

CASE 3345: Application of TEXACO
for a waterflood project in its
West Vacuum Unit Area.

CASE NO.

3345

Application,

TRANSCRIPTS,

SMALL Exhibits

ETC.

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

December 10, 1965

C
O
P
Y

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

Dear Mr. White:

Reference is made to Commission Order No. R-3008, recently entered in Case No. 3345, approving Texaco's West Vacuum Unit Waterflood Project.

Injection is to be through the six authorized water injection wells, which shall be equipped with packers and internally plastic-coated tubing.

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 1134 barrels per day.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate District proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e.,

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

December 10, 1965

-2-

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

C
when active injection commences, when additional injection or
producing wells are drilled, when additional wells are acquired
through purchase or unitization, when wells have received a
response to water injection, etc.

O
Your cooperation in keeping the Commission so informed as to the
status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

P
ALP/DSH/ear

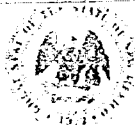
cc: Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico

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

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER



P. O. BOX 2088
SANTA FE

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

December 3, 1965

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

Re: Case No. 3345
Order No. R-3008
Applicant:

Texaco Inc.

Dear Sir:

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.

Very truly yours,

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

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

Other Mr. Frank Irby

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. 3345
Order No. R-3008

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 o'clock a.m. on November 23, 1965, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 3rd day of December, 1965, 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 its West Vacuum Unit Area, Vacuum Pool, by the injection of water into the Grayburg-San Andres formations through six injection wells in Sections 3 and 4, Township 18 South, Range 34 East, and Sections 33 and 34, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.
- (3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper wells.
- (4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

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CASE No. 3345
Order No. R-3008

(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 its West Vacuum Unit Area, Vacuum Pool, by the injection of water into the Grayburg-San Andres formations through the following-described wells in Lea County, New Mexico:

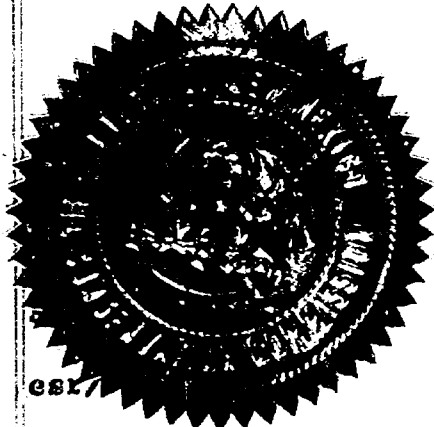
OPERATOR	LEASE	WELL NO.	UNIT	SECTION	TOWNSHIP	RANGE
Sinclair Oil Co.	State "B"	3	A	33	17 South 34 East	NMPM
Texaco Inc.	State "V"	1	C	34	17 South 34 East	NMPM
Texaco Inc.	State "O" (NCT-2)	11	I	33	17 South 34 East	NMPM
Texaco Inc.	State "V"	2	K	34	17 South 34 East	NMPM
Mesa Retailers	State	2	A	4	18 South 34 East	NMPM
Texaco Inc.	State "AA" (NCT-1)	1	C	3	18 South 34 East	NMPM

(2) That the subject waterflood project is hereby designated the West Vacuum Unit 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

Jack M. Campbell
JACK M. CAMPBELL, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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

esl/



PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA 74004

EXPLORATION AND PRODUCTION DEPARTMENT

November 10, 1965

Vacuum (Grayburg) Field, Lea County,
New Mexico -- Proposed West Vacuum Unit

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

Attention Mr. A. L. Porter, Jr.,
Secretary and Director

Gentlemen:

Texaco Inc. has advised all interested parties of its application for approval of the unit agreement and the waterflood program for the proposed West Vacuum Unit, Vacuum (Grayburg) Field, Lea County, New Mexico. This matter is scheduled for hearing on November 23, 1965, under Cases No's. 3344 and 3345.

As a working interest owner in this proposed unit Phillips Petroleum Company concurs in the applicant's proposal and hereby urges approval of the application by the New Mexico Commission.

Yours very truly,

Shofner Smith
Production Director

JRB:dg

cc: Texaco Inc.
P. O. Box 3109
Midland, Texas 79704

NOV 23 1965
AHS

Gulf Oil Corporation

ROSWELL PRODUCTION DISTRICT

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

NOV 23 1965

P. O. Drawer 1938
Roswell, New Mexico 88201.

Oil Conservation Commission
State of New Mexico
Post Office Box 2088
Santa Fe, New Mexico 87501

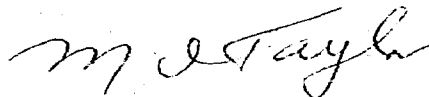
Attention: Mr. A. L. Porter, Jr.

Re: Cases 3344 and 3345
Examiner Hearing November 23, 1965

Gentlemen:

Gulf Oil Corporation as a Working Interest Owner in the proposed West Vacuum Unit, Vacuum (Grayburg) Field, Lea County, New Mexico, concurs with Texaco Inc. in their applications for the subject Cases.

Yours very truly,



M. I. Taylor

JHH:ers

cc: Texaco Inc.
Post Office Box 3109
Midland, Texas 79704
Attention: Mr. T. W. Doyle



DALPORT OIL CORPORATION
3471 FIRST NATIONAL BANK BLDG.
DALLAS, TEXAS 75202

November 8th, 1965

MAIL ROOM
NOV 10 1965

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

Gentlemen:

RE: Proposed West Vacuum Unit
Vacuum (Grayburg) Field
Lea County, New Mexico

Texaco has requested a hearing for the approval of a Unit Agreement and Waterflood Program for the above unit and this hearing has been scheduled before the New Mexico Oil Conservation Commission on November 23rd, 1965.

Dalport has committed its acreage within the boundaries of this unit and requests that you approve the Unit Agreement and Waterflood program.

Yours very truly

DALPORT OIL CORPORATION

W. L. Todd
W. L. Todd, Jr. President

WLTJr:wm
cc: Mr. T. W. Doyle
Asst. Div. Petroleum Engineer
Texaco, Inc
P. O. Box 3109
Midland, Texas

Re: West Vacuum Unit
Vacuum (Grayburg) field
Lea County, New Mexico

Statement to be read into record at Nov. 23, 1965 hearing

Case 3344

Shell Oil Company, as a working interest owner in the proposed West Vacuum Unit, concurs with the Unit Area as proposed by Texaco, Inc., which comprises 2000 acres, more or less, of State Land in T-17-S⁴ R-34-E, Lea County, New Mexico.

ant T-18-S

Case 3345

The Shell Oil Company, as a working interest owner in the proposed West Vacuum Unit, supports Texaco's proposal to institute a waterflood project in the aforementioned unit by injecting water into the Grayburg San Andres formation through six injection wells in Sections 3 and 4, T-18-S, R-34-E and Sections 33 and 34, T-17-S, R-34-E, Lea County, New Mexico.

*Richard D. Saba
Shell Oil Co
Midland, Texas*

Docket No. 33-65

DOCKET: EXAMINER HEARING - TUESDAY - NOVEMBER 23, 1965

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
Elvis A. Utz, Alternate Examiner:

CASE 3294 (Continued from the September 22, 1965, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Harold J. Sechler, dba S. & S. Oil Producers, and all other interested parties to show cause why the Bond Well No. 1 located in the SW/4 NE/4 of Section 17, Township 9 North, Range 14 West, Valencia County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 3333: Application of William A. and Edward R. Hudson for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Queen formation through six wells in Sections 10, 11, and 15, Township 18 South, Range 31 East, Shugart Yates-Seven Rivers-Queen-Grayburg Pool, Eddy County, New Mexico.

CASE 3334: Application of Felmont Oil Corporation for an unorthodox location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Federal 9 Well No. 1 at an unorthodox location 660 feet from the North and East lines of Section 9, Township 8 South, Range 37 East, Bluitt-San Andres Gas Pool, Roosevelt County, New Mexico.

CASE 3335: Application of Monsanto Company for an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox oil well location 1200 feet from the South line and 660 feet from the West line of Section 32, Township 16 South, Range 33 East, West Kemnitz-Lower Wolfcamp Pool, Lea County, New Mexico.

CASE 3336: Application of Shell Oil Company for special rules for the East Hightower-Upper Pennsylvanian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the East Hightower-Upper Pennsylvanian Pool in Section 25, Township 12 South, Range 33 East, Lea County, New Mexico, including a provision for 80-acre proration units.

CASE 3337: Application of Shell Oil Company for the creation of a new gas pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new gas pool for Morrow production in Sections 3 and 4, Township 22 South, Range 34 East, and Section 34, Township 21 South, Range 34 East, Lea County, New Mexico, and the establishment of special pool rules, including a provision for 640-acre spacing units.

November 23, 1965, Examiner Hearing

- CASE 3338: Application of Socony-Mobil Oil Company, Inc. for pool-lease commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Glorieta, Blinbry, Upper-Pennsylvanian, Lower-Pennsylvanian, Devonian, Abo and Wolfcamp production from its State Bridges (Military Institute) Lease in Section 25, Township 17 South, Range 34 East, and from its State Bridges (Common School) Lease in Sections 3, 10 through 15, 22, 23, 24, and 26 and 27, Township 17 South, Range 34 East, Lea County, New Mexico, after separately metering the Military Institute production, allocating production to each lease by means of the subtraction method.
- CASE 3339: Application of Socony-Mobil Oil Company, Inc. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Denton North Wolfcamp Unit Area comprising 2,640 acres, more or less, of Federal and fee lands in Township 14 South, Range 37 East, Lea County, New Mexico.
- CASE 3340: Application of Socony-Mobil Oil Company, Inc. for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Denton North Wolfcamp Unit by the injection of water into the Wolfcamp formation through twelve wells located in Sections 25, 26, 27, 34, 35, and 36, Township 14 South, Range 37 East, Lea County, New Mexico.
- CASE 3341: Application of Tenneco Oil Company for an administrative procedure, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks the establishment of an administrative procedure whereby wells presently completed in the Blanco-Mesaverde Pool could, without notice and hearing, be recompleted in the Blanco-Mesaverde and/or Basin-Dakota Gas Pools by means of setting a whipstock above the Mesaverde producing interval and directionally drilling around the old interval of completion which was originally shot. Operators utilizing such administrative procedure would be required to conduct appropriate deviation tests to ensure that no well would be completed nearer than 200 feet to the outer boundary of its proration unit.
- CASE 3342: Application of Sunray DX Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Grayburg-Jackson Pool, Eddy County, New Mexico, by the injection of water into the Keeley zone of the San Andres formation through four wells in Sections 22 and 23, Township 17 South, Range 29 East.
- CASE 3343: Application of Sunray DX Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Grayburg-Jackson Pool, Eddy County, New Mexico, by the injection of water into the Metex zone of the Grayburg formation through four injection wells in Sections 14 and 15, Township 17 South, Range 29 East.

November 23, 1965, Examiner Hearing

CASE 3344: Application of Texaco Inc. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Vacuum Unit Area comprising 2000 acres, more or less, of State land in Township 17 South, Range 37 East, Lea County, New Mexico.

CASE 3345: 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 in its West Vacuum Unit by the injection of water into the Grayburg-San Andres formations through six injection wells located in Sections 3 and 4, Township 18 South, Range 34 East, and Sections 33 and 34, Township 17 South, Range 34 East, Vacuum Pool, Lea County, New Mexico.

CASE 3346: Application of Sinclair Oil & Gas Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Maljamar Pool by the injection of water into the Grayburg-San Andres formations through eight wells in Section 24, Township 17 South, Range 32 East, Lea County, New Mexico.



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

October 29, 1965

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, NEW MEXICO 87501

MAIL
OCT 31 1965

Page 3345

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Comm.
Santa Fe, N. M.

Dear Mr. Porter:

Reference is made to the application of Texaco, Inc., which seeks approval to initiate water flooding activities in the Vacuum (Grayburg-San Andres) field and to convert 6 wells to injection. Only one diagrammatic sketch of proposed injection well was submitted and it is reproduced on an exhibit showing a partial Gamma Ray-Neutron log on the State of New Mexico "V" No. 6 well.

This office offers no objection to the granting of the application provided all injection wells are constructed and equipped as shown on the sketch and the tension packer on the end of the tubing is set well below the top of the cement surrounding the 5½" casing in each well.

FEI/ma
cc-Texaco, Inc.

Yours truly,

S. E. Reynolds
State Engineer

By: *Frank E. Irby*
Frank E. Irby
Chief
Water Rights Div.

Case 3345

SUMMARY OF RECOMMENDATIONS

It is recommended that TEXACO Inc. as Unit Operator of the West Vacuum Unit be permitted to operate a waterflood in the Vacuum (Grayburg-San Andres) Pool.

The proposed injection wells and locations are:

<u>Operator</u>	<u>Lease</u>	<u>Well No.</u>	<u>Location</u>
Mesa Retailers	State	2	A4-18-34
Sinclair Oil Co.	State "B"	3	A33-17-34
TEXACO Inc.	State "AA" (NCT-1)	1	C3-18-34
TEXACO Inc.	State "O" (NCT-2)	11	I33-17-34
TEXACO Inc.	State "v"	1	C34-17-34
TEXACO Inc.	State "v"	2	K34-17-34

These wells are denoted on the attached plat of the western portion of the Vacuum Field.

Fresh water from the Ogallala formation will be injected in the average open hole interval from 4165 feet to 4708 feet.

Attached is a radioactivity log plus a diagrammatic sketch of a typical injection well completion.

TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



P. O. BOX 3109
MIDLAND, TEXAS

October 25, 1965

65 OCT 28 AM 10

Handwritten:
3345

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

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

Gentlemen:

Texaco Inc. as the initial operator of the proposed West Vacuum Unit, Vacuum (Grayburg-San Andres) Pool, Lea County, New Mexico, respectfully requests that a hearing be scheduled to consider the application for (1) Approval of the West Vacuum Unit Agreement, (2) Approval to initiate waterflooding activities in the Vacuum (Grayburg-San Andres) Field, and (3) Approval to convert six wells to injection to form a normal five-spot pattern for waterflood operations. In support of our application, Texaco Inc. wishes to state the following facts.

- (1) The proposed West Vacuum Unit is a portion of the Vacuum (Grayburg-San Andres) Pool, Lea County, New Mexico.
- (2) Currently there are 48 wells in the proposed unit area producing from this reservoir in the average open hole interval from 4165' to 4708'.
- (3) The area sought to be designated as the West Vacuum Unit comprises 2000 acres, more-or-less, situated in Lea County, New Mexico, which is more particularly described as follows:

Township 17 South, Range 37 East
New Mexico Principal Meridian

- Section 28: S/2 NW/4, N/2 SW/4, SW/4 SW/4
- Section 33: Entire Section
- Section 34: Entire Section
- Section 3 : NE/4, N/2 NW/4, SE/4 NW/4 and NE/4 SE/4
- Section 4 : N/2 N/2
- Section 5 : NE/4 NE/4

- (4) The proposed pattern will be a normal five-spot and will consist of six injection wells.

