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C-6116 108

Case 3728

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CERTIFICATE OF APPROVAL

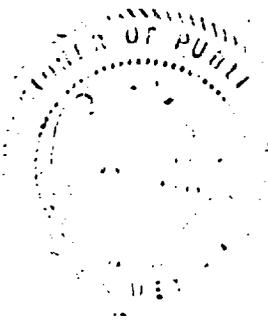
COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO
GRAYBURG-JACKSON, WEST COOPERATIVE UNIT
EDDY COUNTY, NEW MEXICO

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated June 23, 1966, which has been executed, or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement, the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, and 7-11-48, New Mexico Statutes Annotated, 1953 Compilation. 1, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 28th day of SEPTEMBER, 19 66.



Gayton B. Wray
COMMISSIONER OF PUBLIC LANDS
of the State of New Mexico

CG-27

CLERK'S CERTIFICATE
Certified this 24th day of January
19 68, as a true and correct copy of the original
on file in this office.
Mildred Pate
Clerk of Eddy County, N. Mex.
Ernie M. Lawrence Deputy

Case 3728

GRAYBURG-JONSON, WEST
COOPERATIVE UNIT AGREEMENT
EDDY COUNTY, NEW MEXICO

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Case 3728

GRAYBURG-JACKSON, WRSW
COOPERATIVE UNIT AGREEMENT
EDDY COUNTY, NEW MEXICO

THIS AGREEMENT, made and entered into as of the 21st day of June, 1966, by and between Tenneco Oil Company, a Delaware corporation, whose address is Fourth Floor, 201 Wall Building, Midland, Texas, hereinafter sometimes referred to as "Operator", and the other parties who have signed the original of this instrument, a counterpart thereof or other instrument agreeing to be bound by the provisions hereof.

W I T N E S S E T H, T H A T:

WHEREAS, Operator is the present owner and holder of the entire working interests and rights in, to and under the Oil and Gas Leases described in Exhibit "A" attached hereto and made a part hereof for all purposes insofar as said Oil and Gas Leases cover the lands described in said Exhibit; and

WHEREAS, the other parties hereto are lessees of record or the owners of royalty or other interests in and to the oil, gas and associated hydrocarbons which may be in, under or producible from the lands described in Exhibit "A"; and

WHEREAS, under the applicable rules and regulations of the Oil Conservation Commission of the State of New Mexico, it is necessary and desirable to form a unit consisting of Two Thousand (2000) acres, more or less, for the purposes of conducting secondary recovery operations in that portion of the Grayburg-San Andres formation underlying the lands described in Exhibit "A" which is encountered between the depths of 2200 feet and 3600 feet; and

WHEREAS, that portion of the Grayburg-San Andres formation which is described hereinabove is hereinafter sometimes referred to as "Unitized Formation"; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is hereinafter referred to as the "Commissioner"; and

WHEREAS, the Oil Conservation Commission of the State of New Mexico is hereinafter referred to as the "Commission"; and

WHEREAS, the New Mexico Statutes (Laws 1955, Ch. 259, § 1, and Laws 1961, Ch. 176, § 1) provide that, for the purpose of more properly conserving the oil and gas resources of the State of New Mexico, the Commissioner may consent to and approve the development or operation of State Lands under agreement made by lessees of State Lands jointly or severally with other lessees of State Lands and other lands; and

WHEREAS, the oil, gas and associated hydrocarbons which may be in and producible from the Unitized Formation are hereinafter referred to as "Unitized Substances"; and

WHEREAS, the parties hereto desire to combine and pool the Oil and Gas Leases described in Exhibit "A" in order to form a unit for the production of Unitized Substances from the Unitized Formation underlying the following described lands:

Township 17 South, Range 29 East, N.M.P.M.
Eddy County, New Mexico

Section 15: W/2 SW/4

Section 16: S/2 SW/4, SE/4

Section 21: All

Section 22: W/2 W/2, E/2 NW/4, NE/4 SW/4,
NW/4 NE/4

Section 27: W/2 SW/4

Section 28: All

Containing 2000 acres, more or less; and

WHEREAS, the above described lands are hereinafter referred to as the "Unit Area"; and

WHEREAS, in order to be consistent with the existing rules and regulations governing well spacing and production allowables and to prevent waste, the parties hereto desire to operate the entire Unit Area for the purpose and intention of developing Unitized Substances producible from the Unitized Formation in accordance with the terms and provisions of this agreement.

