

TELEPHONE
505-827-2748

December 26, 1973

Perry A. Bass
12th Floor Ft. Worth Nat'l Bank Bldg.
Fort Worth, Texas 76102

Re: 1974 Plan of Development
Big Eddy Unit
Eddy County, New Mexico

ATTENTION: Mr. Howard W. Jennings

Gentlemen:

The Commissioner of Public Lands has this date approved your 1974 Plan of Development for the Big Eddy Unit, Eddy County, New Mexico, which calls for further development in the unit. This approval is subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

Enclosed is one approved copy of the plan.

Please remit a two (\$2.00) Dollar filing fee.

Very truly yours,

RAY D. GRAHAM, Director
Oil and Gas Department

AJA/RDG/rz
Enclosure

cc: USGS-Roswell, New Mexico
OCC-Santa Fe, New Mexico ✓



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

In Reply Refer To:
JAGillham, Engr.

February 9, 1973

Perry R. Bass
Attention: Mr. Howard W. Jennings
Twelfth Floor, Fort Worth National
Bank Building
Fort Worth, Texas 76102

Gentlemen:

One approved copy of your 1973 plan of development for the Big Eddy unit area, Eddy County, New Mexico, is enclosed. Such plan proposes to conduct approximately 25 miles of geophysical work and to drill two wells; one, a 12,500 foot Morrow test and the other, a shallow test in sec. 14, T. 20 S., R. 31 E., in addition to affirmation that appropriate measures will be taken to prevent drainage of unitized substances. Approval of subject plan was made on this date and is conditioned upon like approval by the appropriate officials of the State of New Mexico.

Sincerely yours,

(ORIG. SGD.) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Area Oil and Gas Supervisor

cc:
Reg. Mgr., Denver (ltr. only)
Washington (w/cy plan)
Artesia (w/cy plan)
NMOCC, Santa Fe (ltr. only)✓
Com. of Pub. Lands, Santa Fe (ltr. only)

JAGillham:lh

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

January 23, 1973

Perry R. Bass
12th Floor
Ft. Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Re: 1973 Plan of Development
Big Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for 1973 for the Big Eddy Unit, Eddy 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 approved copy of the plan is returned herewith.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og

cc: Oil Conservation Commission - Santa Fe
Commissioner of Public Lands - Santa Fe
U. S. Geological Survey - Roswell

PERRY R. BASS
12TH FLOOR FT. WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS
76102

January 2, 1973

United States Geological Survey (3)
Drawer 1857
Roswell, New Mexico 88201

Commissioner of Public Lands (2)
P. O. Box 1148
Santa Fe, New Mexico 87501

Oil Conservation Commission (2)
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: 1973 Plan of Development
Big Eddy Unit -
Eddy County, New Mexico

Gentlemen:

In accordance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, Operator for said Unit, hereby submits a Plan of Development for the above captioned Unit for 1973.

HISTORY OF PAST DEVELOPMENT

We refer to our previous Plans of Development for a detailed description of past development on this Unit. To date, we have drilled, or caused to be drilled, 23 deep tests within the Unit area. By deep tests, it is meant that the wells were drilled to approximately 12,000', or deeper, to test the Pennsylvanian and/or Devonian formations. In addition to the deep tests, five shallow tests have also been drilled.

1972 ACTIVITY

Unit Well No. 34 was drilled in the NW/4 SE/4 of Section 5, Township 20 South, Range 31 East. This well was drilled to a total depth of 11,550' and tested the Pennsylvanian formation at this depth. The well was completed as a dry hole on May 20, 1972.

As stated in our last Plan of Development, Unit Operator supported the Elwyn C. Hale No. 1 Federal, located 1650' from the South and West lines of Section 22, Township 20 South, Range 30 East. This well was completed during 1972 in the Morrow formation and had an I.P. of 4.2 MCF. To date, the well has not been connected to a pipeline; consequently no producing characteristics are available until such time as the well has been flowing into a pipeline and reserves are determined. We anticipate that a pipeline connection will be made in the near future and that we will be able to protect the Unit from offset drainage.

Big Eddy Unit Well No. 4 was reworked during the year, and, due to mechanical difficulty, we were unable to complete the well as a commercial producer. The well was temporarily abandoned in December, 1972.

Big Eddy Unit Well No. 15 was reworked, and the attempt resulted in a failure. The well was plugged and abandoned in February, 1972.

FUTURE DEVELOPMENT

We presently have seismic lines in the range of 20-30 miles programmed, and, upon the completion of this geophysical work, a 12,500' Morrow test is anticipated during the early part of 1973.

A shallow test is also planned, same to be drilled in the SE/4 of Section 14, Township 20 South, Range 31 East.

In addition to the above two wells, Unit Operator has committed to support additional Morrow tests on the perimeter of the Unit area. No definite conclusions have been reached concerning the drilling of these tests; however, Unit Operator is actively pursuing these ventures.

OFFSET OBLIGATIONS

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or, pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

ADDITIONAL DEVELOPMENT

This Plan of Development shall constitute the drilling obligations of the Unit Operator under the terms of the Big Eddy Unit Agreement for the period

ending December 31, 1973.

MODIFICATIONS

It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

EFFECTIVE DATE

This Plan of Development shall be effective January 1, 1973.

If this Plan of Development meets with your approval, please indicate in the appropriate space provided below and return one copy for our files.

Yours very truly,


PERRY R. BASS, Unit Operator

By: 

Howard W. Jennings

Approved: _____ Date: _____
Supervisor, United States Geological Survey

Approved: _____ Date: _____
Commissioner of Public Lands

Approved:  Date: January 23, 1973
Oil Conservation Commission

State of New Mexico

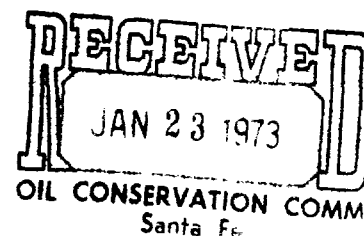
TELEPHONE

505-827-2748



Commissioner of Public Lands

January 22, 1973



P. O. BOX 1148
SANTA FE, NEW MEXICO

ALEX J. ARMIJO
COMMISSIONER

Perry R. Bass
12th Floor Ft. Worth Nat'l Bank Bldg.
Fort Worth, Texas 76102

Re: 1973 Plan of Development
Big Eddy Unit
Eddy County, New Mexico

ATTENTION: Mr. Howard W. Jennings

Gentlemen:

The Commissioner of Public Lands has this date approved your 1973 Plan of Development for the Big Eddy Unit, Eddy County, New Mexico, which calls for further development in the unit. This approval is subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

Enclosed is one approved copy of the plan.

Please remit a two (\$2.00) Dollar filing fee.

Very truly yours,

RAY D. GRAHAM, Director
Oil and Gas Department

AJA/RDG/s

encl.

cc: USGS-Roswell, New Mexico
OCC- Santa Fe, New Mexico ✓



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

RECEIVED

APR 7 1972

365

April 4, 1972

IN REPLY REFER TO:

Perry R. Bass
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Gentlemen:

Your 1972 plan of development for the Big Eddy unit area, Eddy County, New Mexico, proposing the drilling of two wells has been approved on this date subject to like approval by the appropriate State officials.

One approved copy of the plan is enclosed.

Sincerely yours,

N. O. FREDERICK
Regional Oil and Gas Supervisor

cc:
Washington (w/cy of plan)
Artesia (w/cy of plan)
NMOCC, Santa Fe (ltr. only)✓
Com. of Pub. Lands, Santa Fe (ltr. only)

JWillock:lh

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

February 11, 1972

365

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Re: 1972 Plan of Development
Big Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for the calendar year 1972 for the Big Eddy Unit, Eddy 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 approved copy of the plan is returned herewith.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og

cc: United States Geological Survey
Roswell, New Mexico

Commissioner of Public Lands
Santa Fe, New Mexico

January 24, 1972

Perry R. Bass
12th Floor Ft. Worth Nat'l Bank Bldg.
Fort Worth, Texas 76102

Re: 1972 Plan of Development
Big Eddy Unit
Eddy County, New Mexico

ATTENTION: Mr. Howard W. Jennings

Gentlemen:

The Commissioner of Public Lands has this date approved your 1972 Plan of Development for the Big Eddy Unit, Eddy County, New Mexico, which calls for further development in the unit. This approval is subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

We are retaining both copies for our files.

Please remit a Two (\$2.00) Dollar filing fee.

Very truly yours,

RAY D. GRAHAM, Director
Oil and Gas Department

AJA/RDG/s
encls.

cc: USGS-Roswell, New Mexico
OCC- Santa Fe, New Mexico

PERRY R. BASS
12TH FLOOR FT WORTH NATL BANK BLDG.
FORT WORTH, TEXAS
76102

December 30, 1971

RECEIVED

JAN 10 1972

CONSERVATION COMM.
SANTA FE

United States Geological Survey (3)
Drawer 1857
Roswell, New Mexico 88201

Commissioner of Public Lands (2)
P. O. Box 1148
Santa Fe, New Mexico 87501

Oil Conservation Commission (2)
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: 1972 Plan of Development
Big Eddy Unit -
Eddy County, New Mexico

Gentlemen:

In accordance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, Operator for said unit, hereby submits a Plan of Development for the above captioned unit for 1972.

HISTORY OF PAST DEVELOPMENT

Big Eddy Unit Well No. 1 was drilled by Pan American Petroleum Corporation to a total depth of 14,205'. Completion was made in the Wolfcamp interval, and the well was potentialed for a calculated open flow of 10,500 MCFPD on June 5, 1962. The well produced 124,605 MCF and 3,518 barrels distillate prior to being plugged and abandoned.

Big Eddy Unit Well No. 2 was drilled by Pan American Petroleum Corporation to a total depth of 12,457'. The well was completed in the Strawn zone in July, 1963, and produced a total of 1,447 BO before being plugged and abandoned in 1964.

Big Eddy Unit Well No. 3 was drilled by Pan American to a total depth of 13,091'. On May 11, 1964, the well was potentialed in the Strawn for 115 BO and 25 BWPD. This well produced a total of 8,901 BO prior to being plugged and abandoned.

