

2577

May 15, 1962

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas

Re: Southeast Cha Cha Unit,
San Juan County,
New Mexico

Attention: Mr. Bruce A. Landis, Jr.

Gentlemen:

The Commissioner of Public Lands has of this date approved the Southeast Cha Cha Unit, San Juan County, New Mexico.

We are forwarding an original and two copies of our Certificate of Approval to the U. S. Geological Survey, Roswell, New Mexico and have enclosed two certificates.

Also enclosed is Official Receipt No. F 86730 in the amount of \$80.00 which covers the filing fee for this Unit.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

BY:

(Mrs.) Marian M. Rhea, Supervisor
Unit Division

ESW/mm/v

encl:

cc: U. S. Geological Survey, Roswell, N.M.
Oil Conservation Commission, Santa Fe, N.M.

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. 2447
Order No. R-2154

APPLICATION OF HUMBLE OIL & REFINING
COMPANY FOR APPROVAL OF THE CHA CHA-
GALLUP PRESSURE MAINTENANCE PROJECT,
SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on December 11, 1961, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 3rd day of January, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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, Humble Oil & Refining Company, proposes to institute a pressure maintenance project in the Cha Cha-Gallup Oil Pool, said project area to comprise Navajo Indian Reservation Lands constituting portions of Sections 15, 16, 17, 18, 19, 23, 24, 28, and 34, and all of Sections 20, 21, 22, 25, 26, 27, 35, and 36, all in Township 29 North, Range 14 West, NMPM, San Juan County, New Mexico. Initial injection into the Gallup formation would be through certain wells located in Sections 21, 26, 27, and 36 of the same Township.

(3) That the applicant proposes that an administrative procedure be established whereby said pressure maintenance project may be expanded for good cause shown, and whereby additional wells in the project area may be converted to water injection.

(4) That Special Rules and Regulations for the operation of the Humble Oil & Refining Company Cha Cha-Gallup Pressure Maintenance Project should be promulgated and, for operational

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CASE No. 2447

Order No. R-2154

convenience, such rules should provide certain flexibility in authorizing the production of the project allowable from any well or wells in the project in any proportion, provided that no well in the project area which directly or diagonally offsets a well outside the project area producing from the same common source of supply should be allowed to produce in excess of top unit allowable for the Cha Cha-Gallup Oil Pool until such time as the well has experienced a substantial response from water injection. When such a response has occurred, the well should be permitted to produce up to two times top unit allowable for the Cha Cha-Gallup Oil Pool. Production of such well at a higher rate should be authorized only after notice and hearing.

IT IS THEREFORE ORDERED:

(1) That the applicant is hereby authorized to institute a Pressure Maintenance Project in the Cha Cha-Gallup Oil Pool, San Juan County, New Mexico, by the injection of water into the Gallup formation through the following-described wells in Township 29 North, Range 14 West:

Pan American-Navajo "E" No. 3, Unit K, Section 21;

Pan American-Navajo "E" No. 2, Unit I, Section 21;

El Paso Natural Gas Products-Ojo Amarillo No. 2,
Unit C, Section 27;

Humble-Navajo "L" No. 1, Unit E, Section 26;

Humble-Navajo "L" No. 4, Unit O, Section 26;

Humble-Navajo "L" No. 5, Unit E, Section 36.

(2) That Special Rules and Regulations governing the operation of The Humble Oil & Refining Company Cha Cha-Gallup Pressure Maintenance Project, San Juan County, New Mexico, are hereby promulgated as follows, effective January 1, 1962:

SPECIAL RULES AND REGULATIONS
FOR THE HUMBLE OIL & REFINING COMPANY
CHA CHA-GALLUP PRESSURE MAINTENANCE PROJECT

RULE 1. The project area of The Humble Oil & Refining Company Cha Cha-Gallup Pressure Maintenance Project, San Juan County, New Mexico, hereinafter referred to as the Project, shall comprise that area described as follows:

TOWNSHIP 29 NORTH, RANGE 14 WEST, NMPM
Section 15: That portion of the S/2
lying South of the mid-
channel of the San Juan
River

Section 16: All that portion lying South
of the mid-channel of the San
Juan River
Section 17: All that portion lying South
of the mid-channel of the San
Juan River
Section 18: All that portion lying South
of the mid-channel of the San
Juan River
Section 19: NE/4
Section 20: All
Section 21: All
Section 22: All
Section 23: S/2 and NW/4
Section 24: SW/4 SE/4 and S/2 SW/4
Section 25: All
Section 26: All
Section 27: All
Section 28: E/2 and NW/4
Section 34: N/2
Section 35: All
Section 36: All

RULE 2. The allowable for the Project shall be the sum of the allowables of the several wells within the project area, including those wells which are shut-in, curtailed, or used as injection wells. Allowables for all wells shall be determined in a manner hereinafter prescribed.

RULE 3. Allowables for injection wells may be transferred to producing wells within the project area, as may the allowables for producing wells which, in the interest of more efficient operation of the Project, are shut-in or curtailed because of high gas-oil ratio or are shut-in for any of the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids or progress of sweep.

RULE 4. The allowable assigned to any well which is shut-in or which is curtailed in accordance with the provisions of Rule 3, which allowable is to be transferred to any well or wells in the project area for production, shall in no event be greater than its ability to produce during the test prescribed by Rule 6, below, or greater than the current top unit allowable for the pool during the month of transfer, whichever is less.

RULE 5. The allowable assigned to any injection well on an 80-acre proration unit shall be top unit allowable for the Cha Cha-Gallup Oil Pool.

RULE 6. The allowable assigned to any well which is shut-in or curtailed in accordance with Rule 3, shall be determined by a

24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well should be produced in the same manner and at a constant rate. The daily tolerance limitation set forth in Commission Rule 502 I (a) and the limiting gas-oil ratio (2,000 to 1) for the Cha Cha-Gallup Oil Pool shall be waived during such tests. The project operator shall notify all operators offsetting the well, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission, if they so desire.

