oil Pool by the injection of gas into the Niobrara member of the Mancos shale through one well located in Unit K of Section 13, Township 25 North, Range 1 West, Rio Arriba County, New Mexico. Applicant further seeks the promulgation of special rules for said project, including provision for future expansion, gas injection credit, and transfer of allowables.

CASE 3744: Application of Lloyd B. Taylor for pressure tests, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to shut in his Vic Walker Well No. 1 located in Unit C of Section 6, Township 31 North, Range 13 West, La Plata-Gallup Oil Pool, San Juan County, New Mexico, to conduct pressure build-up tests, and to make up production lost during said tests at a later date.

CASE 3472: (Reopened)

In the matter of Case No. 3472 being reopened pursuant to the provisions of Order No. R-3136, which order established 80-acre spacing units for the Shoe Bar-Pennsylvanian Oil Pool, Lea County, New Mexico, for a period of eighteen months. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

State of New Mexico  
Oil Conservation Commission



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

April 9, 1968

Re: Case No. 3742  
Order No. R-3398  
Applicant:  
  
**Texaco Inc.**

Enclosed herewith is a copy of the above-referenced Commission order recently entered in the subject case. Letter pertaining to conditions of approval and maximum allowable to follow.

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

Carbon copy of order also sent to:

Hobbs OCC     x      
 Artesia OCC             
 Aztec OCC             
 State Engineer     x    

Other \_\_\_\_\_



Case 3792

Heard 4-3-68

Rec. 4-3-68

1. Grant Texaco permission to operate a pilot waterflood in the NE/4 sec 19. 20S-37E in Monument - Grayburg San Andreas + Tunic - Grayburg San Andreas oil pools. Grant permission to connect these New Mexico & State (NCT-2) #7Q-19-20S-37E to a water injection well. This well shall inject water thru 2" internally plastic coated tubing and under a packer set at approx. 3620' inside the 5 1/2 inch production casing.

Will be operated under rule 201.  
Thurston

TEXACO  
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT  
MIDLAND DIVISION



P. O. BOX 3109  
MIDLAND, TEXAS 79701

March 14, 1968

REQUEST FOR EXAMINER HEARING  
PILOT WATERFLOOD PROJECT  
EUNICE (GRAYBURG-SAN ANDRES) OIL POOL  
LEA COUNTY, NEW MEXICO

Oil Conservation Commission (3)  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Attn: Mr. A. L. Porter, Jr.

68 MAR 15 AM 8 27

Gentlemen:

It is respectfully requested that an examiner hearing be scheduled in Santa Fe, New Mexico to consider the application of Texaco Inc. for Oil Conservation Commission approval to conduct a pilot waterflood operation in the Eunice (Grayburg-San Andres) Oil Pool in Lea County, New Mexico.

The proposed project area of the waterflood project is comprised of the proration unit upon which the injection well is located plus all the proration units directly or diagonally offsetting the injection well and having producing wells completed thereon in the same formation as provided by Statewide Rule 701, E.2. This area comprises all Texaco's New Mexico "C" State NCT-2 Lease, being the NE/4 of Section 19, T-20-S, R-37-E, Lea County, New Mexico, containing 160 acres.

Approval will be requested to convert Well No. 7 located in Unit G to water injection. Initially, this will be the only injection well. It is anticipated that after establishing successful pilot operations, consideration will be given to expanding this waterflood project by unitizing adjacent tracts and converting additional wells to injection service.

The injection fluid for this proposed pilot project will be fresh water from the Ogallala formation, obtainable from a water well presently completed in the SE/4 of the NE/4 of Section 19, T-20-S, R-37-E. This well was drilled and completed in accordance with State Engineer Water Right Permit No. L-4410. Injection will be down 2-3/8"

DOCKET MAIL

Date 3/22/68

plastic coated tubing with a packer set at approximately 3620' into the open hole interval from 3670' to 3866'. It is estimated that initial injection rates will approximate 500 barrels of water per day with a surface injection pressure of approximately 500 psi.