NOW, THEREFORE, in consideration of the premises and the mutual advantages offered by this agreement, it is mutually covenanted and agreed by and between the parties hereto as follows:

I.

Creation and Effect of Unit

A. Subject to the provisions of this agreement, all rights of the parties hereto in and to the Oil and Gas Leases described in Exhibit "A", insofar as said rights cover and apply to the Unitized Formation, are hereby unitized so that operations may be conducted as if the Unitized Formation had been included in a single lease executed by the other parties hereto, as Lessors, in favor of Operator, as Lessee, and as if such lease had been subject to this agreement.

B. The Unit Area shall be developed and operated for Unitized Substances extracted and producible from the Unitized Formation, as an entirety; with the understanding and agreement that the Unitized Substances produced from the Unitized Formation shall be allocated among the leaseholds comprising the Unit Area in the proportion that the acreage interest of each leasehold bears to the entire acreage interest committed hereto.

C. The commencement, completion, continued operation or production of a well or wells for Unitized Substances extracted therefrom on the Unit Area from the Unitized Formation as an entirety shall be construed and considered as the commencement, completion, continued operation and production from each lease committed hereto.

D. The amount of Unitized Substances allocated to each lease, regardless of whether it be more or less than the amount of Unitized Substances actually produced from the well or wells, if any, located on such lease shall, for all purposes and uses, be deemed to have been produced from such lease.

III.

Rentals, Royalties and Continuation of Leases

A. Except as herein modified and changed, the Oil and Gas Leases described in Exhibit "A" shall remain in full force and effect as originally made and issued.

B. Payment of the rentals under the terms of the leases described in Exhibit "A" shall not be affected by this agreement except as provided for under the terms and provisions of said leases, the laws, rules and regulations of the State of New Mexico, or as may herein be otherwise provided.

C. The royalties payable for Unitized Substances allocated to the lands comprising the Unit Area shall be determined and paid on the basis prescribed in the respective individual leases covering the lands to which such Unitized Substances are allocated as hereinabove provided.

III.

Operator and Operating Methods

A. Tenneco Oil Company shall be the operator of the Unit Area and all matters of operation shall be governed by the provisions of this agreement, the Oil and Gas Leases described in Exhibit "A" except as herein modified, and the laws, rules and regulations of the State of New Mexico.

B. Nothing contained herein shall prevent Operator from discontinuing or changing, in whole or in part, any method of operation which, in the opinion of Operator, is no longer in accord with good engineering, operating or production practices. Other methods of operation may be conducted or changes may be made by Operator, subject to the approval of the Commission or the Commissioner, whenever necessary, from time to time if determined by Operator to be feasible, necessary or desirable to increase the ultimate recovery of Unitized Substances.

IV.

Development Obligation

There shall be no obligation on Operator to offset any well or wells on the separate component tracts into which the Unit Area is now or may hereafter be divided, but Operator shall not be released from its obligation to protect the Unit Area from well or wells which may be drilled offsetting said Unit Area.

V.

Measurement, Use or Loss of Unitized Substances

A. Operator shall not be required to separately measure the Unitized Substances extracted from the separate component tracts into which the Unit Area is now or may hereafter be divided by reason of diverse ownership interests in the Unitized Substances in and under said tracts.

B. Operator may use as much of the Unitized Substances as Operator deems necessary for operations hereunder, including but not limited to the injection thereof into the Unitized Formation.