Big Eddy Unit Well No. 4 was drilled to a total depth of 11,470' by Pan American and completed in the Strawn zone. On July 2, 1965, this well potentialed at a rate of 382 BOPD (flowing) and no water. In August, 1969, the well produced at an average rate of 17 BOPD and no water, with a GOR of 15,000 CF/BO.

Big Eddy Unit Well No. 5 was drilled to a total depth of 11,476' by Pan American and completed in the Strawn with a flowing potential of 435 BOPD and no water in August, 1965. The well produced only 49 BO X 147 BW in April, 1969, and, after going off production, was permanently abandoned.

Big Eddy Unit Well No. 6 was drilled to a total depth of 11,527' by Pan American. Testing indicated the Strawn was non-productive, and the well was plugged and abandoned in November, 1965.

Big Eddy Unit Well No. 7 was drilled to a total depth of 14,208' by Pan American. The Morrow formation tested at an estimated absolute open flow rate of 2.5 MMCFPD; however, due to lack of marketing facilities, this zone was plugged off with a bridge plug, and the well was completed in the Strawn formation for a flowing potential of 579 BOPD and no water. In August, 1969, the well produced at an average rate of 40 BO and 128 BWPD. This well was recompleted in the Morrow formation during 1971. See comments below regarding production details.

Big Eddy Unit Well No. 8 was drilled by Perry R. Bass to a total depth of 11,631'. On May 17, 1966, the well was potentialed in the Strawn interval, flowing at the rate of 424 BO and no water in 14 hours. During August, 1969, production averaged 18 BO and 43 BWPD.

Big Eddy Unit Well No. 9 was drilled by Pan American to a total depth of 13,128'. No commercially productive intervals were encountered, and the well was plugged and abandoned in July, 1966.

Big Eddy Unit Well No. 10 was drilled to a total depth of 11,449' by Pan American and completed in the Strawn zone. The well was potentialed on October 13, 1966, at a flowing rate of 504 BOPD and no water. Production averaged 206 BOPD and no water during August, 1969.

Big Eddy Unit Well No. 11 was drilled by Pan American to a total depth of 11,890' and plugged back to 5,458' in the Delaware interval. The well potentialed 61 BO and 50 BWPD on January 8, 1968. During August, 1969, the well

produced at an average rate of 31 BO and 14 BWPD. A non-commercial classification was granted in April, 1968.

Big Eddy Unit Well No. 12 was drilled by Pennzoil to a total depth of 11,884' and plugged back to 8,678' in the Bone Springs and potentialized for 20 BOPD in August, 1969.

Big Eddy Unit Well No. 13 was drilled to a total depth of 12,150'. No commercially productive intervals were encountered, and the well was plugged and abandoned.

Big Eddy Unit Well No. 14 was drilled by Union Texas to a total depth of 11,933' in Mid-1966. No commercially productive intervals were encountered, and the well was plugged and abandoned.

Big Eddy Unit Well No. 15 was drilled by Perry R. Bass to a total depth of 11,517'. In August, 1966, the well was potentialized in the Strawn at a flowing rate of 413 BOPD and no water. Production during September, 1968 averaged 159 BO and 75 BWPD.

Big Eddy Unit Well No. 16 was drilled by Pan American to a total depth of 12,977'. No commercially productive intervals were encountered, and the well was plugged and abandoned in April, 1967.

Big Eddy Unit Well No. 17 was drilled by Cities Service, Agent for Perry R. Bass, to a total depth of 12,913'. On February 28, 1967, the well was potentialized at a calculated absolute open flow of 9,000 MCFPD, with 20 barrels condensate per MMCF. In February, 1968, the well was re-completed in the Strawn; however, the Strawn was not commercially productive, and the well was plugged and abandoned.

Big Eddy Unit Well No. 18 was drilled to a total depth of 12,920' by Pan American. No commercially productive intervals were encountered, and the well was plugged and abandoned in July, 1967.

Sun-Tex Federal Well No. 1 was drilled by Perry R. Bass to a total depth of 11,446'. The well was completed in the Strawn interval and potentialized at a flowing rate of 342 BOPD on October 11, 1965. The well produced a cumulative of 110,714 BO prior to being permanently abandoned in June, 1969.

Big Eddy Well No. 32 was drilled by Pennzoil United 660' from the South and West lines of Section 15, Township 21 South, Range 28 East. The

well was drilled to a total depth of 11,578' and tested the Delaware Sand, Bone Springs, Wolfcamp, Strawn, Atoka and Morrow formations. The well resulted in a dry hole and was P&A on July 16, 1970.

The Perry R. Bass Federal Cobb, located in the SW/4 of Section 23, Township 20 South, Range 31 East, was reworked during 1970, and, after a lengthy and expensive re-completion attempt, the well was completed in the Delaware formation from perforations at 7,003-35' to pump nine BO and 38 BW.

The Perry R. Bass Big Eddy No. 15 had an expensive and lengthy work-over job, and the well was re-completed August 18, 1970 from perforations at 11,398-406' and 11,411-20' in the Strawn formation. The well was potentialed on a 24-hour flow test for 33 BO and eight BW on a 20/64" choke.

Perry R. Bass Federal Rodke was also reworked and completed through new perforations at 5,722-34' in the Delaware formation for a pumping well making 44 BO and 11 BW.

1971 ACTIVITY

Unit Well No. 33, located in the SE/4 SE/4 of Section 4, Township 20 South, Range 31 East, was drilled and completed in the Strawn formation on March 31, 1971 by Champlin Refining Company. Initial production was 80 BO and 31 BW per day. This well was drilled to a total depth of 11,825' and plugged back to 11,657'. Production on this well declined, and same was classified as a well not capable of producing oil in commercial quantities.

Unit Well No. 7, as mentioned above, was abandoned by Perry R. Bass as a Strawn producer after depleting its reservoir. The well was worked over and completed as a Morrow gas producer from perforations 12,656-948'. Production has declined to where it is now producing below one MMCFGPD. The well has produced 264,690 MCF gas in the first eight months.

Unit Operator supported and caused well to be drilled 1980' from the North and West lines of Section 12, Township 21 South, Range 27 East. The well was the Superior #1-D Government, and same was drilled to a depth of 11,800' to test the Strawn formation. Well was plugged and abandoned on May 15, 1971, and was supported with an \$11,800.00 dry hole commitment from Unit Operator.

Unit Operator had a seismic crew working on the unit in Township 20 South, Range 31 East, during 1971. Approximately 20 miles of seismic

lines were shot in an effort to get additional geological data based on recent wells drilled, and it is anticipated that additional development will be warranted by this work.

FUTURE DEVELOPMENT

Additional Strawn production will be attempted with an 11,500' test to be drilled in the SE/4 of Section 5, Township 20 South, Range 31 East. This well is scheduled to start on or before February 15, 1972, and will be drilled by Monsanto Chemical Company, and is a farmout from Unit Operator.

A Morrow test will be drilled 1650' from the South line and 1800' from the West line of Section 22, Township 20 South, Range 30 East. This is to be a 12,500' test offsetting acreage within the unit and will be supported by Unit Operator with a \$12,500.00 dry hole commitment.

During 1971, V. H. Westbrook re-entered the #1 Cowden-Federal 4620' from the South line and 1980' from the West line of Section 4, Township 21 South, Range 29 East. The well was re-completed in the Morrow from perforations at 12,614-22' and was rated to flow at 9.75 MMCFGPD on October 28, 1971. This acreage is an offset section to acreage in the Big Eddy Unit, and Unit Operator is presently evaluating this producer for possible offsets.

Unit Operator plans an active exploration program in 1972, and early in 1972 Big Eddy Unit Well No. 15 will be reworked, and also a Yates test is in the planning stage, same to be drilled in the SE/4 NE/4 of Section 26, Township 20 South, Range 31 East, by the Felmont Oil Company, supported by Unit Operator.

OFFSET OBLIGATIONS

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or, pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

ADDITIONAL DEVELOPMENT

This Plan of Development shall constitute the drilling obligations of the Unit Operator under the terms of the Big Eddy Unit Agreement for the period ending December 31, 1972.

1972 Plan of Development
Big Eddy Unit -
Eddy County, New Mexico

December 30, 1971
Page 6

MODIFICATIONS

It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

EFFECTIVE DATE

This Plan of Development shall be effective January 1, 1972.

If this Plan of Development meets with your approval, please indicate in the appropriate space provided below and return one copy for our files.

Yours very truly,

PERRY R. BASS, Unit Operator

By: Howard W. Jennings
Howard W. Jennings

Approved: _____
Supervisor, United States Geological Survey

Date: _____

Approved: _____
Commissioner of Public Lands

Date: _____

Approved: A. L. Porter
Oil Conservation Commission

Date: Feb 11, 1972



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Drawer 1857
Roswell, New Mexico 88201

IN REPLY REFER TO:

RECEIVED

NOV 2 1971

OIL CONSERVATION COMM.
SANTA FE

November 1, 1971

Perry R. Bass
12th Floor, Fort Worth National Bank Bldg.
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Gentlemen:

Your letter of October 18, 1971, advises that as unit operator of the Big Eddy unit, Eddy County, New Mexico, you have determined that unit well No. 7 in the SW 1/4 sec. 19, T. 20 S., R. 31 E., Eddy County, New Mexico, lease New Mexico 01189-A, is not capable of producing unitized substances in paying quantities from the Morrow formation.

Well No. 7 was recompleted on April 27, 1971, for an initial absolute open flow potential of 3,800 MCF of gas per day from Morrow perforations in the interval from 12,656 to 12,948 feet.

Based on our review of the pressure-production data we concur with your determination that the well is not capable of producing unitized substances in paying quantities under existing conditions. Two copies of your letter are returned herewith.

Sincerely yours,

(ORIG. SCD) N. O. FREDERICK

N. O. FREDERICK
Regional Oil and Gas Supervisor

cc:
Washington (w/cy ltr. and decline curve)
Artesia (w/cy ltr. and decline curve)
Com. Pub. Lands, Santa Fe
NMOCC, Santa Fe
Accounts
File (w/cy ltr.)



