

CASE 5198: Application of TEXACO  
FOR SALT WATER DISPOSAL, LEA  
COUNTY, NEW MEXICO.

CASE No.

5198

Application,  
Transcripts,  
Small Exhibits

ETC.

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
March 27, 1974

EXAMINER HEARING

-----  
IN THE MATTER OF: )  
 )  
 )

Application of Texaco, Inc., for salt )  
water disposal, Lea County, New Mexico. )  
----- )

Case No.  
5198

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil  
Conservation Commission:

William Carr, Esq.  
Legal Counsel for the  
Commission  
State Land Office Bldg.  
Santa Fe, New Mexico

For the Applicant:

Booker Kelly, Esq.  
WHITE, KOCH, KELLY &  
McCARTHY  
McKee Building  
Santa Fe, New Mexico

CASE 5198

Page..... 2

I N D E X

PAGE

CRAIG HINRICHS

Direct Examination by Mr. Kelly  
Cross Examination by Mr. Nutter

3  
9

E X H I B I T S

Marked

Admitted

Texaco's Exhibits 1  
through 3

-- 9

MR. NUTTER: We call Case 5198.

MR. CARR: Case 5198. Application of Texaco, Inc., for salt water disposal, Lea County, New Mexico.

MR. KELLY: Booker Kelly of White, Koch, Kelly & McCarthy, appearing on behalf of the Applicant. We have one witness and ask that he be sworn.

(Witness sworn.)

CRAIG HINRICHS

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 full name and by whom employed and in what capacity?

A My name is Craig Hinrichs, I'm District Production Engineer for Texaco, Incorporated, at Hobbs, New Mexico.

Q Have you previously qualified as an expert witness in the field of petroleum engineering before this Commission?

A Yes, I have.

Q Referring to what has been marked Exhibit No. 1, the plat, would you state briefly what Texaco seeks by

this Application?

A Texaco seeks approval to convert the V.M. Henderson Well No. 3 to salt-water disposal in the Penrose-Skelly formation. The V.M. Henderson Lease is outlined in yellow with the subject wells noted by the red arrows.

Q Now, can you give the Examiner the present status of that Well and the complete history of its production?

A The Well is currently shut-in. Well No. 3 was initially drilled as a conventional completion, with five-and-a-half casing producing from the Drinkard formation. The perforation was 6545 to 6630 and potential for 64 barrels of oil per day and three barrels of water per day on July 16, 1950. A bridge plug was set at 6504 and capped with 15 feet of Hydromite, and the Drinkard zone was abandoned in 1965 with a cumulative production of 30,124 barrels of oil. The well has been recompleted in Paddock from perforations 5164 to 5180 on June 11, 1965, in potential for 1 barrel of oil per day and 60 barrels of water per day. The Well was subsequently shut-in September 5th, 1969, with a cumulative production from Paddock of 1481 barrels of oil. The Well has been shut-in since that time. The Penrose Skelly has been depleted at this location

by the V.M. Henderson Well No. 1, which is located on the same proration unit as the subject well, just to the southeast. No. 1 produced 123,339 barrels of oil from the Penrose Skelly and was plugged and abandoned in 1959 after the well was depleted.

Q What wells are producing the water that you will be injecting?

A It's the remaining seven wells on the Henderson Lease which are producing from the Eumont, Blinebry, Tubb, Drinkard, Paddock.

Q What is your present disposal system?

A We're trying to truck in water. Previously we were disposing water in V.M. Henderson Well No. 8 in the Drinkard zone on the southwest of our Henderson Lease. This well was abandoned when injection pressure became excessive. We attempted to treat formation increasing activity, but weren't successful, so the well was abandoned as salt-water disposal. We are currently hauling the water, and due to the excessive cost of this method, if it is continued, the economic limit of our Lease will be increased, which means that some oil will be left in the ground that we could recover if the disposed well is utilized.

Q Are there any Penrose Skelly wells close to the subject injection well?

A Yes, there are two off-sets, one to the east and one to the south. However, water is being injected in zones below those being produced in the off-set wells so there would be no effect on them.

Q Now did you experience any corrosion problems or problems with your tubing on your No. 8, your previous injection well?