In addition to requesting an order authorizing the formation of this pilot project and the conversion of Well No. 7 to injection service, Texaco Inc. will also request Commission approval to transfer Wells No. 5 and 6 on the subject lease from the Monument (Grayburg San Andres) Pool to the Eunice (Grayburg-San Andres) Oil Pool. Of the four wells completed on the New Mexico "C" State NCT-2 Lease, Numbers 5 and 6 are currently assigned to the Monument Pool while Numbers 7 and 8 are assigned to the Eunice Oil Pool. All four wells produce from the same formation.

In support of this application and in compliance with Statewide Rule 701 B., we attach hereto a plat showing the location of the subject lease, project area, producing and injection well, and offset operators. In addition, a diagrammatic sketch of the proposed injection well is attached showing the subsurface installation. Also attached is a copy of the Schlumberger Electrical Log of the proposed injection well.

Listed below are all of the offset operators to Texaco's New Mexico "C" State NCT-2 Lease. A copy of this letter is being mailed this date to each of the offset operators.

Yours very truly,

*C. L. Whigham*  
C. L. Whigham  
Division Proration Engineer

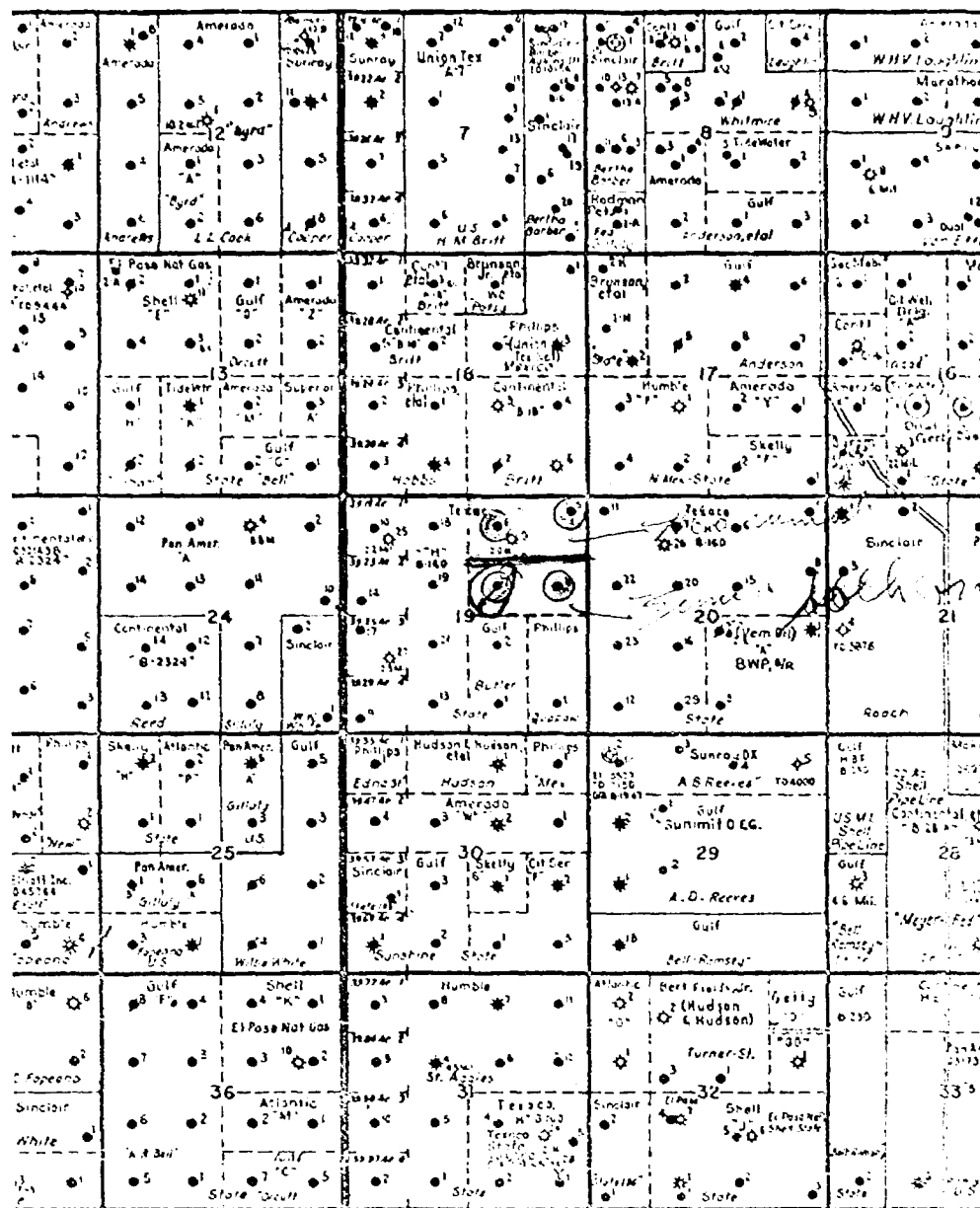
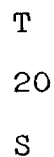
CLW:jl  
Attach.

