

CASE 5296: Appli. of TEXACO INC.  
for downhole commingling, Lea  
County, New Mexico.

CASE No.

5296

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Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 21, 1974

EXAMINER HEARING

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

)  
) Application of Texaco, Inc., )  
) for downhole commingling, )  
) Lea County, New Mexico. )  
)  
-----)

Case No. 5296

BEFORE: Richard L. Stamets, 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 Building  
Santa Fe, New Mexico

For the Applicant:

Ken Bateman, Esq.  
WHITE, KOCH, KELLY &  
McCARTHY  
220 Otero  
Santa Fe, New Mexico

CASE 5296

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I N D E X

PAGE

EUGENE CRAIG HINRICH

Direct Examination by Mr. Bateman

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E X H I B I T S

Applicant's Exhibits Nos. 1 through 7

10

HINRICHS-DIRECT

MR. STAMETS: Case No. 5296.

MR. CARR: Case 5296. Application of Texaco, Inc., for downhole commingling, Lea County, New Mexico.

MR. STAMETS: We call for appearances in this case.

MR. BATEMAN: Mr. Examiner, I am Ken Bateman of White, Koch, Kelly and McCarthy, appearing for the Applicant, Texaco. I have one witness and I request that he be sworn.

MR. STAMETS: Are there any other appearances? The witness will stand and be sworn, please.

(Witness sworn.)

EUGENE CRAIG HINRICHS

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

DIRECT EXAMINATION

BY MR. BATEMAN:

Q Would you state your full name, your place of employment and the capacity in which you are employed?

A My name is Eugene Craig Hinrichs. I am a Division Production Engineer for Texaco, Incorporated, located in Hobbs, New Mexico.

Q Mr. Hinrichs, have you previously testified before

HINRICHS-DIRECT

the Commission, and have you made your credentials a matter of record?

A Yes, I have.

MR. BATEMAN: Is the witness qualified?

MR. STAMETS: Yes, he is.

BY MR. BATEMAN:

Q Mr. Hinrichs, would you refer to Exhibit 1, identify it and state what Texaco seeks by its Application?

A Exhibit No. 1 is a plat of the area in question. Texaco seeks approval for downhole commingling the Vacuum-Upper Penn with the present commingled North Vacuum-Abo and North Vacuum-Wolfcamp Pool in the New Mexico "Q" State Well No. 4. The well is located 760 feet from the east line and 500 feet from the south line in Section 25, Township 17 South, Range 34 East. The well is designated by the red arrow. The lease is outlined in yellow.

Q Mr. Hinrichs, what other data do you have on Exhibit 1?

A This shows wells in the surrounding area that are completed in these same zones. They are designated by color which is shown at the bottom of the map. I would like to point out, too, that we have one well that is downhole commingled in these three zones. It is Texaco

HINRICHS-DIRECT

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Mobil State Well, No. 1, which is two locations north of the subject well.

Q I believe you testified that two of the zones are presently commingled in Well No. 4?

A That's correct.

Q Would you continue, then, with Exhibit No. 2 and identify it and discuss it?

A Exhibit 2 is a data sheet for wellbore commingling which shows the present reservoir information for the subject well, all zones to be commingled. As you can see from this, the Vacuum-Abo North and the Vacuum-Wolfcamp zones are being rod-pumped and the Vacuum-Penn is now flowing, but bottomhole pressure information indicates that we need to put this well on pump. So, if we get the commingling, it will be produced by rod pump in all three

~~zones. Also, the bottomhole pressure information indicates~~  
that the bottomhole pressure is relatively the same for each zone as far as the gradient, and the well will be kept pumped down so there will be no cross flow from one to another.

Also, all three crudes are sweet, gravities are the same, which would indicate that there will be no compatibility problems. The price of the crude oil is the

same for all three zones. so there will be no decrease in the price of crude as a result of the commingling. Also, the zones are commingled in the Texaco-Mobil, as I pointed out before, and we have had no detrimental effects due to that.

Our gas production will be below the allowable limits, so there will be no curtailed oil production due to over-produced gas.

Q Do you expect any increase in production if these zones are commingled?

A Yes, we expect an increase of ten barrels a day from the Penn as a result of putting it on rod pump.

Q Proceed with what has been marked as Exhibit No. 3 and identify it?

A Exhibit 3 is a present completion of the well. It is currently downhole commingled -- well, it was originally a triple completion in the Abo, Wolfcamp and Penn, as authorized by Oil Conservation Commission Order MC-1520 which was amended -- this was issued December 26, 1963. The Abo and Wolfcamp were downhole commingled which was authorized by Order 3946.

Q Is that R-3946?

A Yes. The Abo and Wolfcamp are currently being



HINRICHS-DIRECT

Page.....7

pumped out of Wolfcamp string and the Penn is being flowed out of a string by itself. The Wolf currently has 13 and 3/8 inch casing set at 385 feet, cemented with 400 sacks of cement and cement circulated. The intermediate string is 9 and 5/8 inch casing set at 4799, cemented with 1700 sacks of cement circulated. There are two strings of 2 and 7/8 inch casing set at 10,176, 10,150 and 11,468. These three strings were cemented with 2500 sacks of cement. The total depth of the well is 12,285. It was originally a Devonian test which was dry. Cement plugs were set in open holes at 12,285, 11,468 and completed as the present triple completion.

Exhibit No. 4 is the proposed completion after commingling. We will communicate the Wolfcamp and Penn strings in the Penn zone and pump the three zones out of the Penn string. This will allow for venting of gas out of the Abo and Wolfcamp strings and pumping from the Penn. We have had good results in other downhole commingling where we have been able to set the pump low and vent gas out of off-strings.

Q Mr. Hinrichs, will commingling of the three zones eliminate expense to Texaco?

A Yes, it will, but Penn needs now to be placed on

HINRICHS-DIRECT

rod pump, and by allowing us to commingle this zone, we could use the pump that is presently pumping the Wolfcamp to pump the Penn. It will eliminate one extra pumping unit.

Q Do you have accumulative production data on these zones?

A I have the decline curves for the last nine years. I don't have the cumulatives.

I would like to point out that if we are able to downhole commingle these zones by having one pumping unit instead of two, we will be able to recover an additional 700 barrels of oil. Also, these decline curves show that production is on stable decline so that an allocation could be made for the three zones so that the production can be split, and based on present tests, our proposed allocation would be 7 percent to the Abo North, 18 percent to the Wolfcamp and 75 percent to the Penn. Now, we would recommend that the well be tested for a period of approximately 30 days to see if it exceeds 40 barrels a day, which if these allocations are based on present tests, and any increased production it would have would be due to an increase in the Pennsylvanian as a result of putting it on rod, so these should be recalculated based on the actual test of the well.

HINRICHS-DIRECT

Q The performance curves you are referring to are marked Exhibits 5, 6 and 7, is that correct?

A Yes.

Q What is the lease ownership involved here?

A It is 100 percent Texaco and the royalty is common.

Q Is it a State lease?

A Yes.

Q I take it from your testimony, therefore, that approval of the Application will eliminate expense to Texaco and allow recovery of additional oil. Do you think there will be any adverse effects to correlative rights?

A No.

Q And I assume that your opinion is that waste will be prevented?

A Yes, it will. We will have additional recovery of reserves.

Q Were Exhibits 1 through 7 prepared by you or under your direction?

A Yes, they were.

MR. BATEMAN: I offer Exhibits 1 through 7 at this time.

MR. STAMETS: Without objection, Exhibits 1 through

HINRICHS-DIRECT

7 will be admitted.

(Whereupon, Applicant's Exhibits Nos. 1 through 7 were marked for identification and admitted into evidence.)

MR. BATEMAN: I have no further direct.

MR. STAMETS: Are there any questions of this witness? He may be excused.

(Witness dismissed.)

MR. STAMETS: Is there anything further in this case? We will take the case under advisement.

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.

COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5296 heard by me on Aug 21, 1934.

*Frederick J. Thomas*, Examiner  
New Mexico Oil Conservation Commission



## OIL CONSERVATION COMMISSION

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

I. R. TRUJILLO  
CHAIRMAN  
LAND COMMISSIONER  
ALEX J. ARMJO  
MEMBER  
STATE GEOLOGIST  
A. L. PORTER, JR.  
SECRETARY - DIRECTOR

September 17, 1974

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

Re: CASE NO. 5296  
ORDER NO. R-4859  
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 \_\_\_\_\_  
\_\_\_\_\_

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. 5296  
Order No. R-4859

APPLICATION OF TEXACO INC. FOR  
DOWNHOLE COMMINGLING, LEA  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 21, 1974, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 17th day of September, 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 New Mexico "Q" State Well No. 4, located in Unit P of Section 25, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.
- (3) That the applicant seeks authority to commingle Vacuum-Upper Pennsylvanian production with the presently commingled North Vacuum-Abo and North Vacuum-Wolfcamp production in the wellbore of the above-described well.
- (4) That from the Vacuum-Upper Pennsylvanian zone, the subject well is capable of marginal production only.
- (5) That from the North Vacuum-Abo zone, the subject well is capable of low marginal production only.
- (6) That from the North Vacuum-Wolfcamp zone, the subject well is capable of low marginal production only.
- (7) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not vdate correlative rights.

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CASE NO. 5296  
Order No. R-4859

(8) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(9) That in order to properly allocate the commingled production to each of the commingled zones in the subject well, 10 percent of the commingled production should be allocated to the North Vacuum-Abo zone, 20 percent of the commingled production should be allocated to the North Vacuum-Wolfcamp zone and 70 percent of the commingled production should be allocated to the Vacuum-Upper Pennsylvanian zone unless subsequent testing should show that these percentages should be modified.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to commingle Vacuum-Upper Pennsylvanian, North Vacuum-Abo and North Vacuum-Wolfcamp production in its New Mexico "Q" State Well No. 4, located in Unit P of Section 25, Township 17 South, Range 34 East, NMPM, Vacuum Field, Lea County, New Mexico, in such a manner as to permit production of commingled oil through one string of 2 7/8-inch casing and the production of all or part of the casinghead gas through one or both of the other strings of 2 7/8-inch casing in said well.

(2) That 10 percent of the commingled production shall be allocated to the North Vacuum-Abo zone, 20 percent of the commingled production shall be allocated to the North Vacuum-Wolfcamp zone, and 70 percent of the commingled production shall be allocated to the Vacuum-Upper Pennsylvanian zone.

PROVIDED HOWEVER, that immediately before and within thirty days after completion of the work necessary to accomplish down-hole commingling of the zones in said well, the operator shall conduct production tests on said well to verify the validity of the production percentages set out above and shall file the results of such test immediately with the Secretary-Director of the Commission;

PROVIDED FURTHER, that the Secretary-Director of the Commission may administratively revise the various percentage rates set out above if the results of the required tests indicate the need for such revision.

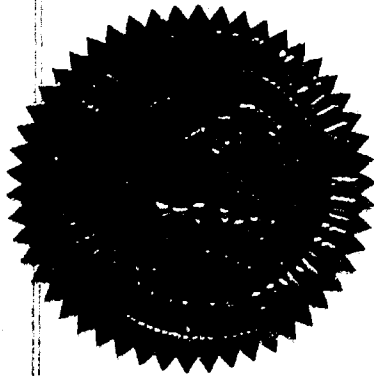
(3) That the operator of the subject well shall immediately notify the Commission's Hobbs District Office any time the well has been shut-in for 7 consecutive days.

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



-3-  
CASE NO. 5296  
Order No. R-4859

DONE at Santa Fe, New Mexico, on the day and year herein-  
above designated.



STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*I. R. Trujillo*  
I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

*A. L. Porter, Jr.*

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

S E A L

jr/

Dockets Nos. 25-74 and 26-74 are tentatively set for hearing on September 4 and September 18. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 21, 1974

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

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

- CASE 5294: Application of Shenandoah Oil Corporation for a buffer zone allowable, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the assignment of a special buffer zone allowable to its Gissler "A" Wells Nos. 1 and 3, located 430 feet from the North line and 1720 feet from the West line, and 1320 feet from the North line and 2310 feet from the West line, respectively, of Section 23, Township 17 South, Range 30 East, Grayburg Jackson Pool, Eddy County, New Mexico. These wells offset an active waterflood project and have received an apparent response to water injection.
- CASE 5295: Application of Amoco Production Company for a non-standard proration unit and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 480-acre non-standard gas proration unit comprising the N/2 and SE/4 of Section 24, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, to be simultaneously dedicated to its Gillully Federal Gas Com Well No. 4 and its Gillully "A" Federal Well No. 7 located in Units B and O, respectively, of said Section 24.
- CASE 5296: Application of Texaco Inc. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Vacuum-Upper Pennsylvanian production with the presently commingled North Vacuum-Abo and North Vacuum-Wolfcamp production in the wellbore in its New Mexico "Q" State Well No. 4 located in Unit P of Section 25, Township 17 South, Range 34 East, Vacuum Field, Lea County, New Mexico.
- CASE 5297: Application of Exxon Corporation for a non-standard proration unit and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 160-acre non-standard gas proration unit comprising the NE/4 of Section 35, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, to be simultaneously dedicated to its Eumont Gas Com 3 Well No. 1 and its Fopeano Federal A/C Well No. 7, located in Units A and G, respectively, of said Section 35.
- CASE 5298: Application of General American Oil Company of Texas for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 29, Township 17 South, Range 29

Docket No. 23-74

DOCKET: COMMISSION HEARING - MONDAY - AUGUST 19, 1974

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

CASE 5262: (DE NOVO)

Application of Petro-Lewis Corporation for pool contraction, creation, and special pool rules, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the Media-Entrada Oil Pool by the deletion of the NW/4 of Section 22, Township 19 North, Range 3 West, Sandoval County, New Mexico, and the creation of a new pool for Entrada production comprising said lands. Applicant further seeks the promulgation of special rules for said pool, including a provision for 160-acre proration units and the establishment of a special depth bracket allowable for said pool of up to 750 barrels per day.

Upon application of Petro-Lewis Corporation, this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 5152: (Reopened) Continued from July 24, 1974 Examiner Hearing

In the matter of Case No. 5152 being reopened pursuant to the provisions of Order No. R-4713, which order established a special depth bracket allowable for the Media-Entrada Oil Pool, Sandoval County, New Mexico. All interested parties may appear and show cause why said special depth bracket allowable should not be rescinded.

ir/

(Case 5298 continued from Page 1)

East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location for said unit. 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.