DOCKET M-ILED

Handwritten:
4-10-65
Signature

(5) The proposed wells to be converted to injection are as follows:

<u>Operator</u>	<u>Lease</u>	<u>Well No.</u>	<u>Location</u>
✓ Mesa Retailers	State	2	A4-18-34
✓ Sinclair Oil Co.	State "B"	3	A33-17-34
✓ Texaco Inc.	State "AA" (NCT-1)	1	C3-18-34
✓ Texaco Inc.	State "O" (NCT-2)	11	I33-17-34
✓ Texaco Inc.	State "V"	1	C34-17-34
✓ Texaco Inc.	State "V"	2	K34-17-34

Attached is a plat of the West Vacuum Unit with the boundary of the unit shown by a hatched line. The proposed injection wells are shown by red triangles. It is respectfully requested that the subject application be set on the hearing docket scheduled for November 23, 1965.

Yours very truly,

C. L. Whigham

C. L. Whigham
Division Proration Engineer

JTJ:jl
Attach.

cc: State Engineer
P. O. Box 1079
Santa Fe, New Mexico

UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION
OF THE
WEST VACUUM UNIT AREA
COUNTY OF LEA
STATE OF NEW MEXICO

Index
Preamble
Agreement Proper

Map of Unit Area.....Exhibit "A"
Tracts and Tract Participation.....Exhibit "B"

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. II
CASE NO. 3344 3345

UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION
OF THE
WEST VACUUM UNIT AREA
COUNTY OF LEA
STATE OF NEW MEXICO

I N D E X

Article

- | | |
|----|--|
| 1 | Enabling Act and Regulations |
| 2 | Definitions |
| 3 | Exhibits |
| 4 | Expansion of Unit Area |
| 5 | Unitized Land and Unitized Substances |
| 6 | Unit Operator |
| 7 | Resignation or Removal of Unit Operator |
| 8 | Successor Unit Operator |
| 9 | Accounting Provisions and Unit Operating Agreement |
| 10 | Rights and Obligations of Unit Operator |
| 11 | Equipment and Facilities not Fixtures Attached to Realty |
| 12 | Plan of Further Development and Operation |
| 13 | Participation |
| 14 | Tracts Qualified for Participation |
| 15 | Allocation of Unitized Substances |
| 16 | Balancing of Production |
| 17 | Royalty Settlement |
| 18 | Rental Settlement |
| 19 | Conservation |
| 20 | Drainage |
| 21 | Leases and Contracts Conformed and Extended |
| 22 | Covenants Run With Land |

I N D E X

(Continued)

Article

23	Effective Date and Term
24	Appearances
25	Notices
26	No Waiver of Certain Rights
27	Unavoidable Delay
28	Loss of Title
29	Nonjoinder and Subsequent Joinder
30	Counterparts
31	Taxes
32	Conflict of Supervision
33	No Partnership
34	Border Agreements

UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION
OF THE
WEST VACUUM UNIT AREA
COUNTY OF LEA
STATE OF NEW MEXICO

THIS AGREEMENT entered into as of the first day of October, 1964, by and between the parties subscribing, ratifying, or consenting hereto, and herein referred to as the "parties hereto,"

W I T N E S S E T H:

WHEREAS, the parties hereto are the owners of working, royalty, or other oil and gas interests in the Unit Area subject to this agreement; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by law (Volume 2, Chapter 7, Article 11, New Mexico Statutes, 1953 Annotated) to consent to and approve the development or operation of State lands under agreements made by lessees of State land jointly or severally with other lessees where such agreements provide for the unit operation or development of part of or all of any oil or gas pool, field or area; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by an Act of the Legislature (Sec. 1, Chap. 162, Laws of 1951; Chap. 7, Art. 11, Sec. 41, N.M. Stats. 1953 Annot.) to amend with the approval of lessee, evidenced by the lessee's execution of such agreement or otherwise, any oil and gas lease embracing State lands so that the length of the term of said lease may coincide with the term of such agreements for the unit operation and development of part or all of any oil or gas pool, field or area; and

WHEREAS, the Oil Conservation Commission of the State of New Mexico is authorized by law (Volume 9, Part 2, Chapter 65, Article 3, New Mexico Statutes, 1953 Annotated) to approve this agreement and the conservation provisions hereof; and

WHEREAS, the parties hereto hold sufficient interests in the West Vacuum Unit Area covering land hereinafter described to give reasonably effective control of operations therein; and

WHEREAS, it is the purpose of the parties hereto to enable institution and consummation of secondary recovery operations, to conserve natural resources, prevent waste and secure other benefits obtainable through development and operation of the area subject to this agreement under the terms, conditions and limitations herein set forth.

NOW THEREFORE, in consideration of the premises and the promises herein contained, the parties hereto commit to this agreement their respective interests in the "Unit Area" and the "Unitized Formation" lying thereunder (as those terms are defined hereinafter) and agree severally among themselves as follows:

1. ENABLING ACT AND REGULATIONS. The oil and gas operating regulations in effect as of the effective date hereof governing drilling and producing operations not inconsistent with the terms hereof or the laws of the State of New Mexico are hereby accepted and made a part of this Agreement.

2. DEFINITIONS. For the purpose of this agreement, the following terms and expressions as used herein shall mean:

(a) "Commission" means the Oil Conservation Commission of the State of New Mexico.

(b) "Commissioner" means the Commissioner of Public Lands of the State of New Mexico.

(c) "Royalty Interest" or "Royalty" means an interest other than a Working Interest in or right to receive a portion of the Unitized Substances or the proceeds thereof and includes the royalty interest reserved by the lessor by an oil and gas lease and any overriding royalty interest, oil payment interest, net profits contract, or any other payment or burden which does not carry with it the right to search for and produce Unitized Substances.

(d) "Royalty Owner" means the owner of a Royalty Interest.

(e) "Tract" means each parcel of land described as such and given a Tract number in Exhibit "B".

(f) "Tract Participation" means the percentage of Unitized Substances allocated to a Tract under this agreement as shown in Exhibit "B".

(g) "Unit Area" means the land shown on Exhibit "A", and described by Tracts in Exhibit "B", containing 2,000 acres, more or less.

(h) "Unit Operating Agreement" means any agreement or agreements, whether one or more, entered into either separately or collectively by and between the Unit Operator and the Working Interest Owners, as provided in Section 9, ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT, and shall be styled "Unit Operating Agreement for the Development and Operation of the West Vacuum Unit Area, County of Lea, State of New Mexico."

(i) "Unit Participation" means the sum of all Tract Participations or portions thereof which a party is entitled to receive.

(j) "Unitized Formation" means that subsurface portion of the Unit Area including portions of the Grayburg-San Andres formations which occur between the logged depths, measured from the kelly bushing, of 4213 feet and 4750 feet in the Texaco Inc. State of New Mexico "V" Well No. 8 as shown on the Schlumberger Gamma-Neutron log of said well which is located 660 feet from the north line and 660 feet from the west line of Section 34, Township 17-South, Range 34 East, Lea County, New Mexico.

(k) "Unitized Substances" means all oil, gas, gaseous substances, sulphur contained in gas, condensate, distillate and all associated and constituent liquid or liquefiable hydrocarbons within or produced from the Unitized Formation.

(l) "Working Interest" means an interest in Unitized Substances by virtue of a lease, operating agreement, fee title, carried interest or otherwise, which interest is chargeable with and obligated to pay or bear, either in cash or out of production or otherwise, all or a portion of the cost of drilling, developing, producing and operating the Unitized Formation. Any interest in Unitized Substances which is a Working Interest as of the date the owner thereof executes or ratifies this agreement shall thereafter be treated as a Working Interest for all purposes of this agreement.

(m) "Working Interest Owner" means a party hereto who owns a Working Interest.

(n) "Voting Interest". Each Working Interest Owner shall have a voting interest equal to its Unit Participation which is in effect at the time the vote is taken.

(o) "Unit Operator" means the Working Interest Owner designated by Working Interest Owners under the Unit Operating Agreement to develop and operate the Unitized Formation, acting as operator and not as a Working Interest Owner.

(p) "Unit Operations" means all operations conducted by Working Interest Owners or Unit Operator pursuant to this agreement and the Unit Operating Agreement for or on account of the development and operation of the Unitized Formation for the production of Unitized Substances.

(q) "Outside Substances" means all substances obtained from any source other than the Unitized Formation and which are injected into the Unitized Formation.

(r) "Oil and Gas Rights" means the right to explore, develop, and operate lands within the Unit Area for the production of Unitized Substances, or to share in the production so obtained or the proceeds therefrom.

(s) "Unit Equipment" means all personal property, lease and well equipment, plants, and other facilities and equipment taken over or otherwise acquired for the joint account for use in Unit Operations.

(t) "Unit Expense" means all cost, expense, or indebtedness incurred by Working Interest Owners or Unit Operator pursuant to this agreement and the Unit Operating Agreement for or on account of Unit Operations.

3. EXHIBITS. Attached hereto are the following exhibits which are incorporated herein by reference:

Exhibit "A", which is a map that shows the boundary lines of the Unit Area and the Tracts therein.

Exhibit "B", which is a schedule that describes each Tract in the Unit Area and shows its Tract Participation.

3.1 Reference to Exhibits. When reference herein is made to an exhibit, the reference is to the Exhibit as originally attached or, if revised, to the latest revision.

3.2 Exhibits Considered Correct. An exhibit shall be considered to be correct until revised as herein provided.

3.3 Correcting Errors. The shapes and descriptions of the respective Tracts have been established by using the best information available. If it subsequently appears that any Tract, because of diverse royalty or working interest ownership on the effective date hereof, should be divided into more than one Tract, or that any mechanical miscalculation has been made, Unit Operator, with the approval of working interest owners and the Commissioner, may correct the mistake by revising the exhibits to conform to the facts. The revision shall not include any re-evaluation of engineering or geological interpretations used in determining Tract Participation. Each such revision of an exhibit shall be effective at 7:00 a.m. on the first day of the calendar month next following the filing for record of the revised exhibit or on such other date as may be determined by Working Interest Owners and set forth in the revised exhibit.

3.4 Filing Revised Exhibits. If an exhibit is revised pursuant to this agreement, Unit Operator shall certify and file the revised exhibit for record in Lea County, New Mexico, and with the Commissioner.

4. EXPANSION OF UNIT AREA. The Unit Area may be expanded to include acreage reasonably proved to be productive upon such terms as may be determined by Working Interest Owners including, but not limited to the following:

(a) The acreage shall qualify under a Section of Article 14.

(b) The participation to be allocated to the acreage shall be reasonable, fair and based on all available information.

(c) There shall be no retroactive allocation or adjustment of Unit Expense or of interests in the Unitized Substances produced or proceeds therefrom; however, this limitation shall not prevent an adjustment of investment by reason of the enlargement.

4.1 Determination of Tract Participation. Unit Operator, subject to Section 13.1, shall determine the Tract Participation of each Tract within the Unit Area as enlarged and shall revise Exhibits "A" and "B" accordingly. If revision is effective as in this section provided during Phase I, the number of barrels of oil that shall determine the duration of the remainder of Phase I shall be the product of the number of barrels of oil that immediately prior to the effective date of such enlargement would have determined the duration of the remainder of Phase I and the ratio that the oil production used to determine the Phase I Participation for all Tracts which qualify for inclusion within the Unit Area as enlarged bears to the oil production used to determine the Phase I Participation for all Tracts within the Unit Area immediately prior to the effective date of such enlargement.

4.2 Effective Date. The effective date of any enlargement of the Unit Area shall be 7:00 a.m. on the first day of the calendar month following compliance with conditions for enlargement as specified by Working Interest Owners, approval by the Commissioner and the Commission, and the filing for record of revised Exhibits "A" and "B" in the records of Lea County, New Mexico.

5. UNITIZED LAND AND UNITIZED SUBSTANCES. All oil, gas, gaseous substances, sulphur contained in gas, condensate, distillate and all associated and constituent liquid and liquefiable hydrocarbons in the lands committed to this agreement are, as to the Grayburg-San Andres formation, unitized under the terms of this agreement (and are herein called "Unitized Substances") and said lands shall constitute lands referred to herein as "unitized land" or "land subject to this agreement."

6. UNIT OPERATOR. Texaco Inc. is hereby designated as the Unit Operator and by signature hereto as Unit Operator agrees and consents to accept the duties of Unit Operator for the development and production of Unitized Substances as herein provided. Whenever reference is made herein to the "Unit Operator," such reference means the Unit Operator acting in that capacity and not as an owner of interest in Unitized Substances, and the term "Working Interest Owner" when used herein shall include or refer to Unit Operator as the owner of a Working Interest when such interest is owned by it.

7. RESIGNATION OR REMOVAL OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time, but such resignation shall not become effective so as to release Unit Operator from the duties and obligations of Unit Operator and terminate Unit Operator's rights as such for a period of six (6) months after notice of intention to resign has been served by Unit Operator on all Working Interest Owners and the Commissioner and the Commission, and until all wells then drilled hereunder are placed in satisfactory condition for suspension or abandonment, whichever is required by the Commission as to State lands, unless a new Unit Operator shall have been selected and approved and shall have taken over and assumed the duties and obligations of Unit Operator prior to the expiration of said period.

The resignation of Unit Operator shall not release Unit Operator from any liability or default by it hereunder occurring prior to the effective date of its resignation.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by affirmative vote of at least eighty per cent (80%) of the Voting Interest remaining after excluding the voting interest of Unit Operator. Such removal shall be effective upon notice thereof to the Commissioner.

In all such instances of resignation or removal, until a successor Unit Operator is selected and approved, as hereinafter provided, the Working Interest Owners shall be jointly responsible for the performance of the duties of Unit Operator and shall, not later than thirty (30) days before such resignation or removal becomes effective, appoint a common agent to represent them in any action to be taken hereunder.

The resignation or removal of Unit Operator under this agreement shall not terminate its right, title or interest as the owner of a Working Interest or other interests in Unitized Substances, but upon the resignation or removal of Unit Operator becoming effective, such Unit Operator shall deliver possession of all equipment, materials, and appurtenances used in conducting the Unit Operations owned by the Working Interest Owners to the new duly qualified successor Unit Operator, or to the owner thereof if no such new Unit Operator is elected, to be used for the purpose of conducting Unit Operations hereunder. Nothing herein shall be construed as authorizing removal of any material, equipment and appurtenances needed for the preservation of any wells.

8. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender his or its resignation as Unit Operator, or shall be removed as hereinabove provided, the Working Interest Owners shall, by affirmative vote of at least seventy-five per cent (75%) of the Voting Interests, select a successor Unit Operator; provided, however, that should any Working Interest Owner own a Voting Interest of more than twenty-five per cent (25%), the vote of said party shall not serve to disapprove the selection of a new Unit Operator approved by 80 per cent (80%) or more of the Voting Interests of the remaining Working Interest Owners and provided, further, that the Unit Operator shall not vote to succeed itself and its Voting Interest shall not be counted in a vote concerning its removal as the Unit Operator. Such selection shall not become effective until (a) a Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator, and (b) the selection shall have been approved by the Commissioner. If no successor Unit Operator is selected and qualified as herein provided, the Commissioner may, at his election, declare this Unit Agreement terminated.

9. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT. All costs and expenses incurred by Unit Operator in conducting Unit Operations hereunder shall be apportioned among, borne and paid by the Working Interest Owners, all in accordance with this agreement and the Unit Operating Agreement. The Unit Operating Agreement shall also provide the manner in which the Working Interest Owners shall be entitled to receive their respective proportionate and allocated share of the benefits accruing hereto in conformity with their underlying operating agreements, leases or other independent contracts and such other rights and obligations as between Unit Operator and the Working Interest Owners as they may agree upon. However, the Unit Operating Agreement shall not be deemed either to modify the terms and conditions of this Unit Agreement or to relieve the Unit Operator of any right or obligation established under this Unit Agreement; in case of any inconsistency or conflict between the Unit Agreement and the Unit Operating Agreement, this agreement shall prevail. One true copy of any Unit Operating Agreement shall be filed with the Commissioner.

10. RIGHTS AND OBLIGATIONS OF UNIT OPERATOR. Except as otherwise specifically provided herein, the exclusive right, privilege, and duty of exercising any and all rights of the parties hereto (including surface rights) which are necessary or convenient for the prospecting for, producing, storing, allocating, and distributing the Unitized Substances, are hereby granted and delegated to and shall be exercised by the Unit Operator as herein provided. Upon request therefor, acceptable evidence of title to said rights shall be deposited with said Unit Operator and, together with this agreement, shall constitute and define the rights, privileges and obligations of Unit Operator. Nothing herein, however, shall be construed to transfer title to any land, lease, Royalty Interest, operating agreement or communitization agreement, it being understood that under this agreement the Unit Operator, in its capacity as Unit Operator, shall exercise the rights of possession and use vested in the parties hereto only for the purposes herein specified.

10.1 Surface Damages. Working Interest Owners shall pay the owner for damages to growing crops, timber, fences, improvements, and structures on the Unit Area that result from Unit Operations in accordance with and as specified in the leases subject to this agreement.

11. EQUIPMENT AND FACILITIES NOT FIXTURES ATTACHED TO REALTY. All lease and well equipment, materials, and other facilities heretofore or hereafter placed by any of the Working Interest Owners on the lands covered hereby shall be deemed to be and shall remain personal property belonging to and may be removed by the Working Interest Owners and is hereby excepted from the provisions of this agreement. The rights and interests therein as among Working Interest Owners are covered by the Unit Operating Agreement.

12. PLAN OF FURTHER DEVELOPMENT AND OPERATION. It is recognized and agreed by the parties hereto that the object and purpose of this agreement is to formulate and to put into effect a secondary recovery project in order to effect the optimum recovery of Unitized Substances, prevent waste and conserve natural resources. The parties hereto agree that the Unit Operator may, subject to the consent and approval of a plan of operation by the Working Interest Owners, the Commissioner and the Commission, inject into the Unitized Formation, through any well or wells completed therein, brine, water, air, gas, oil, liquefied petroleum gas, or any other substance or a combination of any of said substances, whether produced from the Unitized Formation or not, and that the location of input wells and the rates of injection therein and the rate of production shall be governed by standards of good geologic and petroleum engineering practices and conservation methods. This agreement is and shall be subject to the conservation laws of the State of New Mexico, to the valid rules, regulations and orders of the Commissioner and the Commission and to all other applicable federal, state and municipal laws, rules, regulations, and orders. The parties hereto, subject to prior rights, if any, grant to Unit Operator the use of brine or water or both from any formation in and under the Unit Area for injection into the Unitized Formation. After commencement of secondary operations, Unit Operator shall furnish the Commissioner monthly injection and production reports for each well in the Unit Area. The Working Interest Owners and the Commissioner shall be furnished periodic reports on the progress of the plan of operation and any revisions or changes thereto necessary to meet changed conditions or to protect the interests of all parties to this agreement; provided, however, that any major revisions of the plan of operation involving a basic deviation from the initial plan of operation shall be subject to the consent and approval of the Working Interest Owners, the Commissioner and the Commission.

13. PARTICIPATION. In Exhibit "B" attached hereto, there are listed and numbered the various tracts within the Unit Area and set forth opposite each tract is a figure which represents the percentage

of participation allocated to each tract in the Unit Area during Phase I, and a figure which represents the percentage of participation allocated to each Tract in the Unit Area during Phase II, said Phase I and Phase II being hereinafter defined:

(a) Phase I Participation. Beginning at 7:00 a.m. on the effective date hereof and until 7:00 a.m. on the first day of the month next following the date when the cumulative oil production from the Unitized Formation underlying all of the Tracts described in Exhibit "B" from and after December 1, 1963, equals 2,679,000 barrels as determined from the official production reports filed with the Oil Conservation Commission of New Mexico, the Tract Participation of each Tract shall be equal to one hundred per cent (100%) times the ratio of barrels of oil produced from the Unitized Formation underlying such Tract to the barrels of oil produced from the Unitized Formation underlying all such Tracts during the period from June 1, 1963 to December 1, 1963, as approved by the Working Interest Owners and shown in Phase I of Exhibit "B".

(b) Phase II Participation. Beginning at 7:00 a.m. on the first day of the month following the date when the 2,679,000 barrels referred to in Section 13(a) above shall have been produced, the Tract Participation of each Tract shall be equal to one hundred per cent (100%) times the ratio of the ultimate primary oil production from the Unitized Formation underlying each such Tract to the ultimate primary oil production from the Unitized Formation underlying all such tracts, as approved by the Working Interest Owners and shown in Phase II of Exhibit "B".

13.1 Relative Tract Participations. If the Unit Area is enlarged or reduced, the revised Tract Participations of the Tracts remaining in the Unit Area and which were within the Unit Area prior to the enlargement or reduction shall remain in the same ratio one to another.

14. TRACTS QUALIFIED FOR PARTICIPATION. On and after the effective date hereof and until the enlargement or reduction thereof, the Unit Area shall be composed of the Tracts listed in Exhibit "B" that corner or have a common boundary (Tracts separated only by a public highway or a railroad right of way shall be considered to have a common boundary) and that otherwise qualify as follows:

(a) Each Tract as to which Working Interest Owners owning one hundred per cent (100%) of the Working Interest have become parties to this agreement and as to which Royalty Owners owning seventy-five per cent (75%) or more of the Royalty Interest have become parties to this agreement.

(b) Each Tract as to which Working Interest Owners owning one hundred per cent (100%) of the Working Interest have become parties to this agreement and as to which Royalty Owners owning less than seventy-five per cent (75%) of the Royalty Interest have become parties to this agreement, and as to which (a) all Working Interest Owners in such Tract have joined in a request for the inclusion of such Tract in the Unit Area, and as to which (b) seventy-five per cent (75%) of the combined voting interests of Working Interest Owners in all Tracts that meet the requirements of Section 14(a) have voted in favor of the inclusion of such Tract. For the purpose of this Section 14(b), the voting interest of a Working Interest Owner shall be equal to the ratio that its Phase I Unit Participation attributable to Tracts that qualify under Section 14(a) bears to the total Phase I Unit Participation of all Working Interest Owners attributable to all Tracts that qualify under Section 14(a).

(c) Each Tract as to which Working Interest Owners owning less than one hundred per cent (100%) of the Working Interest have become parties to this agreement regardless of the percentage of Royalty Interest therein that is committed hereto; and as to which (a) the Working Interest Owner who operates the Tract and all of the other Working Interest Owners in such Tract who have become parties to this agreement have joined in a request for inclusion of such Tract in the Unit Area, and have tendered or executed and delivered an indemnity agreement indemnifying and agreeing to hold harmless the other Working Interest Owners in the Unit Area, their successors and assigns, against all claims and demands that may be made by the owners of Working Interests in such Tract who are not parties to this agreement and which arise out of the inclusion of the Tract in the Unit Area; and as to which (b) seventy-five per cent (75%) of the combined voting interest of Working Interest Owners in all Tracts that meet the requirements of Sections 14(a) and 14(b) have voted in favor of the inclusion of such Tract and to accept the indemnify agreement. For the purpose of this Section 14(c), the voting interest of each Working Interest Owner shall be equal to the ratio that its Phase I Unit Participation attributable to Tracts that qualify under Sections 14(a) and 14(b) bears to the total Phase I Unit Participation of all Working Interest Owners attributable to all Tracts that qualify under Sections 14(a) and 14(b). Upon the inclusion of such a Tract in the Unit Area, the Unit Participation that would have been attributed to the non-subscribing owners of the Working Interest in such Tract, had they become parties to this agreement and the Unit Operating Agreement, shall be attributed to the Working Interest Owners in such Tract who have become parties to such agreements in proportion to their respective Working Interests in the Tract.

14.1 Revision of Exhibits. If any of the Tracts described in original Exhibit "B" fail to qualify for inclusion in the Unit Area, Unit Operator shall recompute, using the original basis of computation, the Tract Participation of each of the qualifying Tracts and shall revise Exhibits "A" and "B" accordingly. The revised exhibits shall be effective as of the effective date hereof and upon approval by the Commissioner. If revision is effected as provided in this section, the 2,679,000 barrels, referred to in Sections 13(a) and 13(b) hereof, shall be reduced to the product of 2,679,000 and the ratio that the oil production used to determine the Phase I Participation for all Tracts which qualify under this Article 14 bears to the oil production used to determine the Phase I Participation for all Tracts described in original Exhibit "B".

15. ALLOCATION OF UNITIZED SUBSTANCES. All Unitized Substances produced and saved shall be allocated to the several tracts in accordance with the respective Tract Participations effective during the period that the Unitized Substances were produced. The amount of Unitized Substances allocated to each Tract, regardless of whether it is more or less than the actual production of Unitized Substances from the well or wells, if any, on such Tract, shall be deemed for all purposes to have been produced from such tract.

15.1 Distribution Within Tracts. The Unitized Substances allocated to each Tract shall be distributed among, or accounted for to, the parties entitled to share in the production from such Tract in the same manner, in the same proportions, and upon the same conditions as they would have participated and shared in the production from such Tract, or in the proceeds therefrom, had this agreement not been entered into and with the same legal effect. If any Oil and Gas Rights in a Tract hereafter become divided and owned in severalty as to different parts of the Tract, the owners of the divided interests, in the absence of an agreement providing for a different division, shall share in the Unitized Substances allocated to the Tract, or in the proceeds there-

from, in proportion to the surface acreage of their respective parts of the Tract.

If the participation of any Oil and Gas Rights in Unitized Substances depends on the average production per well or the average pipeline runs per well on any Tract for any specified period, such average per-well production or such average per-well pipeline runs shall be determined from and after the effective date hereof by dividing the production of Unitized Substances allocated to such Tract by the number of wells located thereon which are completed in the Unitized Formation as of the effective date hereof plus the number of wells thereafter completed therein that are capable of producing Unitized Substances.

15.2 Taking Unitized Substances in Kind. The Unitized Substances allocated to each Tract shall be delivered in kind to the respective parties entitled thereto by virtue of the ownership of Oil and Gas Rights therein or by purchase from such owners. Such parties shall have the right to construct, maintain, and operate within the Unit Area all necessary facilities for that purpose, provided that they are so constructed, maintained, and operated as not to interfere with Unit Operations. Any extra expenditures incurred by Unit Operator by reason of the delivery in kind of any portion of the Unitized Substances shall be borne by the receiving party. If a Royalty Owner has the right to take in kind a share of Unitized Substances and fails to do so, the Working Interest Owner whose Working Interest is subject to such Royalty Interest shall be entitled to take in kind such share of the Unitized Substances.

15.3 Failure to Take in Kind. If any party fails to take in kind or separately dispose of its share of Unitized Substances Unit Operator shall have the right, for the time being and subject to revocation at will by the party owning the share, to purchase for its own account or sell to others such share at not less than the market price prevailing in the area and not less than the price Unit Operator receives for its share of Unitized Substances; provided that all contracts of sale by Unit Operator of any other party's share of Unitized Substances shall be only for such reasonable periods of time as are consistent with the minimum needs of the industry under the circumstances, but in no event shall any such contract be for a period in excess of one year. The proceeds of the Unitized Substances so disposed of by Unit Operator shall be paid to a payee who shall distribute such proceeds to the parties entitled thereto, such payee being the Working Interest Owners of each affected Tract or a party designated by such Working Interest Owners under an agreement between such party and such Working Interest Owners. Notwithstanding the foregoing, Unit Operator shall not make a sale into interstate commerce of any other party's share of gas production without first giving such other party sixty (60) days notice of such intended sale.

15.4 Royalty on Outside Substances. If gas obtained from lands or formations not subject to this agreement is introduced into the Unitized Formation for use in pressure maintenance, stimulation of production, or increasing ultimate recovery, which shall be in conformity with a plan first approved by the Commissioner, a like amount of gas, less appropriate deductions for loss from any cause, may be withdrawn from the formation into which the gas was introduced royalty free as to dry gas but not as to the products extracted therefrom; provided that such withdrawal shall be pursuant to such conditions and formulas as may be prescribed or approved by the Commissioner as conforming to good petroleum engineering practice; and provided further that such right of withdrawal shall terminate on the termination of this agreement.

If liquefied petroleum gases obtained from lands or formations not subject to this agreement be injected into the Unitized Formation for the purpose of increasing ultimate recovery, which shall be in conformance with a plan first approved by the Commissioner, part or all of such liquefied petroleum gases may be withdrawn royalty free pursuant to such conditions and formulas as may be prescribed or approved by the Commissioner.

15.5 Use of Unitized Substances. Working Interest Owners may use as much of the Unitized Substances as they deem necessary for Unit Operations including, but not limited to, the injection thereof into the Unitized Formation.

15.6 Royalty Payments. No royalty, overriding royalty, production, or other payments shall be payable upon, or with respect to, Unitized Substances used or consumed in Unit Operations, or which otherwise may be lost or consumed in the production, handling, treating, transportation, or storing of Unitized Substances.

16. BALANCING OF PRODUCTION. Unit Operator shall gauge all lease and other tanks within the Unit Area to ascertain the amount of merchantable oil produced from the Unitized Formation in such tanks, above the pipe line connections, as of 7:00 a.m. on the effective date hereof. The oil that is a part of the prior allowable of the wells from which it was produced shall remain the property of the parties entitled thereto the same as if the Unit had not been formed. Any such oil not promptly removed may be sold by the Unit Operator for the account of the parties entitled thereto, subject to the payment of all royalties, overriding royalties, production payments, and all other payments under the provisions of the applicable lease or other contracts. The oil that is in excess of the prior allowable of the wells from which it was produced shall be regarded as Unitized Substances produced after effective date hereof.

16.1 Overproduction. If, as of the effective date hereof, any Tract is overproduced with respect to the allowable of the wells on that Tract and the amount of overproduction has been sold or otherwise disposed of, such overproduction shall be regarded as a part of the Unitized Substances produced after the effective date hereof and shall be charged to such Tract as having been delivered to the parties entitled to Unitized Substances allocated to such Tract.

17. ROYALTY SETTLEMENT. Any party receiving in kind or separately disposing of all or part of the Unitized Substances allocated to any Tract or receiving the proceeds therefrom shall be responsible for the payment thereof to the persons entitled thereto, and shall indemnify all parties hereto, including Unit Operator, against any liability for all royalties, overriding royalties, production payments and all other payments chargeable against or payable out of such Unitized Substances or the proceeds therefrom.

18. RENTAL SETTLEMENT. Rentals due on leases committed hereto shall be paid by Working Interest Owners responsible therefor under existing contracts, laws and regulations; provided that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any rental due under their leases. Rental for lands of the State of New Mexico subject to this agreement shall be paid at the rate specified in the respective leases from the State of New Mexico.