A No, we did not. The tubing and packer have been pulled and there is no indication of corrosion or scale.

Q And what do you expect the rate of injection to be?

A We'll inject 300 barrels of water a day, approximately, and anticipate to be on a vacuum.

Q Has that been pretty steady over the years, that rate of water injection?

A Yes.

Q You don't expect that would climb substantially.

A No. There is no active water down in this vicinity.

Q All right. Now, referring to your sketch, Exhibit No. 2, would you explain the proposed installation?



A The well currently has 13-3/8-inch-surface casing set 254 feet, cemented with 300 sacks of cement, which circulated. There is secondary casing, 8-5/8ths inch, set at 2864, cemented with 1000 sacks. The cement top is at 510, as was determined by temperature survey. There is a third string, 5½ inch, set at 5657, which was cemented with 1000 sacks and a cement top at 2590. This was also confirmed by temperature survey. The proposed completion will include 2-3/8ths-inch-plastic-coated tubing to be set in a nickel-plated packer which will be set at 3790, which is below the cement top outside of 5½ at 2590. There will be a pressure gauge on the tubing-casing annulus and the annulus will be filled with inhibited fluid.

Q Is there any fresh-water wells on this Lease?

A Yes there are; there is one near Well No. 8. That was our former disposal well.

Q Do you anticipate there will be any problem with this salt water migrating to that Well?

A No, I don't. We had the fresh water chased off the higher surface pack and cement circulated on our surface string, and there is also an intermediate string, so there are three strings of pipe covered with cement.

Q All right. How did you happen to pick the

Penrose Skelly formation for injection?

A It was picked primarily because our wells on the Henderson Lease are slim-hole completions with 2-7/8ths-inch casing. This one is conventional with 5½ so 2-3/8ths-inch tubing can be utilized, and in this way we minimize our surface pressures, reduce the friction pressure. Also, they injected it, you know, Skelly anticipated it'd be better than the other zones.

Q Could you describe to the Examiner Texaco's procedures for inspecting these injection wells to make sure that there isn't any leaks?

A The Pumper checks the pressure gauge on the annulus daily, also the disposal system itself, and reports any discrepancies, this is reported to our head pumper and to the production foreman. If there is any remedial work to be done it's implemented immediately.

Q Has Texaco had any problem with injection wells from these zones in the past?

A No.

Q Now, Exhibit 3 is a log and would you point out the perforations that you have on there?

A The proposed perforations are marked in red. We've perforated two shots per foot, 3815 to 3822, 3838

to 3840, 3898 to 3925, 3948 to 3956, 4030 to 4050 and 4054 to 4068.

Q In your opinion, would the granting of this Application prevent economic waste by allowing you to dispose of this salt water in the most economical manner?

A Yes, it would.

Q Do you feel that it would have any adverse effect on the correlative rights of other operators?

A No.

Q Were Exhibits 1 through 3 prepared by you or under your supervision?

A Yes, sir.

MR. KELLY: Mr. Examiner, we move the introduction of Texaco's Exhibits 1 through 3.

MR. NUTTER: Texaco's Exhibits 1 through 3 will be admitted into evidence.

(Whereupon, Texaco's Exhibits 1 through 3 were admitted into evidence.)

MR. KELLY: We have no other testimony on direct.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Hinrichs, I presume that on your plat, Exhibit No. 1, that the symbol "PS" is Penrose Skelly,

correct?

A Yes, sir.

Q Okay, so you have a Penrose Skelly Well immediately south on the Gulf Mattern Lease, then a Penrose Skelly Well immediately east on the Mobil Hardy Lease?

A Right.

Q You've got a Penrose Skelly Well on the same 40-acre tract as proposed disposal well, and you've got a shut-in Penrose Skelly Well immediately west in your No. 9?

A Right. Now, the only two that are producing is the Mobil Hardy No. 1 to the east and Gulf Mattern No. 1 to the south.

Q Now is the Penrose Skelly Well on the same 40 abandoned or is it just shut-in?

A It's plugged and abandoned.

Q It is plugged and abandoned. How about the No. 9 west?

A It's just shut-in.

Q And, of course, Gulf and Mobil are producing their wells?