RULE 7. The allowable assigned to each producing well in the Project shall be equal to the well's ability to produce or to top unit allowable for the Cha Cha-Gallup Oil Pool, whichever is less, provided that any producing well in the project area which directly or diagonally offsets a well outside the project area producing from the same common source of supply shall not produce in excess of top unit allowable for the pool until such time as the well receives a substantial response to water injection. When such a response has occurred, the well shall be permitted to produce up to two times top unit allowable for the pool. Production of such well at a higher rate shall be authorized only after notice and hearing. Each producing well shall be subject to the limiting gas-oil ratio (2,000 to 1) for the Cha Cha-Gallup Oil Pool, except that any well or wells within the project area producing with a gas-oil ratio in excess of 2,000 cubic feet of gas per barrel of oil may be produced on a "net" gas-oil ratio basis, which net gas-oil ratio shall be determined by applying credit for daily average gas injected, if any, into the Cha Cha-Gallup Oil Pool within the project area to such high gas-oil ratio well. The daily adjusted oil allowable for any well receiving gas injection credit shall be determined in accordance with the following formula:

$$A_{adj} = \frac{TUA \times F_a \times 2,000}{\frac{P_g - I_g}{P_o}}$$

where:

- A_{adj} = the well's daily adjusted allowable
- TUA = top unit allowable for the pool
- F_a = the well's acreage factor
- P_g = average daily volume of gas produced by the well during the preceding month, cubic feet

I_g = the well's allocated share of the daily average gas injected during the preceding month, cubic feet

P_o = average daily volume of oil produced by the well during the preceding month, barrels

In no event shall the amount of injected gas being credited to a well be such as to cause the net gas-oil ratio, $\frac{P_g - I_g}{P_o}$, to be less than 2,000 cubic feet of gas per barrel of oil produced.

RULE 8. Credit for daily average net water injected into the Cha Cha-Gallup Oil Pool through any injection well located within the project area may be converted to its gas equivalent and applied to any well producing with a gas-oil ratio in excess of two thousand cubic feet of gas per barrel of oil. Total credit for net water injected in the project area shall be the gas equivalent volume of the daily average net water injected during a one-month period. The daily average gas equivalent of net water injected shall be computed in accordance with the following formula:

$$E_g = (V_w \text{ inj} - V_w \text{ prod}) \times 5.61 \times \frac{P_a}{15.025} \times \frac{520^\circ}{T_r} \times \frac{1}{Z}$$

where:

E_g = Average daily gas equivalent of net water injected, cubic feet

$V_w \text{ inj}$ = Average daily volume of water injected, barrels

$V_w \text{ prod}$ = Average daily volume of water produced, barrels

5.61 = Cubic foot equivalent of one barrel of water

P_a = Average reservoir pressure at a datum of + 418 feet above sea level, psig + 12.00, as determined from most recent survey

15.025 = Pressure base, psi

520° = Temperature base of 60°F expressed as absolute temperature

T_r = Reservoir temperature of 158°F expressed as absolute temperature (618°R)

Z = Compressibility factor from analysis of
Cha Cha-Gallup gas at average reservoir
pressure, P_a , interpolated from compressi-
bility tabulation below:

<u>Pressure</u> <u>Psig</u>	<u>Z</u>	<u>Pressure</u> <u>Psig</u>	<u>Z</u>	<u>Pressure</u> <u>Psig</u>	<u>Z</u>
0	.986	500	.912	1000	.869
50	.976	550	.906	1050	.865
100	.963	600	.902	1100	.860
150	.952	650	.899	1150	.857
200	.943	700	.895	1200	.853
250	.935	750	.891	1250	.849
300	.930	800	.886	1300	.845
350	.927	850	.882	1350	.842
400	.923	900	.877	1400	.838
450	.918	950	.873		

RULE 9. Each month the project operator shall, within three days after the normal unit allowable for Northwest New Mexico has been established, submit to the Commission a Pressure Maintenance Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project as well as the total Project allowable. The aforesaid Pressure Maintenance Project Operator's Report shall be filed in lieu of Form C-120 for the Project.

RULE 10. The Commission shall, upon review of the report and after any adjustments deemed necessary, calculate the allowable for each well in the Project for the next succeeding month in accordance with these rules. The sum of the allowables so calculated shall be assigned to the Project and may be produced from the wells in the Project in any proportion except that no well in the Project which directly or diagonally offsets a well outside the Project producing from the same common source of supply shall produce in excess of two times top unit allowable for the pool.

RULE 11. The conversion of producing wells to injection, the drilling of additional wells for injection, and expansion of the project area shall be accomplished only after approval of the same by the Secretary-Director of the Commission. To obtain such approval, the Project operator shall file proper application with the Commission, which application, if it seeks authorization to convert additional wells to injection or to drill additional injection wells shall include the following:

(1) A plat showing the location of proposed injection well, all wells within the project area, and offset operators, locating wells which offset the project area.

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CASE No. 2447
Order No. R-2154

(2) A schematic drawing of the proposed injection well which fully describes the casing, tubing, perforated interval, and depth showing that the injection of gas or water will be confined to the Gallup formation.

(3) A letter stating that all offset operators to the proposed injection well have been furnished a complete copy of the application and the date of notification.

The Secretary-Director may approve the proposed injection well if, within 20 days after receiving the application, no objection to the proposal is received. The Secretary-Director may grant immediate approval, provided waivers of objection are received from all offset operators.

Expansion of the project area may be approved by the Secretary Director of the Commission administratively when good cause is shown therefor.

(3) 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 herein-above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

E. S. WALKER, Member

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

S E A L

esr/

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER



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

P. O. BOX 871
SANTA FE

April 19, 1962

Mr. Guy Buell
Pan American Petroleum Corporation
Box 1410
Fort Worth, Texas

Re: CASE NO. 2517

ORDER NO. R-2214

APPLICANT:

Pan American Petroleum Corporation

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC X
Artesia OCC
Aztec OCC X

OTHER Mr. Kenneth Swanson

psm

MARINE DRILLING, INC.

1126 MERCANTILE SECURITIES BUILDING

DALLAS 1, TEXAS

1962 MAR 22 PM : 31

March 22, 1962

Mr. A. L. Porter, Jr.
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Case 2517

Dear Sir:

We note that Case 2517, application of Pan American Petroleum Corporation for a unit agreement and a pressure maintenance project, San Juan County, New Mexico, has been scheduled for hearing Wednesday, March 28, 1962.

We strongly support this project and respectfully request the approval of the application by the Commission.

Very truly yours,

MARINE DRILLING, INC.

J. B. Avant
J. B. Avant

JBA:mrp

cc: Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas
Attention: Mr. Bruce A. Landis, Jr.

ROCANVILLE CORPORATION

1126 MERCANTILE SECURITIES BUILDING

DALLAS 1, TEXAS

1962 MAR 26 PM 1:31

March 22, 1962

Mr. A. L. Porter, Jr.
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Case 2517

Dear Sir:

Please be advised that we are in complete support of the application of Pan American Petroleum Corporation for unit agreement and pressure maintenance project, San Juan County, New Mexico. This application is scheduled for hearing Wednesday, March 28, 1962, Case No. 2517.