cc: Oil Conservation Commission  
P. O. Box 1110  
Hobbs, New Mexico

Offset Operators

Continental Oil Company - Box 431 - Midland, Texas 79701  
Gulf Oil Corporation - Box 1150 - Midland, Texas 79701  
Humble Oil & Refng. Company - Box 1600 - Midland, Texas 79701  
Phillips Petroleum Company - Box 791 - Midland, Texas 79701

R-37-E



SCALE: 1" 4000' EDMc 3-7-68

Page 370

Casing-Tubing Annulus  
To Be Loaded With  
Inhibited Fluid

13" casing set @ 135'  
cemented with 125 sacks.  
Cement circulated

8 5/8" casing in 11" hole  
set @ 1122' cemented with  
250 sacks (top of cement  
unknown)

5 1/2" casing in 7 7/8" hole  
set @ 3670' cemented with  
125 sacks (top of cement  
unknown)

2" tubing set @ approximately 3670'  
(Internally Plastic Coated)

3620' estimated

Top of Grayburg 3640'

Injection interval  
3670' to 3866' open hole

4 3/4" open hole to total  
depth of 3866'

DIAGRAMMATIC SKETCH  
PROPOSED INJECTION WELL  
TEXACO INC.  
N.M. STATE "C" (NCT-2) NO. 7  
EUNICE GRAYBURG SAN ANDRES FIELD  
LEA COUNTY, NEW MEXICO

*3620' 3720'*

WELLS IN PROJECT WITH CURRENT ALLOWABLES

	<u>Location</u>	<u>Allowable</u>
New Mexico 'C' State (NCT-2) No. 8-H	19-20S-37E	1
New Mexico 'C' State (NCT-2) No. 5-A	19-20S-37E	7
New Mexico 'C' State (NCT-2) No. 6-B	19-20S-37E	4

Page 3742

OFFSET OPERATORS  
TEXACO Inc.

NEW MEXICO 'C' STATE (NCT-2)  
LEASE

Continental Oil Company  
P. O. Box 460  
Hobbs, New Mexico

Gulf Oil Corporation  
P. O. Box 1938  
Roswell, New Mexico

Humble Oil & Refining Co  
P. O. Box 2100  
Hobbs, New Mexico

Phillips Petroleum Co  
P. O. Box 1232  
Odessa, Texas

Jan 3742

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P. O. BOX 1012 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
April 3, 1968  
EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco Inc. for  
a waterflood project, Lea County,  
New Mexico.

Case 3742

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING



MR. UTZ: Case 3742.

MR. HATCH: Case 3742. Application of Texaco Inc. for a waterflood project, Lea County, New Mexico.

MR. KELLY: Booker Kelly, of White, Gilbert, Koch, & Kelly, Santa Fe on behalf of the Applicant. I have one witness and ask that he be sworn.

(Witness sworn)

MR. UTZ: Are there other appearances?

You may proceed.

CARL L. WHIGHAM, JR.

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

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name and residence, please?

A My name is Carl L. Whigham, Jr., and I reside in Midland, Texas.

Q By whom are you employed and in what capacity?

A I am employed by Texaco in Midland as Midland Division Proration Engineer.

Q Have you previously qualified as an expert Petroleum Engineer before this Commission?

A Yes, sir.

Q Would you briefly state what Texaco seeks by the application?