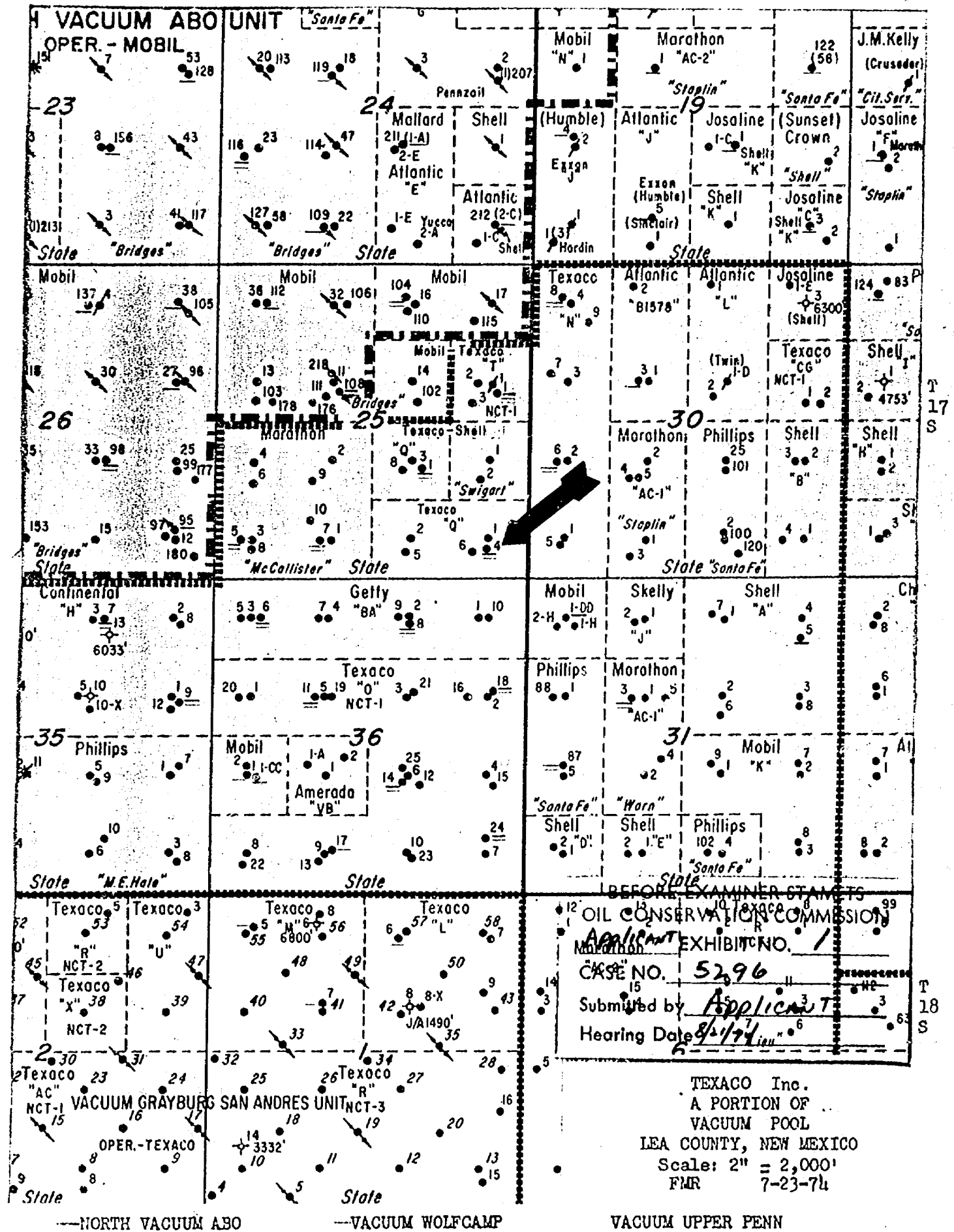
CASE 5299: Application of Coquina Oil Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 23, Township 22 South, Range 25 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location for said unit. 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 5300: Application of Mesa Petroleum Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp formation underlying the SE/4 of Section 7, Township 16 South, Range 36 East, North Shoe Bar-Wolfcamp Pool, Lea County, New Mexico, to be dedicated to a well to be drilled 555 feet from the South line and 2085 feet from the East line of said Section 7. 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 5301: Application of Cleary Petroleum Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Quarry Unit Area comprising 5177 acres, more or less, of Fee and Federal lands in Township 22 South, Range 32 East, Lea County, New Mexico.

R-34-E

R-35-E



DATA SHEET FOR WELLBORE COMMINGLING

Operator: TEXACO Inc.

Address: P. O. Box 728 - Hobbs, New Mexico 88240

Lease and Well No.: New Mexico 'Q' State No. 4

Location: Unit P, Section 25, Township 17 South, Range 34 East

WELL DATA

	Upper Pool	Middle Pool	Lower Pool
Name of Pool	*Vacuum Abo (North)	*Vacuum Wolfcamp	Vacuum Upper Penn
Producing Method	Pump	Pump	Flow
BHP	820 Est.	1140 Est.	1502
Type Crude	Sweet	Sweet	Sweet
Gravity	38.2°	38.2°	38.2°
GOR Limit	2000	2000	2000
Completion Interval	8420'-9251'	9951'-10,005'	10,069'-10,107'
Current Test Date	6-28-74	6-28-74	6-29-74
Oil	3	7	30
Water	1	2	2
GOR	5333	5000	4433
Selling Price of Crude - \$/BBL.	5.27	5.27	5.27
Daily Income - \$/Day	15.81	36.89	158.10

COMMINGLED DATA:

Gravity of Commingled Crude 38.2°

Selling Price of Commingled Crude - \$/BBL. 5.27

~~Daily Income - \$/Day 52.70~~

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

*Applicant* EXHIBIT NO. 2

CASE NO. 5296

Submitted by *Applicant*

Receiving Date 8/12/74

Net (Gain) (Loss) from Wellbore Commingling - \$/Day 52.70 (Production Increase of 10 BOPD) based on current producing rates.

\*Vacuum Abo North & Vacuum Wolfcamp are downhole commingled.

2-7/8" csg. cemented with 2500 sacks. Cement volume is approx. 200% of the theoretical volume of the annular space.

Abo and Wolfcamp commingled downhole. Producing from Wolfcamp string.

ABO (NORTH)  
Perf:  
8420'-9251'

*DN C*  
*ABO & WC*  
*R3946*

WOLFCAMP

ABO

PENN

13-3/8" csg. set at 385'. Cemented with 400 sacks. Cement circulated.

9-5/8" csg. set at 4799'. Cemented with 1700 sacks. Cement circulated.

2-7/8" csg. set at 10,176'.

2-7/8" csg. set at 10,150'.

2-7/8" csg. set at 11,468'.

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 3

CASE NO. 5296

Submitted by Applicant

Hearing Date 8/21/74

WOLFCAMP

Perf:  
9951'-10,005'

PENN

Perf:  
10,069'-10,107'

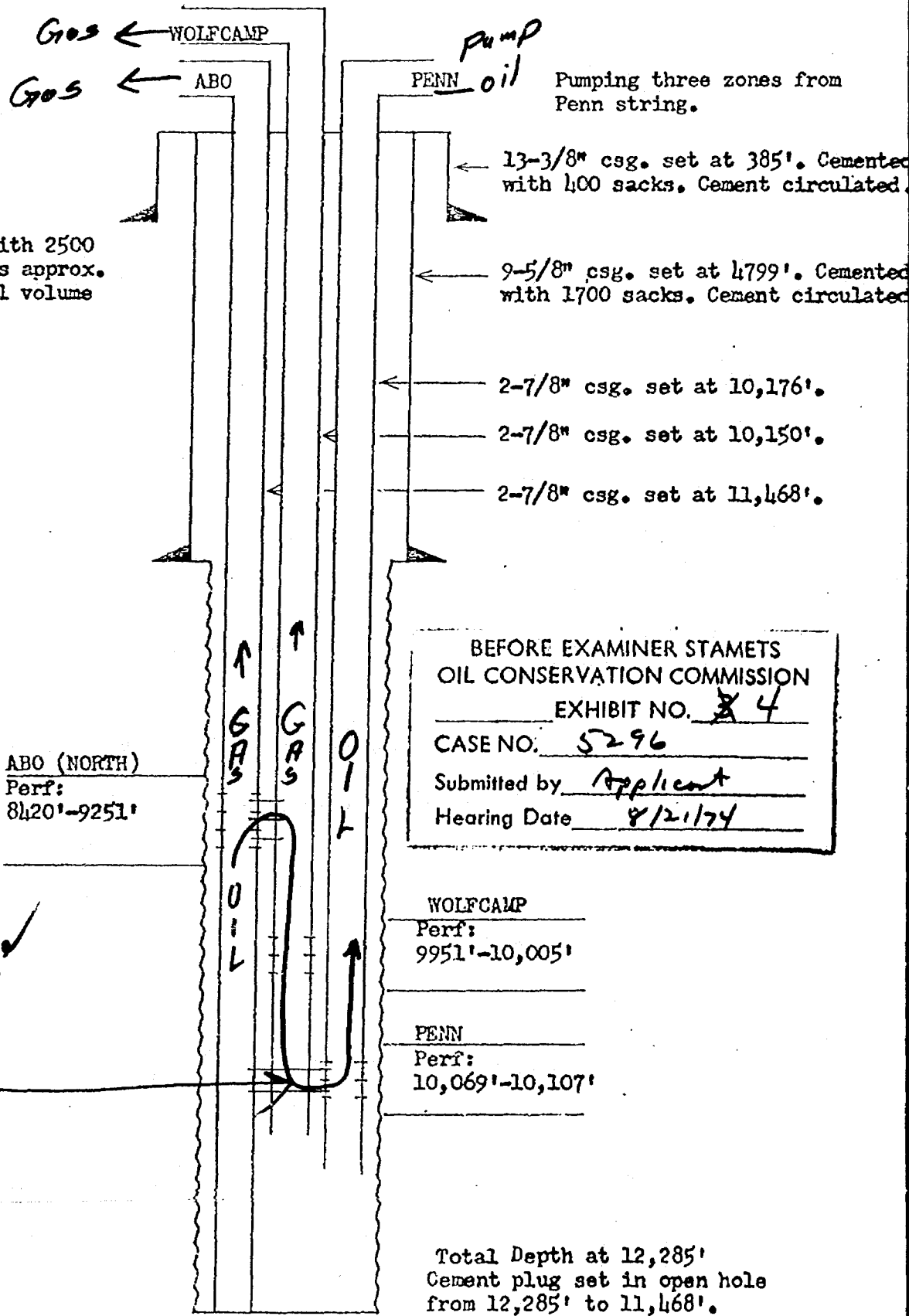
Total Depth at 12,285'  
Cement plug set in open hole  
from 12,285' to 11,468'.