We respectfully request the approval of this application by the Commission.

Very truly yours,

ROCANVILLE CORPORATION


Billie Fuller

JBA:mrp

cc: Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas
Attention: Mr. Bruce A. Landis, Jr.

TEXACO
HEAD OFFICE OCC
INC.

PETROLEUM PRODUCTS

1002 MAR 25 AM 8:11
DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



R. M. BISCHOFF, ASSISTANT DIVISION MANAGER

P. O. BOX 3109
MIDLAND, TEXAS

March 23, 1962

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

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

Gentlemen:

Reference is made to Case No. 2517 concerning the application of Pan American Petroleum Corporation for approval of the Southeast Cha Cha Unit Agreement and a pressure maintenance project for this unit. Texaco Inc. will be a working interest owner in this unit and wishes to go on record in concurrence with Pan American's application. Texaco respectfully urges that the Commission approve the application of Pan American Petroleum Corporation as submitted.

Yours very truly,

CRB-MM

PAN AMERICAN PETROLEUM CORPORATION

MAIN OFFICE OCC
P. O. Box 480, Farmington, New Mexico

1962 MAR 7 AM 8:24 March 6, 1962

File: N-205-986.510.1 X 416

Subject: Request for Hearing
Southeast Cha Cha Unit
Cha Cha Gallup Field
San Juan County, New Mexico

Case 2517

Mr. A. L. Porter, Jr. (3)
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico


Dear Sir:

Please refer to Pan American Petroleum Corporation's letter to you dated March 2, 1962, File: GHF-75-986.510.1 X 416, from our Fort Worth Office, in which we requested that two hearings be docketed for the last Examiner Hearing in March, 1962. The purpose of these hearings is to consider Pressure Maintenance Projects in the proposed Southeast Cha Cha Unit and the Gallegos Canyon Unit portions of the Cha Cha Gallup Field.

Attached herewith are the logs of the injection wells to be used in each of the two projects and a description of the casing program utilized in the injection wells. These data are being furnished in accordance with the last paragraph of the above referenced letter.

Yours very truly,

PAN AMERICAN PETROLEUM CORPORATION


Fred L. Nabors
District Engineer

DJR:en
Attachments

*Not
mailed*

REGISTRATION

Subject: Request for Hearing
Southeast Cha Cha Unit
Cha Cha Gallup Field
San Juan County, New Mexico

Dear Sir:

Attached herewith are the logs of the injection wells to be used in each of the two projects and a description of the casing program utilized in the injection wells. These data are being furnished in accordance with the last paragraph of the above referenced letter.

PAN AMERICAN PETROLEUM CORPORATION

Fred L. Nabors
Fred L. Nabors

[Faint, illegible handwritten notes]

P. O. Box 480, Farmington, New Mexico
March 5, 1962

File: N-205-986.510.1 X 416

Subject: Request for Hearing
Southeast Cha Cha Unit
Cha Cha Gallup Field
San Juan County, New Mexico

Mr. A. L. Porter, Jr. (3)
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico


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Yours very truly,

PAN AMERICAN PETROLEUM CORPORATION


Fred L. Nabors
District Engineer

DJR:en
Attachments

207

PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING

FORT WORTH, TEXAS

March 2, 1962

File: GHF-75-986.510.1 x 416

Subject: Request for Hearing
Southeast Cha Cha Unit
Cha Cha-Gallup Field
San Juan County, New Mexico

Mr. A. L. Porter, Jr. (3)
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Sir:

Pan American Petroleum Corporation respectfully requests that a hearing be docketed for the last Examiner Hearing to be held in March, 1962, to consider its application for approval of a Unit Agreement for the Southeast Cha Cha Unit, Cha Cha-Gallup Field, San Juan County, New Mexico, and also for permission to initiate a pressure maintainence project in this Unit. Pan American also requests that a separate hearing be docketed for the same hearing to consider its application for approval of a pressure maintainence project for the Cha Cha-Gallup Field underlying its Gallegos Canyon Unit, San Juan County, New Mexico. Orders similar to Commission's Order No. R-2026 which approved a pressure maintenance project for Pan American's Northeast Hogback Unit, Horseshoe-Gallup Field, San Juan County, New Mexico, will be requested for each of these projects.

Attached is a map showing the boundary of the Southeast Cha Cha Unit together with the location of proposed initial injection wells. The maintainence of pressure in this project is to be accomplished by the injection of water into the Gallup horizon of the Cha Cha Gallup Field at an approximate depth of 5700 feet. It is anticipated that initially approximately 800-1000 barrels of water per day will be injected into each injection well. Injection water will be obtained from the Morrison Formation through a Morrison well located in the Southeast Cha Cha Unit.

Also shown on the attached map is the portion of our Gallegos Canyon Unit to be flooded. Location of proposed injection wells for the Gallegos Canyon Unit project are denoted on the map. This project will also be carried out by injection of water from the Morrison Formation at a rate of 800-1000 barrels of water per day per well into the Gallup horizon occurring at a depth of approximately 5700 feet.

*Unit agreement
and
Pressure maintainence
project.*

*Exhibit
Mailed
3/9/62*

PAN AMERICAN PETROLEUM CORPORATION
FORT WORTH, TEXAS

March 2, 1962

File: GHF-75-986.510.1 x 416

Subject: Request for Hearing
Southeast Cha Cha Unit
Cha Cha-Gallup Field
San Juan County, New Mexico

Mr. A. L. Porter, Jr. (3)
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

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Also shown on the attached map is the portion of our Gallegos Canyon Unit to be flooded. Location of proposed injection wells for the Gallegos Canyon Unit project are denoted on the map. This project will also be carried out by injection of water from the Morrison Formation at a rate of 800-1000 barrels of water per day per well into the Gallup horizon occurring at a depth of approximately 5700 feet.

C O P Y

March 2, 1962

Logs on the injection wells to be used in each of the two projects together with a description of the casing program utilized in the injection wells will be furnished by our Farmington office under separate cover.

Yours very truly,

KENNETH J. BARR
Division Engineer

CRM:bw
Attachment

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION]
OF PAN AMERICAN PETROLEUM CORPOR-]
ATION FOR APPROVAL OF A UNIT AGREE-]
MENT AND A PRESSURE MAINTENANCE]
PROJECT OF THE SOUTHEAST CHA CHA]
UNIT IN A PRESSURE MAINTENANCE PRO-]
JECT, SAN JUAN COUNTY, NEW MEXICO.]