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

April 30, 1971

Perry R. Bass
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Gentlemen:

Your 1971 plan of development for the Big Eddy unit area, Eddy County, New Mexico, proposing the drilling of one Strawn test well and the deepening of unit well No. 7 to test the Morrow, has been approved on this date subject to like approval by the appropriate State officials.

One approved copy of the plan is enclosed.

Sincerely yours,

N. O. FREDERICK
Regional Oil and Gas Supervisor

cc:
Washington (w/cy of plan)
Artesia (w/cy of plan)
NMOCC, Santa Fe (ltr. only) ✓
Com. of Pub. Lands, Santa Fe (ltr. only)

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

January 19, 1971

Perry R. Bass
12th Floor
Fort Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Re: 1971 Plan of Development
Big Eddy Unit
Eddy County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development dated December 28, 1970, for the calendar year 1971 for the Big Eddy Unit, Eddy 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.

Two approved copies of the plan are returned herewith.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og
Enclosures

cc: Commissioner of Public Lands
P. O. Box 1148
Santa Fe, New Mexico 87501

United States Geological Survey
Drawer 1857
Roswell, New Mexico 88201

PERRY R. BASS
12TH FLOOR FT. WORTH NATL BANK BLDG.
FORT WORTH, TEXAS
76102

December 28, 1970

70 DEC 31 11 18 14

United States Geological Survey (6)
Drawer 1857
Roswell, New Mexico 88201

Commissioner of Public Lands for
State of New Mexico (3)
P. O. Box 791
Santa Fe, New Mexico 87501

Oil Conservation Commission for
State of New Mexico (3)
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: 1971 Plan of Development
Big Eddy Unit -
Eddy County, New Mexico

Gentlemen:

In accordance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, Operator for said Unit, hereby submits a Plan of Development for the above captioned Unit for the year 1971.

History of Past Development

Big Eddy Unit Well No. 1 was drilled by Pan American Petroleum Corporation to a total depth of 14,205'. Completion was made in the Wolfcamp interval, and the well was potentialed for a calculated open flow of 10,500 MCFPD on June 5, 1962. The well produced 124,605 MCF and 3,518 barrels distillate prior to being plugged and abandoned.

Big Eddy Unit Well No. 2 was drilled by Pan American Petroleum Corporation to a total depth of 12,457'. The well was completed in the Strawn

zone in July, 1963, and produced a total of 1,447 BO before being plugged and abandoned in 1964.

Big Eddy Unit Well No. 3 was drilled by Pan American to a total depth of 13,091'. On May 11, 1964, the well was potentialed in the Strawn for 115 BO and 25 BWPD. This well produced a total of 8,901 BO prior to being plugged and abandoned.

Big Eddy Unit Well No. 4 was drilled to a total depth of 11,470' by Pan American and completed in the Strawn zone. On July 2, 1965, this well potentialed at a rate of 382 BOPD (flowing) and no water. In August, 1969, the well produced at an average rate of 17 BOPD and no water with a GOR of 15,000 CF/BO.

Big Eddy Unit Well No. 5 was drilled to a total depth of 11,476' by Pan American and completed in the Strawn with a flowing potential of 435 BOPD and no water in August, 1965. The well produced only 49 BO X 147 BW in April, 1969, and after going off production, was permanently abandoned.

Big Eddy Unit Well No. 6 was drilled to a total depth of 11,527' by Pan American. Testing indicated the Strawn was non-productive and the well was plugged and abandoned in November, 1965.

Big Eddy Unit Well No. 7 was drilled to a total depth of 14,208' by Pan American. The Morrow formation tested at an estimated absolute open flow rate of 2.5 MMCFPD; however, due to lack of marketing facilities, this zone was plugged off with a bridge plug and the well was completed in the Strawn formation for a flowing potential of 579 BOPD and no water. In August, 1969, the well produced at an average rate of 40 BO and 128 BWPD.

Big Eddy Unit Well No. 8 was drilled by Perry R. Bass to a total depth of 11,631'. On May 17, 1966, the well was potentialed in the Strawn interval flowing at the rate of 424 BO and no water in 14 hours. During August, 1969, production averaged 18 BO and 43 BWPD.

Big Eddy Unit Well No. 9 was drilled by Pan American to a total depth of 13,128'. No commercially productive intervals were encountered, and the well was plugged and abandoned in July, 1966.

Big Eddy Unit Well No. 10 was drilled to a total depth of 11,449' by Pan American and completed in the Strawn zone. The well was potentialed on October 13, 1966, at a flowing rate of 504 BOPD and no water. Production averaged 206 BOPD and no water during August, 1969.

Big Eddy Unit Well No. 11 was drilled by Pan American to a total depth of 11,890' and plugged back to 5,458' in the Delaware interval. The well potentialed 61 BO and 50 BWPD on January 8, 1968. During August, 1969, the well produced at an average rate of 31 BO and 14 BWPD. A non-commercial classification was granted in April, 1968.

Big Eddy Unit Well No. 12 was drilled by Pennzoil to a total depth of 11,884' and plugged back to 8,678' in the Bone Springs and potentialed for 20 BOPD in August, 1969.

Big Eddy Unit Well No. 13 was drilled to a total depth of 12,150'. No commercially productive intervals were encountered, and the well was plugged and abandoned.

Big Eddy Unit Well No. 14 was drilled by Union Texas to a total depth of 11,933' in mid-1966. No commercially productive intervals were encountered, and the well was plugged and abandoned.

Big Eddy Unit Well No. 15 was drilled by Perry R. Bass to a total depth of 11,517'. In August, 1966, the well was potentialed in the Strawn at a flowing rate of 413 BOPD and no water. Production during September, 1968 averaged 159 BO and 75 BWPD.

Big Eddy Unit Well No. 16 was drilled by Pan American to a total depth of 12,977'. No commercially productive intervals were encountered, and the well was plugged and abandoned in April, 1967.

Big Eddy Unit Well No. 17 was drilled by Cities Service, agent for Perry R. Bass, to a total depth of 12,913'. On February 28, 1967, the well was potentialed at a calculated absolute open flow of 9,000 MCFPD with 20 barrels condensate per MMCF. In February, 1968, the well was re-completed in the Strawn; however, the Strawn was not commercially productive, and the well was plugged and abandoned.

Big Eddy Unit Well No. 18 was drilled to a total depth of 12,920' by Pan American. No commercially productive intervals were encountered, and the well was plugged and abandoned in July, 1967.

Sun-Tex Federal Well No. 1 was drilled by Perry R. Bass to a total depth of 11,446'. The well was completed in the Strawn interval and potentialed at a flowing rate of 342 BOPD on October 11, 1965. The well produced a cumulative of 110,714 BO prior to being permanently abandoned in June, 1969.

Big Eddy Well No. 32 was drilled by Pennzoil United 660' from the South and West lines of Section 15, Township 21 South, Range 28 East. The well was drilled to a total depth of 11,578' and tested the Delaware Sand, Bone Spring, Wolfcamp, Strawn, Atoka and Morrow formations. The well resulted in a dry hole and was P&A on July 16, 1970.

The Perry R. Bass Federal Cobb, located in the SW/4 of Section 23, Township 20 South, Range 31 East, was reworked during the year 1970, and after a lengthy and expensive re-completion attempt, the well was completed in the Delaware formation from perforations at 7,003-35' to pump nine BO and 38 BW.

The Perry R. Bass Big Eddy No. 15 had an expensive and lengthy work-over job, and the well was re-completed August 18, 1970 from perforations at 11,398-406' and 11,411-20' in the Strawn formation. The well was potentialized on a 24-hour flow test for 33 BO and eight BW on a 20/64" choke.

Perry R. Bass Federal Rodke was also reworked and completed through new perforations at 5,722-34' in the Delaware formation for a pumping well making 44 BO and 11 BW.

Future Development

The 1971 Plan of Development provides for our continuous exploratory program. Specifically, we have made a farmout agreement with Champlin Petroleum Company for the drilling of an 11,900' Strawn test in the SE/4 of Section 4, Township 20 South, Range 31 East, with the well to be commenced within 90 days from the date of this Plan of Development.

We have made a commitment with Ed White who is presently doing, or has just completed, five miles of geophysical work in Township 21 South, Range 30 East, in anticipation of working out a farmout agreement with him for a Devonian test should his information indicate structure as developed in his geophysical survey.

Phillips Petroleum Company is presently drilling a Morrow test in the SW/4 of Section 15, Township 20 South, Range 32 East, just outside the east boundary of the Big Eddy Unit, which it is hopeful will give us additional geological information in this area of the Unit. We have supported this test in the hope that this will develop.

Plans are also being made to deepen Perry R. Bass No. 7 Big Eddy to adequately test the Morrow formation in this well. It is anticipated that this work will be commenced within the next 30-60 days.

Offset Obligations

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

Additional Development

This Plan of Development shall constitute the drilling obligations of the Unit Operator under the terms of the Big Eddy Unit Agreement for the period ending December 31, 1971.

Modifications

It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

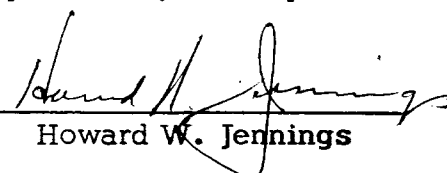
Effective Date

This Plan of Development shall be effective January 1, 1971.

If this Plan of Development meets with your approval, please indicate in the appropriate space provided below and return one copy for our files.

Yours very truly,

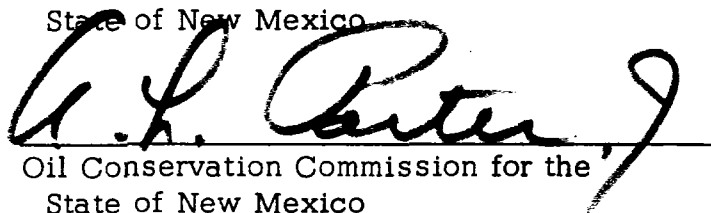
Perry R. Bass, Unit Operator

By: 
Howard W. Jennings

Supervisor, United States Geological Survey

Date: _____

Commissioner of Public Lands for the
State of New Mexico


Oil Conservation Commission for the
State of New Mexico

Date: _____

Date: January 19, 1971

January 12, 1971

Perry R. Bass
12th Floor Ft. Worth Nat'l Bank Bldg.
Fort Worth, Texas 76102

Re: 1971 Plan of Development
Big Eddy Unit
Eddy County, New Mexico

ATTENTION: Mr. Howard W. Jennings

Gentlemen:

The Commissioner of Public Lands has this date approved your 1971 Plan of Development for the Big Eddy Unit, Eddy County, New Mexico. This approval is subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

Enclosed is one approved copy of the plan.