Present Completion  
TEXACO INC.

NEW MEXICO "Q" STATE WELL NO. 4  
VACUUM (N. ABO, WOLFCAMP & PENNSYLVANIAN)  
LEA COUNTY, NEW MEXICO

2-7/8" csg. cemented with 2500 sacks. Cement volume is approx. 200% of the theoretical volume of the annular space.

*Communicate here*



ABO (NORTH)  
Perf:  
8420'-9251'

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 24  
CASE NO. 5296  
Submitted by Applicant  
Hearing Date 8/21/74

WOLFCAMP  
Perf:  
9951'-10,005'

PENN  
Perf:  
10,069'-10,107'

Total Depth at 12,285'  
Cement plug set in open hole  
from 12,285' to 11,468'.

Proposed Completion  
TEXACO INC.  
NEW MEXICO "Q" STATE WELL NO. 4  
VACUUM (N. ABO, WOLFCAMP & PENNSYLVANIAN)  
LEA COUNTY, NEW MEXICO



# TEXACO INC. MIDLAND DIVISION

Performance Curve

NEW MEXICO "Q" STATE NO. 1  
VACUUM ABO NORTH POOL  
LEA COUNTY, NEW MEXICO

DRAWN BY: JBS DATE: 7-18-74

2,000  
9  
8  
7  
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1

OIL PRODUCTION  
BBL/DAY

BEFORE EXAMINER STAMPS  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 5  
CASE NO. Application 5374  
Submitted by Application  
Hearing Date 8/21/74

19 65 19 66 19 67 19 68 19 69 19 70 19 71 19 72 19 73 19 74 19 75

**TEXACO INC.**  
**MIDLAND DIVISION**

Performance Curve  
NEW MEXICO "Q" STATE NO. 4  
VACUUM UPPER PENN POOL  
LEA COUNTY, NEW MEXICO

DRAWN BY: JBS DATE: 7-18-74

OIL PRODUCTION  
BBIS/DAY

Month	Year	Oil Production (BBIS/DAY)
MAR	1965	200
JUN	1965	100
SEP	1965	100
DEC	1965	100
MAR	1966	100
JUN	1966	100
SEP	1966	100
DEC	1966	100
MAR	1967	100
JUN	1967	100
SEP	1967	100
DEC	1967	100
MAR	1968	100
JUN	1968	100
SEP	1968	100
DEC	1968	100
MAR	1969	100
JUN	1969	100
SEP	1969	100
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JUN	1971	100
SEP	1971	100
DEC	1971	100
MAR	1972	100
JUN	1972	100
SEP	1972	100
DEC	1972	100
MAR	1973	100
JUN	1973	100
SEP	1973	100
DEC	1973	100
MAR	1974	100
JUN	1974	100
SEP	1974	100
DEC	1974	100
MAR	1975	100
JUN	1975	100
SEP	1975	100

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 6  
CASE NO. 5296  
Submitted by Applicant  
Hearing Date 8/21/74

Performance Curve  
NEW MEXICO "Q" STATE NO. 4  
VACUUM UPPER PENN POOL  
LEA COUNTY, NEW MEXICO

DRAWN BY: JBS DATE: 7-18-74

OIL PRODUCTION  
BBLs/DAY

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 6

CASE NO. 5296

Submitted by Applicant

Hearing Date 8/21/77

1000

# TEXACO INC. MIDLAND DIVISION

Performance curve

NEW MEXICO "Q" STATE NO. 4  
VACUUM WOLF CAMP POOL  
LEA COUNTY, NEW MEXICO

DRAWN BY: JBS DATE: 7-18-74

100

OIL PRODUCTION  
BBL/DAY

10

1

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 7  
CASE NO. Applicant 5296  
Submitted by Applicant  
Hearing Date 8/21/74

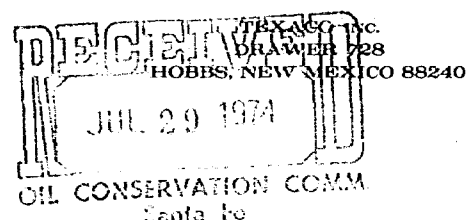
19 65	19 65	19 67	19 68	19 69	19 70	19 71	19 72	19 73	19 74	19 75
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PETROLEUM PRODUCTS

July 26, 1974

Case 5296



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

Re: REQUEST FOR EXAMINER HEARING  
Application for Downhole Commingling  
New Mexico 'Q' State Well No. 4  
Vacuum (Abo North, Wolfcamp and  
Upper Pennsylvanian) Pools  
Lea County, New Mexico

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

Gentlemen:

It is requested that an Examiner Hearing be scheduled to consider Texaco's application to downhole commingle the Vacuum (Upper Pennsylvanian) with the presently commingled Vacuum (Abo North and Wolfcamp) Pools in the New Mexico 'Q' State Well No. 4 located in Unit P, Section 25, Township 17 South, Range 34 East, Lea County, New Mexico.

By copy of this application the U.S.G.S. and all offset operators are notified of Texaco's proposal.

Your cooperation in this matter will be appreciated.

Yours very truly,

  
J. V. Gannon  
District Superintendent

JBS-BH

MAS, Jr.  
JSR  
NMOCC-Hobbs, N.M.  
U.S.G.S.-Hobbs, N.M.  
Offset Operators

DOCKET MAILED

8-9-74

# DATA SHEET FOR WELLBORE COMMINGLING

Operator: TEXACO Inc.