A Yes, sir.

Q I was just wondering if there would be some means of determining if the injection of water into the Penrose

HINRICHS-CROSS

CASE 5198

Page..... 11

Skelly formations might enhance the production, they'd find it out on Gulf's Lease and Mobil.

A There would be a response, if anything.

MR. NUTTER: Okay, are there any further questions of the Witness? He may be excused.

Is there anything further in Case 5198?

MR. KELLY: I have nothing further.

MR. NUTTER: We will take the Case under advisement.

STATE OF NEW MEXICO )  
COUNTY OF SANTA FE ) SS.

I, RICHARD L. NYE, Court Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

  
RICHARD L. NYE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings of the Examiner hearing of Case No. 5198 heard by me on 3/27, 1974.

  
Examiner  
New Mexico Oil Conservation Commission



## OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO  
P. O. BOX 2088 - SANTA FE  
87501

April 16, 1974

I. R. TRUJILLO  
CHAIRMAN

LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER

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

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

Re: CASE NO. 5198

ORDER NO. R-4762

Applicant:

TEXACO INC.

Dear Sir:

Enclosed herewith are two copies of the above-referenced  
Commission order recently entered in the subject case.

Very truly yours,

*A. L. Porter, Jr.*

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC       X        
Artesia OCC             
Aztec OCC           

Other                     State Engineer Office

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. 5198  
Order No. R-4762

APPLICATION OF TEXACO INC.  
FOR SALT WATER DISPOSAL,  
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 27, 1974, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 16th day of April, 1974, 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., is the owner and operator of the V.M. Henderson Well No. 3, located in Unit H of Section 30, Township 21 South, Range 37 East, NMPM, Penrose Skelly Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Grayburg formation, with injection into the perforated interval from approximately 3815 feet to 4068 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set at approximately 3790 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer.

(5) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(6) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.



-2-

CASE NO. 5198  
Order No. R-4762

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to utilize its V.M. Henderson Well No. 3, located in Unit H of Section 30, Township 21 South, Range 37 East, NMPM, Penrose Skelly Pool, Lea County, New Mexico, to dispose of produced salt water into the Grayburg formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 3790 feet, with injection into the perforated interval from approximately 3815 feet to 4068 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(3) That the operator shall immediately notify the supervisor of the Commission's Hobbs District Office of the failure of the tubing, casing, or packer in said well or the leakage of water from or around said well and shall take such steps as may be timely or necessary to correct such failure or leakage.


(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

I. R. TRUJILLO, Chairman

  
ALEX J. ARMIJO, Member

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

S E A L

jr/

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 27, 1974

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

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 5188: (Continued from the March 13, 1974, Examiner Hearing)

Application of Continental Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Drinkard and Blinebry production in the wellbore of its Lockhart B-1 Well No. 8 located in Unit H of Section 1, Township 22 South, Range 36 East, Lea County, New Mexico.

CASE 5194: Application of Kersey & Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen-Grayburg formation through one well on its Creek Lease in Section 23, Township 18 South, Range 30 East, Leo Pool, Eddy County, New Mexico.