C. No royalty, overriding royalty, production or other payment shall be payable upon, or with respect to, Unitized Substances used or consumed in operations hereunder or which may otherwise be lost or consumed in the production, handling, treating, transporting or storing of Unitized Substances.

VI.
Laws, Rules and Regulations

All production of Unitized Substances and disposal thereof shall be in conformity with allocations, allotments and quotas made and fixed by the duly authorized person or regulatory body under applicable Federal or State Statutes. The provisions of this agreement shall be subject to all applicable Federal or State laws or executive orders, rules and regulations which affect performance of any of the provisions of this agreement and Operator shall not suffer a forfeiture or be liable in damages for failure to comply with any of the provisions of this agreement if such compliance is prevented by or if such failure results from compliance with any such law, rule or regulation.

VII.
Injection Rights

All parties hereto, other than Operator, do hereby grant to Operator the right to inject gas, water or other fluids or combinations thereof into the Unitized Formation in whatever amounts Operator deems expedient for operations under this agreement. Operator is also granted the right to drill or maintain injection wells on the Unit Area and to use producing or abandoned oil or gas wells for such purposes.

VIII.
No Transfer of Title

Nothing contained herein shall be construed to result in the transfer of any title to any interest in any of the Oil and Gas Leases described in Exhibit "A", or the Unitized Substances or the Unit Area by any party hereto to any other party hereto. It is the intention hereof to provide for the cooperative operation and development of the Unit Area and for the allocation of Unitized Substances produced from the Unitized Formation as herein provided.

IX.
Outside Substances

A. For the purposes of this agreement, Outside Substances shall mean all substances obtained from any source other than the Unitized Formation and which are injected into the Unitized Formation and which, when subsequently produced, are sold or used for purposes other than operations hereunder.

B. If any Outside Substances, consisting of natural gases, are injected into the Unitized Formation, a percentage of like substances actually recovered, as indicated by proper engineering tests, shall, with the approval of the Commissioner, be deemed to be Outside Substances until the aggregate of said percentage as above determined equals the accumulated volume of natural gases injected into the Unitized Formation.

C. If the Outside Substances which are injected are liquified petroleum gases, or other liquid hydrocarbons, as distinguished from natural gases, then, beginning one (1) year after injection of such liquified petroleum gases or other liquid hydrocarbons is commenced, a percentage of like substances actually recovered as indicated by proper production tests, or a percentage of all Unitized Substances produced as may be agreed upon by the Commissioner and Operator, shall, with the approval of the Commissioner, be deemed to be Outside Substances until the aggregate value of the aforesaid percentage equals the entire accumulative cost to Operator of such liquified petroleum gases or other liquid hydrocarbons so injected.

D. No royalty, overriding royalty, production or other payment shall be due or payable to the owner of any royalty, overriding royalty, payment out of production or other interest on any substance which is classified hereunder as an Outside Substance.

II.

Effective Date and Term of Agreement

A. This agreement shall be subject to the consent and approval of the Commissioner.

B. This agreement shall be effective as of 7:00 A.M., M.S.T., the first day of the calendar month following the date of approval of this agreement by the Commissioner and shall remain in force and effect for a period of twelve (12) months and so long thereafter as Unitized Substances are produced in paying quantities from any part of the Unit Area and so long thereafter as drilling, reworking or other operations including but not limited to secondary recovery operations are prosecuted hereunder without cessation of more than ninety (90) days and so long thereafter as Unitized Substances can be produced as aforesaid unless sooner terminated by Operator, with the approval of eighty percent (80%) of the Working Interest Owners and the Commissioner, filing a certificate of termination, showing the date of termination, with the Commissioner and in the records of Eddy County, New Mexico.

C. Operator shall file this agreement for record in Eddy County, New Mexico, together with a certificate to the effect that this agreement has become effective according to its terms and stating the effective date hereof.

XI.

Force Majeure

All obligations imposed by this agreement on Operator, 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 Operator. Operator shall not 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 operations hereunder due to any one or more of the causes set forth in this Article.

XII.