Address: P. O. Box 728 - Hobbs, New Mexico 88240

Lease and Well No.: New Mexico 'Q' State No. 4

Location: Unit P, Section 25, Township 17 South, Range 34 East

## WELL DATA

	Upper Pool	Middle Pool	Lower Pool
Name of Pool	*Vacuum Abo (North)	*Vacuum Wolfcamp	Vacuum Upper Penn
Producing Method	Pump	Pump	Flow
BHP	820 Est.	1140 Est.	1502
Type Crude	Sweet	Sweet	Sweet
Gravity	38.2°	38.2°	38.2°
GOR Limit	2000	2000	2000
Completion Interval	8420'-9251'	9951'-10,005'	10,069'-10,107'
Current Test Date	6-28-74	6-28-74	6-29-74
Oil	3	7	30
Water	1	2	2
GOR	5333	5000	4433
Selling Price of Crude - \$/BBL.	5.27	5.27	5.27
Daily Income - \$/Day	15.81	36.89	158.10

## COMMINGLED DATA:

Gravity of Commingled Crude 38.2°

Selling Price of Commingled Crude - \$/BBL. 5.27

Daily Income - \$/Day 263.50

Net (Gain) (Loss) from Wellbore Commingling - \$/Day 52.70 (Production Increase of 10 POPD)  
based on current producing rates.

\*Vacuum Abo North & Vacuum Wolfcamp are downhole commingled.

**NEW MEXICO OIL CONSERVATION COMMISSION  
GAS-OIL RATIO TESTS**

C-116  
Revised 1-1-65

Operator <b>TEXACO Inc.</b>				Pool <b>Vacuum Upper Penn</b>				County <b>Lea</b>								
Address <b>P.O. Box 728 - Hobbs, New Mexico 88240</b>							TYPE OF TEST - (X) <b></b>		Scheduled <input type="checkbox"/>		Completion <input type="checkbox"/>		Special <input checked="" type="checkbox"/>			
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST				GAS - OIL RATIO CU.FT./BBL.
		U	S	T	R							WATER BBLs.	GRAV. OIL	OIL BBLs.	GAS M.C.F.	
New Mexico 'Q' State	4	P	25	17S	34E	6-29-74	F	1"		41	24	2	38.2	30	133	4433

No well will be assigned an allowable greater than the amount of oil produced on the official test.

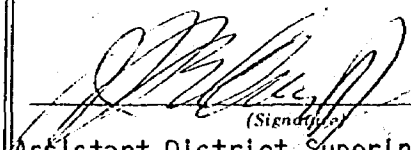
During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15,025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

  
 (Signature)  
**Assistant District Superintendent**  
 (Title)  
**July 5, 1974**  
 (Date)

NEW MEXICO OIL CONSERVATION COMMISSION  
GAS-OIL RATIO TESTS

C-116  
Revised 1-1-65

Operator <b>TEXACO Inc.</b>		Pool <b>Vacuum Wolfcamp</b>				County <b>Lea</b>										
Address <b>P. O. Box 728 - Hobbs, New Mexico 88240</b>						TYPE OF TEST - (X)		Scheduled <input type="checkbox"/>		Completion <input type="checkbox"/>		Special <input checked="" type="checkbox"/>				
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST				GAS - OIL RATIO CU. FT./BDL.
		U	S	T	R							WATER BBLs.	GRAV. OIL	OIL BBLs.	GAS M.C.F.	
New Mexico 'Q' State	4	P	25	17S	34E	6-28-74	P			12	24	2	38.2	7	35	5000

No well will be assigned an allowable greater than the amount of oil produced on the official test.

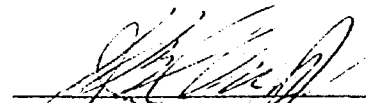
During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

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I hereby certify that the above information is true and complete to the best of my knowledge and belief.

  
(Signature)  
Assistant District Superintendent  
(Title)  
July 5, 1974  
(Date)

NEW MEXICO OIL CONSERVATION COMMISSION  
GAS-OIL RATIO TESTS

C-116  
Revised 1-1-65

Operator <b>TEXACO Inc.</b>		Pool <b>Vacuum Abo North</b>				County <b>Lea</b>										
Address <b>P.O. Box 728 - Hobbs, New Mexico 88240</b>						TYPE OF TEST - (X) <input checked="" type="checkbox"/>		Scheduled <input type="checkbox"/>		Completion <input type="checkbox"/>		Special <input checked="" type="checkbox"/>				
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	STATUS	CHOKE SIZE	T.B.G. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST				GAS - OIL RATIO CU.FT/BBL
		U	S	T	R							WATER BBLs.	GRAV. OIL	OIL BBLs.	GAS M.C.F.	
New Mexico 'Q' State	4	P	25	17-S	34-E	6-28-74	P			5	24	1	38.2	3	16	5333

No well will be assigned an allowable greater than the amount of oil produced on the official test.

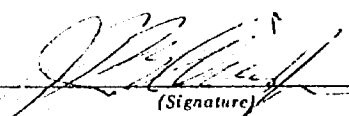
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Report casing pressure in lieu of tubing pressure for any well producing through casing.

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I hereby certify that the above information is true and complete to the best of my knowledge and belief.

  
(Signature)  
Assistant District Superintendent  
(Title)  
July 5, 1974  
(Date)





# COLEMAN PETROLEUM ENGINEERING COMPANY

PHONE EXPRESS 3-3813  
611 GRIMES  
P O BOX 1829  
HOBBS, NEW MEXICO

## BOTTOM HOLE PRESSURE RECORD

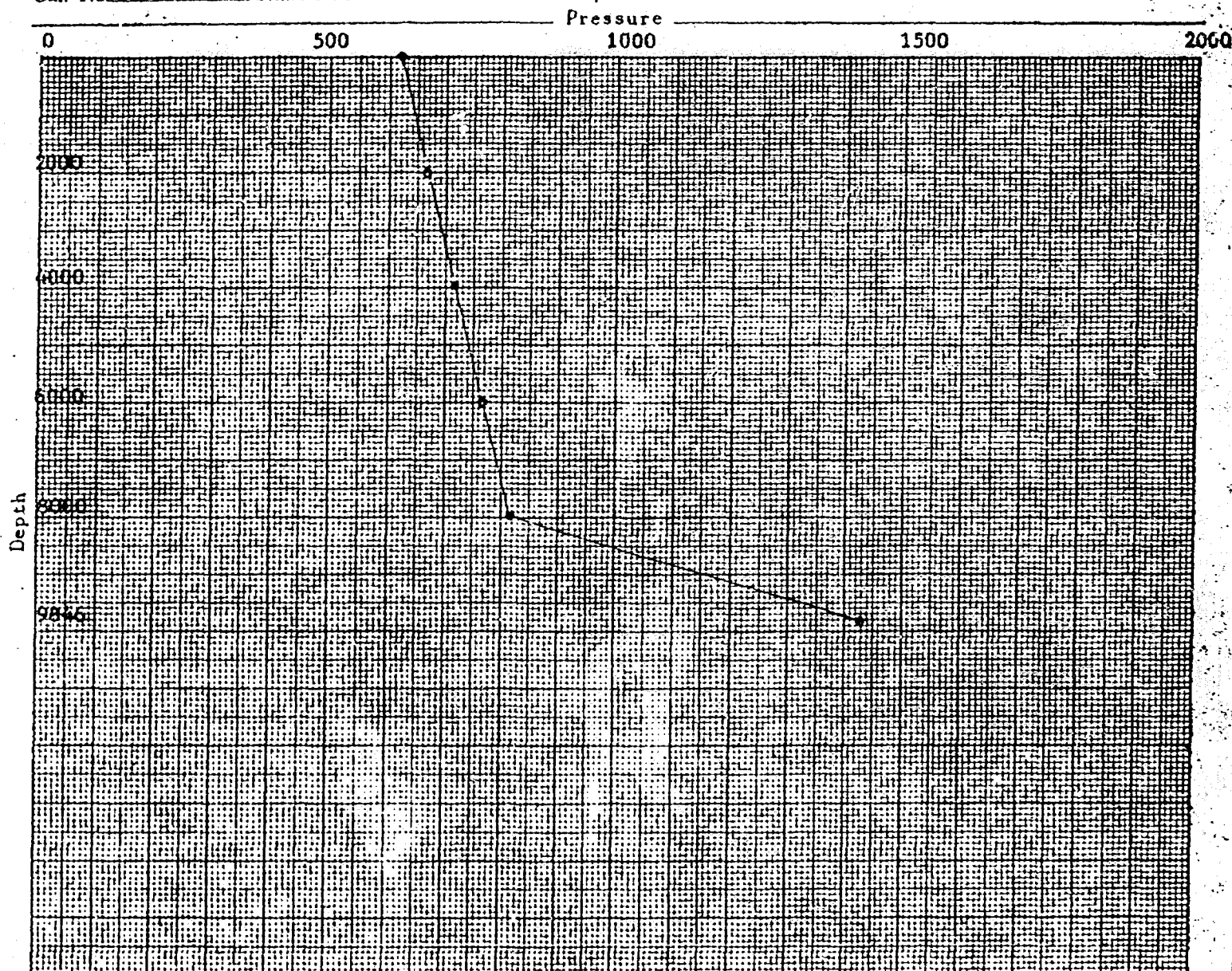
OPERATOR Texaco, Inc.  
FIELD Vacuum FORMATION Penn  
LEASE New Mexico State Q WELL No. 4  
COUNTY Lea STATE New Mexico  
DATE 7-20-74 TIME 3:00 Pm  
Status Shut In Test depth 10088'  
Time S. 124.0 Hrs Last test date -  
Tub Pres. 620 BHP last test -  
Gas. Pres. - BHP change -  
Elev. 3992' GL Fluid top 8000'  
Datum (-6096') \*\* Water top NONE  
Temp. @ - Run by Adkins  
Cal. No. A2419M Chart No. 2