Please remit a three (\$3.00) dollar filing fee.

Sincerely yours,

GORDON G. MARCUM, II, Director

AJA/GGM/s

encl.

cc: USGS-Roswell, New Mexico

OCC- Santa Fe, New Mexico ✓

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

April 1, 1970

Perry R. Bass
12th Floor
Fort Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard Jennings

Re: Supplemental 1970
Plan of Development,
Big Eddy Unit, Eddy
County, New Mexico

Dear Sir:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Supplemental 1970 Plan of Development dated March 11, 1970 for the Big Eddy Unit, Eddy 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.

Two approved copies of the plan are returned herewith.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og

cc: United States Geological Survey - Roswell
Commissioner of Public Lands - Santa Fe

PERRY R. BASS
12TH FLOOR FT. WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS
76102

March 11, 1970

Subject: Supplemental 1970
Plan of Development
Big Eddy Unit,
Eddy County, New Mexico

United States Geological Survey
Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands for
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

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

Gentlemen:

During December, 1969 Perry R. Bass, operator of the above captioned unit submitted a Plan of Development for this unit for 1970. Accordingly, this supplemental plan is being submitted as a supplement to our original plan and is to be taken in conjunction with said original letter.

History of Past Development

During the year 1969 the unit operator drilled two wells on this unit, which two wells are set forth as follows:

Big Eddy Unit Well #12 was drilled by Pennzoil United to a total depth of 11,884 feet. The well was subsequently plugged back and 4 $\frac{1}{2}$ " casing was run to a depth of 8,740 feet. The well was perforated from 8,565-8602 feet and after several acid treatments was potentialized for 20 BOPD. The well was spudded 5-14-69 and completed four months later on 9-7-69.

The other well drilled on the unit was the Sweeney and Hannifin #31, Big Eddy Unit. This well was spudded 9-27-69 535 feet FSL and 660 feet FWL Sec. 31-21S-28E. The well was drilled to a total depth of 4,615 feet and plugged and abandoned 10-5-69. As was stated in our previous Plan of Development, we are continuing our active exploratory program into 1970 and to be more specific, we are working on three separate deals to drill or, cause to be drilled. In each instance there is outstanding acreage not owned by the operator and negotiations at the present time are continuing, however, no definite trades have been made although we feel reasonably sure two out of the three possible prospects will be drilled in 1970.

Specifically, we have plans for a Strawn test in Sec. 4-20S-31E which test will go to a depth of 11,500 feet to test the upper and lower Delaware, Bone Springs formation and the Strawn formation.

Likewise, a 11,000 foot Pennsylvanian test is contemplated in the vicinity of Sec. 27-21S-28E. Also, another Strawn test to a depth of 11,500 feet is being worked on in the vicinity of Sec. 21-20S-31E with the plan in mind and option to carry this well to the Devonian formation should the test run structurally high.

Additional geophysical work and geological correlation is being done continuously on the unit with each additional test well contributing to our subsurface control. Naturally, these deep tests are extremely expensive and many geological hours are justified before another location is selected.

Modifications

It is understood that this supplemental Plan of Development will be modified from time to time to meet changing conditions and it is respectfully requested that this Supplemental Plan of Development be considered in conjunction with our original plan and if this plan meets with your approval please indicate in the space provided and return one copy for our files.

Yours very truly,

Perry R. Bass, Unit Operator

By:  10

Supplemental 1970
Plan of Development
Big Eddy Unit,
Eddy County, New Mexico

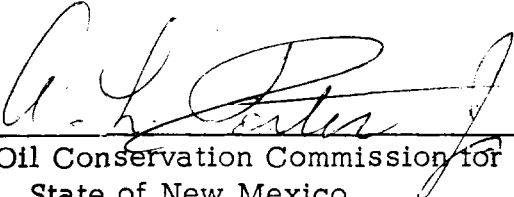
March 11, 1970
Page 3

Supervisor, United States Geological Survey

Date: _____

Commission of Public Lands for the
State of New Mexico

Date: _____



Oil Conservation Commission for the
State of New Mexico

Date: April 1, 1970

Drawer 1857
Roswell, New Mexico 88201

70 APR 1 AM 8 25

March 31, 1970

Perry R. Bass
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Gentlemen:

Your 1970 plan of development for the Big Eddy unit area, Eddy County, New Mexico, has been approved on this date subject to like approval by the appropriate State officials.

One approved copy of the plan is enclosed.

Sincerely yours,

(ORIG. SCD) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Oil and Gas Supervisor

cc:
Washington (w/cy of plan)
Artesia (w/cy of plan)
NEOCC, Santa Fe (ltr. only) ✓
Com. of Pub. Lands, Santa Fe (ltr. only)

MAIN OFFICE

'70 MAR 20 AM 8

365

March 18, 1970

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas 76101

Re: Big Eddy Unit
1970 Plan of Development and
Supplemental 1970 Plan of
Development
Eddy County, New Mexico

Gentlemen:

The Commissioner of Public Lands has this date approved your 1970 Plan of Development as well as your Supplemental 1970 Plan of Development for the Big Eddy Unit, Eddy County, New Mexico. This approval is subject to like approval by the United States Geological Survey.

We are enclosing one copy of each of the plans which contain the Commissioners approval.

~~Very~~ truly yours,

Ted Bilberry, Director
Oil and Gas Department

TE/ML/s

encls.

cc: USGS-Roswell, New Mexico
OCC-Santa Fe, New Mexico

Perry R. Bass
12th Floor Ft. Worth Nat'l Bank Bldg.
Fort Worth, Texas 76102



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

February 2, 1970

Perry R. Bass
12th Floor, Fort Worth
National Bank Bldg.
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Gentlemen:

Your letter of January 26 requests that we concur with your determination as unit operator that the Big Eddy unit well No. 12 in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 20 S., R. 31 E., N.M.P.M., on Federal lease New Mexico 04082 is not capable of production in paying quantities from the Bone Springs formation. Big Eddy unit well No. 12 was drilled to a total depth of 11,884 feet in the Atoka zone on July 30, 1969. Your letter states that no commercial production was found in the deeper zones and the well was subsequently plugged back and casing set at 8,740 feet. The well was then completed in the Bone Springs formation from 8,565 to 8,602 feet and produced 19.2 barrels of oil per day with a gas-oil ratio of 1,600 cubic feet per barrel on potential test. Cumulative production from the Bone Springs for the 3-month interval, September through November 1969, is 1,158 barrels of oil with November production averaging 11.7 barrels of oil per day.

This office concurs with your determination that the well is not capable of production in paying quantities under existing conditions.

Sincerely yours,

(ORIG. SCD.) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Oil and Gas Supervisor

cc:
Washington (w/cy determination)
Hobbs (w/cy determination)
BLM, Santa Fe (ltr. only)
NMOCC, Santa Fe (ltr. only) ✓
Com. Pub. Lands, Santa Fe (ltr. only)
Accounts (ltr. only)

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

January 23, 1970

365

**Pan American Petroleum Corporation
P. O. Box 1410
Port Worth, Texas 76101**

**Re: 1970 Plan of Development
Big Eddy Unit, Eddy County,
New Mexico**

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1970 Plan of Development dated December 4, 1969, for the Big Eddy Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and Commissioner of Public Lands of the State of New Mexico.

Two approved copies of the plan are returned herewith.

Very truly yours,

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

**ALP/JEK/og
Enclosures**

**cc: United States Geological Survey
Roswell, New Mexico**

**Commissioner of Public Lands
Santa Fe, New Mexico**

C
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Y

PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING

P. O. BOX 1410

FORT WORTH, TEXAS—76101

December 4, 1969

File: SJO-730-416

Subject: 1970 Plan of Development
Big Eddy Unit,
Eddy County, New MexicoUnited States Geological Survey (6)
Drawer 1857
Roswell, New MexicoCommissioner of Public Lands for (3)
State of New Mexico
P. O. Box 791
Santa Fe, New MexicoOil Conservation Commission for (3)
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

In accordance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, operator of record, and Pan American Petroleum Corporation, its agent, hereby submit a Plan of Development for 1970.

History of Past Development

At the present time the Big Eddy Unit consists of one well in the Lusk (Strawn) Pool, four wells in the Big Eddy Strawn Pool, one well in the Big Eddy Delaware Pool, one well in a Bone Springs interval and 12 plugged and abandoned wells.

Big Eddy Unit Well No. 1 was drilled by Pan American to a total depth of 14,205'. Completion was made in the Wolfcamp interval and the well was potentialized for a calculated open flow of 10,500 MCFPD on June 5, 1962. The well produced 124,605 MCF and 3,518 barrels distillate prior to being plugged and abandoned.

Big Eddy Unit Well No. 2 was drilled by Pan American to a total depth of 12,457'. The well was completed in the Strawn zone in July, 1963, and produced a total of 1,447 BO before being plugged and abandoned in 1964.

Big Eddy Unit Well No. 3 was drilled by Pan American to a total depth of 13,091'. On May 11, 1964, the well was potentialized in the Strawn for 115 BO and 25 BWP. This well produced a total of 8,901 BO prior to being plugged and abandoned.

Big Eddy Unit Well No. 4 was drilled to a total depth of 11,470' by Pan American and completed in the Strawn zone. On July 2, 1965, this well potentialed at a rate of 382 BOPD (flowing) and no water. In August, 1969, the well produced at an average rate of 17 BOPD and no water with a GOR of 15,000 CF/BO.

Big Eddy Unit Well No. 5 was drilled to a total depth of 11,476' by Pan American and completed in the Strawn with a flowing potential of 435 BOPD and no water in August, 1965. The well produced only 49 BO X 147 BW in April, 1969, and after going off production, was permanently abandoned.