No. 2 5 1 7

ENTRY OF APPEARANCE

The undersigned, Atwood & Malone of Roswell, New Mexico,
a firm of attorneys all of whose members are duly licensed to practice
law in the State of New Mexico, hereby enters its appearance as local
counsel with Guy Buell, of the Texas Bar, appearing for Pan American
Petroleum Corporation in said cause.

DATED at Roswell, New Mexico this 21st day of March, 1962.

ATWOOD & MALONE

By *Robert L. Malone*
Post Office Drawer 700
Roswell, New Mexico

APR 13 1962

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION]
OF PAN AMERICAN PETROLEUM CORP-]
ORATION FOR APPROVAL OF A PRESSURE]
MAINTENANCE PROJECT ON ITS GALLEGOS]
CANYON UNIT, SAN JUAN COUNTY, NEW]
MEXICO.]

No. 2 5 1 6

ENTRY OF APPEARANCE

The undersigned, Atwood & Malone of Roswell, New Mexico,
a firm of attorneys all of whose members are duly licensed to practice
law in the State of New Mexico, hereby enters its appearance as local
counsel with Guy Buell, of the Texas Bar, appearing for Pan American
Petroleum Corporation in said cause.

DATED at Roswell, New Mexico this 21st day of March, 1962.

ATWOOD & MALONE

By *Paul R. Malone*
Post Office Drawer 700
Roswell, New Mexico

PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING P. O. BOX 1410

FORT WORTH 1, TEXAS
January 4, 1963

3517

File: BAL-214-416

Subject: Southeast Cha Cha Unit,
San Juan County, New Mexico

Mr. E. S. (Johnny) Walker
Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico
Attn: Mrs. Marian M. Rhea, Supervisor
Unit Division

✓ Mr. A. L. Porter, Jr., Director
Oil Conservation Commission
P. O. Box 450
Santa Fe, New Mexico

Mr. John A. Anderson
Regional Oil & Gas Supervisor
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Gentlemen:

Reference is made to previous individual correspondence between this office and your respective office concerning the Certificate of Effectiveness for the subject unit which became effective July 1, 1962.

Attached for your records is a conformed copy of the fully executed Certificate, showing the recording data.

Very truly yours,

Original
Signed By: Bruce A. Landis, Jr.

/ek
Attachment

U. S. GEOLOGICAL SURVEY
AUG 3 1 1962
U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO



RECEIVED
STATE LAND OFFICE
SANTA FE, N.M.
1962 AUG 12 AM 10 38

CERTIFICATE OF EFFECTIVENESS
UNIT AGREEMENT - SOUTHEAST CHA CHA UNIT
SAN JUAN COUNTY, NEW MEXICO

THE STATE OF NEW MEXICO :
COUNTY OF SAN JUAN :

KNOW ALL MEN BY THESE PRESENTS:

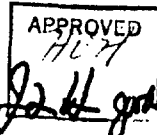
THAT, Pan American Petroleum Corporation, in its capacity as Unit Operator of the above described unit and pursuant to the terms and provisions of said Unit Agreement, which is of record in Book 517, Page 88, of the records of San Juan County, New Mexico, does hereby certify as follows, to-wit:

1. That in accordance with Section 20 of said Unit Agreement, July 1, 1962, is hereby certified to be the effective date of said Unit Agreement.
2. That each of the Tracts shown on Exhibit "A" of the Unit Agreement, and described on Exhibit "B" hereto, has qualified for inclusion in the Unit Area under the provisions of Section 14 of said agreement.
3. That true and correct copies of Revised Exhibits "A" and "B", attached hereto, revised as of July 1, 1962, were effective as of the effective date of the Unit Agreement, and shall remain in full force and effect until again revised pursuant to the terms and provisions of said Unit Agreement.

IN WITNESS WHEREOF, Pan American Petroleum Corporation, acting in its capacity as Unit Operator, has on this 10th day of August, 1962, executed this instrument.

PAN AMERICAN PETROLEUM CORPORATION

By [Signature]
Attorney in Fact



THE STATE OF TEXAS :
COUNTY OF TARRANT :

On this 10th day of August, 1962, before me appeared G. F. BEDFORD, to me personally known, who, being by me duly sworn did say that he is the Attorney in Fact of PAN AMERICAN PETROLEUM CORPORATION, a corporation, and that the seal affixed to said instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said G. F. BEDFORD acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal on this, the day and year first above written.

My Commission expires: STATE OF NEW MEXICO
COUNTY OF SAN JUAN
FILED

6-1-63

12-11-62

at 8:35 o'clock A M
and Recorded in Book 537
Page 123
Sarah Goodding, County Clerk

Ada Belle Zartman Ada Belle Zartman
Notary Public in and for
Tarrant County, Texas



123-A

CERTIFICATE OF EFFECTIVENESS
UNIT AGREEMENT - SOUTHEAST CHA CHA UNIT
SAN JUAN COUNTY, NEW MEXICO
DATED August 10, 1962

APPROVED:

Emilio A. Sanchez
Commissioner of Public Lands
State of New Mexico

Date: *August 28, 1962*

Acting

W. H. Johnson
Director
United States Geological Survey

Date: OCT 12 1962

Oil Conservation Commission
State of New Mexico

Date: *8/30/62*

By *A. H. Porter, Jr.*

2517

August 13, 1962

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas

Re: Southeast Cha Cha Unit
San Juan County, New Mexico

Attention: Mr. Bruce A. Landis, Jr.

Gentlemen:

We have received by your letter of August 10, 1962, nine (9) copies of Certificate of Effectiveness for the Southeast Cha Cha Unit, designating July 1, 1962, as the effective date of the Unit and including Revised Exhibits "A" and "B" to the Unit Agreement. You request the Commissioner of Public Lands to approve these Certificates and then to obtain the approval of the Oil Conservation Commission, after such is obtained, to forward all copies to Mr. John Anderson, United States Geological Survey, Roswell, New Mexico.

I find nothing under Section 20 of the Unit Agreement providing for the approval of such certificates, however, if you will please furnish Mr. A. L. Porter, Jr., Director of the Oil Conservation Commission with a copy of your August 10, 1962, letter we will forward eight copies of this Certificate when approved, to his attention.

I would call your attention to the Exhibit "B" under Total for Federal Tracts, the total shows 4,068.34 acres, however, the Federal Acres on Exhibit "B" totals 4,188.34. There would be an additional forty (40) acres in Tract 22.

The Exhibit "B" shows the Federal acreage having 90.24031

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas
August 13, 1962
(Page 2)

percent Participating Interest in the Unit, the percentage actually totals 90.24533 percent. Plus 1.78934 percent of Interest in Tract 22.