Depth	Pressure	Gradient
0	620	-
2000	667	.024
4000	715	.024
6000	765	.025
8000	817	.026
9846+	1423	.328
10088(-6096)	1502* **	(.028)

+ Hit obstruction

\* Extrapolated pressure

\*\* Mid point of casing perforations



OFFSET OPERATORS

Getty Oil Company  
P. O. Box 1231  
Midland, Texas 79701

Mobil Oil Corporation  
P. O. Box 1800  
Hobbs, New Mexico 88240

Marathon Oil Company  
P. O. Box 2409  
Hobbs, New Mexico 88240

2-7/8" csg. cemented with 2500 sacks. Cement volume is approx. 200% of the theoretical volume of the annular space.

Abo and Wolfcamp commingled downhole. Producing from Wolfcamp string.

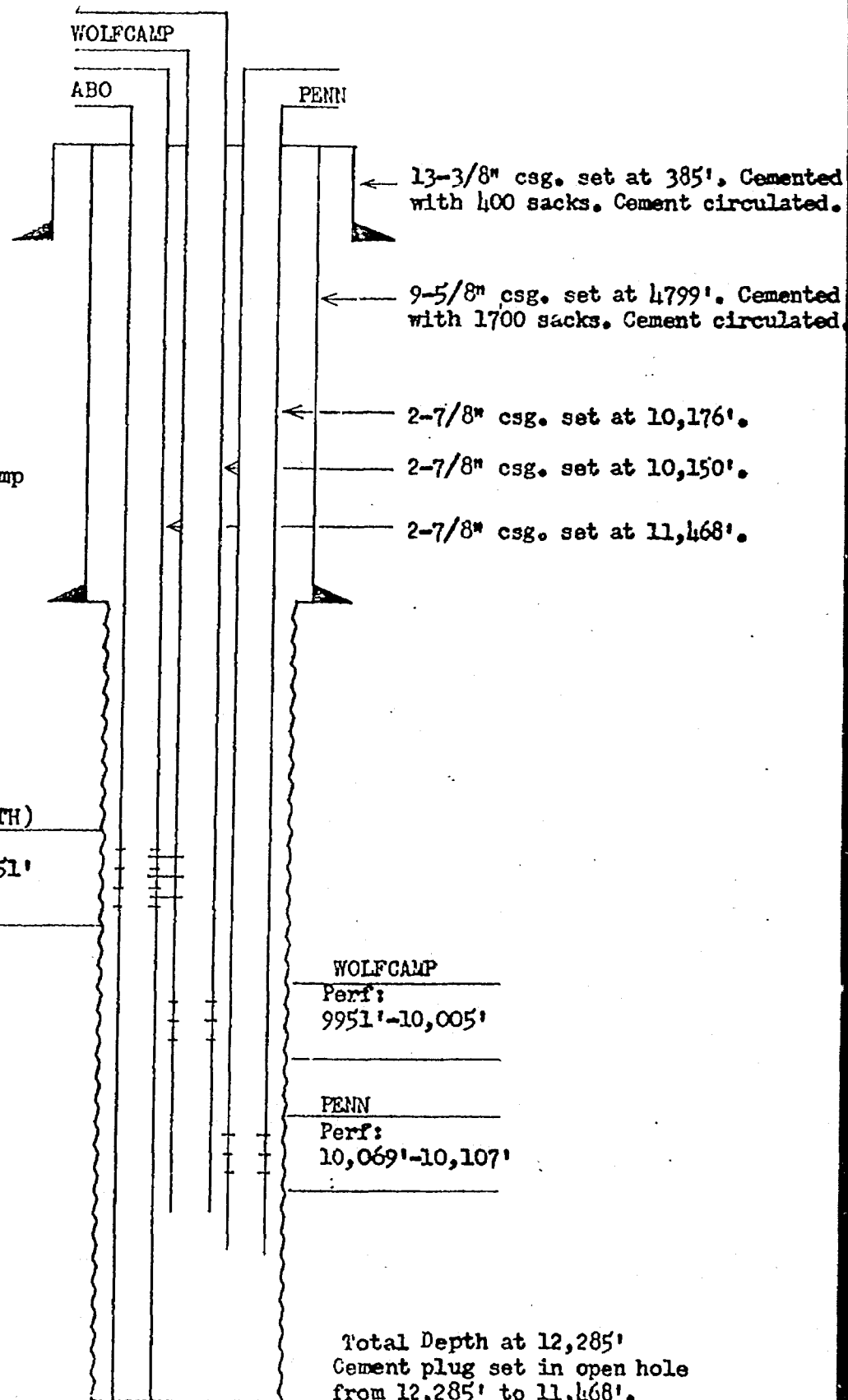
ABO (NORTH)  
Perf:  
8,420'-9,251'

WOLFCAMP  
Perf:  
9,951'-10,005'