Big Eddy Unit Well No. 6 was drilled to a total depth of 11,527' by Pan American. Testing indicated the Strawn was non-productive and the well was plugged and abandoned in November, 1965.

Big Eddy Unit Well No. 7 was drilled to a total depth of 14,208' by Pan American. The Morrow formation tested at an estimated absolute open flow rate of 2.5 MMCFPD; however, due to lack of marketing facilities, this zone was plugged off with a bridge plug and the well was completed in the Strawn formation for a flowing potential of 579 BOPD and no water. In August, 1969, the well produced at an average rate of 40 BO and 128 BWPD.

Big Eddy Unit Well No. 8 was drilled by Perry R. Bass to a total depth of 11,631'. On May 17, 1966, the well was potentialed in the Strawn interval flowing at the rate of 424 BO and no water in 14 hours. During August, 1969, production averaged 18 BO and 43 BWPD.

Big Eddy Unit Well No. 9 was drilled by Pan American to a total depth of 13,128'. No commercially productive intervals were encountered and the well was plugged and abandoned in July, 1966.

Big Eddy Unit Well No. 10 was drilled to a total depth of 11,449' by Pan American and completed in the Strawn zone. The well was potentialed on October 13, 1966, at a flowing rate of 504 BOPD and no water. Production averaged 206 BOPD and no water during August, 1969.

Big Eddy Unit Well No. 11 was drilled by Pan American to a total depth of 11,890' and plugged back to 5,458' in the Delaware interval. The well potentialed 61 BO and 50 BWPD on January 8, 1968. During August, 1969, the well produced at an average rate of 31 BO and 14 BWPD. A non-commercial classification was granted in April, 1968.

Big Eddy Unit Well No. 12 was drilled by Pennzoil to a total depth of 11,884' and plugged back to 8,678' in the Bone Springs and potentialed for 20 BOPD in August, 1969.

Big Eddy Unit Well No. 13 was drilled to a total depth of 12,150'. No commercially productive intervals were encountered and the well was plugged and abandoned.

Big Eddy Unit Well No. 14 was drilled by Union Texas to a total of 11,933' in mid-1966. No commercially productive intervals were encountered and the well was plugged and abandoned.

Big Eddy Unit Well No. 15 was drilled by Perry R. Bass to a total depth of 11,517'. In August, 1966, the well was potentialized in the Strawn at a flowing rate of 413 BOPD and no water. Production during September, 1968, averaged 159 BO and 75 BWPD.

Big Eddy Unit Well No. 16 was drilled by Pan American to a total depth of 12,977'. No commercially productive intervals were encountered and the well was plugged and abandoned in April, 1967.

Big Eddy Unit Well No. 17 was drilled by Cities Service, agent for Perry R. Bass, to a total depth of 12,913'. On February 28, 1967, the well was potentialized at a calculated absolute open flow of 9,000 MCFPD with 20 barrels condensate per MMCF. In February, 1968, the well was recompleted in the Strawn; however, the Strawn was not commercially productive and the well was plugged and abandoned.

Big Eddy Unit Well No. 18 was drilled to a total depth of 12,920' by Pan American. No commercially productive intervals were encountered and the well was plugged and abandoned in July, 1967.

Sun-Tex Federal Well No. 1 was drilled by Perry R. Bass to a total depth of 11,446'. The well was completed in the Strawn interval and potentialized at a flowing rate of 342 BOPD on October 11, 1965. The well produced a cumulative of 110,714 BO prior to being permanently abandoned in June, 1969.

Participating Area

The current participating area for the Lusk (Strawn) consists of 480 acres of the Lusk (Strawn) Pool, being the S/2 of Section 27, and the NW/4 of Section 34, T-19-S, R-31-E, Eddy County, New Mexico.

The initial participating area designated as the Big Eddy Strawn "A" includes 160 acres in the SE/4 of Section 19, T-20-S, R-31-E. The first, second, and third revisions of the participating area for the Strawn "A" formation include 159.59 acres in Lots 1, 2, E/2 NW/4 of Section 30, 160 acres in the NE/4 of Section 30, and 159.25 acres in Lots 2, 3, E/2 of SW/4, Section 19, all in T-20-S, R-31-E.

Future Development

The 1970 Plan of Development provides for no additional development drilling in the currently productive pools in the unit; however, the presently active exploratory program will continue into 1970. Should any additional development appear warranted as a result of this activity, a revised Plan of Development will be submitted.

1970 Plan of Development
Big Eddy Unit,
Eddy County, New Mexico

December 4, 1969
SJO-730-416
Page 4

Offset Obligations

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

Additional Development

This Plan of Development shall constitute the drilling obligations of the unit operator and his agent under the terms of the Big Eddy Unit Agreement for the period ending December 31, 1970.

Modifications

It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

Effective Date

This Plan of Development shall be effective January 1, 1970.

If this Plan of Development meets with your approval, please indicate in the appropriate space provided below and return one copy for our files.

Yours very truly,

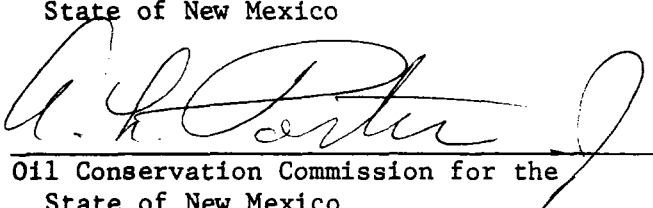

Perry R. Bass, Unit Operator

Supervisor, United States Geological Survey

Date: _____

Commission of Public Lands for the
State of New Mexico

Date: _____


Oil Conservation Commission for the
State of New Mexico

Date: January 26, 1970

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

345

January 7, 1969

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard W. Jennings

Re: 1969 Plan of Development
Big Eddy Unit, Eddy
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1969 Plan of Development dated December 10, 1968, for the Big Eddy Unit, Eddy 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 approved copy of the plan is returned herewith.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og

cc: United States Geological Survey - Roswell
Commissioner of Public Lands - Santa Fe

C
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Y



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

IN REPLY REFER TO:

December 30, 1968

Perry R. Bass
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Gentlemen:

Your 1969 plan of development for the Big Eddy unit area, Eddy County, New Mexico, advising that unit well No. 13 was recently completed as a dry hole at 12,150 feet in the Mississippian and proposing no additional drilling has been approved on this date subject to like approval by the appropriate State officials. You advise that the presently active exploratory program will continue into 1969 and a revised plan of development will be submitted if additional development appears warranted during the year.

Two approved copies of the plan are enclosed.

Sincerely yours,

(SIGNED) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

cc:
Washington (w/cy. of plan)
Artesia (w/cy. of plan)
MSGCC, Santa Fe (ltr. only) ✓
Com. of Pub. Lands, Santa Fe (ltr. only)

State of New Mexico



Commissioner of Public Lands



December 16, 1968

GUYTON B. HAYS
COMMISSIONER

P. O. BOX 1148
SANTA FE, NEW MEXICO

Perry R. Bass
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas

Re: Big Eddy Unit
Eddy County, New Mexico
1969 Plan of Development

ATTENTION: Mr. Howard W. Jennings

Gentlemen:

The Commissioner of Public Lands has this date approved your 1969 Plan of Development for the Big Eddy Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

This plan calls for the drilling of no additional wells during 1969. A revised plan of development will be submitted if additional development should appear.

Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

BY:
Malcolm L. Long, Supervisor
Unit Division

GBH/TB/ML/s
encl. (copy of Plan)
cc: USGS-Roswell, New Mexico
OCC- Santa Fe, New Mexico

PERRY R. BASS
12TH FLOOR, FT. WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS

December 10, 1968

DEC 12 1968

Subject: Plan of Development
Big Eddy Unit
Eddy County, New Mexico

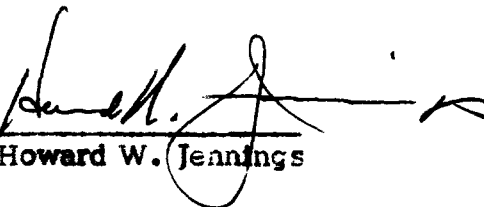
United States Geological Survey (5)
Oil Conservation Commission (2)
Commissioner of Public Lands (2)

Gentlemen:

We are enclosing herewith Plan of Development covering the above captioned unit dated December 3, 1968. You will note that on page four of the Plan there are approval sheets and we ask that one copy of said Plan be executed and returned to us if same meets with your respective approvals.

Very truly yours,

Perry R. Bass

By 
Howard W. Jennings

HWJ:jas

Enclosures

December 3, 1968

Subject: Plan of Development
Big Eddy Unit
Eddy County, New Mexico

United States Geological Survey
Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

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

Gentlemen:

In accordance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, operator of record, and Pan American Petroleum Corporation, its agent, hereby submit a Plan of Development for 1969.

History of Past Development

At the present time, the Big Eddy Unit consists of three wells in the Lusk (Strawn) Pool, four wells in the Big Eddy Strawn Pool, one well in the Big Eddy Delaware Pool, one well in the Tower Hill Gas Pool and nine plugged and abandoned wells.

Big Eddy Unit Well No. 1 was drilled by Pan American to a total depth of 14,205'. Completion was made in the Wolfcamp interval and the well was potentialled for a calculated open flow of 10,500 MCFPD on June 5, 1962. The well produced 124,605 MCF and 3,518 barrels distillate prior to being plugged and abandoned.

Big Eddy Unit Well No. 2 was drilled by Pan American to a total depth of 12,457'. The well was completed in the Strawn zone in July, 1963, and produced a total of 1,447 BO before being plugged and abandoned in 1964.

Big Eddy Unit Well No. 3 was drilled by Pan American to a total depth of 13,091'. On May 11, 1964, the well was potentialled in the Strawn for 115 BO and 25 BWPD. This well produced a total of 8,901 BO prior to being plugged and abandoned.

Big Eddy Unit Well No. 4 was drilled to a total depth of 11,470' by Pan American and completed in the Strawn zone. On July 2, 1965, this well potentialled at the rate of 382 BOPD (flowing) and no water. In September, 1968, the well produced at an average rate of 27 BOPD and 1 BWPD with a GOR of 2540.