The State of New Mexico acreage is shown as 360 acres but does not reflect the forty acres of State Land in tract 22.

The Exhibit "B" shows the State acreage as 7.98520 percent Participating Interest in the Unit, the percentage actually totals 6.17599 percent Participating Interest. Plus 1.78934 percent of Interest in Tract 22.

Please submit a corrected Exhibit "B" together with nine (\$9.00) dollars to cover the filing fee.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

BY:
(Mrs.) Marian M. Rhea, Supervisor
Unit Division

ESW/mmr/v

cc: Mr. John Anderson
Regional Oil & Gas Supervisor
U. S. Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Mr. Harold J. Duncan
Director - U. S. Department of Interior
Geological Survey
Washington 25, D. C.

Mr. A. L. Porter, Jr.,
Director - Oil Conservation Commission
P. O. Box 450
Santa Fe, New Mexico

PAN AMERICAN PETROLEUM CORPORATION
FORT WORTH, TEXAS

August 23, 1962

File: BAL-1135-416

Subject: Southeast Cha Cha Unit,
San Juan County, New Mexico

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. E. S. (Johnny) Walker
Commissioner of Public Lands
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Attention: Mrs. Marian M. Rhea, Supervisor - Unit Division

Dear Sir:

Thank you for your letter of August 13, 1962, pointing out certain discrepancies in the listing of tracts on Exhibit "B" to the Southeast Cha Cha Unit Agreement.

Pursuant to your request, we are submitting herewith corrected pages 4, 5 and 6, in nine copies each. Will you kindly insert these pages in the copies of Exhibit "B" which you have on hand and which we requested that you approve.

By attachment to a copy of this letter, we are furnishing Mr. A. L. Porter, Jr., Director of the Oil Conservation Commission, with a copy of our August 10, 1962, letter requesting approval of the Certificate of Effectiveness.

Enclosed is a check for \$9.00 to cover the filing fee, as requested by your August 13th letter.

Very truly yours,

BAL/ek
Attachments

CC: Mr. John A. Anderson
Regional Oil & Gas Supervisor
U. S. Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Mr. Harold J. Duncan
Director - U. S. Department of Interior
Geological Survey
Washington 25, D. C.
Attn: Mr. Pilkington

Mr. A. L. Porter, Jr.
Director - Oil Conservation Commission
P. O. Box 450
Santa Fe, New Mexico

COPY

PAN AMERICAN PETROLEUM CORPORATION

P. O. BOX 1410

FORT WORTH, TEXAS

PRODUCING DEPARTMENT
BRUCE A. LANDIS, JR.
DIVISION UNITIZATION
SUPERINTENDENT

August 10, 1962

File: BAL-1076-416

Subject: Southeast Cha Cha Unit,
San Juan County, New Mexico

CERTIFIED MAIL -
RETURN RECEIPT REQUESTED

Mr. E. S. (Johnny) Walker
Commissioner of Public Lands
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Attention: Mrs. Marian M. Ehea, Supervisor - Unit Division

Dear Sir:

Attached are nine (9) copies of the Certificate of Effectiveness for the Southeast Cha Cha Unit, which has been executed by Pan American, designating July 1, 1962 as the effective date of the unit and including Revised Exhibits "A" and "B" to the Unit Agreement.

We respectfully request that your office approve all copies of this instrument and then obtain approval from the Oil Conservation Commission. After approvals are obtained, we would appreciate your forwarding all copies direct to Mr. John A. Anderson in Roswell for that office's approval before the instruments are sent to the Director in Washington, D. C.

By copy of this letter to Mr. Anderson, we are requesting that he forward the approved instruments to Mr. Harold J. Duncan, Attn: Mr. Pilkington, advising that the Washington Office of the U.S.G.S. may retain five (5) fully executed copies, return one to your office, one to Mr. Anderson's office, and furnish the remaining two copies to Pan American, Attention: Mr. Bruce A. Landis, Jr. We would appreciate being furnished copies of all transmittal letters regarding this Certificate.

As soon as the two fully approved copies are returned to this office, we will send one copy for recording in the San Juan County, New Mexico records, and then furnish all interested parties with conformed copies showing the recording data.

Your expediting approval of this instrument will be appreciated.

Very truly yours,

BRUCE A. LANDIS, JR.

By:

PAN/ek

Page 2
BAL-1076-416
August 10, 1962

CC: Mr. John A. Anderson
Regional Oil & Gas Supervisor
U. S. Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Mr. Harold J. Duncan
Director - U. S. Department of Interior
Geological Survey
Washington 25, D. C.
Attn: Mr. Pilkington

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

August 30, 1962

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas

Attention: Mr. Bruce A. Landis, Jr.

Re: Certificate of Effectiveness
Southeast Cha Cha Unit, San
Juan County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved a Certificate of Effectiveness designating July 1, 1962 as effective date of the Southeast Cha Cha Unit Agreement, San Juan County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

One copy has been retained for Commission files and Seven approved copies of the certificate have been forwarded to the United States Geological Survey, Roswell, New Mexico.

Very truly yours,

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

ALP/JEK/ig

cc: U. S. Geological Survey - Roswell, New Mexico

Commissioner of Public Lands - Santa Fe, New Mexico

August 28, 1962

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas

Re: Southeast Cha Cha Unit,
San Juan County, New Mexico

Attention: Mr. Bruce A. Landis, Jr.

Gentlemen:

The Commissioner of Public Lands has approved as of this date a document designated as Certificate of Effectiveness, for the Southeast Cha Cha Unit, San Juan County, New Mexico.

We are returning one copy and handing eight approved copies to the New Mexico Oil Conservation Commission and by copy of this letter request that they in turn transmit these Certificates to the Regional Oil and Gas Supervisor, United States Geological Survey, Roswell, New Mexico, for their consideration.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

By:
(Mrs.) Marian M. Rhea, Supervisor
Unit Division

ESW/mar/v

cc: Mr. A. L. Porter, Jr.,
Director, Oil Conservation Commission
Santa Fe, New Mexico

Mr. John A. Anderson
Regional Oil & Gas Supervisor
U. S. Geological Survey
Roswell, New Mexico

STATE OF NEW MEXICO
SAN JUAN COUNTY
13th AUG
AM 11:28

CERTIFICATE OF EFFECTIVENESS
UNIT AGREEMENT - SOUTHEAST CHA CHA UNIT
SAN JUAN COUNTY, NEW MEXICO

THE STATE OF NEW MEXICO :
:
COUNTY OF SAN JUAN :

KNOW ALL MEN BY THESE PRESENTS:

THAT, Pan American Petroleum Corporation, in its capacity as Unit Operator of the above described unit and pursuant to the terms and provisions of said Unit Agreement, which is of record in Book 517, Page 88, of the records of San Juan County, New Mexico, does hereby certify as follows, to-wit:

1. That in accordance with Section 20 of said Unit Agreement, July 1, 1962, is hereby certified to be the effective date of said Unit Agreement.