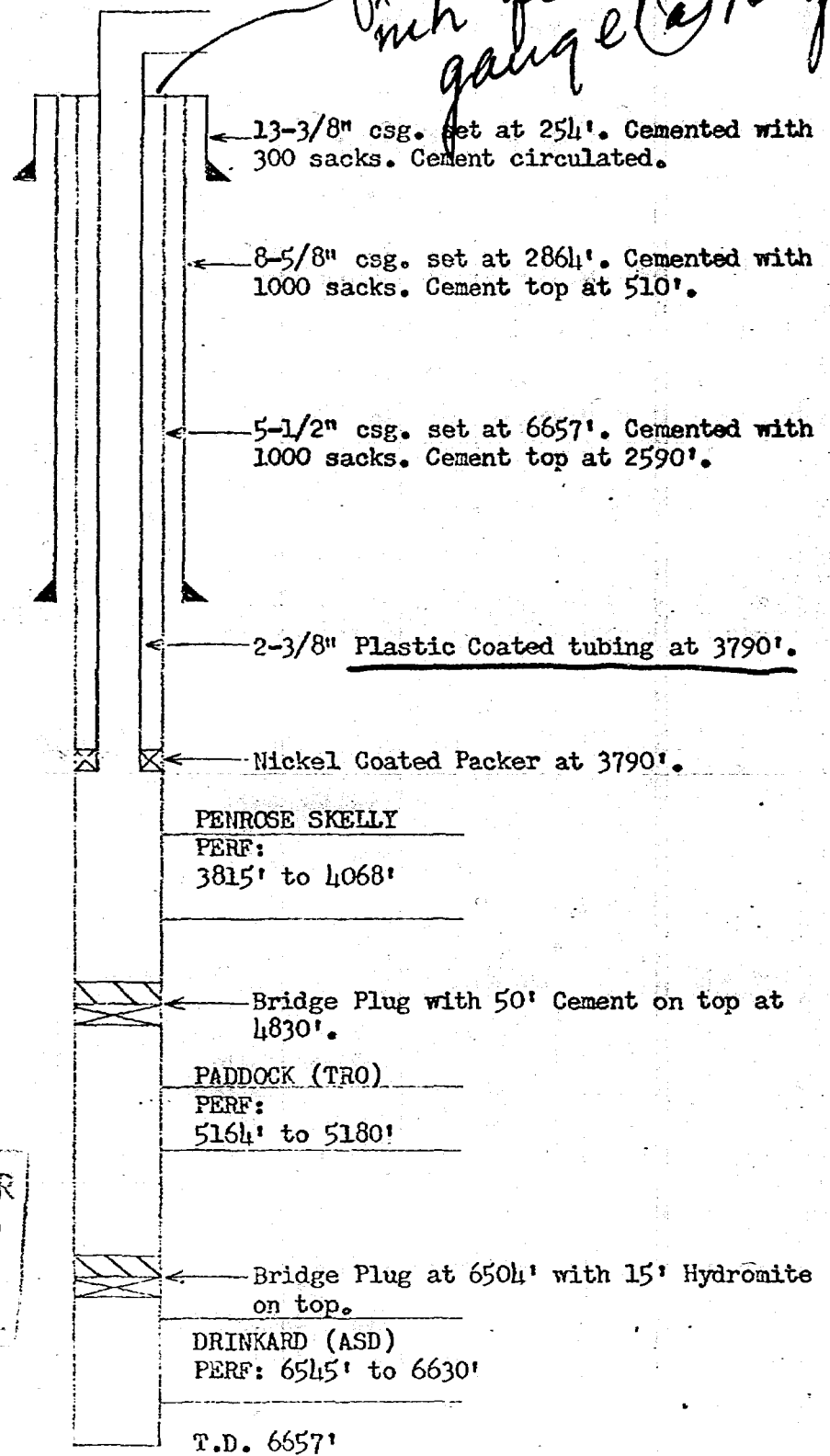
CASE 5195: Application of J. M. Huber Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests, including those of Harry V. Allen or his devisees, underlying the E/2 of the SE/4 of Section 21, Township 12 South, Range 37 East, Southwest Gladiola-Devonian Pool, Lea County, New Mexico. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5196: Application of Kimbell Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling in the wellbore of Blanco-Mesa-verde and Basin-Dakota gas production in its Warren Federal Well No. 3 located in Unit P of Section 26 and in its Salazar Federal Well No. 3 located in Unit H of Section 27, and Otero-Callup Oil and Basin-Dakota gas production in its Warren-Salazar Well No. 2 located in Unit M of Section 26, all in Township 25 North, Range 6 West, Rio Arriba County, New Mexico.

CASE 5197: Application of Skelly Oil Company for a waterflood project and a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Seven Rivers-Queen formation in its J. C. Johnson Well No. 4 located in Unit D of Section 20, Township 23 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico. Applicant further seeks authority to dually complete said well for water injection and for the production of gas from the Jalmat Gas Pool. Applicant also seeks an administrative procedure for said project for approval of additional injection wells without notice and hearing.