Use of Surface and Water

A. The parties hereto, other than Operator, to the extent of their rights and interests, do hereby grant to Operator the right to use so much of the surface of the land within the Unit Area as may reasonably be necessary for operations hereunder.

B. Operator shall have free use of water from the Unit Area for all operations under this agreement, except water from any well, private lake, pond or irrigation ditch of any party hereto.

XIII.

Counterpart Execution

Any person or party may become a party to this agreement by signing the original of this agreement, a counterpart thereof or other instrument agreeing to be bound by the provisions hereof.

III.
Headings

The headings set forth above the Articles of this agreement are for convenience only and shall in no manner be used in construing or interpreting any provision hereof.

IV.
Covenants Run With The Land

This agreement shall be binding upon the parties hereto and shall extend to and be binding upon their heirs, executors, administrators, personal representatives, successors and assigns and shall constitute covenants running with the lands, leases and interests covered hereby.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written, but effective as hereinabove provided.

DIVISION
PROPERTIES
SUPERVISOR
9377
DISTRICT
LANDMAN
Rau
DISTRICT
PRODUCTION
DEPT
Lut

TENNECO OIL COMPANY

By [Signature]
Agent and Attorney-in-Fact

FORM
RECORDED
[Signature]

ATTEST:

[Signature]
Secretary

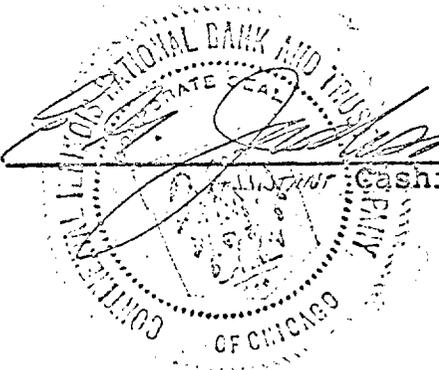
MIDWEST INVESTMENT COMPANY

By [Signature]
President

EL PASO NATURAL GAS COMPANY

By [Signature]
Attorney-in-Fact

ATTEST:

[Signature]
Cashier


^{NATIONAL}
CONTINENTAL ILLINOIS BANK AND
TRUST COMPANY OF CHICAGO,
CHICAGO, ILLINOIS

By [Signature]
Senior Vice President

[Signature]
Robert W. Garver, Trustee

ATTEST:

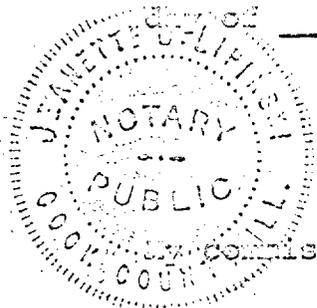
[Signature]
Secretary

EDUCATIONAL FOUNDATION, INC.

By [Signature]
President

THE STATE OF ILLINOIS X
COUNTY OF COOK X SS

The foregoing instrument was acknowledged before me this 17th day of August, 1966, by Robert W. Carver, Trustee.



Jeanette S. Lipinski
Notary Public in and for
COOK County, ILLINOIS

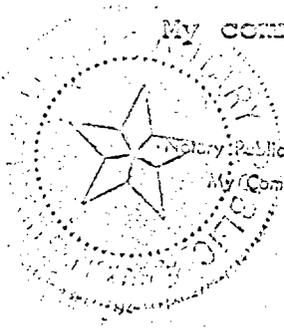
MY COMMISSION EXPIRES
MARCH 16, 1968

THE STATE OF TEXAS X
COUNTY OF HARRIS X SS

The foregoing instrument was acknowledged before me this 2nd day of August, 1966, by THEODORE E. SWIGART, President of Educational Foundation, Inc., a Delaware corporation, on behalf of said corporation.

Agnes T. Lacey
Notary Public in and for
Harris County, Texas

My commission expires June 1, 1967.