Big Eddy Unit Well No. 5 was drilled to a total depth of 11,476' by Pan American and completed in the Strawn with a flowing potential of 435 BOPD and no water in August, 1965. Average production during August, 1968, was 5 BOPD and no water.

Big Eddy Unit Well No. 6 was drilled to a total depth of 11,527' by Pan American. Testing indicated the Strawn was non-productive and the well was plugged and abandoned in November, 1965.

Big Eddy Unit Well No. 7 was drilled to a total depth of 14,208' by Pan American. The Morrow formation tested at an estimated absolute open flow rate of 2.5 MMCFPD; however, due to lack of marketing facilities, this zone was plugged off with a bridge plug and the well was completed in the Strawn formation for a flowing potential of 579 BOPD and no water. In September, 1968, the well produced at an average rate of 71 BO and 227 BWPD.

Big Eddy Unit Well No. 8 was drilled by Perry R. Bass to a total depth of 11,631'. On May 17, 1966, the well was potentialized in the Strawn interval flowing at the rate of 424 BO and no water in 14 hours. During September, 1968, production averaged 31 BO and 144 BWPD.

Big Eddy Unit Well No. 9 was drilled by Pan American to a total depth of 13,128'. No commercially productive intervals were encountered and the well was plugged and abandoned in July, 1966.

Big Eddy Unit Well No. 10 was drilled to a total depth of 11,449' by Pan American and completed in the Strawn zone. The well was potentialized on October 13, 1966, at a flowing rate of 504 BOPD and no water. Production averaged 300 BOPD and no water during September, 1968.

Big Eddy Unit Well No. 11 was drilled by Pan American to a total depth of 11,890' and plugged back to 5,458' in the Delaware interval. The well potentialized 61 BO and 50 BWPD on January 8, 1968. During September, 1968, the well produced at an average rate of 24 BO and 23 BWPD. A non-commercial classification was granted in April, 1968.

Big Eddy Unit Well No. 14 was drilled by Union Texas to a total depth of 11,933' in mid-1966. No commercially productive intervals were encountered and the well was plugged and abandoned.

Big Eddy Unit Well No. 15 was drilled by Perry R. Bass to a total depth of 11,517'. In August, 1966, the well was potentialized in the Strawn at a flowing rate of 413 BOPD and no water. Production during September, 1968, averaged 207 BO and 98 BWPD with a GOR of 3860.

Big Eddy Unit Well No. 16 was drilled by Pan American to a total depth of 12,977'. No commercially productive intervals were encountered and the well was plugged and abandoned in April, 1967.

Big Eddy Unit Well No. 17 was drilled by Cities Service, agent for Perry R. Bass, to a total depth of 12,913'. On February 28, 1967, the well

was potentialized at a calculated absolute open flow of 9000 MCFPD with 20 barrels condensate per MMCF. In February, 1968, the well was recompleted in the Strawn; however, the Strawn was not commercially productive and the well was plugged and abandoned.

Big Eddy Unit Well No. 18 was drilled to a total depth of 12,920' by Pan American. No commercially productive intervals were encountered and the well was plugged and abandoned in July, 1967.

Sun-Tex Federal Well No. 1 was drilled by Perry R. Bass to a total depth of 11,446'. The well was completed in the Strawn interval and potentialized at a flowing rate of 342 BOPD on October 11, 1965. During September, 1968, production averaged 3 BO and 1 BWPD with a GOR of 25,800.

Current Wildcat Program

Pan American has just completed operations on the Big Eddy Unit Well No. 13. The well was drilled to a total depth of 12,150' and plugged and abandoned as a dry hole.

Participating Area

The current participating area for the Lusk (Strawn) consists of 480 acres of the Lusk (Strawn) Pool, being the S/2 of Section 27, and the NW/4 of Section 34, T-19-S, R-31-E, Eddy County, New Mexico.

The initial participating area designated as the Big Eddy Strawn "A" includes 160 acres in the SE/4 of Section 19, T-20-S, R-31-E. The first, second, and third revisions of the participating area for the Strawn "A" formation include 159.59 acres in Lots 1, 2, E/2 NW/4 of Section 30, 160 acres in the NE/4 of Section 30, and 159.25 acres in Lots 2, 3, E/2 of SW/4 Section 19, all in T-20-S, R-31-E.

Future Development

The 1969 Plan of Development provides for no additional development drilling in the currently productive pools in the unit; however, the presently active exploratory program will continue into 1969. Should any additional development appear warranted as a result of this activity, a revised Plan of Development will be submitted.

Offset Obligations

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

Additional Development

This Plan of Development shall constitute the drilling obligations of the unit operator and his agent under the terms of the Big Eddy Unit Agreement for the period ending December 31, 1969.

Modifications

It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

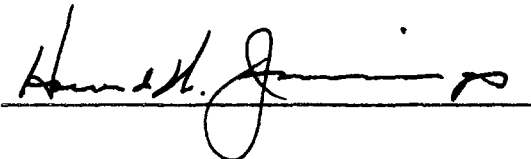
Effective Date

This Plan of Development shall be effective January 1, 1969.

If this Plan of Development meets with your approval, please indicate in the appropriate space provided below and return one copy for our files.

Yours very truly,

PERRY R. BASS, UNIT OPERATOR

By: 


VDS:kp

Approved: _____
Supervisor, United States Geological
Survey

Date: _____

Approved: _____
Commissioner of Public Lands

Date: _____

Approved: 
Oil Conservation Commission

Date: January 7, 1969



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

April 10, 1968

Perry R. Bass
Fort Worth National Bank Bldg.
Fort Worth, Texas 76102

Gentlemen:

Your undated letter received on March 27, 1968, advises that as operator of the Big Eddy unit, Lea County, New Mexico, you have determined that unit well No. 11 in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 20 S., R. 31 E., N.M.P.M., lease New Mexico 0251, is not capable of producing unitized substances in paying quantities from the Delaware.

Well No. 11 was completed on December 12, 1967, for an initial pumping potential of 61 barrels of oil and 50 barrels of water per day from Delaware perforations in the interval from 5,142 to 5,165 feet. A production test conducted on the well on March 11, 1968, showed the production rate had declined to 34 barrels of oil and 42 barrels of water per day.

This office concurs with your determination that the well is not capable of producing unitized substances in paying quantities under existing conditions. Two surplus copies of the notice are attached.

Sincerely yours,

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

68 APR 12 AM 9 07

cc:
Washington (w/cy notice)
Hobbs (w/cy notice)
Com. of Pub. Lands, Santa Fe (ltr. only)
NMOCC, Santa Fe (ltr. only)
Pan American, Lubbock, Texas
Accounts

Subject: Non-Commercial Determination
Big Eddy Unit No. 11
Eddy County, New Mexico

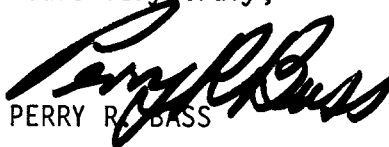
United States Geological Survey (3)
Drawer 1857
Roswell, New Mexico

Gentlemen:

Perry R. Bass, operator of record, and Pan American Petroleum Corporation, his agent, respectfully requests non-commercial determination of Big Eddy Unit Well No. 11, located 1650' FSL and 660' FEL, Section 7, T-20-S, R-31-E, Eddy County, New Mexico, due to rapid decline in production, estimated ultimate recovery, and unfavorable economics. The well potentialized pumping 61 BOPD with 50 BW on December 12, 1967. Latest production tests on March 11, 1968 shows the well pumping 34 BOPD and 42 BW. Attached is a plot of well tests taken since completion of this well. Extrapolation of the decline rate reflected by these tests would indicate ultimate recovery to be in the range of 15,000 to 30,000 barrels. Reserves of this magnitude would not payout the cost of operations plus well cost of \$65,000 and lift and lease equipment costing \$10,000. The high cost of the well is due partly to the additional strings of casing required in Potash Mining areas.

Non-commercial determination is respectfully requested based upon performance of Big Eddy Unit Well No. 11.