A At this hearing Texaco Incorporated seeks an order that will permit the initiation of secondary recovery operations in a portion of the Eunice Grayburg-San Andres oil pool and the Monument Grayburg-San Andres oil pool by injection of water into Texaco's New Mexico C State NCT-2 Well No. 7, which is located in Unit G, Section 19, Township 20 South, Range 37 East. We propose that this secondary recovery pilot project be authorized and governed by currently existing regulations and rules 701, 702 and 703.

(Whereupon, Applicant's Exhibits 1 through 5 marked for identification)

Q Now, referring to what has been marked Exhibit 1, would you locate the project area and the wells involved?

A Yes, Exhibit 1 is a map of a portion of the Monument and Eunice pools and many other oil and gas pools which produce in the same general area. The proposed project area as recommended and applied for at this hearing, is encircled in yellow and is shown as the northeast quarter of Section 19, Township 20 South, Range 37 East in Lea County, New Mexico. This map is color-coded to show the producing oil pool in each of the wells located on the map.

The two that we are concerned with at this hearing are the Monument Grayburg-San Andres indicated in red and the Eunice Grayburg-San Andres indicated by the Green. You will note that the two southermost wells in this quarter section are presently carried in the proration schedule in the Eunice Grayburg-San Andres whereas the other two wells in the north half of the northeast quarter are presently carried by the Oil Conservation Commission proration schedule as producing from the Monument Grayburg-San Andres.

Q Now, actually the two designations of Monument and Eunice are actually a common source or common reservoir, isn't that correct, as far as --

A Yes, sir.

Q They are just distinguished by different names?

A Yes, sir, that's correct. They are designated as separate oil pools only in the Oil Conservation Commission's Monthly Proration Schedules.

Q Now, going back to Exhibit 1 what is the history of the particular project or the wells located thereon?

A Well, --

Q Or the present status of the wells.

A With regard to the history of these fields, oil

was discovered in this vicinity, in this reservoir, in 1929 by Continental Oil Company. Development has continued since that time, there are presently three producing wells in the northeast quarter of Section 19, Well No. 7 is the proposed injection well and it was shut in in 1963. Production from Wells No. 5, 6 and 8 at the present time, averages approximately four barrels of oil per day per well with an average gas-oil ration of approximately 16,000 cubic feet of gas per barrel of oil.

Q Now, could you list the offset operators to the project area?

A Yes, we submitted a list of the offset operators with our application for hearing and they are Continental Oil Company, Gulf Oil Corporation, Humble Oil & Refining Company, and Phillips Petroleum Company.

Q And they have all been notified of this application?

A Yes, they have.

Q Now, going on to what has been marked as Exhibit 2, which is your diagrammatic sketch of your injection well, could you explain the casing program?

A Yes, thirteen inch surface casing was set in this well at a depth of 135 feet and cemented with 125 sacks of cement, and as shown on this sketch, the cement

circulated or it rose to the surface. Subsequently eight and five eighths inch casing was installed in an eleven inch hole at a depth of 11,022 feet and cemented with 250 sacks of cement. A temperature survey was not run, however, a calculation shows that cementation with 250 sacks in this size hole would bring the cement up to the surface of the ground, so we have every reason to believe that the eight and five-eighths inch intermediate casing set at 11,022 feet is very adequately cemented. Five and a half inch casing was then installed in a seven and seven-eighths inch hole at a depth of 3,670 feet with 125 sacks of cement. This would result in a cement fill behind the casing of two or three hundred feet. I have some calculations on that that I would like to give you.

Assuming a 100 per cent fillup the 125 sacks of cement would fill 350 feet, so if the casing set at 3,670 the top should be at approximately 2,820 feet. At that point the drilling was continued with a four and three quarter inch bit down to a depth of 3,865 feet. The setting depth for the five and a half inch casing at 3,670 feet is the approximate top of the Grayburg Formation. This was the usual completion procedure employed at that

time, the operators drilled to the top of the Grayburg and set production casing and then continued drilling to penetrate most of the Grayburg section and sometimes a portion of the upper San Andres section. And then the operators completed in the open hole interval below the casing. This plat, this diagrammatic sketch also shows the proposed installation of the two inch injection tubing. We show two inch tubing set at 3,670 feet and show that this will be internally plastic coated. We propose to use a packer set at 3,620 feet and injection would therefore be in the open hole interval from a depth of 3670 feet down to total depth of 3866 feet.