2. That each of the Tracts shown on Exhibit "A" of the Unit Agreement, and described on Exhibit "B" hereto, has qualified for inclusion in the Unit Area under the provisions of Section 14 of said agreement.

3. That true and correct copies of Revised Exhibits "A" and "B", attached hereto, revised as of July 1, 1962, were effective as of the effective date of the Unit Agreement, and shall remain in full force and effect until again revised pursuant to the terms and provisions of said Unit Agreement.

IN WITNESS WHEREOF, Pan American Petroleum Corporation, acting in its capacity as Unit Operator, has on this 10th day of August, 1962, executed this instrument.

PAN AMERICAN PETROLEUM CORPORATION

By

C. F. Bedford
Attorney in Fact



THE STATE OF TEXAS :
:
COUNTY OF TARRANT :

On this 10th day of August, 1962, before me appeared C. F. BEDFORD, to me personally known, who, being by me duly sworn did say that he is the Attorney in Fact of PAN AMERICAN PETROLEUM CORPORATION, a corporation, and that the seal affixed to said instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said C. F. BEDFORD acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal on this, the day and year first above written.

My Commission expires:

6-1-63

Ada Belle Zartman Ada Belle Zartman
Notary Public in and for
Tarrant County, Texas

APPROVED:

E. Smalher
Commissioner of Public Lands
State of New Mexico

Date: August 28, 1962

Director
United States Geological Survey

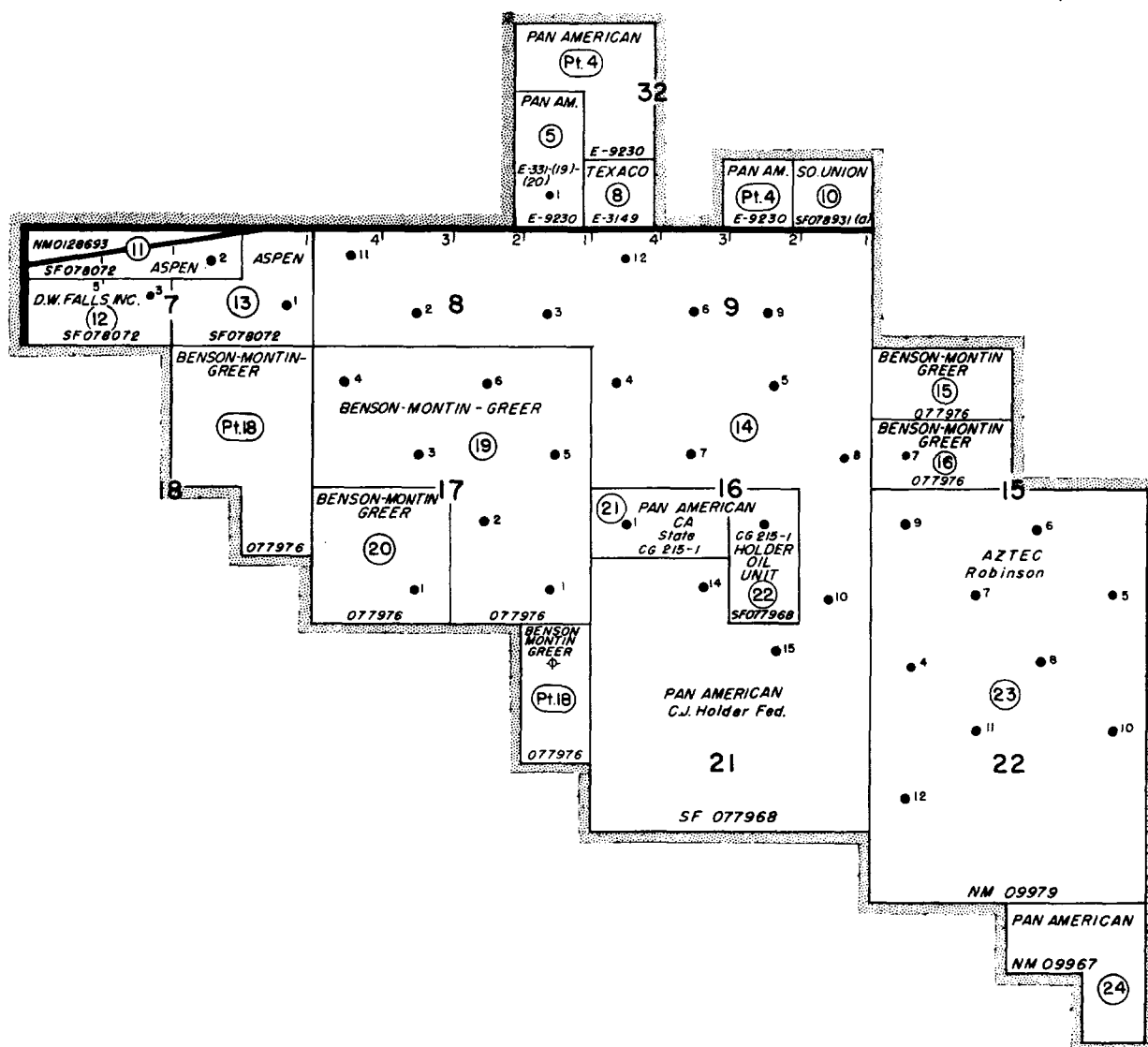
Date: _____

Oil Conservation Commission
State of New Mexico

Date: August 30, 1962

By A. H. Packer, Jr.