AGNES T. LACEY
Notary Public in and for Harris County, Texas
My Commission Expires June 1, 1967

Attached to and made a part of that certain Grayburg-Jackson, West, Cooperative Unit Agreement, Eddy County, New Mexico, dated the 23rd day of June, 1936.

All lands in Township 17 South, Range 29 East, N.M.P.M. Eddy County, New Mexico

Tract No. 1

Tenneco Lease No. 30401
 Lease Date: June 16, 1948
 Lessor: Midwest Investment Company
 Original Lessee: Leonard Oil Company
 Present Lessee of Record and Working Interest Owner: Tenneco Oil Company - 1000
 Recorded: Book 30 at Page 524, Oil and Gas Records of Eddy County, New Mexico
 O.R.R.I. and Percentage: Educational Foundation, Inc. *
 Description of Lands Committed: Section 22: NW/4 NW/4
 Number of Acres: 40

Tract No. 2

Tenneco Lease No. 30,408
 Lease Date: September 10, 1931
 Lessor: The State of New Mexico
 Original Lessee: E. Ruth Piatt
 Present Lessee of Record and Working Interest Owner: Tenneco Oil Company - 1000
 State of New Mexico Lease No. B-255-3
 O.R.R.I. and Percentage: Educational Foundation, Inc.*
 Description of Lands Committed: Section 15: SW/4 SW/4
 Section 16: S/2 SW/4, NE/4 SE/4
 Section 28: SE/4, SE/4 SW/4
 Number of Acres: 360

Tract No. 3

Tenneco Lease No. 30,409
 Lease Date: April 15, 1933
 Lessor: The State of New Mexico
 Original Lessee: Leonard and Levers, Inc.
 Present Lessee of Record and Working Interest Owner: Tenneco Oil Company - 1000

State of New Mexico Lease No.	B-514-7
O.R.R.I. and Percentage:	Educational Foundation, Inc.*
Description of Lands Committed:	Section 20: N/2, E/2 SW/4, SW/4 SW/4
Number of Acres:	440
<u>Tract No. 4</u>	
Tenneco Lease No.	30,411
Lease Date:	January 5, 1933
Lessor:	The State of New Mexico
Original Lessee:	Leonard & Levers, Inc.
Lessee of Record:	El Paso Natural Gas Company
Present Working Interest Owner:	Tenneco Oil Company - 1000 **
State of New Mexico Lease No.:	B-1266-3
O.R.R.I. and Percentage:	Educational Foundation, Inc.*
Description of Lands Committed:	Section 22: SW/4 SW/4, N/2 SW/4, E/2 NW/4
Number of Acres:	200
<u>Tract No. 5</u>	
Tenneco Lease No.	30,411
Lease Date:	January 5, 1933
Lessor:	The State of New Mexico
Original Lessee:	Leonard & Levers, Inc.
Present Lessee of Record and Working Interest Owner:	Tenneco Oil Company - 1000
State of New Mexico Lease No.	B-1266-5
O.R.R.I. and Percentage:	Educational Foundation, Inc.*
Description of Lands Committed:	Section 21: S/2 NE/4, E/2 W/2, SE/4
Number of Acres:	400
<u>Tract No. 6</u>	
Tenneco Lease No.	30,417
Lease Date:	March 10, 1942
Lessor:	The State of New Mexico
Original Lessee:	Ed W. Owen
Present Lessee of Record and Working Interest Owner:	Tenneco Oil Company - 1000
State of New Mexico Lease No.	B-9563-5

O.R.R.I. and Percentage: Educational Foundation, Inc.*
 Description of Lands Committed: Section 21: N/2 NE/4, W/2 W/2
 Number of Acres: 240

Tract No. 7

Tenneco Lease No. 30,413
 Lease Date: October 11, 1943
 Lessor: The State of New Mexico
 Original Lessee: D. E. Wallace
 Present Lessee of Record: El Paso Natural Gas Company
 Present Working Interest Owner: Tenneco Oil Company - 100% **
 State of New Mexico Lease No. B-10714-3