Yours very truly,


PERRY R. BASS

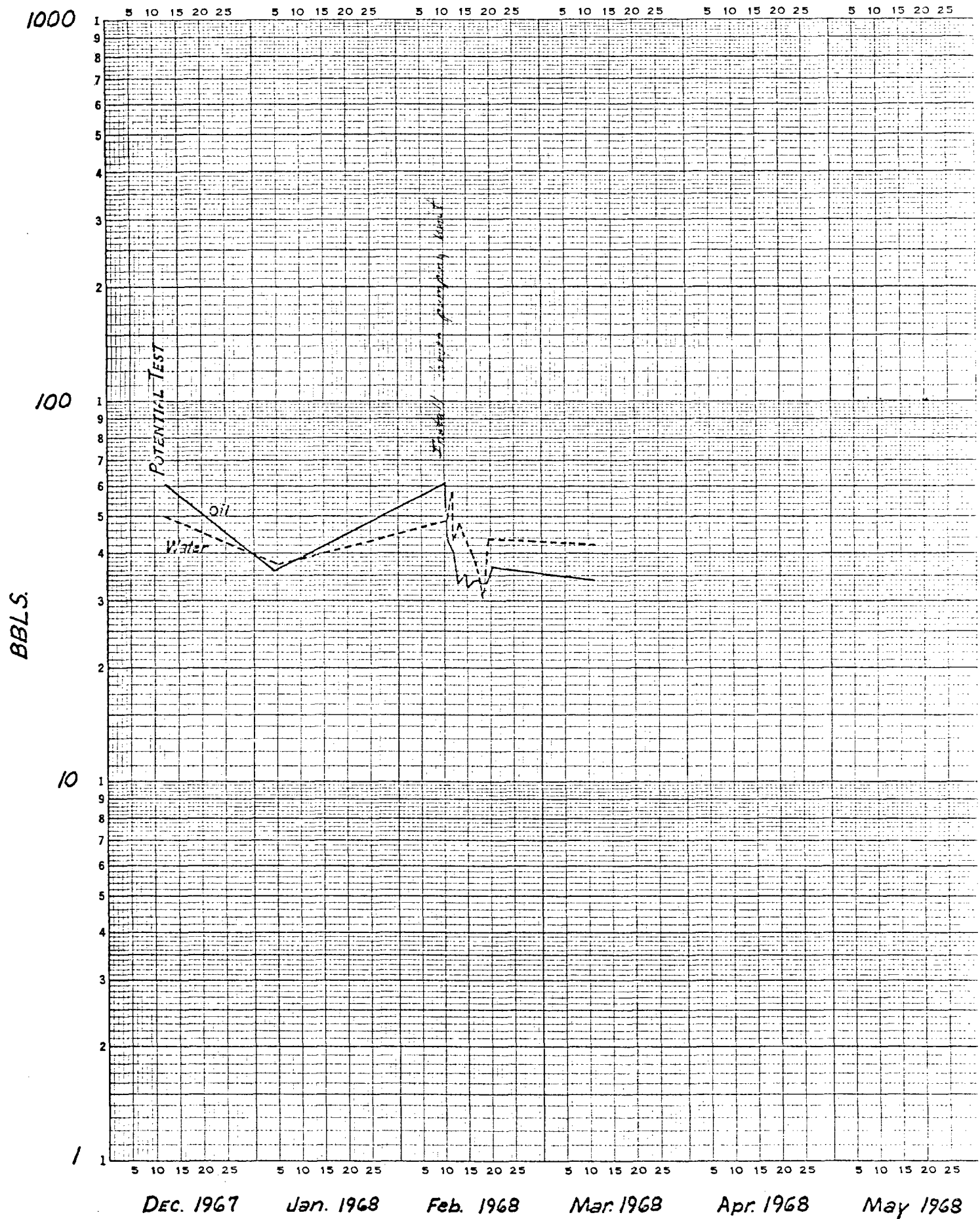
LDL:jn
Attachment

69 MAR 27 AM 10 31

cc: New Mexico Oil Conservation Commission (2)
P. O. Box 2088
Santa Fe, New Mexico

Commissioner of Public Lands (2)
P. O. Box 791
Santa Fe, New Mexico

BIG 5DDY UNIT No. 11



Subject: Non-Commercial Determination
Big Eddy Unit No. 11
Eddy County, New Mexico

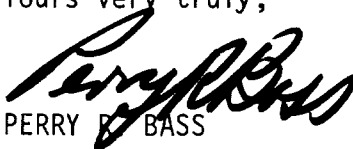
United States Geological Survey (3)
Drawer 1857
Roswell, New Mexico

Gentlemen:

Perry R. Bass, operator of record, and Pan American Petroleum Corporation, his agent, respectfully requests non-commercial determination of Big Eddy Unit Well No. 11, located 1650' FSL and 660' FEL, Section 7, T-20-S, R-31-E, Eddy County, New Mexico, due to rapid decline in production, estimated ultimate recovery, and unfavorable economics. The well potentialized pumping 61 BOPD with 50 BW on December 12, 1967. Latest production tests on March 11, 1968 shows the well pumping 34 BOPD and 42 BW. Attached is a plot of well tests taken since completion of this well. Extrapolation of the decline rate reflected by these tests would indicate ultimate recovery to be in the range of 15,000 to 30,000 barrels. Reserves of this magnitude would not payout the cost of operations plus well cost of \$65,000 and lift and lease equipment costing \$10,000. The high cost of the well is due partly to the additional strings of casing required in Potash Mining areas.

Non-commercial determination is respectfully requested based upon performance of Big Eddy Unit Well No. 11.

Yours very truly,

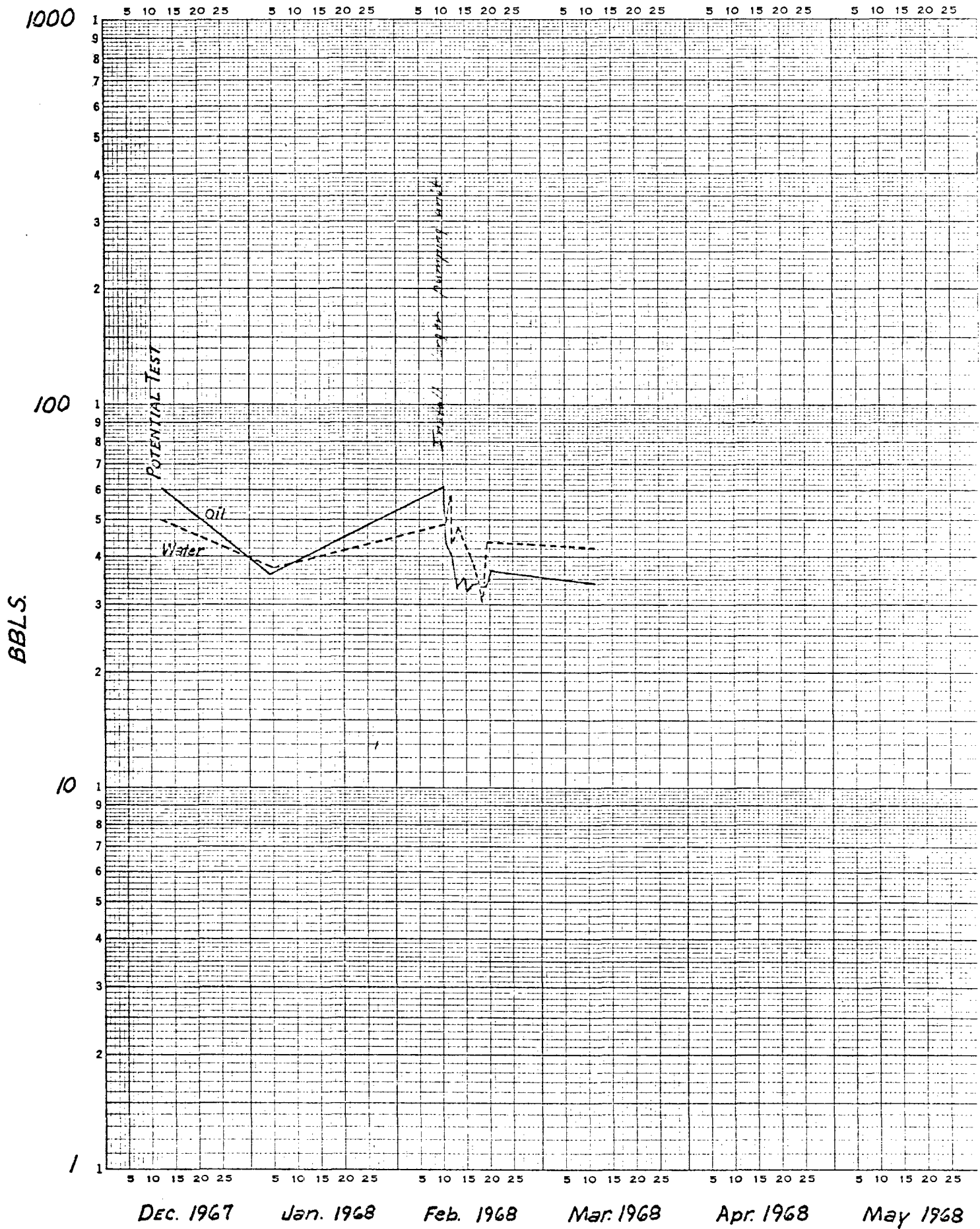

PERRY R. BASS

LDL:jn
Attachment

cc: New Mexico Oil Conservation Commission (2)
P. O. Box 2088
Santa Fe, New Mexico

Commissioner of Public Lands (2)
P. O. Box 791
Santa Fe, New Mexico

BIG EDDY UNIT No. 11





IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

February 29, 1963

365
MAIN OFFICE

'68 MAR 4 AM 8 14

Derry E. Baas
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Gentlemen:

Your 1962 plan of development for the Big Eddy unit area, Eddy County, New Mexico, advising that unit well No. 11 is currently being drilled below 10,000 feet and proposing the drilling of no additional wells, has been approved on this date subject to like approval by the appropriate State officials.

Two approved copies of the plan are enclosed.

Sincerely yours,

(ORIG. SGD.) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Oil and Gas Supervisor

cc:
Washington (w/cy. of plan)
Artesia (w/cy. of plan)
NMCCC, Santa Fe (ltr. only) ✓
Com. of Pub. Lands, Santa Fe (ltr. only)

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

365

January 16, 1968

Perry R. Bass
12th Floor
Fort Worth National Bank Building
Fort Worth, Texas

Re: 1968 Plan of Development
Big Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for the calendar year 1968 for the Big Eddy Unit, Eddy 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 approved copy of the plan is returned herewith.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og

cc: United States Geological Survey - Roswell
Commissioner of Public Lands - Santa Fe

December 29, 1967

Subject: Plan of Development
Big Eddy Unit
Eddy County, New Mexico

MAIN OFFICE

United States Geological Survey
Drawer 1857
Roswell, New Mexico

'68 JAN 10 PM 1 22

Commissioner of Public Lands
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

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

Gentlemen:

In compliance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, operator of record, and Pan American Petroleum Corporation, its agent, hereby submit for your approval a Plan of Development for 1968.

History of Past Development

Presently within the Big Eddy Unit, there are three wells located in the Lusk (Strawn) Pool, four wells in the Big Eddy Strawn Pool, one gas well in an undesignated pool, while there are seven wells plugged and abandoned. Perry R. Bass has completed four of the producers, and Pan American has completed four producers while plugging and abandoning seven wells. In addition, Union Texas Petroleum Corporation plugged and abandoned a dry hole which they drilled. Pan American is currently drilling a wildcat. A brief summary of each well is presented below.

Big Eddy Unit Well No. 1 was drilled to a total depth of 14,205' by Pan American to test the Devonian which was found non-commercial. Casing was run and completion attempted in the Morrow Sand in two different intervals both of which were found to be non-commercial with no shows of oil or gas being recovered. The Morrow interval was then squeezed and the Strawn interval perforated after which 438 barrels of new oil and 1,479 barrels of water were eventually produced prior to this zone being squeezed. The next interval tested was the Wolfcamp in which a gas well completion was made on June 5, 1962, for a calculated open flow of 10,500 MCFPD. The Wolfcamp was connected to gas sales on December 6, 1962, and produced 124,605 MCF and 3,518 barrels of distillate prior to Big Eddy Unit Well No. 1 being plugged and abandoned in early 1964.