T.
29
N.



T.
28
N.

FEDERAL LEASES IN UNIT

S.F. 077968
077976
078072
S.F. 078931 (a)
N.M. 09967
N.M. 09979
N.M. 0128693

R. 13 W.

REVISED
EXHIBIT "A"

SOUTHEAST CHA-CHA UNIT AREA
SAN JUAN COUNTY, NEW MEXICO

STATE OF NEW MEXICO LEASES IN UNIT

C.G. 215-1
E. - 331-(19)-(20)
E-3149
E-9230

0 1 2 3 4 5
SCALE IN THOUSANDS OF FEET

(Pt. 4) TRACT NUMBER

UNIT BOUNDARY

TRACT BOUNDARY

REVISION EFFECTIVE 7-1-62

TRACT NO.	DESCRIPTION	NO. ACRES	SERIAL NUMBER & DATE OF LEASE	BASIC ROYALTY AND OWNERSHIP PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY AND PERCENTAGE	WORKING INTEREST AND PERCENTAGE	TRACT PERCENTAGE PARTICIPATION
FEDERAL LAND: T-29N, R-13-W								
10	Sec. 33: SW/4 SW/4	40.00	SF-078931(a) 4-1-48	USA	12.5 Anna Elizabeth McClanahan	Arnold E. Carle Glenn E. Callow H. K. Riddle Anna Elizabeth McClanahan, 1.0% reduced to 1/2 of 1% when \$25/acre is received	Southern Union - ALL	.02440
11	T-28N, R-13W							
	Sec. 7: Lots 2, 3 & 4	97.38	SF-078072 2-1-48	USA	12.5 Gas Producers Corporation	Lots 2, 3 & 4 in Sec 7 subject to ORI as shown under Tract 12 payable on basis of 56.57/97.38 of unitized substances allocated to this tract	Aspen Drilling Company, 25% of 56.57/97.38 D. W. Falls, Inc., 50% of 56.57/97.38 Warren Shear 25% of 56.57/97.38	2.86272
	and unsurveyed tract of land lying North of Sec. 7-28N-13W and South of Sec. 36-29N-14W, more particularly described by metes and bounds as follows, to-wit: Beginning at the Standard U.S. B.L.M. corner on the Seventh Standard Parallel at the common corners of T-29N, R-13W and R-14W, identified by brass cap markings and 2 bearing trees; Thence South 82 deg. 38 min. W., with the North line of Sec. 7-28N-13W, 78.90 chains to the Standard U.S. B.L.M. corner for the Northwest corner of Sec. 7-28N-13W, in the East line of the Navajo Indian Reservation, identified by brass cap markings and 4 bearing trees; Thence North zero degrees, 07 min. East with the East line of fractional Section 12-28N-14W, and the East line of the Navajo Indian Reservation, 10.43 chains to a point in the South line of Sec. 36, T-29N, R-14W; Thence South 89 deg. 51 min. 04 sec. East with the South line of said Sec. 36, 78.26 chains to the place of beginning.		NM-0128693 2-1-61	USA	12.5 Humble Oil & Refining Company	None	Humble Oil & Refining Company - 100% of 40.81/97.38	

TRACT NO.	DESCRIPTION	NO. ACRES	SERIAL NUMBER AND DATE OF LEASE	BASIC ROYALTY AND OWNERSHIP PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY AND PERCENTAGE	WORKING INTEREST AND PERCENTAGE	TRACT PARTICIPATION PERCENTAGE
12	Sec. 7: Lot 5 and SE/4 SW/4	87.50	SF-078072 2-1-48	USA	12.5	Gas Producers Corporation	Gas Producers Corporation 21.0% D. W. Falls, Inc. - ALL subject to the following: After the Working Interest has recovered \$55,000 in net proceeds, or 3 years after the date of first production, whichever sooner occurs, from the Gallup formation, Gas Producers' override shall increase only in months when Gallup production is over 1000 barrels for that month. 3.5% owned as follows: N.B. Garner & Earnie Lou Garner 1/18 Ralph Lowe & Emma Lowe 1/18 J.R. Martin & Lucille Martin 1/18 J. Ralph Stewart & Viola Stewart 1/18 C. B. Yarbrough 1/18 Kathryn B. Yarbrough 1/18 Robert D. Duden & Nancy Mae Duden 1/18 R.M. Barron & Lucille C. Barron 1/18 Reese Cleveland & Roselle B. Cleveland 1/18 J. F. Postelle 1/18 Frank A. Schultz 1/18 W. H. Sloan & Alberta Sloan 1/36 Ina Belle Hightower 1/36 Gerald Fitz-Gerald & Elizabeth Fitz-Gerald 1/36 Kathryn Ashby 1/36 Robert Murray Fasken, Individually and as Executor and Trustee U/W of Andrew Fasken, Deceased, and wife, Celeste Fasken and Elizabeth Barbara Fasken, widow 1/36	1.48646

- Cont'd.