Q You also plan to load your annulus with inhibitor fluid, is that right?

A Yes, as a precaution against corrosion.

Q Now, actually, the water that will be injected is fresh water, isn't it?

A Yes, that's correct.

Q So you don't really anticipate any corrosion problems?

A No, we don't.

Q What is your water source?

A Texaco has a permit from the State Engineer to

use Ogallala fresh water in this immediate area.

Q Actually, your water well is shown on Exhibit 1 there?

A Yes, we didn't mention that, but the water well is located and shown on Exhibit 1 to be in Unit H in Section 19. From that well we plan to obtain more than enough water for injection into the proposed injection Well No. 7. We anticipate an initial rate of about 500 barrels of water per day at a maximum pressure of approximately 500 PSI.

Q Do you expect that this rate will be fairly constant or will it increase as the project -- as time goes on and the project possibly grows?

A No, we expect the rate to remain relatively constant in this particular well. We do anticipate in the not too distant future, the need to expand this project and to convert additional producing wells to injection service. The injection rates in these additional injection wells will initially be in the order of 500 barrels of water per day and the pressure would be approximately 500 PSI. Of course, as the project expands and producing and injection operations are monitored we will undoubtedly find it necessary to increase

injection rates in certain areas and possibly decrease the rates in certain other areas in order to adequately control the movement of the flood front.

MR. UTZ: What was your pressure again?

A A maximum of 500 PSI is estimated.

Q Now, the casing program that you have shown on Exhibit 2, in your opinion, do you feel it would adequately prevent migration of fluids to other zones?

A Yes.

Q Now, going to what has been marked Exhibit 3, which is the performance curves, would you explain the production history of these?

A Yes, Exhibit 3 shows a plot of the monthly oil production from 1940 to 1968. The gas-oil ratio is plotted from 1959 to mid-1967 and monthly water production is plotted from mid-1959 to 1968. The uppermost curve is the gas-oil ratio curve. This shows that a maximum gas-oil ratio of approximately 22,000 cubic feet per barrel of oil was exhibited by the wells producing on Texaco's New Mexico C State NCT-2 Lease in 1962. And generally that gas-oil ratio has subsequently declined down to approximately 14,000 cubic feet per barrel in mid-1967. In recent months the gas-oil ratio is estimated to be in the order of



16,000 cubic feet per barrel. We do expect response from water injection in a relatively short period of time and one of the first indications of response will probably be a reduction in gas-oil ratio. Monthly oil production, the next curve, has declined to approximately 350 barrels of oil per month for the lease. This would be from the three producing wells, Well No. 7 being shut in since 1963. Monthly water production has varied somewhat since 1959, however, the scale on this particular curve exaggerates this variation. Generally speaking, we might say that the monthly water production averages 300 barrels of water per month at the present time from these three wells.

This curve shows, or these curves show, that the gas-oil ratio is rather high, water production is not excessive, production is declining at a rate in the order of six or seven per cent per year and this and other information indicates that this reservoir produces with a solution gas drive mechanism.

Q Now, you have an Exhibit No. 4 that gives the actual allowables for the three wells that are still on production, is that right?

A Yes, sir.

Q Does this, in your opinion, show that the lease

has reached stripper stage, advanced stage of depletion?

A Yes, it does. Production data also indicates that there is very little remaining primary production to be obtained from this reservoir in this immediate area.

Q Now, are there any other secondary recovery projects in this reservoir, in the Grayburg-San Andres reservoir in this area?

A No, there isn't, however, about three or four miles east of the proposed project area, Continental Oil Company has a project in the Skaggs-Grayburg pool and Texaco also has a small project in the Skaggs-Grayburg pool. Performance of these two operations indicate that we can expect a successful secondary recovery operation by waterflooding in Section 19 and in this general area.

Q What is the pattern that will be used in this project?