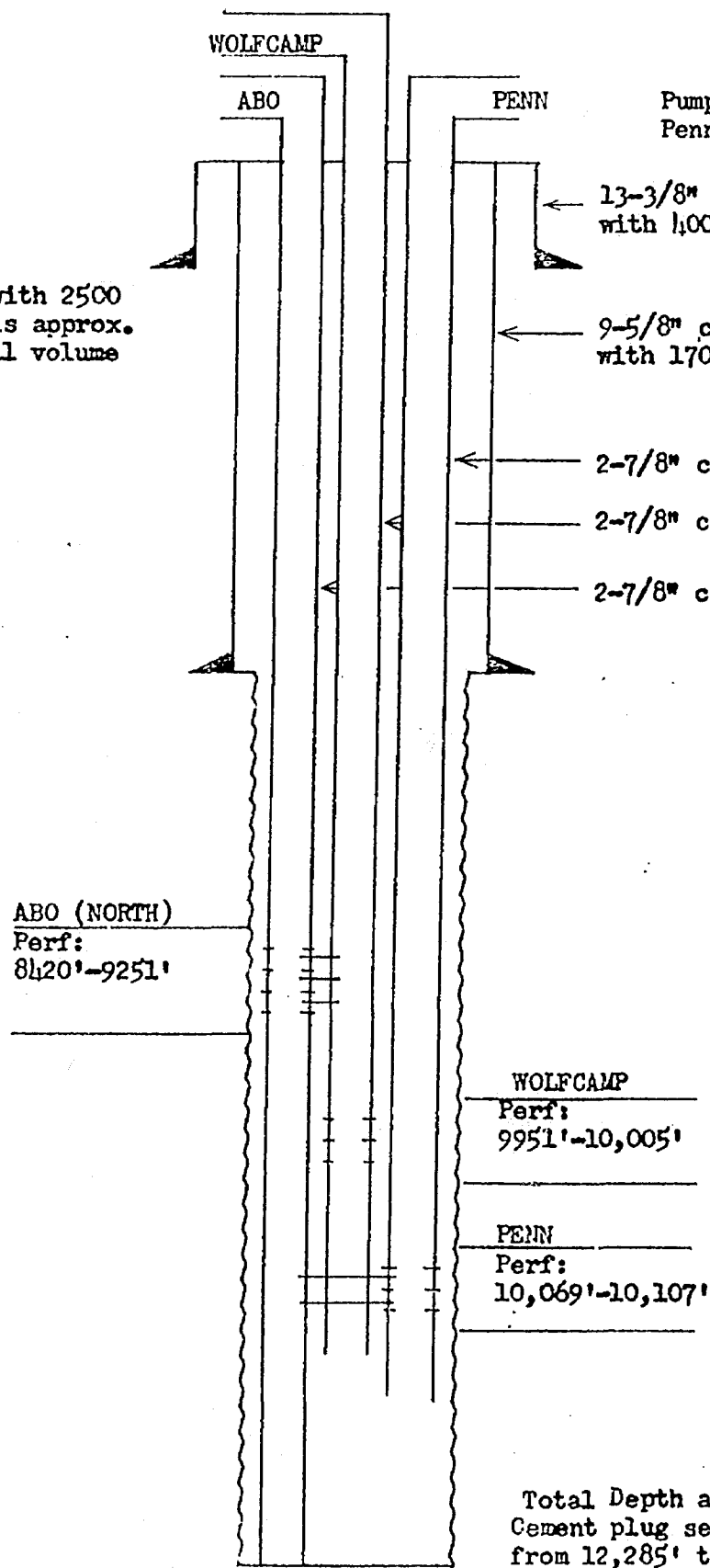
PENN  
Perf:  
10,069'-10,107'

Total Depth at 12,285'  
Cement plug set in open hole  
from 12,285' to 11,468'.

Present Completion  
TEXACO INC.  
NEW MEXICO "Q" STATE WELL NO. 4  
VACUUM (N. ABO, WOLFCAMP & PENNSYLVANIAN)  
LEA COUNTY, NEW MEXICO



2-7/8" csg. cemented with 2500 sacks. Cement volume is approx. 200% of the theoretical volume of the annular space.



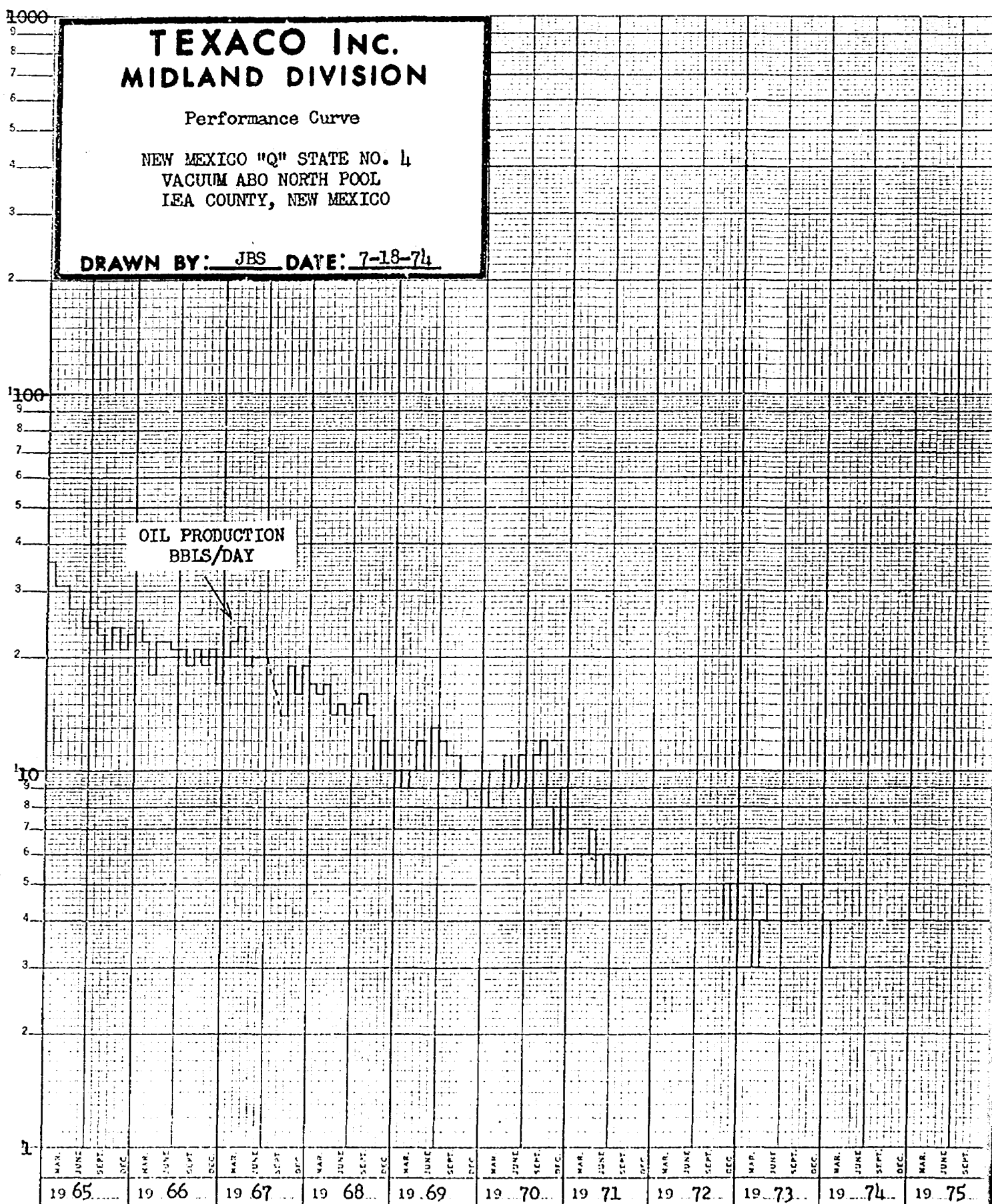
Proposed Completion  
TEXACO INC.  
NEW MEXICO "Q" STATE WELL NO. 4  
VACUUM (N. ABO, WOLFCAMP & PENNSYLVANIAN)  
LEA COUNTY, NEW MEXICO

# TEXACO INC. MIDLAND DIVISION

Performance Curve

NEW MEXICO "Q" STATE NO. 4  
VACUUM ABO NORTH POOL  
IEA COUNTY, NEW MEXICO

DRAWN BY: JBS DATE: 7-18-74



1000

# TEXACO INC. MIDLAND DIVISION

Performance Curve  
NEW MEXICO "Q" STATE NO. 4  
VACUUM UPPER PENN POOL  
LEA COUNTY, NEW MEXICO

DRAWN BY: JBS DATE: 7-18-74

OIL PRODUCTION  
BBLs/DAY

100

10

1

MAR	JUN	SEPT	DEC	MAR	JUN	SEPT	DEC	MAR	JUN	SEPT	DEC	MAR	JUN	SEPT	DEC	MAR	JUN	SEPT	DEC	MAR	JUN	SEPT	DEC	MAR	JUN	SEPT	DEC	MAR	JUN	SEPT	DEC												
19.65				19.66				19.67				19.68				19.69				19.70				19.71				19.72				19.73				19.74				19.75			

1000

8 \_\_\_\_\_  
7 \_\_\_\_\_  
6 \_\_\_\_\_  
5 \_\_\_\_\_  
4 \_\_\_\_\_  
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4 \_\_\_\_\_

3 \_\_\_\_\_

2.