- CASE 5198: Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Grayburg formation in the perforated interval from 3815 feet to 4068 feet in its V. M. Henderson Well No. 3 located in Unit H of Section 30, Township 21 South, Range 37 East, Penrose Skelly Pool, Lea County, New Mexico.
- CASE 5199: Application of Wm. G. Ross for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to the Atoka-Pennsylvanian Gas Pool Rules, authority to drill a gas well 1650 feet from the South line and 660 feet from the East line of Section 10, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, the E/2 of said Section 10 to be dedicated to the well.
- CASE 5200: Application of Monsanto Company for a triple completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the triple completion (conventional) of its Wilderspin Well No. 1 located in Unit F of Section 11, Township 21 South, Range 27 East, Burton Flats Field, Eddy County, New Mexico, in such a manner as to produce gas from the Wolfcamp, Strawn, and Morrow formations through three parallel strings of tubing.

*filled w/ 1 1/2" fl w/ gauge @ surf*



BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
TEXACO EXHIBIT NO. 2  
CASE NO. 5198

Proposed Salt Water Disposal Completion  
TEXACO INC.  
V.M. HENDERSON WELL NO. 3  
PENROSE SKELLY POOL  
IEA COUNTY, NEW MEXICO



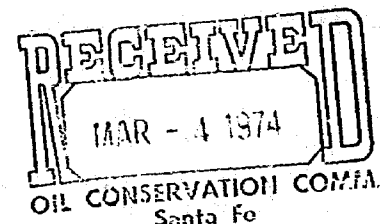
PETROLEUM PRODUCTS

March 1, 1974

TEXACO INC.  
DRAWER 728  
HOBBS, NEW MEXICO 88240

*Case 5198*

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



Re: Request for Examiner Hearing  
for Salt Water Disposal  
V. M. Henderson Well No. 3  
Penrose Skelly Pool  
Lea County, New Mexico

Gentlemen:

It is requested that an examiner hearing be scheduled to consider the application of Texaco Inc. for disposal of produced water in the Penrose Skelly Pool, Lea County, New Mexico.

At this hearing, Texaco will request permission to dispose of produced water into the V. M. Henderson Well No. 3 located in Unit H, Section 30, Township 21 South, Range 37 East, Lea County, New Mexico. Disposal will be via plastic coated tubing into perforations from 3,815' to 4,068'. The initial disposal rate will be approximately 300 barrels of water per day.

Enclosed with this request are three copies of a plat of the area showing the proposed salt water disposal well, three copies of a diagrammatic sketch of the proposed disposal well and three copies of a log.

Yours very truly,

*J. V. Gannon*  
J. V. GANNON  
District Superintendent

JBS-ks  
cc: NMOCC -- Hobbs  
MAS, Jr.  
JSR  
Enclosures

DOCKET MAILED

Date 3/14/74

DRAFT

jr/

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. 5198

Order No. R- 4762

APPLICATION OF TEXACO INC.  
FOR SALT WATER DISPOSAL,  
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

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at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this \_\_\_\_\_ day of April, 1974, 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.,  
is the owner and operator of the V.M. Henderson Well No. 3,  
located in Unit H of Section 30, Township 21 South, Range  
37 East, NMPM, Penrose Skelly Pool, Lea  
County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Grayburg  
formation, with injection into the perforated interval  
from approximately 3815 feet to 4068 feet.

(4) That the injection should be accomplished through  
2 3/8-inch plastic-lined tubing installed in a packer set at

CASE No. 5198

approximately 3790 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer.

(5) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(6) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc.,  
is hereby authorized to utilize its V.M. Henderson Well No. 3,  
located in Unit H of Section 30, Township 21 South, Range  
37 East, NMPM, Penrose Skelly Pool, Lea  
County, New Mexico, to dispose of produced salt water into the  
Grayburg formation, injection to be accomplished through  
2 3/8-inch tubing installed in a packer set at approximately  
3790 feet, with injection into the perforated interval  
from approximately 3815 feet to 4068 feet;

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(2) That the applicant shall submit monthly reports of its  
disposal operations in accordance with Rules 704 and 1120 of the  
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(3) That the operator shall immediately notify the  
supervisor of the Commission's Hobbs District Office of the  
failure of the tubing, casing, or packer in said well or the  
leakage of water from or around said well and shall take such  
steps as may be timely or necessary to correct such failure or  
leakage.

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