A A five spot pattern will be employed.

Q Now, Exhibit No. 5 is a log of the injection well, is that right?

A Yes, sir.

MR. KELLY: Mr. Examiner, part of our application here is to change our wells No. 5 and 6 from the Monument to the Eunice and it's my understanding that that will be

handled administratively and you don't need any testimony on that point.

MR. UTZ: I believe it will be handled at the nomenclature hearing in Hobbs, will it not, instead of administratively?

MR. KELLY: Oh, I see. There is no information you need on that at this time?

MR. UTZ: No other information other than the fact that if you have cross sections of this area it might be helpful to us.

MR. KELLY: Yes, we have cross sections and we might as well go ahead and introduce them at this time.

MR. UTZ: I'm not sure it would be necessary to introduce them into this case since the advertisement doesn't cover this, does it?

MR. HATCH: I don't think so.

MR. UTZ: But if we could just have them to give to our Hobbs people we would appreciate it very much.

MR. KELLY: All right.

Q Do you have anything further you want to add on any of the exhibits?

A No, sir, I don't.

Q Were Exhibits 1 through 5 prepared by you or under your direction?

A Yes.

MR. KELLY: We move the introduction of Texaco's Exhibits 1 through 5.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 5 were offered and admitted in evidence.)

Q In your opinion, will the granting of this application prevent waste by recovering oil that would otherwise be left in place?

A Yes, that's true.

MR. KELLY: That's all we have on Direct.

CROSS EXAMINATION

BY MR. UTZ:

Q I believe you did say that you were going to load the annulus with inert fluid?

A Yes, sir.

Q Do you intend to put a gauge at the surface or leave it open, which do you prefer?

A I am not sure, Mr. Examiner, but the level of the fluid in the annulus would be checked periodically by

one means or another. The operations people might just possibly go out periodically, say once a month, and add water if any were needed.

Q Now, am I correct that you calculated the cement on the 125 sacks, the five and a half inch to come up 850 feet above the shoe?

A Yes, sir, that's correct.

Q Which, in your opinion, is ample to hold the pressures that you may put on?

A Yes, it should. We do not anticipate excessive injection pressures in this area.

Q How old is the casing in this well?

A I have been unable to determine that date. We do have a reasonable date for the age of that well. The well log that we entered as Exhibit No. 4 shows a date of November 1, 1939.

MR. UTZ: I can't see that date.

MR. KELLY: Right under the title there.

A So that casing is about 30 years old.

Q But you have taken a precaution of using fluid in the annulus, plastic coated tubing and a packer?

A That's correct.

MR. UTZ: Other questions of the witness? He

may be excused.

(Witness excused)

MR. UTZ: Statements in this case? Case will be  
taken under advisement.

STATE OF NEW MEXICO    )  
                                   ) ss  
 COUNTY OF BERNALILLO    )

I, KAY EMBREE, Notary Public 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.

Witness my Hand and Seal this 18th day of April 1968.

Kay Embree  
 NOTARY PUBLIC

My Commission Expires:

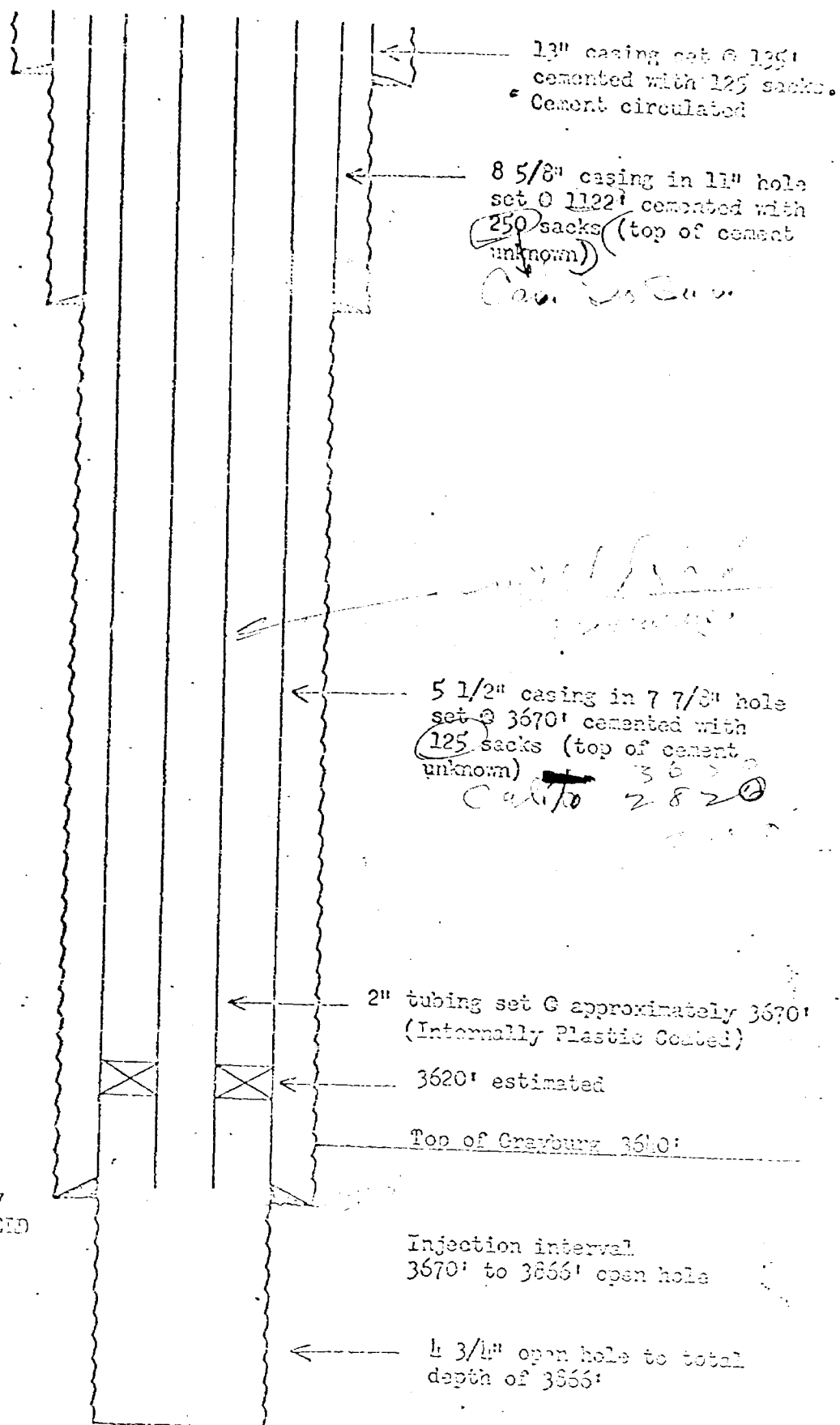
November 19, 1971

RECEIVED  
 APR 23 1968  
 3742  
 68  
 [Signature]  
 New Mexico Oil Conservation Commission

Casing-Tubing Annulus  
To Be Loaded With  
Inhibited Fluid

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
CASE NO. 3742 EXHIBIT NO. 2

DIAGRAMATIC SKETCH  
PROPOSED INJECTION WELL  
TEXACO INC.  
N.M. STATE "OC" (NOT-2) NO. 7  
BUNICE GRAYBURG SAN ANDRES FIELD  
LEA COUNTY, NEW MEXICO





OFFSET OPERATORS  
TEXACO Inc.