19. CONSERVATION. Operations hereunder and production of Unitized Substances shall be conducted so as to provide for the most economical and efficient recovery of such substances to prevent waste as defined by State laws or regulations.

20. DRAINAGE. Unit Operator shall take appropriate and adequate measures to prevent drainage of Unitized Substances from the committed Tract by wells on land not subject to this agreement, or, with consent of the Commissioner and pursuant to applicable regulations, pay a fair and reasonable compensatory royalty as determined by the Commissioner.

21. LEASES AND CONTRACTS CONFORMED AND EXTENDED. The terms, conditions and provisions of all leases, subleases, and other contracts relating to exploration, drilling, development, or operation for oil, gas, gaseous substances, sulphur contained in gas, condensate, distillate and all associated and constituent liquid or liquefiable hydrocarbons in and under lands committed to this agreement are hereby expressly modified and amended to the extent necessary to make the same conform to the provisions hereof, but otherwise to remain in full force and effect; and the parties hereto hereby consent that the Commissioner as to State leases, by his approval hereof or by the approval by his duly authorized representative, does hereby establish, alter, change or revoke the drilling, producing, rental, minimum royalty and royalty requirements of State leases committed hereto and the regulations in respect thereto to conform said requirements to the provisions of this agreement, and without limiting the generality of the foregoing, all leases, subleases, and contracts are particularly modified in accordance with the following:

(a) The development and operation of lands subject to this agreement under the terms hereof shall be deemed full performance of all obligations for development and operation with respect to each and every part or separately owned Tract committed to this agreement, regardless of whether there is any development of any particular part of or Tract of unitized land, notwithstanding anything to the contrary in any lease, operating agreement, or other contract by and between the parties hereto, or their respective predecessors in interest, or any of them.

(b) Drilling and producing operations performed hereunder upon any Tract of unitized land will be accepted and deemed to be performed upon and for the benefit of each and every Tract of unitized land, and no lease shall be deemed to expire by reason of failure to drill or produce wells situated on the land therein embraced.

(c) Suspension of drilling or producing operations on all unitized lands pursuant to direction or consent of the Commissioner shall be deemed to constitute such suspension pursuant to such direction or consent as to each and every Tract of unitized land.

(d) Each lease, sublease, or contract relating to the exploration, drilling, development, or operation for oil, gas, gaseous substances, sulphur contained in gas, condensate, distillate and all associated and constituent liquid or liquefiable hydrocarbons which by its terms might expire prior to the termination of this agreement, is hereby extended beyond any such term so provided therein so that it shall be continued in full force and effect for and during the term of this agreement.

(e) Any lease embracing lands of the State of New Mexico which is made subject to this agreement shall continue in force beyond the terms provided therein as to the lands committed hereto until the termination hereof.

(f) Any lease embracing lands of the State of New Mexico having only a portion of its land committed hereto, shall be segregated as to the portion committed and that portion not committed, and the terms of such lease shall apply separately as

to such segregated portions commencing as of the effective date hereof. Notwithstanding any of the provisions of this agreement to the contrary, any lease embracing lands of the State of New Mexico having only a portion of its lands committed hereto shall continue in full force and effect beyond the term provided therein as to all lands embraced in such lease (whether within or without the Unit Area), (i) if and for so long as oil or gas is capable of being produced in paying quantities from some part of the lands embraced in such lease committed to this agreement; or (ii) if and for so long as some part of the lands embraced in such State lease are allocated Unitized Substances; or (iii) if, at the expiration of the secondary term, the lessee or the Unit Operator is then engaged in bona fide drilling or reworking operations on some part of the lands embraced therein and for so long as such operations are being diligently pursued, and if they result in the production of oil or gas, said lease shall continue in full force and effect as to all the lands embraced therein, as provided in (i) and (ii) above.

22. COVENANTS RUN WITH LAND. This agreement shall extend to, be binding upon and inure to the benefit of the respective heirs, devisees, legal representatives, successors, and assigns of the parties hereto, and shall constitute a covenant running with the lands, leases, and interests covered hereby.

22.1 Notice of Transfer. Any conveyance of all or any part of any interest owned by any party hereto with respect to any Tract shall be made expressly subject to this agreement. No change of title shall be binding on the Unit Operator, or upon any party hereto other than the party so transferring, until the first day of the calendar month next succeeding the date of receipt by Unit Operator of a photocopy or a certified copy of the recorded instrument evidencing such change in ownership.

22.2 Waiver of Rights to Partition. Each party hereto covenants that, during the existence of this agreement, it will not resort to any action to partition the Unit Area or the Unit Equipment, and to that extent waives the benefits of all laws authorizing such partition.

23. EFFECTIVE DATE AND TERM. This agreement shall become binding upon each party as of the date such party signs the instrument by which it becomes a party hereto, and unless sooner terminated as provided in Section 23.1 shall become effective as to qualified Tracts at the time and date as determined by the Working Interest Owners in all the qualified Tracts, and set forth in a certificate filed for record by Unit Operator in Lea County, New Mexico. The certificate shall also recite the percentage of the Unit Area represented by the Tracts qualified under Article 14 and the book and page in which a counterpart of this agreement has been recorded. The certificate shall not be filed until after the following requirements have been met:

(a) Tracts comprising seventy-five per cent (75%) or more of the Unit Area as shown on the original Exhibit "A" have qualified under the provisions of Article 14.

(b) At least one counterpart of this agreement has been filed for record by Unit Operator in Lea County, New Mexico.

(c) This agreement has been approved by the Oil Conservation Commission of the State of New Mexico.

(d) This agreement has been approved by the Commissioner of Public Lands of the State of New Mexico.

23.1 Ipso Facto Termination. If the requirements above are not accomplished on or before January 1, 1966, this agreement shall ipso facto terminate on that date (hereinafter called "termination date") and thereafter be of no further effect, unless prior thereto Working Interest Owners owning a combined Unit Participation of at least seventy-five per cent (75%) have become parties to this agreement and at least seventy per cent (70%) of the combined voting interests of such signatory parties have decided to extend the termination date for a period not to exceed twelve (12) months. If the termination date is so extended and the above requirements are not accomplished on or before the extended termination date, this agreement shall ipso facto terminate on the extended termination date and thereafter be of no further effect. For the purpose of this section, Unit Participation shall be as shown under Phase I on the original Exhibit "C" attached to the Unit Operating Agreement.

23.2 Term. The term of this agreement shall be for the time that Unitized Substances are produced in paying quantities and as long thereafter as Unit Operations are conducted without a cessation of more than ninety (90) consecutive days unless sooner terminated by Working Interest Owners in the manner herein provided.

23.3 Termination by Working Interest Owners. This agreement may be terminated with approval of the Land Commissioner by Working Interest Owners having a combined Unit Participation of at least eighty per cent (80%), as shown in Phase II of Exhibit "C" attached to the Unit Operating Agreement, whenever such Working Interest Owners determine that Unit Operations are no longer profitable or feasible and Unit Operator shall file an affidavit stating such fact and the date thereof in the records of Lea County, New Mexico.

23.4 Effect of Termination. Upon termination of this agreement, the further development and operation of the Unitized Formation as a unit shall be abandoned, Unit Operations shall cease, and thereafter the parties shall be governed by the provisions of the leases and other instruments affecting the separate Tracts.

23.5 Salvaging Equipment Upon Termination. If not otherwise granted by the leases or other instruments affecting each Tract unitized under this agreement, Royalty Owners hereby grant Working Interest Owners a period of six (6) months after the date of termination of this agreement within which to salvage and remove Unit Equipment.

24. APPEARANCES. Unit Operator shall, after notice to other parties affected, have the right to appear for or on behalf of any and all interests affected hereby before the Commission and to appeal from orders issued under the regulations of said Commission or to apply for relief from any of said regulations or in any proceedings relative to operations before the Commission, or other legally constituted authority; provided however, that any other interested party shall also have the right at his or its own expense to be heard in any such proceeding.

25. NOTICES. All notices, demands, objections, or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if made in writing and delivered to the party or parties at their respective addresses set forth in connection with the signatures hereto or to the ratification or consent hereof or to such other address as any such party may have furnished in writing to party sending the notice, demand or statement.

26. NO WAIVER OF CERTAIN RIGHTS. Nothing in this agreement contained shall be construed as a waiver by any party hereto of the right to assert any legal or constitutional right or defense as to the validity or invalidity of any law of the State of New Mexico, or regulations issued thereunder in any way affecting such party, or as a waiver by any such party of any right beyond his or its authority to waive.

27. UNAVOIDABLE DELAY. All obligations imposed by this agreement on each party, except for the payment of money, shall be suspended while compliance is prevented, in whole or in part, by a strike, fire, war, civil disturbance, act of God; by federal, state, or municipal laws, by any rule, regulation, or order of a governmental agency; by inability to secure materials; or by any other cause or causes beyond reasonable control of the party. No party shall be required against its will to adjust or settle any labor dispute. Neither this agreement nor any lease or other instrument subject hereto shall be terminated by reason of suspension of Unit Operations due to any one or more of the causes set forth in this Article.

28. LOSS OF TITLE. If a Tract ceases to have sufficient Working Interest Owners or Royalty Owners committed to this agreement to meet the conditions of Article 14 because of failure of title of any party hereto, such Tract shall be removed from the Unit Area effective as of the first day of the calendar month in which the failure of title is finally determined; however, the Tract shall not be removed from the Unit Area if within ninety (90) days of the date of final determination of the failure of title the Tract requalifies under a Section of Article 14. If a Tract should be removed as provided in this Section while Unit Participation set forth in Column I of Exhibit "B" is in effect, the 2,679,000 barrels of cumulative oil production stipulated in Sections 13(a) and 13(b) shall be adjusted by Unit Operator with approval by Working Interest Owners.

28.1 Revision of Exhibits. If a Tract is removed from the Unit Area because of the failure of title, Unit Operator, subject to Section 13.1, shall recompute the Tract Participation of each of the Tracts remaining in the Unit Area and shall revise Exhibits "A" and "B" accordingly. The revised exhibits shall be effective as of the first day of the calendar month in which such failure of title is finally determined.

28.2 Working Interest Titles. If title to a Working Interest fails, the rights and obligations of Working Interest Owners by reason of the failure of title shall be governed by the Unit Operating Agreement.

28.3 Royalty Owner Titles. If title to a Royalty Interest fails but the Tract to which it relates is not removed from the Unit Area, the party whose title failed shall not be entitled to share hereunder with respect to such interest.

28.4 Production Where Title is in Dispute. If the title or right of any party claiming the right to receive in kind all or any portion of the Unitized Substances allocated to a Tract is in dispute, Unit Operator, at the discretion of Working Interest Owners, shall either:

(a) require that the party to whom such Unitized Substances are delivered, or to whom the proceeds therefrom are paid, furnish security for the proper accounting therefor to the rightful owner if the title or right of such party fails in whole or in part, or

(b) withhold and market the portion of Unitized Substances with respect to which title or right is in dispute, and impound the proceeds thereof until such time as the title or right thereto is established by a final judgment of a court of competent jurisdiction or otherwise to the satisfaction of Working Interest Owners, whereupon the proceeds so impounded shall be paid to the party rightfully entitled thereto;

(c) notwithstanding any provisions contained herein to the contrary, no payments of funds due the State of New Mexico shall be withheld, but such funds shall be deposited as directed by the Commissioner, to be held as unearned money pending final settlement of the title dispute, and then applied as earned or returned in accordance with such final settlement.

29. NONJOINDER AND SUBSEQUENT JOINDER. After the effective date of this agreement, the commitment of any interest in any Tract within the Unit Area shall be upon such terms as may be negotiated by Working Interest Owners and the owner of such interest and upon approval by the Commissioner.

30. COUNTERPARTS. A person may become a party to this agreement by signing the original of this instrument, a counterpart thereof, or other instrument agreeing to be bound by the provisions hereof. The signing of any such instrument shall have the same effect as if all the parties had signed the same instrument.

30.1 Joinder in Dual Capacity. Execution as herein provided by any party as either a Working Interest Owner or a Royalty Owner shall commit all interests that may be owned or controlled by such party.

30.2 Commitment of State Lands by Lessee of Record. No lease or portion thereof embracing lands of the State of New Mexico shall be committed hereto unless the original of this instrument, a counterpart thereof or other instrument agreeing to be bound by the provisions hereof has been signed by the lessee of record who, for the purposes of this provision, shall be the original lessee or the assignee whose assignment was last approved by the Commissioner as shown by the records in the State Land Office.

31. TAXES. The owners of (1) the surface rights of lands within the Unit Area, (2) the severed mineral or Royalty Interests in the lands, and (3) the improvements located on the lands not utilized for Unit Operations shall individually be responsible for the rendition and assessment for ad valorem tax purposes of all such property and for the payment of such taxes, except as otherwise provided in any contract or agreement between such owners and a Working Interest Owner. If any ad valorem taxes are not paid by such Owner responsible therefor when due, Unit Operator may, with approval of Working Interest Owners, at any time prior to tax sale, or expiration of period of redemption after tax sale, pay the same, redeem such property and discharge such tax liens as may arise through nonpayment. Any such payment shall be treated as an item of Unit Expense. Unit Operator shall, if possible, withhold from any proceeds derived from the sale of Unitized Substances otherwise due to any delinquent taxpayer or taxpayers an amount sufficient to defray the costs of such payment or redemption, such withholding to be credited to the joint account. Such withholding shall be without prejudice to any other remedy, either at law or in equity, which may be available for exercise by the Unit Operator or by the Working Interest Owners.

32. CONFLICT OF SUPERVISION. Neither the Unit Operator nor the Working Interest Owners or any of them shall be subject to any forfeiture, termination, or expiration of any rights hereunder or under any leases or contracts subject hereto, or to any penalty or liability on account of delay or failure in whole or in part to comply with any applicable provisions thereof to the extent that the said Unit Operator, Working Interest Owners, or any of them are hindered, delayed or prevented from complying therewith by reason of the failure of the Unit Operator to obtain, in the exercise of due diligence, the concurrence of proper representatives of the State of New Mexico in and about any matters or things concerning which it is required herein that such concurrence be obtained.

The parties hereto, including the Commission, agree that all powers and authority vested in the Commission in and by any provisions of this contract are vested in the Commission and shall be exercised by it pursuant to the provisions of the laws of the State of New Mexico and subject, in any case, to appeal or judicial review as may now or hereafter be provided by the laws of the State of New Mexico.

33. NO PARTNERSHIP. The duties, obligations, and liabilities of the parties hereto are intended to be several and not joint or collective. This agreement is not intended to create, and shall not be construed to create, an association or trust, or to impose a partnership duty, obligation, or liability with regard to any one or more of the parties hereto. Each party hereto shall be individually responsible for its own obligations as herein provided.

33.1 No Sharing of Market. This agreement is not intended to provide, and shall not be construed to provide, directly or indirectly, for any cooperative refining, joint sale, or marketing of Unitized Substances.

34. BORDER AGREEMENTS. Subject to the approval of the Commissioner, the Unit Operator, with concurrence of sixty-five per cent (65%) of the then Voting Interests of the Working Interest Owners, may enter into a border protection agreement or agreements with the working interest owners of lands adjacent to the committed Tracts with respect to the operations in the border area for the maximum ultimate recovery, conservation purposes and proper protection of the parties and interest.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed as of the date first above written and have set opposite their respective names the date of execution and the address of each of the respective executing parties.