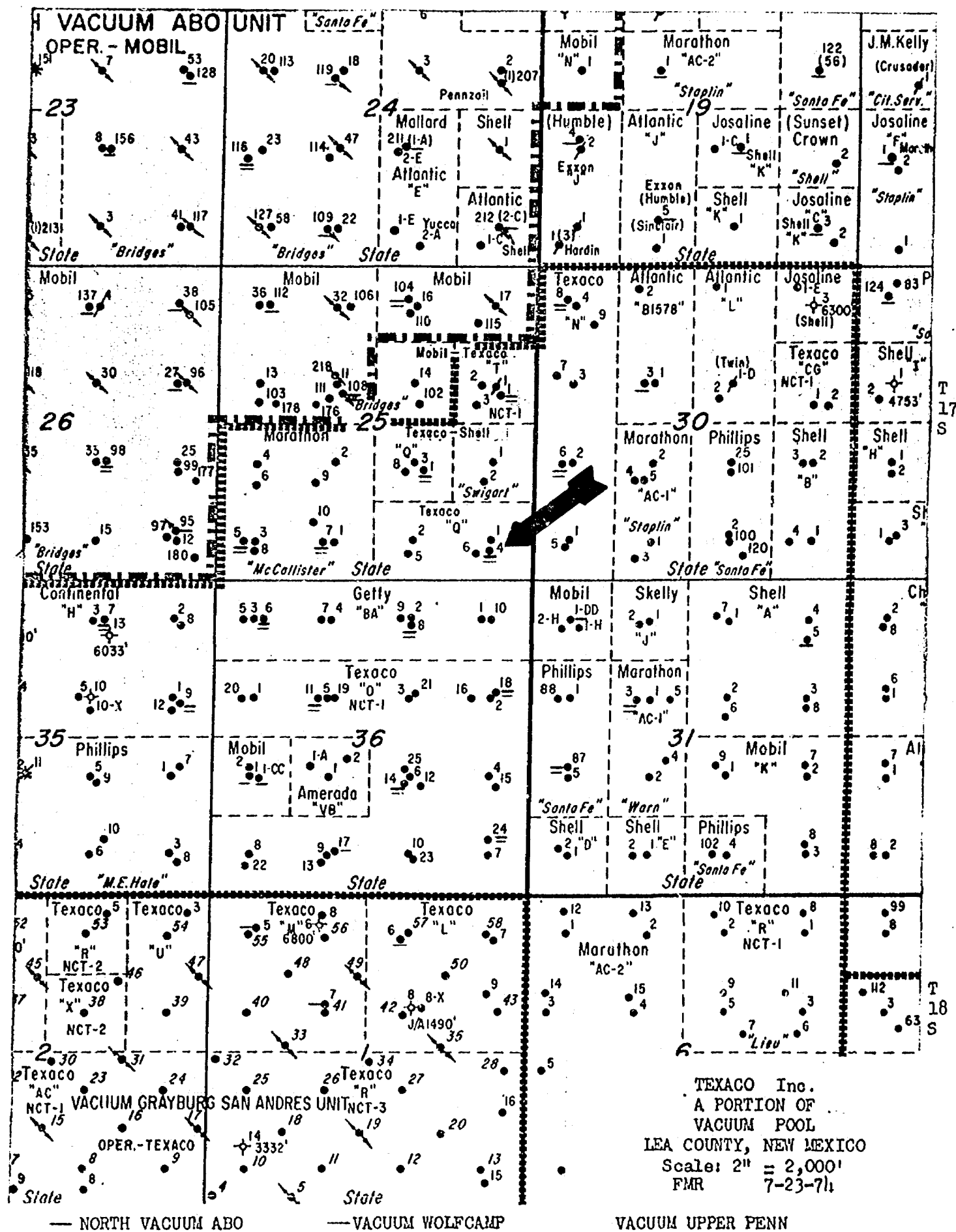
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MAR.	JUNE	SEPT.	DEC.	MAR.	JUNE	SEPT.	DEC.	MAR.	JUNE	SEPT.	DEC.	MAR.	JUNE	SEPT.	DEC.	MAR.	JUNE	SEPT.	DEC.	MAR.	JUNE	SEPT.	DEC.	MAR.	JUNE	SEPT.	DEC.	MAR.	JUNE	SEPT.	DEC.												
19 65				19 66				19 67				19 68				19 69				19 70				19 71				19 72				19 73				19 74				19 75			



R-35-E





DRAFT

dr/

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. 5296

Order No. R-4859

APPLICATION OF TEXACO INC. FOR  
DOWNHOLE COMMINGLING, LEA  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 21, 1974,  
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this day of August, 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 New Mexico "Q" State Well No. 4, located in  
Unit P of Section 25, Township 17 South, Range 34 East, NMPM,  
Lea County, New Mexico.

1           (3) That the applicant seeks authority to commingle Vacuum-  
2 Upper Pennsylvanian production with the presently commingled  
3 North Vacuum-Abo and North Vacuum-Wolfcamp production in the  
4 wellbore of the above-described well.

5           (4) That from the Vacuum-Upper Pennsylvanian zone, the  
6 subject well is capable of marginal production only.

7           (5) That from the North Vacuum-Abo zone, the subject well  
8 is capable of low marginal production only.

9           (6) That from the North Vacuum-Wolfcamp zone, the subject  
10 well is capable of low marginal production only.

11           (7) That the proposed commingling may result in the  
12 recovery of additional hydrocarbons from each of the subject  
13 pools, thereby preventing waste, and will not violate correlative  
14 rights.

15           (8) That the reservoir characteristics of each of the subject  
16 zones are such that underground waste would not be caused by the  
17 proposed commingling provided that the well is not shut-in for  
18 an extended period.

19           (9) That in order to <sup>properly</sup> allocate the commingled production to  
20 each of the commingled zones in the subject well, 10 percent of the  
21 commingled production <sup>should be allocated</sup> to the North Vacuum-Abo zone, 20 percent of  
22 the commingled production <sup>should be allocated</sup> to the North Vacuum-Wolfcamp zone and  
23 70 percent of the commingled production should be allocated to the  
24 Vacuum-Upper Pennsylvanian zone unless subsequent testing should  
25 show that these percentages should be modified.

26           IT IS THEREFORE ORDERED:

27           (1) That the applicant, Texaco Inc., is hereby authorized  
28 to commingle Vacuum-Upper Pennsylvanian, North Vacuum-Abo and  
29 North Vacuum-Wolfcamp production in its New Mexico "Q" State Well  
30 No. 4, located in Unit P of Section 25, Township 17 South, Range 34  
31 East, NMPM, Vacuum Field, Lea County, New Mexico, in such a manner  
32

1 as to permit production of commingled oil through one string of  
2 2 7/8-inch casing and the production of all or part of the  
3 casinghead gas through one or both of the other strings of 2 7/8-  
4 inch casing in said well.

5 (2) That 10 percent of the commingled production shall be  
6 allocated to the North Vacuum-Abo zone, 20 percent of the commingled  
7 production shall be allocated to the North Vacuum-Wolfcamp zone,  
8 and 70 percent of the commingled production shall be allocated to  
9 the Vacuum-Upper Pennsylvanian zone.

10 PROVIDED HOWEVER, that immediately before and within thirty  
11 days after completion of the work necessary to accomplish downhole  
12 commingling of the zones in said well, the operator shall conduct  
13 production tests on said well to verify the validity of the produc-  
14 tion percentages set out above and shall file the results of such  
15 test immediately with the Secretary-Director of the Commission;

16 PROVIDED FURTHER, that the Secretary-Director of the Com-  
17 mission may administratively revise the various percentage rates  
18 set out above if the results<sup>of</sup>/the required test indicate the need  
19 for such revision.

20 (3) That the operator of the subject well shall immediately  
21 notify the Commission's Hobbs District Office any time the well  
22 has been shut in for 7 consecutive days.

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

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

27

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