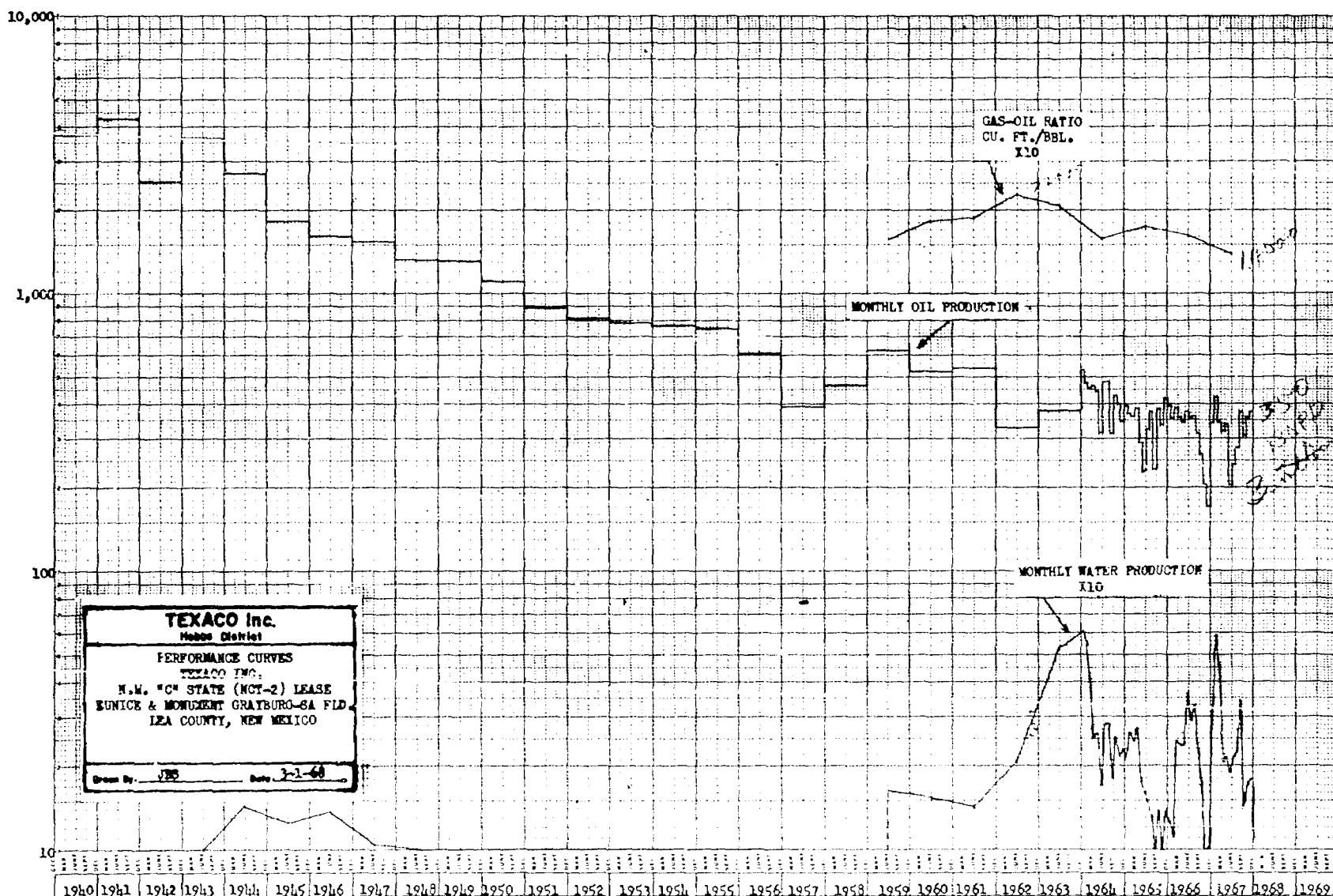
NEW MEXICO 'C' STATE (NCT-2)  
LEASE

Continental Oil Company  
P. O. Box 460  
Hobbs, New Mexico

Gulf Oil Corporation  
P. O. Box 1938  
Roswell, New Mexico

Humble Oil & Refining Co  
P. O. Box 2100  
Hobbs, New Mexico

Phillips Petroleum Co  
P. O. Box 1232  
Odessa, Texas



BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 3  
CASE NO. 3742

WELLS WITHIN PROPOSED PROJECT AREA

Eunice-Grayburg San Andres Pool

			<u>Injection well</u> <u>Allowable</u>
New Mexico "C" State (NCT-2)	Well No. 7	G 19-20-37	0
	Well No. 8	H 19-20-37	1

Monument-Grayburg San Andres Pool

New Mexico "C" State (NCT-2)	Well No. 5	A 19-20-37	7
	Well No. 6	B 19-20-37	4

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

*Appl'd* EXHIBIT NO. 4  
CASE NO. 3742