Approved:

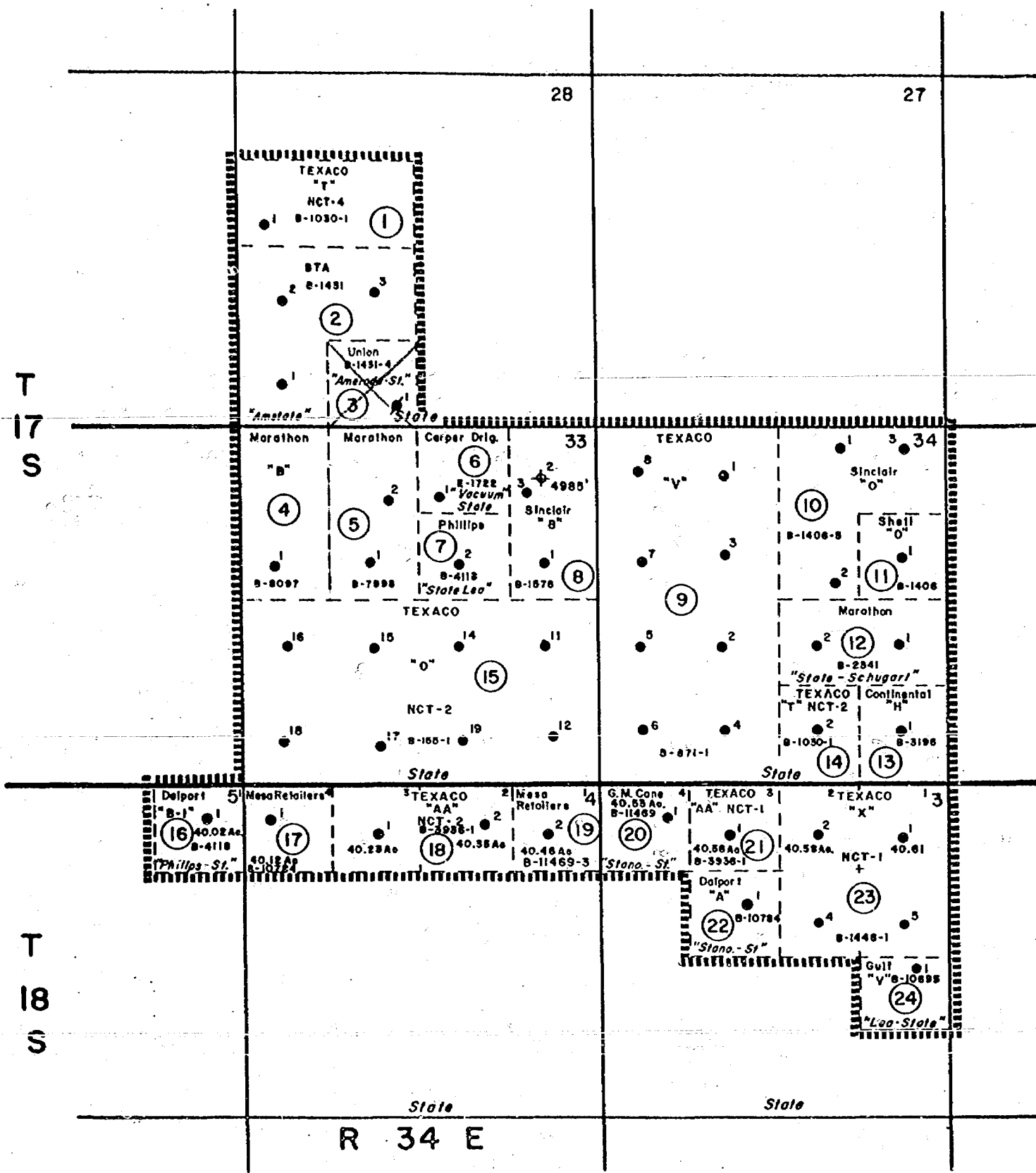
UNIT OPERATOR AND WORKING INTEREST OWNER

Terms _____

Form _____

By _____

Attorney-in-Fact



T
17
S

T
18
S

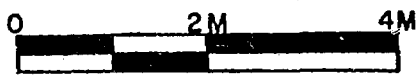
R 34 E

LEGEND

- ▬ UNIT BOUNDARY
- ⊙ UNIT TRACT NUMBER

EXHIBIT A

TO
UNIT AGREEMENT
WEST VACUUM UNIT
 TOTAL - 2043.46 Ac.
 Lea County, New Mexico



Scale:

Drawn By: JWD

Date: 4-20-65

EXHIBIT "B"
SCHEDULE SHOWING THE PERCENTAGE AND KIND OF OWNERSHIP OF ALL LANDS IN THE
WEST VACUUM UNIT AREA, LEA COUNTY, NEW MEXICO

Tract No.	Description of Land	No. of Acres	Serial No. and Expiration Date of Lease	Lessee of Record	Overriding Royalty or Production Payment and Percentage	Working Interest and Percentage	Percentage Unit Participation	
							Phase I	Phase II
1	S/2 NW/4 Sec. 28 T-17S, R-34E	80	B-1030-1 HBP	Texaco	0	100.0000	1.01876	0.34382
2	N/2 SW/4 & SW/4SW/4 Sec. 28, T17S, R34E	120	B-1431 HBP	BTA Oil	6.2500	Carlton Beal 24.9650 A.K.Trobaugh 24.9650 M.I.Schwartz 0.8000 H.I.Schwartz 0.8000 H.D.Goldman 0.8000 M.D.Goldman 0.8000 Ernst Wolff 12.0000 G. N. Frank 4.0000 B.E.Alpern 4.8000 Jack Weinstein 3.2000 Herbert Winter 3.2000 G.P.Palma 1.6000 E.J.Horton 1.6000 F.T.Joyce 1.6000 Isaac Gordon 8.0000 H.H.Black 1.6000 R.B.Gordon 1.6000 R.A.Gordon 1.6000 W.S.Nevin 0.7200 E.H.Palma 0.6000 Winter, Wolff & Co. 0.7500 100.0000	0.99909 0.99909 0.03202 0.03202 0.03202 0.03202 0.48024 0.16008 0.19210 0.12806 0.12806 0.06403 0.06403 0.06403 0.06403 0.32016 0.06403 0.06403 0.06403 0.06403 0.02881 0.02401 0.03002 4.00198	0.36384 0.36384 0.01166 0.01166 0.01166 0.01166 0.01166 0.17489 0.05830 0.06995 0.04664 0.04664 0.02332 0.02332 0.02332 0.02332 0.11659 0.02332 0.02332 0.02332 0.01049 0.00874 0.01093 1.45741
3	SE/4 SW/4 Sec. 28 T-17-S, R-34E	40	B-1431-4 HBP	Lamar Fleming, Jr. dba L. F. Oil Company	6.2500	Amerada 6.2500 M.C.Danuth 1.3672 W.S.Boyle 4.1667 W.D.Wenderson 2.8033 0 100.0000	0.00000 0.00000 0.00000 0.00000 0.00000 4.00198	0.03259 0.01086 0.01086 0.04345 1.45741
4	W/2 NW/4 Sec. 33 T17S, R-34E	80	B-8097 HBP	Marathon	0	100.0000	3.08956	4.64737

Tract No.	Description of Land	No. of Acres	Serial No. and Expiration Date of Lease	Lessee of Record	Overriding Royalty or Production Payment and Percentage	Working Interest and Percentage		Percentage Unit Participation	
								Phase I	Phase II
5	E/2 NW/4 Sec. 33 T17S, R34-E	80	B-7998 HBP	Marathon	0	Marathon	100.0000	1.65112	2.04061
6	NW/4 NE/4 Sec. 33, T17S, R34E	40	E-1722 HBP	Carpenter Drilling Continental	0	Carpenter Drig. Continental	75.0000 25.0000 100.0000	1.10440 0.36813 1.47253	1.27696 0.42565 1.70261
7	SW/4 NE/4 Sec. 33 T17S, R34E	40	B-4118 HBP	Phillips	0	Phillips	100.0000	1.32642	1.64906
8	E/2 NE/4 Sec. 33 T17S, R34E	80	B-1575 HBP	Stinclair	0	Stinclair	100.0000	1.67953	2.58329
9	W/2 Sec. 34 T17S, R34E	320	B-871-1 HBP	Texaco	0	Texaco	100.0000	25.65245	25.33139
10	N/2NE/4&SW/4NE/4 Sec. 34, T17S, R34E	120	B-1406-5 HBP	Stinclair	12.5000	Stinclair	100.0000	2.92478	5.22931
11	SE/4NE/4Sec. 34 T17S, R34E	40	B-1406 HBP	Shell	0	Shell	100.0000	1.54640	2.34370
12	N/2 SE/4 Sec. 34 T17S, R34E	80	B-2341 HBP	Marathon	0	Marathon	100.0000	3.47352	6.73420
13	SE/4SE/4 Sec. 34 T17S, R34E	40	B-3196 HBP	Continental	0	Continental	100.0000	5.83007	5.06146
14	SW/4 SE/4 Sec. 34 T17S, R34E	40	B-1030-1 HBP	Texaco	0	Texaco	100.0000	3.74546	4.30505
15	S/2 Sec. 33 T17S, R34E	320	B-155-1 HBP	Texaco	0	Texaco	100.0000	21.26245	18.26429
16	NE/4 NE/4 Sec. 5 T18S, R34E	40.02	B-4118 HBP	Phillips	10.9375	Phillips	42.1875 25.0000 14.0625 9.3750 9.3750 100.0000	0.36404 0.21572 0.12134 0.08090 0.08090 0.086290	0.26101 0.15467 0.08701 0.05800 0.05800 0.61869

Tract No.	Description of Land	No. of Acres	and Expiration Date of Lease	Lessee of Record	Overriding Royalty or Production Payment and Percentage	Working Interest and Percentage	Percentage Unit Participation Phase I	Percentage Unit Participation Phase II
17	NW/4 NW/4 Sec. 4, T18S, R34E	40.12	B-10784 HBP	Mesa Retailers	Jerry Curtis Martin Yates & Lillie M. Yates Pan American 3.1250 3.1250 6.2500 12.5000	Mesa Retailers Don Angle 86.1667 10.8333 100.0000	0.58702 0.07132 0.65834	0.50335 0.06115 0.56452
18	NE/4NW/4&NW/4NE/4 Sec. 4, T18S, R34E	80.58	B-3936-1 HBP	Texaco	0	Texaco	1.64706	1.18410
19	NE/4NE/4 Sec. 4 T18S, R34E	40.46	B-11469-3 HBP	Mesa Retailers	Jerry Curtis Martin Yates & Lillie M. Yates Pan American 3.1250 3.1250 6.2500 12.5000	Mesa Retailers Don Angle 89.1667 10.8333 100.0000	0.88378 0.10738 0.99116	0.50280 0.06109 0.56389
20	NW/4NW/4 Sec. 3 T18S, R34E	40.53	B-11469 HBP	Gordon M. Cone	Pan American 5.46875	G.M. Cone	1.14540	0.88192
21	NE/4 NW/4 Sec. 3 T18S, R34E	40.56	B-3936-1 HBP	Texaco	0	Texaco	1.06909	1.88595
22	SE/4 NW/4 Sec. 33, T18S, R34E	40	B-10784 HBP	Pan American	Pan American 5.46875	Delport Oil G.W. Pirtle J.S. Hudnall W.I. Todd, Jr. W.I. Todd T.E. Todd 12.5000 10.0000 100.0000	0.42501 0.08898 0.08898 0.17587 0.12562 0.10050 1.00496	0.37718 0.07897 0.07897 0.15607 0.11148 0.08918 0.39185
23	NE/4 Sec. 3 T18S, R34E	161.19	B-1446-1 HBP	Texaco	5.46875	Texaco	12.57905	10.76067
24	NE/4SE/4Sec. 3 T18S, R34E	40	B-10695 HBP	Gulf	0	Gulf	1.36701	0.91139
		<u>2043.46</u>			0		<u>100.0000</u>	<u>100.00000</u>

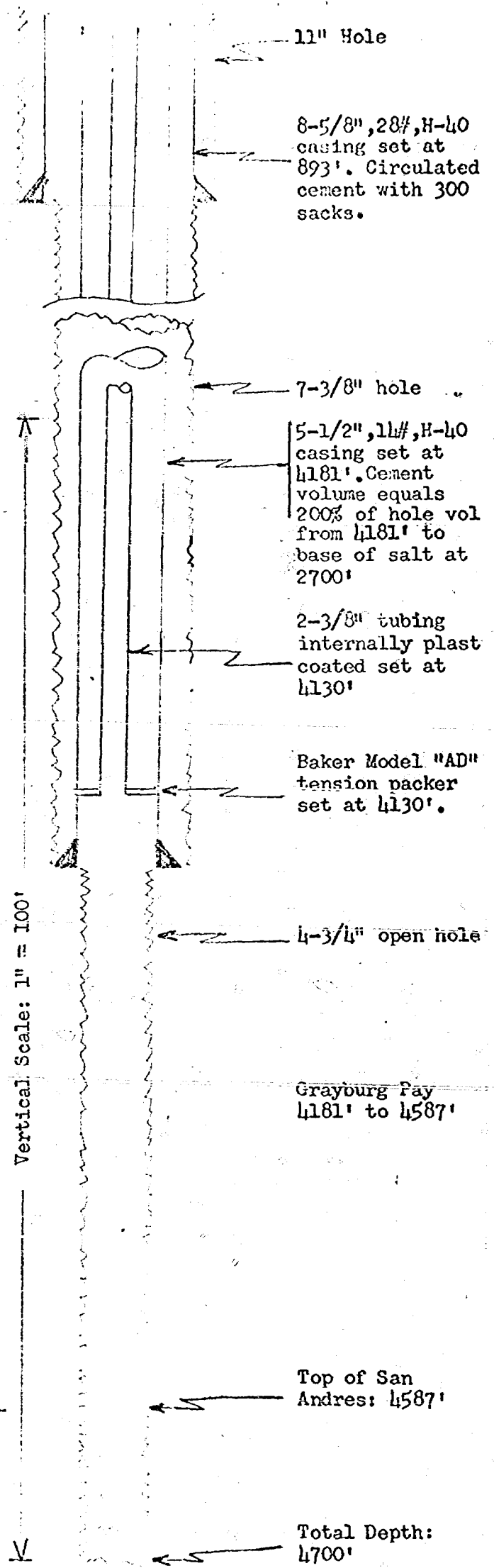
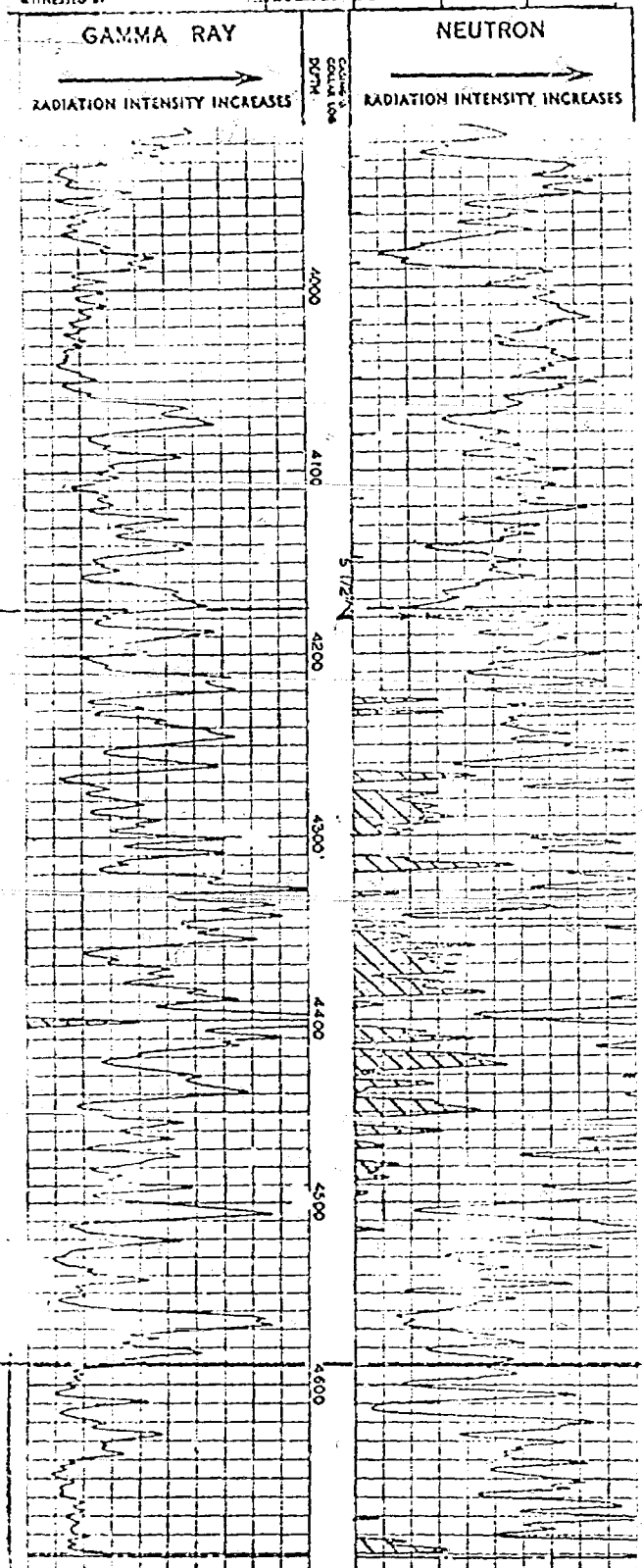
Note: Unit contains all State acreage with a base royalty of 12.5 per cent.