O.R.R.I. and Percentage: Educational Foundation, Inc.*
 Description of Lands Committed: Section 22: SW/4 NW/4,
 NW/4 NE/4
 Number of Acres: 80

Tract No. 8

Tenneco Lease No. 30,413
 Lease Date: October 11, 1943
 Lessor: The State of New Mexico
 Original Lessee: D. E. Wallace
 Present Lessee of Record and Working Interest Owner: Tenneco Oil Company - 100%
 State of New Mexico Lease No. B-10714-5
 O.R.R.I. and Percentage: Educational Foundation, Inc.*
 Description of Lands Committed: Section 15: NW/4 SW/4
 Section 16: W/2 SE/4, SE/4 SE/4
 Section 27: W/2 SW/4
 Number of Acres: 240

* Seventy-five per cent (75%) of the oil, gas and other hydrocarbon substances producible from the Unit Area and other lands until the primary sum of \$5,500,000.00 has been paid as more particularly provided in Part I of that certain two (2) part Conveyance dated October 1, 1965, from Leonard Oil Company to Tenneco Oil Company, recorded in Book 160 at Page 23 of the Records of Eddy County, New Mexico. Said production payment was conveyed by Part II of the aforesaid Conveyance to Educational Foundation, Inc. Reference is made to said Conveyance for all purposes hereof. Educational Foundation, Inc. mortgaged its interest to Robert W. Garver, Trustee, and Continental Illinois National Bank and Trust Company of Chicago, Chicago, Illinois, by Mortgage dated October 1, 1965, recorded in Mortgage Book 230 at Page 389 of the Records of Eddy County, New Mexico.

** Tenneco Oil Company is owner of entire working interest in
Unclined Formation and other formations by virtue of an assignment
or assignments of operating rights from the present Lessee of
Record or its predecessor in title to a predecessor in title of
Tenneco Oil Company.

STATE OF NEW MEXICO, County of Eddy, ss. I hereby certify that this
instrument was filed for record on the 4 day of Oct., 1966 at
3:40 o'clock P. M., and duly recorded in Book 170, page
109 of the Records of Oil & Gas

Geraldine Mahaffey, County Clerk

By (sgd.) Doris Pate Deputy

GRAYBURG-JACKSON WEST UNIT

Eddy County, New Mexico

February 22, 1968

BEFORE EXAMINER NUTTER	
I. CONSERVATION COMMISSION	
<i>App</i>	EXHIBIT NO. <i>1</i>
C NO.	<i>3128</i>

App Ex A
Cr 3128

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GRAYBURG-JACKSON WEST UNIT AREA
Eddy County, New Mexico

L O C A T I O N

The Tenneco Oil Company Grayburg-Jackson Cooperative Unit lies in Sections 15, 16, 21, 22, 27 and 28 of T-17-S, R-29-E, of Eddy County, New Mexico. This area lies along the Geological Province long known as "The Artesia-Vacuum Trend".

G E O L O G Y

STRUCTURE

The Grayburg-Jackson West Cooperative Unit lies on "The Artesia-Vacuum Trend" axis. This trend is an eastward plunging anticlinal nose as mapped on the Guadalupian Series. This trend can be followed in the sub-surface from its western limit in the San Andres Mountains, southwest of the city of Artesia, New Mexico, through the vacuum structure which is generally considered to be its eastern limit. East of the Vacuum structure, similar nosing connects with the West Lovington structure, Lovington structure, Knowles structure, and continues eastward into Texas across the Wasson structure, Northeast Wasson structure, Ownby structure and Prentice structure. The Texas portion of this structural zone is known as the "Wasson-Prentice Trend."

The New Mexico portion of this trend is the hinge line along which down warp of the Delaware Basin occurred. This trend of nosing is also partly due to compaction of the Guadalupian sediments over the approximately 1200 feet of reefing which occurred in the Abo and Hueco Formations along this hinge line in Lower Permian time. As a rule,

steeper dips are found south of the hinge line because of the combination of both reef drapage and downwarp of the Delaware Basin to the south, whereas the north dip is due primarily to drapage over the reef mass.