TRACT NO.	DESCRIPTION	NO. ACRES	SERIAL NUMBER & DATE OF LEASE	BASIC ROYALTY AND OWNERSHIP PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY AND PERCENTAGE	WORKING INTEREST AND PERCENTAGE	TRACT PARTICIPATION PERCENTAGE
13	Sec. 7: Lot 1 & S/2 SE/4	108.48	SP-078072 2-1-48	USA	12.5 Gas Producers Corporation	Same as Tract 12	Aspen Drilling Co. D. W. Falls, Inc. Warren Shear	25.00 50.00 25.00
14	Sec. 8: Lots 1, 2, 3 & 4, and S/2 S/2 Sec. 9: Lots 1, 2, 3, 4, & S/2 S/2 Sec. 16: N/2, S/2 SW/4 & S/2 SE/4 Sec. 21: N/2 & N/2 S/2	1,517.20	SP-077968 3-1-49	USA	12.5 Hancel M. McCord	Hancel M. McCord, et ux, \$25/acre Production Payment out of 1% of 8/8, converting to 1/2 of 1% after payout.	Pan American Southern Union	50.00 50.00
15	Sec. 15: N/2 NW/4	80.00	077976 2-1-48	USA	12.5 Thomas B. Scott, Jr.	Thomas B. Scott, Jr. 0.50 Brookhaven Oil Co. 0.50 British-American Oil Prod. Co. 5.75 O. J. Lilly 0.12975	Benson-Montin-Greer Drig. Corp. Albert R. Greer Greer-Griffin, Inc. Marine Drig., Inc.	15.00 5.00 15.00 65.00
16	Sec. 15: S/2 NW/4	80.00	077976 2-1-48	USA	12.5 Thomas B. Scott, Jr.	BEFORE PAYOUT Thomas B. Scott, Jr. .50 Brookhaven Oil Co. .50 British-American Oil Prod. Co. 5.75 AFTER PAYOUT Thomas B. Scott, Jr. .50 Brookhaven Oil Co. .50 British-American Oil Prod. Co. 5.75	BEFORE PAYOUT Delta Development Limited Partnership AFTER PAYOUT ALL	2.76780
18	Sec. 18: NE/4 & NE/4 SE/4 Sec. 20: E/2 NE/4	280.00	077976 2-1-48	USA	12.5 Thomas B. Scott, Jr.	BEFORE PAYOUT Thomas B. Scott, Jr. .50 Brookhaven Oil Co. .50 British-American Oil Prod. Co. 5.75 O. J. Lilly .064875 AFTER PAYOUT Thomas B. Scott, Jr. .50 Brookhaven Oil Co. .50 British-American Oil Prod. Co. 5.75 O. J. Lilly .064875	Delta Development Limited Partnership Benson-Montin-Greer Drig. Corp. Albert R. Greer Greer-Griffin, Inc. Marine Drig., Inc.	50.00 7.50 2.50 7.50 32.50
18	Sec. 18: NE/4 & NE/4 SE/4 Sec. 20: E/2 NE/4	280.00	077976 2-1-48	USA	12.5 Thomas B. Scott, Jr.	Same as Tract 15	Benson-Montin-Greer Drig. Corp. Albert R. Greer Greer-Griffin, Inc. Marine Drig., Inc.	15.00 5.00 15.00 65.00
19	Sec. 17: N/2 and SE/4	480.00	077976 2-1-48	USA	12.5 Thomas B. Scott, Jr.	BEFORE PAYOUT Thomas B. Scott, Jr. 0.5 Brookhaven Oil Co. 0.5 British-American Oil Prod. Co. 8.541667 O. J. Lilly 0.196376 AFTER PAYOUT Thomas B. Scott, Jr. 0.5 Brookhaven Oil Co. 0.5 British-American Oil Prod. Co. 8.541667 O. J. Lilly 0.196376	Benson-Montin-Greer Drig. Corp. Bonanza Oil Corp. Albert R. Greer Greer-Griffin, Inc. Marine Drig., Inc.	25.00 11.665 15.00 5.00 43.335
19	Sec. 17: N/2 and SE/4	480.00	077976 2-1-48	USA	12.5 Thomas B. Scott, Jr.	BEFORE PAYOUT Thomas B. Scott, Jr. 0.5 Brookhaven Oil Co. 0.5 British-American Oil Prod. Co. 8.541667 O. J. Lilly 0.196376 AFTER PAYOUT Thomas B. Scott, Jr. 0.5 Brookhaven Oil Co. 0.5 British-American Oil Prod. Co. 8.541667 O. J. Lilly 0.196376	Benson-Montin-Greer Drig. Corp. Bonanza Oil Corp. Albert R. Greer Greer-Griffin, Inc. Marine Drig., Inc.	25.00 11.665 15.00 5.00 43.335

TRACT NO.	DESCRIPTION	NO. ACRES	SERIAL NUMBER & DATE OF LEASE	BASIC ROYALTY AND OWNERSHIP PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY AND PERCENTAGE	WORKING INTEREST AND PERCENTAGE	TRACT PARTICIPATION PERCENTAGE
20	Sec. 17: SW/4	160.00	077976 2-1-48	USA	12.5 Thomas B. Scott, Jr.	Same as Tract 15	Benson-Montin Greer Drig. Corp. 15.00 Albert R. Greer 5.00 Greer-Griffin, Inc. 15.00 Marine Drig., Inc. 65.00	1.08271
23	Sec. 15: S/2 Sec. 22: ALL	960.00	NH-09979 2-1-48	USA	12.5 Anna Elizabeth McClanahan	Anna Elizabeth McClanahan - \$25/acre payable out of 1/2 of 8/8 converting to 1/2 of 1/2 ORI after payout.	Astec ALL	23.38917
24	Sec. 27: NW/2 NE/4, SE/4 NE/4	120.00	NH-09967 2-1-48	USA	12.5 Hancel M. McCord	Hancel M. McCord, et ux, \$25/acre Production Payment payable out of 1/2 of 8/8, converting to 1/2 of 1/2 ORI after payout	Pan American Southern Union 50.00 50.00	.13244
TOTAL - - 13 Federal Tracts, 4,050.56 acres, with 92.03467% Participating Interest in Unit.								
* Includes 40 acres (SW/4 SE/4 Sec. 16, T-28-N, R-13-W with participation of 1.789342) in Tract 22 which is communitized with 40 acres of State Lands consisting of NW/4 SE/4, Section 16, T-28-N, R-13-W.								
FEDERAL AND STATE LANDS								
T-28-N, R-13-W								
22	Sec. 16: SW/4 SE/4	40.00	SF-077968 3-1-49	USA	12.5 of 40/80 Hancel M. McCord	Hancel M. McCord, et ux, \$25/acre Production Payment on 40 acres payable out of 1/2 of 40/80, converting to 1/2 of 1/2 of 40/80 ORI after payout.	Pan American Southern Union 50.00 50.00	3.57868
	Sec. 16: NW/4 SE/4	40.00	CG-215-1 9-18-56	State of New Mexico	12.5 of 40/80 Pan American Petroleum Corp. and Southern Union Production Company	None		
STATE LANDS								
T-29-N, R-13-W								
4	Sec. 32: S/2 NW/4, NE/4 SW/4, SE/4 SE/4	160.00	E-9230 7-19-55	State of New Mexico	12.5 Pan American Petroleum Corp.	None	Pan American ALL	.51251

TRACT NO.	DESCRIPTION	NO. ACRES	SERIAL NUMBER & DATE OF LEASE	BASIC ROYALTY AND OWNERSHIP PERCENTAGE	LESSEE OF RECORD	OVERRIDING ROYALTY AND PERCENTAGE	WORKING INTEREST AND PERCENTAGE	TRACT PARTICIPATION PERCENTAGE
5	Sec. 32: NW/4 SW/4 SW/4 SW/4	80.00	E-331-(19)-(20) 5-16-45 E-9230 7-19-55	State of New Mexico 12.5	Pan American Petroleum Corporation	N o n e	Pan American	2.53877
8	Sec. 32: SE/4 SW/4	40.00	E-3149 12-10-49	State of New Mexico 12.5	Texaco Inc.	N o n e	Texaco Inc.	.69963
T-28-N, R-13-W								
21	Sec. 16: N/2 SW/4	80.00	CG-215-1 9-18-56	State of New Mexico 12.5	Pan American Petroleum Corporation and Southern Union Production Company	N o n e	Pan American Southern Union	2.42508

TOTAL - - - 5 State Tracts, 400 acres, with 7.96533% Participating Interest in Unit. **

** Includes 40 acres (NW/4 SE/4 Sec. 16, T-28-N, R-13-W, with participation of 1.78934%) in Tract 22 which is communitized with 40 acres of Federal Lands consisting of SW/4 SE/4, Sec. 16, T-28-N, R-13-W.