LANE LOG WELLS COMPANY

DIAGRAMMATIC SKETCH OF PROPOSED INJECTION WELL

Location of Well	COMPANY: THE TEXAS CO. WELL: STATE OF NEW MEXICO "V" #6 FIELD: VACUUM COUNTY: LEA STATE: N.M. LOCATION: SW/4 OF SW/4 OF SEC. 34-573-56E	COUNTY: LEA STATE: N.M. LOCATION: SW/4 OF SW/4 OF SEC. 34-573-56E	COMPANY: THE TEXAS CO. WELL: STATE OF NEW MEXICO "V" #6 FIELD: VACUUM COUNTY: LEA STATE: N.M. LOCATION: SW/4 OF SW/4 OF SEC. 34-573-56E
MEAS FROM ROTARY TABLE	ELEV. 4045'		
MEAS FROM ROTARY TABLE	ELEV. 4045'		
DATE	5 1/2" GSO.	ELEV. 4055'	

TYPE OF LOG	O/R	K-
PLN NO.	1	1
DATE	1-20-51	1-19-51
TOTAL DEPTH (FEET)	4700'	4700'
EFFECTIVE DEPTH (FEET)	4700'	4700'
TOP OF LOGGED INTERVAL	0	0
BOTTOM OF LOGGED INTERVAL	4692'	4692'
TYPE OF FLUID IN HOLE	WATER	WATER
FLUID LEVEL	696'	622'
MAXIMUM RECORDED TEMP.		60.74
NEUTRON SOURCE STRENGTH & TYPE		0.25
SOURCE SPACING - IN.		0
LENGTH OF MEASURING DEVICE - IN.	36	0
OD OF INSTRUMENT - IN.	3 5/8"	3 5/8"
TIME CONSTANT - SECONDS	11	11
SCATTERING SPEED FE. MIN.	35	35
STATISTICAL VARIATION - IN.		
SENSITIVITY REFERENCE	274	275
RECORDED BY	SCHULTZ	BEACK
WITNESSED BY	DULLENIG	DULLENIG



Vertical Scale: 1" = 100'

BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. III
 CASE NO. 3344 & 3345

Company: TEXACO Inc.
 Lease: State of New Mexico "V" No.6
 Field: Vacuum (Grayburg-San Andres)
 County: Lea County, New Mexico

DESCRIPTION OF WATER SOURCE

TEXACO has appropriated water rights under 606.9 acres of Section 30, Township 17-South, Range 35-East, except five acres. This appropriation is for a combined total of 2100 acre feet per annum (44,633 BPD) of the shallow ground water of the Lea County Underground Water Basin by drilling four wells, each approximately 200 feet in depth and 13-3/8 inches in diameter, to be located as follows:

<u>Well No.</u>	<u>Subdivision</u>	<u>Section</u>	<u>Township</u>	<u>Range</u>
L-4247	NW/4 NW/4	30	17-S	35-E
L-4247-X	SW/4 NW/4	30	17-S	35-E
L-4247-X-2	SW/4 SW/4	30	17-S	35-E
L-4247-X-3	NW/4 SW/4	30	17-S	35-E

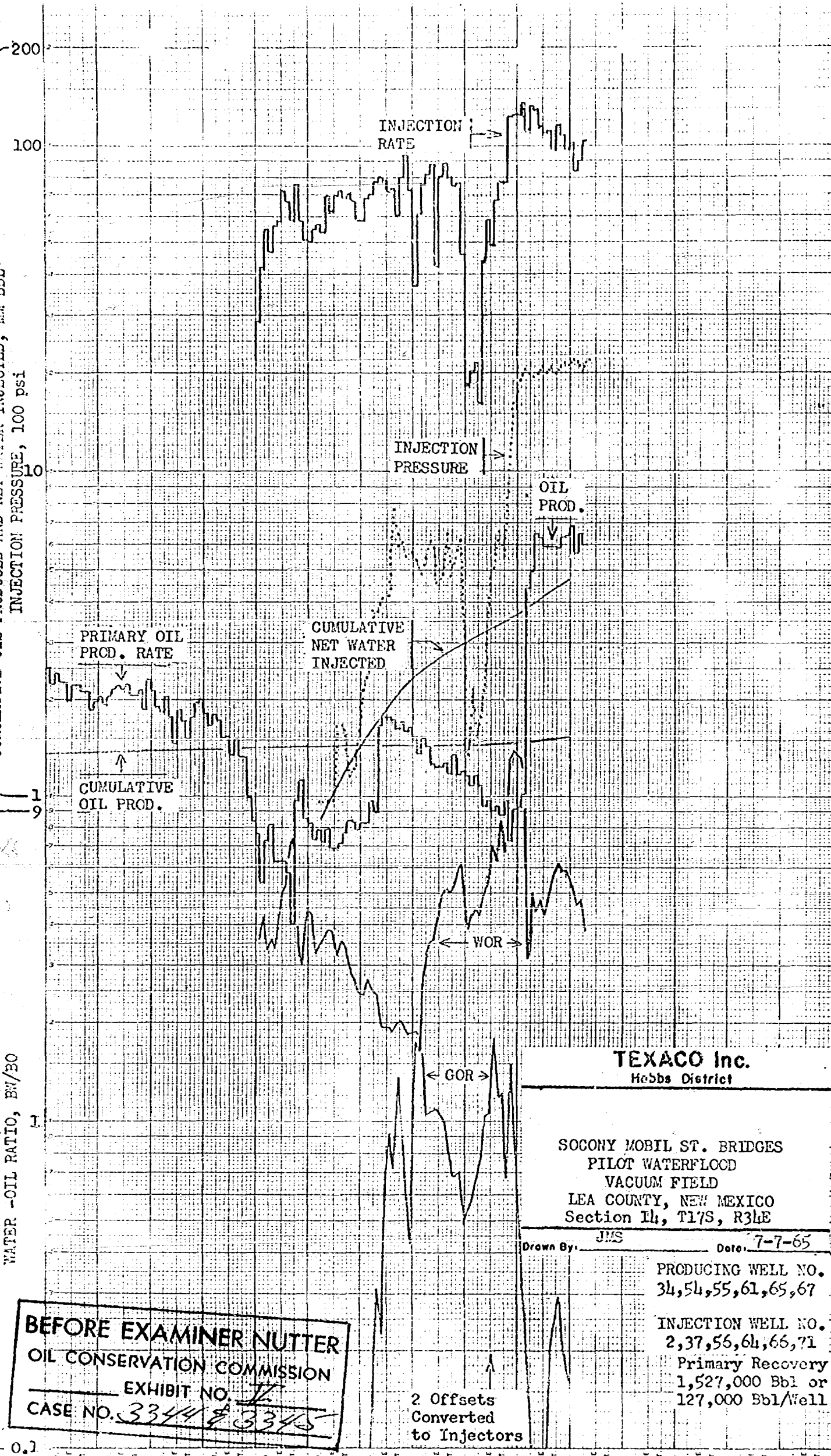
said wells to be used for the secondary recovery of oil by waterflooding approximately 4240 acres in the Proposed West Vacuum Unit.

Under Permit No. L-4247X2 a water source well was drilled in the SW/4 SW/4 SW/4 of Section 30, Township 17-South, Range 35-East. Abbott Brothers, Hobbs, New Mexico, was the Drilling Contractor. Water-bearing strata were encountered from 83 to 115 feet and from 135 to 190 feet. Total depth is 200 feet and 11-3/4", 32# spiral welded casing with perforation from 100 to 200 feet was set at total depth. This well was completed August 28, 1963.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. IV
CASE NO. 3344 & 3345

MONTHLY OIL PRODUCED AND WATER INJECTED, M BBL
 CUMULATIVE OIL PRODUCED AND NET WATER INJECTED, MM BBL
 INJECTION PRESSURE, 100 psi

GAS-OIL RATIO, MCF/BO
 WATER-OIL RATIO, BW/BO



TEXACO Inc.
 Hobbs District

SOCONY MOBIL ST. BRIDGES
 PILOT WATERFLOOD
 VACUUM FIELD
 LEA COUNTY, NEW MEXICO
 Section 14, T17S, R34E

Drawn By: JMS Date: 7-7-65

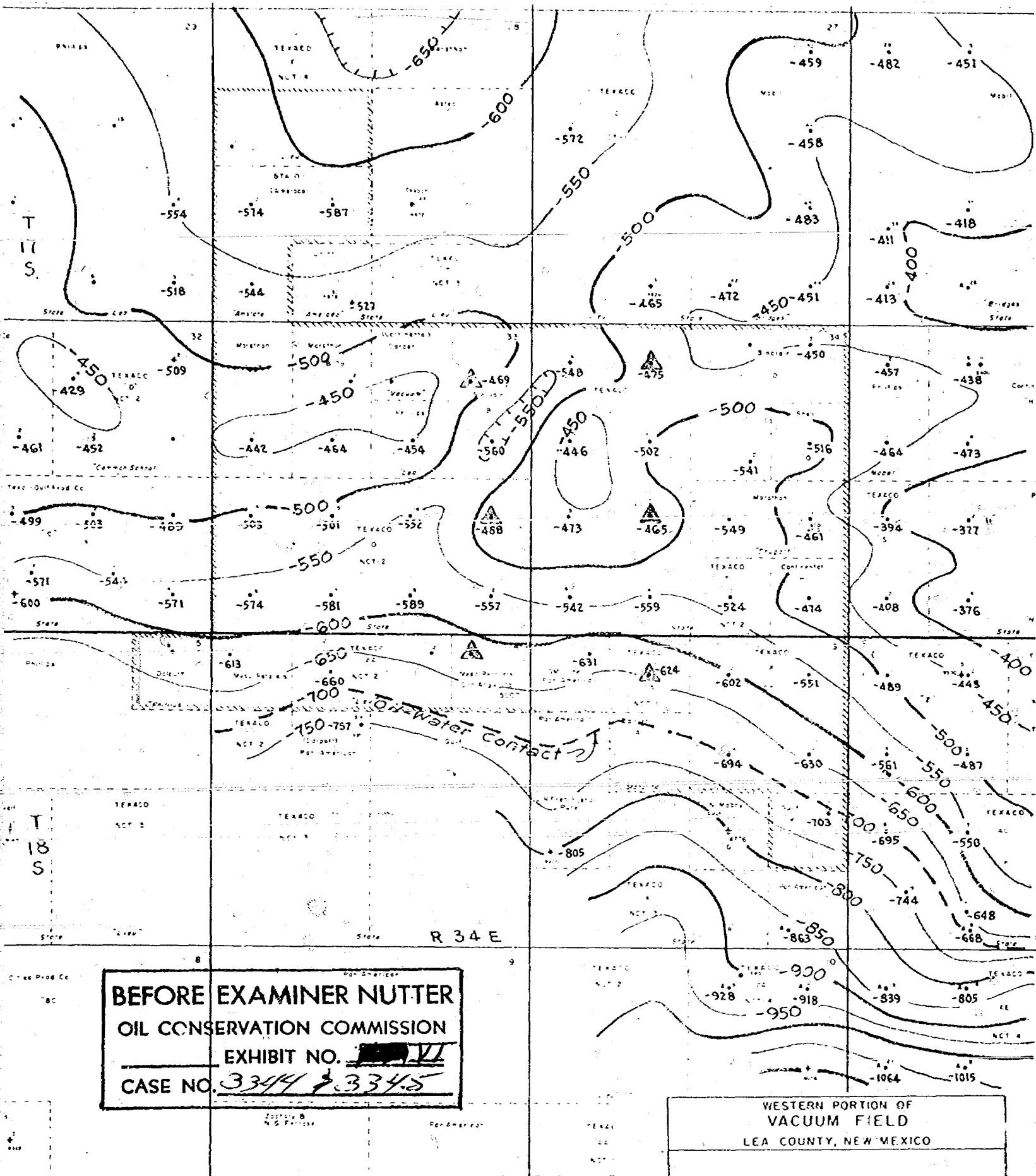
PRODUCING WELL NO.
 34, 54, 55, 61, 65, 67

INJECTION WELL NO.
 2, 37, 56, 64, 66, 71
 Primary Recovery
 1,527,000 Bbl or
 127,000 Bbl/Well

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
 EXHIBIT NO. VI
 CASE NO. 3344 & 3345