Mapping on the top of the San Andres Formation in T-17-S, R-29-E, Eddy County, New Mexico, where the Grayburg-Jackson West Cooperative Unit is located indicates: structural plunge of the anti-clinal nose of approximately 50 feet to the mile to the east, north dip at a rate of not more than 100 feet to the mile which dissipates into east regional dip of approximately 50 feet to the mile in generally less than one (1) mile of the axis of folding, south dip of approximately 250 feet to the mile which extends for a distance greater than two (2) miles from the axis of folding.

Metex Sand Zone No. 2, 2260-2286. This zone is oil productive in the Unit area.

Anderson Sand Zone No. 1, 2298-2312. This zone is oil productive in the Unit area. This zone is the flood zone in Sunray-DX's Metex flood on the northeast side of the Unit area.

Anderson Sand Zone No. 2, 2321-2326. This zone is oil productive in the Unit area.

Anderson Sand Zone No. 3, 2332-2344. This zone is oil productive in the Unit area.

Anderson Sand Zone No. 4, 2362-2370. This zone is oil productive in the Unit area.

Anderson Sand Zone No. 5, 2376-2383. This zone is oil productive in the Unit area.

Anderson Sand Zone No. 6, 2388-2397. This zone is oil productive in the Unit area.

The Premier Sand Zone, 2406-2422. This zone was cored in three wells in the Unit area and is oil productive.

2422 feet to 3700 feet (Total Depth of Type Log). Dolomite, anhydrite and sand stringers of San Andres Formation.

NOTE: The following zones in the San Andres Formation are correlative throughout the Unit area.

The Lovington Sand Zone 2519 to 2557 is oil productive in the Unit area.

The Oolitic Zone 2593 to 2724 is the main oil pay in the Grayburg-Jackson San Andres Field.

The Pi Sand or Selenitic Sand Zone 3084 to 3101, is an important stratigraphic marker and some oil was bailed from this zone in cable tool wells in the Grayburg-Jackson Field.

The Keeley Zones 3148 to 3450 produce oil on the east side of the Unit area. The Keeley Zones correlate with the Slaughter, Levelland and Yellowhouse zones in Texas. Cores and logs within the Unit indicate these zones are lacking in porosity and permeability in the Unit proper and are thus not considered to be productive.

COMPANY TENNECO OIL COMPANY

WELL MIDWEST FEE #1

FIELD GRAYBURG JACKSON

COUNTY EDDY STATE NEW MEXICO

Location: 660' FNL
660' FWL
Sec. 22 Twp. 17-S Rge. 29 E

Other Services
M.L.L. REP.

Reference Datum: GROUND LEVEL Elev.: 3554
Depth Measured From: K, B 10 Ft. Above Perm. Datum
Datum Measured From: K, B

Elev.: K.D. 3554
D.F. 3554
G.L. 3554

Top Grayburg

Top Grayburg

0323

Metex sand
M-1

0324

Metex sand
M-2

0325

Anderson sand
A-1

Anderson sand A-2

Anderson sand
A-3

Anderson sand A-4

Anderson sand A-5

Anderson sand A-6

0326

Premier sand
Top San Andres

Premier sand
Top San Andres

Upper Grayburg Sands

Metex Zones

Type Log
Grayburg-Jackson Zone

Limestone sand

Limestone sand

HISTORY OF PRODUCTION IN THE GRAYBURG-JACKSON UNIT AREA

The first production of hydro-carbons was made in January 1923 with the discover of gas in the upper portion of the Grayburg formation in a wildcat well drilled on 12 mile hill, east of Artesia, New Mexico. This gas field was named The Artesia Gas Field. Oil was discovered in this gas producing area in August 1923. The oil came from a series of sands in the lower portion of the Grayburg Formation and from an Oolitic zone encountered 200 feet to 400 feet below the top of the San Andres Formation. The gas producing sands seemed to correlate with upper Grayburg oil sands which had been discovered in Winkler County, Texas, in 1921, and were thus given the name Mex-Tex Sand or later Metex Sand. By Conservation Commission designation, all production of oil and gas in T-17-S, T-18-S, R-27-E, R-28-E would be considered to be in the Artesia Field. Cumulative production for this field to January 1, 1967, had amounted to 17,038,515 barrels of oil from 581 wells.