2 Offsets
 Converted
 to Injectors

DEC 59 JAN 60 FEB 60 MAR 60 APR 60 MAY 60 JUN 60 JUL 60 AUG 60 SEPT 60 OCT 60 NOV 60 DEC 60 JAN 61 FEB 61 MAR 61 APR 61 MAY 61 JUN 61 JUL 61 AUG 61 SEPT 61 OCT 61 NOV 61 DEC 61 JAN 62 FEB 62 MAR 62 APR 62 MAY 62 JUN 62 JUL 62 AUG 62 SEPT 62 OCT 62 NOV 62 DEC 62 JAN 63 FEB 63 MAR 63 APR 63 MAY 63 JUN 63 JUL 63 AUG 63 SEPT 63 OCT 63 NOV 63 DEC 63 JAN 64 FEB 64 MAR 64 APR 64 MAY 64 JUN 64 JUL 64 AUG 64 SEPT 64 OCT 64 NOV 64 DEC 64 JAN 65 FEB 65 MAR 65 APR 65 MAY 65 JUN 65 JUL 65 AUG 65 SEPT 65 OCT 65 NOV 65 DEC 65 JAN 66 FEB 66 MAR 66 APR 66 MAY 66 JUN 66 JUL 66 AUG 66 SEPT 66 OCT 66 NOV 66 DEC 66 JAN 67 FEB 67 MAR 67 APR 67 MAY 67 JUN 67 JUL 67 AUG 67 SEPT 67 OCT 67 NOV 67 DEC 67 JAN 68 FEB 68 MAR 68 APR 68 MAY 68 JUN 68 JUL 68 AUG 68 SEPT 68 OCT 68 NOV 68 DEC 68



BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. VI
 CASE NO. 3344 & 3345

WESTERN PORTION OF
 VACUUM FIELD
 LEA COUNTY, NEW MEXICO

STRUCTURE MAP

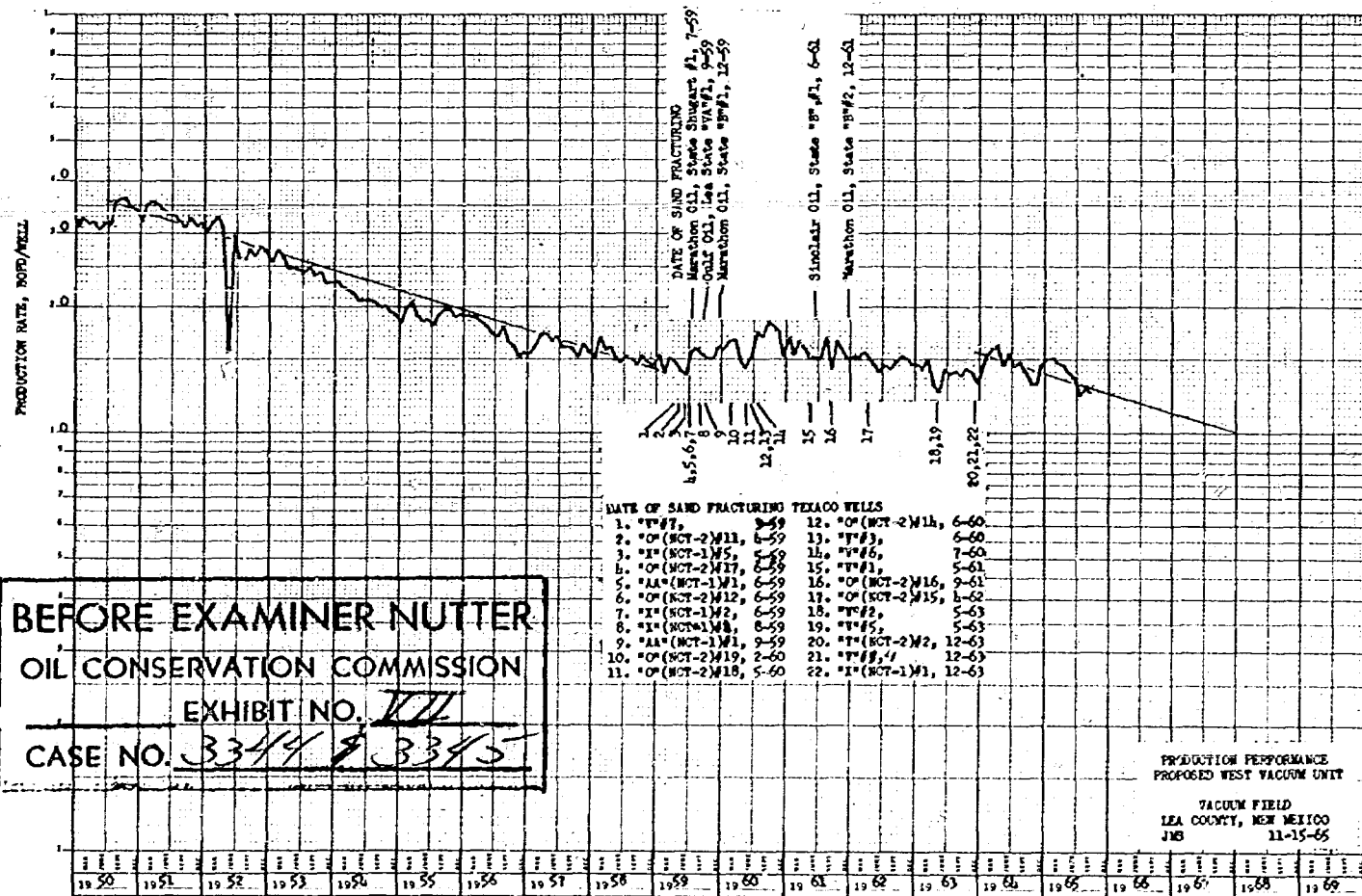
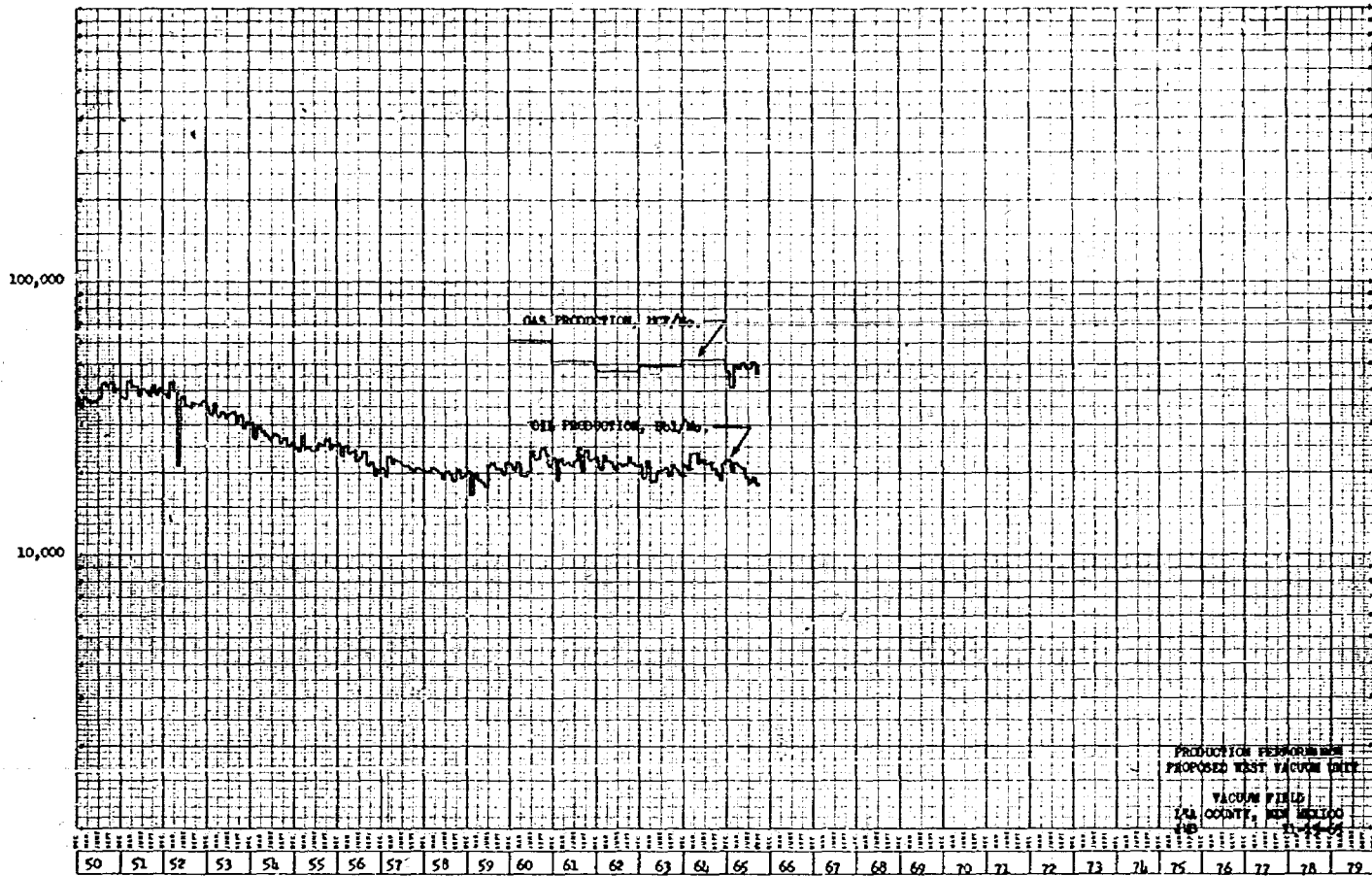
CONTOURED ON TOP SAN ANDRÉS
 CONTOUR INTERVAL 50' BY DATE 11-9-62
 SCALE: 0' 1000' 2000' 3000'

LEGEND

- PROPOSED INJECTORS
- INJECTORS
- UNIT BOUNDARY, WEST VACUUM

POOL LEGEND

- G GLORETA
 - B BLINEBRY
 - A ABO
 - W WOLFCAMP
 - P PENNSYLVANIAN
 - D DEVONIAN
- WELLS NOT NOTED ARE SAN ANDRES



WEST VACUUM UNIT

Production - September, 1965

Top Allowable - 37 BOPD

(Data from NMOCC "Monthly Statistical Report")

Co. & Lease	Well No.	BOPD	BWPD
ETA Amstate Amstate Amstate	1	5.7	4
	2	7.4	5
	3	4.9	3
Carper Drilling Co. Vacuum State	1	7.2	0
G. M. Cone Stanolind State	1	6.2	0
Continental Oil Company State 'E' - 34	1	20.1	0
Dalport Phillips State 1B Stanolind State A	1	5.7	1
	1	7.4	0
Gulf Oil Corp. Lea State 'VA'	1	8.9	2
Marathon Oil Co. State Shugart State Shugart State 'B' State 'B' State 'A'	1	15.7	0
	2	18.2	0
	1	12.9	0
	2	13.5	0
	1	7.7	0
Mesa Retailers State Lease State Lease	1	3.3	0
	2	5.3	0
Phillips Petroleum Co. State Lea	2	5.6	0
Shell Oil Company State 'O' Lease	1	8.3	0
Sinclair Oil Company State 'B' Lease State 'B' Lease State 'O' Lease (D&E) State 'O' Lease	1	7.9	0
	3	1.7	0
	1	4.3	0
	2	3.7	0

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
 EXHIBIT NO. VIII
 CASE NO. 3344 & 3345

<u>Co. & Lease</u>	<u>Well No.</u>	<u>BOPD</u>	<u>BWPD</u>
Sinclair Oil Company (Cont'd) State 'O' Lease			
TEXACO Inc.	3	9.0	0
State 'AA' (NCT-1)	1	6.8	3
State 'AA' (NCT-2)	1	3.1	0
State 'AA' (NCT-2)	2	4.7	0
State 'O' (NCT-2)	11	8.4	0
	12	20.0	0
	14	18.9	11
	15	13.3	0
	16	17.5	0
	17	11.0	0
State 'T' (NCT-2)	18	7.1	0
State 'T' (NCT-4)	19	17.3	0
State 'V'	2	17.1	0
	1	5.6	0
	1	1.3	0
	2	37.0 ✓	0
	3	22.0	0
	4	37.0 ✓	0
	5	37.0 ✓	0
	6	17.6	0
State 'X' (NCT-1)	7	18.7	0
	8	2.9	0
	1	35.7	0
	2	35.7	0
	4	0	3
	5	35.8	0

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 23, 1965

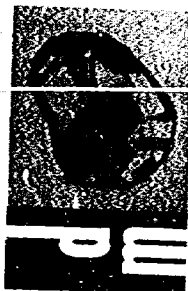
EXAMINER HEARING

IN THE MATTER OF:)
 Application of Texaco Inc. for a unit)
 agreement, Lea County, New Mexico.)
 Applicant, in the above-styled cause, seeks)
 approval of the West Vacuum Unit Area)
 comprising 2000 acres, more or less, of)
 State land in Township 17 South, Range 37)
 East, Lea County, New Mexico, and)
 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 in its)
 West Vacuum Unit by the injection of water)
 into the Grayburg-San Andres formations)
 through six injection wells located in)
 Sections 3 and 4, Township 18 South, Range)
 34 East, and Sections 33 and 34, Township)
 17 South, Range 34 East, Vacuum Pool, Lea)
 County, New Mexico.)

Case Nos. 3344 and 3345

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING



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MR. DURRETT: Application of Texaco Incorporated for a unit agreement, Lea County, New Mexico.

MR. WHITE: If the Examiner please, Charles White of Santa Fe, attorney on behalf of the Applicant. We have one witness, Mr. Yost, to be sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 8 marked for identification.)

MR. NUTTER: Are these cases closely enough related?

MR. WHITE: Yes, sir. I was going to ask if we could have them consolidated with case 3345.

MR. NUTTER: We will call the next case, 3345.

MR. DURRETT: Application of Texaco for a waterflood project, Lea County, New Mexico.

W I L L I A M P. Y O S T, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Yost, will you state your full name, please?

A My name is William P. Yost.

Q By whom are you employed and in what capacity?

A I am employed Texaco Incorporated as a petroleum engineer.

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Q Are you familiar with the subject application?

A Yes, I am.

Q What is Texaco seeking in cases 3344 and 3345?

A In the first case Texaco seeks approval of a unit agreement. In the second case Texaco seeks authorization for a waterflood project in the West Vacuum Unit.

Q For secondary recovery operations?

A For secondary recovery operations, yes.

Q Now Mr. Yost, will you testify as to Exhibit Number 1?

A Yes. Exhibit 1 is a plat of the over-all area outlining the proposed unit area and also indicating all properties, the operators of the properties, and the zones which have been completed within a two mile radius of the proposed unit area.

Q Does that also show the injection wells?

A Injection wells are indicated by the red triangle at each pertinent location. There are to be six of these injection wells in the initial stage and this initial stage which will be a pilot stage and this unit area consists of 2,000± acres.

Q If I'm not mistaken, in your original application didn't you say this would be a five spot.

A In the original application it was a five spot. However, since that time, this project has been re-evaluated and it appears as if an inverted nine spot would probably be



the most economical pattern. The six injection wells will be in a pilot stage. If in the event evaluation of this inverted nine spot pattern in the pilot stage indicates that a five spot pattern may be preferable, then this pattern will be converted to a five spot rather readily.

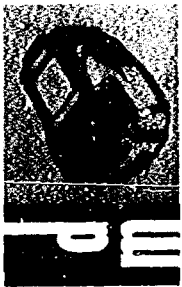
Q Now, referring to your proposed unit agreement, when did Texaco first undertake this study of the well area?