In March 1929, oil was discovered on the Jackson Ranch approximately ten (10) miles east of the Artesia Field. The production came from sands in the Grayburg, the Lovington Sand of the San Andres, and from an Oolitic Zone below the Lovington Sand. This field was given the name Grayburg-Jackson Field. Following the discovery of the Slaughter Field in 1945, in February 1948, a deep test was drilled in the Grayburg-Jackson Field and a Productive porosity zone (given the name Keeley Zone, the equivalent of Slaughter Field Pay) was found below a selenitic sand zone. This Selenitic Sand Zone was first found and recognized as an important stratigraphic marker in the Slaughter Field, Hockley County, Texas, and given the name Pi Sand. The Grayburg-Jackson Field has been defined by the Conservation Commission as that production from the

Grayburg and San Andres Formations found in T-17-S, R-29-E, R-30-E, R-31-E. Cumulative production from the Grayburg-Jackson Field to Jan. 1, 1967, is 54,033,458 barrels from 795 wells.

Tenneco Oil Company acquired its oil property in the Grayburg-Jackson Field from the Leonard Oil Company in October, 1965. It is located in Sections 15, 16, 17, 20, 21, 22, 27, 28 and 29, all in T-17-S, R-29-E, Eddy County, New Mexico.

Subsequently, in 1965 and during 1966, Tenneco expanded the development by drilling 21 wells on the newly acquired property. These new wells averaged 31 BOPD and 26 BWPD. During the same period, 4 wells were re-entered and recompleted in the Grayburg-Jackson pay zone for an average production rate of 11 BOPD and 28 BWPD. Additional pay was perforated in 3 wells and 3 other wells were deepened to open all of the Grayburg-Jackson zone to production. During 1967, 28 wells were worked over resulting in an increase of 425 BOPD. In January, 1968, Tenneco stepped outside the present unit area and drilled the Sinclair "A" State Well No. 1 in the NE/4, SW/4, Section 16, T-17-S, R-29-E. It was completed pumping 103 BOPD and 50 BWPD.

Under the New Mexico Oil Conservation Commission Order No. 3069, Tenneco commenced water injection into the Grayburg-Jackson zone, through 4 wells in Section 28. In order to prevent waste and to provide for future economical development, and to expand the waterflood as necessary to complete an efficient waterflood, Tenneco applied for and was authorized by the NMOCC Order No. R-3127, on October 4, 1966, to form the Grayburg-Jackson West Cooperative Unit. The Unit covers an area of 2000 acres and its outline is shown in Exhibit No. 1.

Subsequently, as provided for in the NMOCC Order No. 3069, Administrative Orders, numbers WFX No. 245, WFX No. 271 and WFX No. 273 were granted which authorized the expansion of the waterflood in Section 28 and into Section 21.

Presently, there are 8 water injection wells in Section 28 and 3 in Section 21. Approximately 3300 BPD of water is being injected into the 11 wells at a plant injection pressure of 1200-1600 psi. As of January 1, 1968, 850,000 barrels of water had been injected into the Grayburg-Jackson zone.

Tenneco's immediate projected plans are to continue development in Sections 16 and 21 to expand the waterflood in Section 21.

The daily oil production from the 35 producing wells is averaging 320 BPD after reaching a peak of 620 BPD in August, 1967, following the extensive workover program. The average field gas-oil ratio is 4500 CF/B and water production is 200 BPD. The cumulative oil production from the field to January 1, 1968 was 940,523 barrels. The field production and water injection history is shown on Exhibit No. 6.