A Texaco commenced studying its property in the unit area and surrounding areas early in 1963 for the purpose of evaluating the feasibility of secondary recovery. During the course of this study it was determined that secondary recovery measures were a prospect and should be commenced in the near future. After this was determined, other operators' properties adjacent to Texaco properties were examined and it was felt that these properties were also prospective for secondary recovery and that Texaco should initiate a proposal to the operators to form a unit in this area. In the middle of 1965 a ballot letter was submitted by Texaco to these other operators requesting their approval or disapproval for further investigation under study and leading toward the study of the unit operation. All parties within the proposed area indicated an affirmative answer. From there Texaco conducted further work and arrived at various perimeters in which to unitize. Correspondence was mailed to these pertinent operators for their comments and

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approval or disapproval and after negotiations with these other operators, all perimeters were agreed upon and this unit agreement was circulated to these people for that application.

Q Is the unit agreement marked Exhibit 2?

A Exhibit 2 is the unit agreement.

Q Is it the standard API form of agreement?

A Yes. This is a model API standard form revised to meet the New Mexico State Land requirements and applicable to these specific areas.

Q Are there any amendments to be made to this unit agreement?

A Yes. Exhibit A, which is a plat of the proposed area, should be amended to exclude the southeast quarter of the southwest quarter of Section 28, Township 17 South, Range 34 East.

MR. NUTTER: Is that Tract 3?

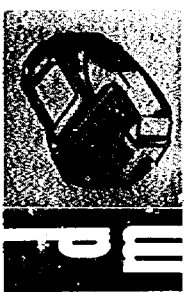
THE WITNESS: That's Tract 3 on Exhibit A.

Q (By Mr. White) And your participation factors will be amended accordingly?

A We will delete this property.

Q What per cent of the working interests are committed?

A All of the working interests have been committed to the unit with the exception of those properties, tract numbers, in Continental owns and those in Mesa Retailers and those that



Don Angle owns.

Q Now, where would they be indicated on your unit agreement that you referred to, where are they reflected?

A The Continental properties are indicated on the agreement as being Tract Number 6 and Tract Number 13. The Mesa Retailers and Don Angle properties are joint properties and that would be Tract Number 17 and Tract 19.

Q Do you have every reason to believe that they will be committed to the unit later on?

A Yes. Continental advised last Friday that their district office recommended that they ratify. Texaco's land department advised last Friday that the Mesa Retailers and Don Angle properties would be coming into the unit.

Q The percentage interests and the kind of ownership are reflected on Exhibit B of the unit agreement?

A They are reflected there on Exhibit B.

Q The area comprises approximately 2,000. Is that all State land?

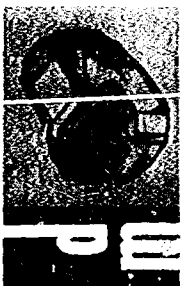
A Yes, that's all State land.

Q Do you know whether or not the State Land Commissioner will approve the unit agreement?

A The State Land has advised Texaco that they would ratify the agreement subsequent to the Oil Conservation Commission's approval of the agreement.

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Q Does that complete your testimony in reference to the unit agreement?

A There is one item there in overriding royalty interest. As indicated on Exhibit B of the proposed agreement, Martin Yates and Lillie M. Yates have an overriding royalty in Tract 17 and also Tract 19 who have not signed the agreement but we have been advised that they will be signing in the very near future.

Q Now, will you refer to your diagrammatic sketches, Exhibit Number 3, and explain the exhibit?

A Yes. Exhibit 3 illustrates what will be a typical injection well. And the log portion reproduced is a log on this well. This well being Texaco State of New Mexico "V" Well Number 6.

Q Is that the only log you have?

A This is the only log we have and also this particular well is not to be an injection well. This was submitted for the purpose of having a log to indicate the pay zones but this well will be typical of all the injectors.

Q Well, will each well that's going to be transferred to water injection be logged prior to its being converted?

A Yes, sir, it will.

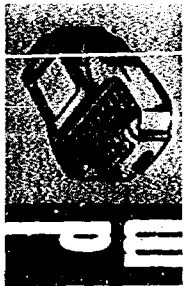
Q Will this casing program include contamination?

A Yes, it will.

Q And what will be your source of water supply?

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A Exhibit 4 indicates a description of the water rights and I'll not go into the detailed description since it is spelled out on this exhibit.

Q What do you anticipate your initial injection rates to be?

A We anticipate a maximum of 600 barrels per day of water into each injection well at a maximum pressure of 2,200 psi. The initial injection rate has not been determined since these initial injection wells will be in the pilot stage and evaluation for -- the injection rate will have to be determined.

Q Are there similar waterflood projects within the area?

A Yes.

Q Is that shown by Exhibit 5?

A Yes. Exhibit 5 indicates the performance data of both pilot waterflood approximately two and a half miles northeast of the proposed unit area. They commenced their operation injecting water early in 1959 on a five spot pattern. For a while there it seemed as if this project might be somewhat questionable in its ultimate economics. However, early in 1963 Mobil increased, as indicated on these curves, their injection rate into the injection wells and the pressures thereby the oil production correspondingly increased. The water to oil ratio decreased. The gas/oil ratio decreased so that data lead

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us to believe that probably a high injection rate might be the optimum method to go at rather than a lower injection rate.

Q Now, will you explain Exhibit 6 which is a structure map?

A Yes. Exhibit 6 indicates contours in the area of the proposed unit. These contours being based on the top of the San Andres formation and it also indicates a water/oil contact on the southern portion of the pool as well as the southern portion of the unit area and this structure is indicated by the contours as a continuous structure throughout the entire proposed unit area as well as the area surrounding the proposed unit which is similar to the Mobil's waterflood to the north.

Q Have you conducted any studies as to your productive performance in the area?

A Yes. Exhibit 7, referring to the lower curve on that exhibit which is a refinement of the upper curve, production decline curve extrapolated from the year commencing in 1950 to the year ending in 1958 indicated that an average of 10 barrels of oil per day per well within the unit area would reach 10 barrels a early in the year in 1962. However, as indicated on this lower curve extensive remedial work was performed on wells within the unit area in order to increase the primary producing rate. During this period of time commencing early in 1959 and ending in December of 1963 some 27 wells had remedial

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work performed on them and now the production is back on decline and the remedial work has served its useful purpose. The next logical step since remedial work has served its usefulness is to commence secondary recovery operations in order to increase production.

Q In other words in your opinion it is not economically feasible to continue this remedial work?

A That is correct. The wells that can be considered responsive to remedial work have been treated.

Q Have you made a study of the daily production of each well?

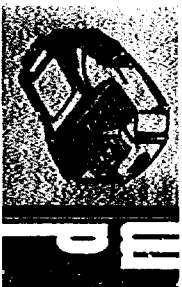
A Yes. Exhibit 8 indicates the average daily production for each of these concerned wells within the unit area for the month of September, 1965.

Q How many wells are making their top allowable?

A There are currently six wells producing top allowable; four of these wells were of the later group on which remedial work was performed in order to increase production but these four should decline to considerably less than top allowable in the very near future. Also indicated on this you may see that most of the wells produce less than 10 barrels per day.

Q What per cent of the wells produce less than 10 barrels per day within the unit?

A It's 56.3 per cent or 27 of the 48 wells produce less



than 10 barrels per day.

Q What per cent of the wells produce between 10 and 20 barrels per day?

A 29.2 per cent or 14 of the 48 wells produce between 10 and 20 per day.

Q Would you say that 87 per cent of the total wells are incapable of producing their top allowable?

A Yes, sir, that is correct. There is one well that produces 22 barrels per day so included approximately seven and a half per cent of the wells are in the later life for primary recovery.

Q Mr. Yost, did you file a copy of the application with the State Engineer, and if so, what result did you obtain?

A We filed with him. We received a copy of a letter which he submitted to the Oil Conversation Commission advising certain stipulations he would like to have incorporated and insured in the injection wells.

Q Now, are you willing to meet these requirements?

A Yes. Texaco will more than meet these requirements insofar as setting the packer at the proper depth and the cement tops and the other specifications he desires.

MR. WHITE: Did the Examiner receive --

MR. NUTTER: We have a letter dated October 29, would that be the one, Mr. Yost?

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THE WITNESS: Yes, that would be the one.

Q (By Mr. White) In your opinion would the proposed project be in the interests of conservation and tend to protect correlative rights?

A Yes. It is estimated within the unit area that the calculated secondary recovery oil will be 6,160,811 barrels.

Q And by this application you are seeking secondary rights pursuant to Rule 701?

A Yes, we do.

Q And would you like administrative approval to expand your area in accordance with the present rules?

A Yes, that is correct.

Q And is it possible that you may convert to five point instead an inverted nine?

A Yes, it's possible after the evaluation of the nine spot pattern has been performed.

Q Does that complete your testimony?

A Yes.

MR. WHITE: At this time we offer exhibits 1 through 8.

MR. NUTTER: Texaco's Exhibits 1 through 8 will be admitted into evidence.

(Whereupon, Applicant's Exhibits 1 through 8 were offered and admitted in evidence.)



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MR. WHITE: That completes our direct.

MR. NUTTER: Does anyone have any questions of Mr. Yost?

CROSS EXAMINATION

BY MR. PORTER:

Q Mr. Yost, these wells have been producing for quite a few years, have they not?

A Yes, sir, Mr. Porter. The initial well within the unit area I believe was completed by Ohio Oil Company in November of 1938 and during the 1940's some 23, I believe, or some 21 wells were developed during the year 1940.

Q I see.

A The remaining 23 were in the late 40's and early 50's and four were drilled during the year 1961.

Q You testified that you would expect to recover a little bit in excess of 6 million barrels on secondary recovery?

A Yes, sir.

Q Do you have the figures for the primary recovery for this particular area?

A Yes, sir, I do. The estimated primary reserve as of December 1, 1963; 2,279,000 barrels of oil.

Q And do you know much has been recovered up to now by these wells in this area?

A No, sir, I do not have that number.



Q I see.

A I don't have that with me.

MR. PORTER: Okay. Thank you.

BY MR. NUTTER:

Q What is the participation formula for the various tracts, Mr. Yost?

A It's a two-phase formula: Phase one being based on 100 per cent on the current producing rate for the period from June 1, 1963 to December 1, 1963. This phase one formula is the remaining primary reserves and is to remain in effect approximately estimated to January 1, 1975. At that time we expect that the total primary reserves of 10,268,019 barrels of oil shall have been recovered.

Q In other words, phase one remains in effect until this amount of primary oil being 2,679,000 barrels has been recovered?

A That is correct.

Q And you expect that to be in 1975?

A Early in '75, yes.

Q And then it goes into phase two?

A Yes, sir.

Q And actually how do the tracts participate under phase one or phase two?

A These tracts have their formula calculated in their

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percentage of current production during this six-month period, the latter part of 1963 times their remaining reserves gives their percentage for phase one participation. In phase two --

Q Well, I see it here in the unit agreement, "tract participation", under phase two would be the ratio of the ultimate primary oil production underlining each tract to the primary oil underlining all tracts.

A That's it.

Q And the participation formula is in this agreement and has been agreed to by the various working interests?

A Yes, sir, that is correct.

Q Now, in your Exhibit 3, you show a schematic diagram of one injection well. Is this a typical well?

A I believe I mentioned before this diagram is not of an injection well. This is the only well on which we have an adequate log but all injection wells will be typical of this particular installation.

Q What about the top of the cement in each of these injection wells? I notice one of the conditions of approval stated in there in their letter that was the packer should be set well below the top of the cement surrounding the 5-1/2" casing?

A Yes, sir, in all cases that will be the case. We propose to set the packer within 50 feet or less from the casing





shield. Each of these injection wells were cemented with 200 to 300 sacks of cement and that percentage would vary from say 200 per cent from base of the casing shield to the base of the salt so this should insure a good cementing program throughout the entire area.

Q And the packer will be set within 50 feet of the shield?

A Yes.

Q So it would be below the base for the top of the cement?

A Yes.

Q Now, on your production decline curves in Exhibit Number 7 you had a kick in production there in the beginning of 1964 but evidently three wells were worked over about that time?

A Three wells were treated in December of 1963 and this increased production in '64 as a resulting factor in the program.

Q Now, in 1964 you had another production kick but there is no evidence of any workovers. What do you attribute that to?

A Not knowing definitely, probably it was due to subsurface equipment repairs being made.

Q Now, of these area wells that are top allowable, you states that four are top allowable.

A There are six top allowables now, yes, sir.

Q Which would they be, Mr. Yost?

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A Texaco's State of New Mexico "X" and NCT-1, Well Number 5, Texaco's "X", NCT-1 Well Number 2, and the Texaco's State of New Mexico "V", Wells Number 2, 4 and 5.

Q In other words those six wells are the six highest producers shown on Exhibit A?

A Yes, sir.

Q Well now, were any of these six wells some that were subject to remedial work back here in this period shown by Exhibit 7 or are these new completions?

A All of these production increases were realized by remedial work.

Q I see. Now, you have an inverted nine spot. What pattern is Socony-Mobil following on their flood?

A They have a standard five spot pattern.

Q They have a five spot?

A Yes, sir.

Q And the Union tract is being excluded. That well is plugged and abandoned?

A It's plugged and abandoned. It has no useful purpose really to the secondary recovery operations.

MR. NUTTER: I see. Are there any further questions of Mr. Yost? You may be excused.

Do you have anything further, Mr. White?

MR. WHITE: That concludes our presentation.

MR. NUTTER: Does anyone else have anything they wish to offer in this particular case or either of these cases?

MR. DURRETT: If the Examiner, please. I have a statement that was left with me by Mr. Richard D. Seba, representing Shell Oil Company, from Midland, Texas. He had a statement in each case; case 3344 his statement reads: "Shell Oil Company as a working interest in the proposed West Vacuum Unit concurs with the unit area as proposed by Texaco, Inc. which comprises 2,000 acres more or less of State lands in Township 17 South, and Township 18 South, Range 34 East, Lea County, New Mexico." His statement in Case 3345 reads as follows: "Shell Oil Company as a working interest owner in the West Vacuum Unit supports Texaco's proposal to institute a waterflood project in the aforementioned unit by injecting water into the Grayburg-San Andres formation through six injection wells in Sections 3 and 4 of Township 18 South, Range 34 East and in Sections 33 and 34 of Township 17 South, Range 34 East, Lea County, New Mexico." The Commission has received a letter from Dalport Oil Company referring to case 3334, the unit agreement, stating that they request approval of the unit agreement and waterflood program. We have a letter from Gulf Oil Corporation concurring with Texaco. We have a letter from Phillips Petroleum Company concurring with Texaco in both of these applications.

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MR. NUTTER: Thank you. Is there anything further in Case 3344 or 3345? We will take the cases under advisement and call case 3346.

(Whereupon, Case Numbers 3344 and 3345 were concluded.)

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E X H I B I T S

<u>EXHIBIT</u>	<u>MARKED FOR IDENTIFICATION</u>	<u>OFFERED</u>	<u>ADMITTED</u>
App's. 1	2	12	12
App's. 2	2	12	12
App's. 3	2	12	12
App's. 4	2	12	12
App's. 5	2	12	12
App's. 6	2	12	12
App's. 7	2	12	12
App's. 8	2	12	12



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STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, DEAN A. ROBINSON, 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 31st day of December, 1965.

Dean A. Robinson

 NOTARY PUBLIC

My Commission Expires:

October 16, 1969.



I do hereby certify that the foregoing is a complete record of the proceedings in the hearing of Case No. 3344 & 3345 held by me on 11/23, 1965.
 _____, Notary
 New Mexico Oil Conservation Commission.