Big Eddy Unit Well No. 2 was drilled by Pan American to test the Mississippian at a total depth of 12,457'. A completion attempt was made in the Morrow and that zone flowed 156 MCFPD (non-commercial) prior to being squeezed. The Strawn was then perforated and Big Eddy Unit Well No. 2

eventually completed for a flowing potential of 14 BO and 14 BWPD on July 30, 1963. This well was assigned to the Fenton Draw (Strawn) Pool and Big Eddy Unit Well No. 2 produced a total of 1,447 BO from the Strawn prior to its being plugged and abandoned in early 1964.

Big Eddy Unit Well No. 3 was also a Mississippian test by Pan American with a total depth of 13,091'. The Morrow was perforated and flowed 100 MCFPD (non-commercial) after which a bridge plug, capped with cement, was placed above the Morrow perforations and a completion attempt made in the Strawn. On initial potential, the Strawn flowed 115 BO and 25 BWPD, dated May 11, 1964. This well was placed in the Lusk, West (Strawn) Pool and it produced a total of 8,901 BO prior to its being plugged and abandoned in the middle of 1965.

Big Eddy Unit Well No. 4 was drilled to a total depth of 11,470' and completed as a Lusk (Strawn) Pool oil well with a flowing potential of 382 BOPD and no water on July 2, 1965, by Pan American. This well continues to produce and in September 1967 had average production of 38 BOPD and no water with a GOR of 8,740 cubic feet per barrel.

Big Eddy Unit Well No. 5 was drilled to a total depth of 11,486' and was also completed as a Lusk (Strawn) Pool oil well with flowing potential of 435 BOPD and no water on August 27, 1965, by Pan American. Average production in September, 1967, was 24 BOPD and 1 EWPD with a GOR of 3670 cubic feet per barrel.

Big Eddy Unit Well No. 6 was drilled to a total depth of 11,527'. A drillstem test over the Strawn pay interval recovered only 25' of drilling mud with no shows of oil or gas, and this well was plugged and abandoned in November, 1965, by Pan American.

Big Eddy Unit Well No. 7 was drilled as a wildcat to a total depth of 14,208' by Pan American. A successful attempt for completion in the Morrow formation, gross interval 12,656' - 12,948', was made with an estimated absolute open flow potential of 2.5 MCFPD. However, due to a lack of marketing facilities, this zone was plugged off with a bridge plug and the well completed March 19, 1966, in the Strawn formation from 11,402' - 11,468' for a flowing potential of 579 BO and 0 BWPD. This was the discovery well for the Big Eddy Strawn Pool. In September, 1967, the well produced an average of 71 BO and 182 BWPD.

Big Eddy Unit Well No. 8 was drilled to a total depth of 11,631' and completed in the Strawn interval 11,462' - 11,502' by Perry R. Bass. Initial potential taken May 17, 1966, was 424 BO and 0 BW in 14 hours with a GOR of 4,662 cubic feet per barrel. The well is in the Big Eddy Strawn Pool and during September, 1967, produced a daily rate of 96 BO and 170 BW.

Big Eddy Unit Well No. 9 was drilled to a total depth of 13,128' in the Morrow without encountering any productive Strawn or Morrow. Consequently, Pan American plugged and abandoned the well.

Big Eddy Unit Well No. 10 was drilled to a total depth of 11,449' by Pan American and is completed in the Strawn interval 11,372'-399'. Initial flowing potential taken October 13, 1966, was 504 BO and 0 BWPD with a GOR of 3,730 cubic feet per barrel as a Big Eddy Strawn Field well. During September, 1967, the well produced a daily average of 352 BO with no water.

Big Eddy Unit Well No. 14 was drilled to a total depth of 11,922' in mid-1966 in an attempt for a Big Eddy Strawn Pool development well by Union Texas. However, no Strawn pay was encountered and the well was plugged and abandoned.

Big Eddy Unit Well No. 15 was drilled to a total depth of 11,517' and completed in the Strawn interval 11,468' to 11,489'. Initial potential taken July 29, 1966, was 413 BO and 0 BW with a GOR of 5,642 cubic feet per barrel. The well is in the Big Eddy Strawn Pool and in September, 1967, average production equaled 226 BOPD with 67 BW for a GOR of 6160'.

Big Eddy Unit Well No. 16 was drilled to a total depth of 12,977' in the Morrow by Pan American. Testing of the Wolfcamp and Morrow horizons showed these zones incapable of producing commercial quantities of gas. The well was plugged and abandoned April 6, 1967.

Big Eddy Unit Well No. 17 was drilled to a total depth of 12,913'. Cities Service, agent for Perry R. Bass, initially potentialized the well for a calculated absolute open flow of 9,000 MCFGPD with 20 barrels of condensate per MCFG on February 28, 1967. The well is in an undesignated field.

Big Eddy Unit Well No. 18 was drilled to a total depth of 12,920' by Pan American. Drillstem tests were run over the Strawn, Atoka, and Morrow formations without recovering commercial quantities of oil or gas. Evaluation of logs confirmed the drillstem tests. The well was plugged and abandoned June 28, 1967.

Sun-Tex Federal No. 1 was drilled to a total depth of 11,446' by Perry R. Bass and the Strawn was perforated 11,350-360'. After acidizing with 2,500 gallons, the well potentialized flowing 342 BOPD on October 11, 1965, and is included in the Lusk (Strawn) Pool. Average production in September, 1967, equaled 8 BOPD and no water with a GOR of 14,140 cubic feet per barrel.

Current Wildcat Program

Pan American is presently drilling Big Eddy Unit Well No. 11 below 10,000' with a projected total depth of 11,700' to test the Strawn.

Participating Area

The current participating area for the Lusk (Strawn) consists of 480 acres of the Lusk (Strawn) Pool, being the S/2 of Section 27 and the NW/4 of Section 34, T-19-S, R-31-E, Eddy County, New Mexico. This participating area was submitted to your office in late 1965 with a revision submitted in mid-1966.

An initial participating area designated as the Big Eddy Strawn "A" was filed in September, 1966 for Well No. 7 and includes 160 acres in the SE/4 of Section 19, T-20-S, R-31-E. The first, second, and third revisions of the participating area for the Strawn "A" formation were filed in April, 1967, for Wells Nos. 8, 15, and 10, and included 159.59 acres being Lots 1, 2, E/2 NW/4 of Section 30, 160 acres being the NE/4 of Section 30 and 159.25 acres being Lots 3, 4, E/2 of Section 19, all in T-20-S, R-31-E. SW/4

Future Development

The 1968 Plan of Development provides for no additional development drilling in the currently productive pools in the unit; however, the currently active exploratory program will continue into 1968. Should any additional development appear warranted as a result of this activity, a revised Plan of Development will be submitted.

Offset Obligations

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

Additional Development

This Plan of Development shall constitute the drilling obligations of the unit operator and his agent under the terms of the Big Eddy Unit Agreement for the period ending December 31, 1968.

Modifications

It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

Effective Date

This Plan of Development shall be effective January 1, 1968.

If this Plan of Development meets with your approval, please indicate in the appropriate space provided below and return one copy for our files.

Yours very truly,
PERRY R. BASS, UNIT OPERATOR

BY: 

LDL:jn

Approved: _____ Date: _____
Supervisor, United States Geological
Survey

Approved: _____ Date: _____
Commissioner of Public Lands

Approved: A. L. Porter Date: Jan. 16, 1968
Oil Conservation Commission



CITIES SERVICE OIL COMPANY

Bartlesville, Oklahoma 74004
Telephone: 918 FE 6-2200

November 13, 1967

Commissioner of Public Lands
State of New Mexico
P. O. Box 1148
Santa Fe, New Mexico

Attention: Mr. Eddie Lopez, Supervisor
Unit Division

Re: NMC-2893, Big Eddy Unit Well #17, Section 2,
T-21-S, R-29-E, Eddy County, New Mexico

Gentlemen:

We have been furnished a copy of your letter of September 28, 1967, to Mr. Perry R. Bass, concerning the filing for an initial participating area in connection with the Big Eddy #17 Well, and have been requested to furnish Mr. Bass with the necessary data to comply with the request.

The Big Eddy #17 Well was drilled and completed by Cities Service Oil Company pursuant to an agreement between it, United States Borax & Chemical Corporation, and Mr. H. N. Sweeney, and as required by the terms of the Big Eddy Agreement, operations of the well were turned over to Mr. Perry R. Bass. Mr. Bass has operated the well since it went on stream the 19th of June, 1967. The last production from the well is on or about October 5, 1967, and it is now dead in the Morrow Formation and is temporarily abandoned. We are conducting further study and evaluation of the well concerning re-working and tests up the hole, but have not formulated any definite plans at this time.

The well is spaced by State of New Mexico Conservation Commission Order #3544 for the Tower Hill-Morrow Gas Pool consisting of Lots 1 through 16. The well has been produced on this basis and royalty has been paid to the State of New Mexico through and including September.

In view of the spacing order and the cessation of production, it does not appear that a request to establish an initial participating area for the well is justified, and we respectfully ask that in lieu of a participating

Page Two
Commissioner of Public Lands
November 13, 1967

area that only the Conservation Commission Order be applicable to the well
for all production for the Tower Hill-Morrow.

Yours very truly,

CITIES SERVICE OIL COMPANY

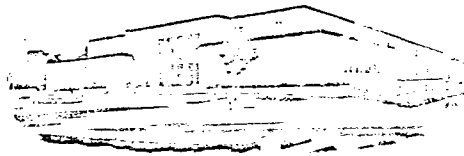
By Wiley C. Hill
Wiley C. Hill
Superintendent of Administration
Land Department

RBH/wf

cc: Mr. Perry R. Bass
U. S. Borax
Oil Conservation Commission for
the State of New Mexico
U. S. Geological Survey - Roswell

THIS COPY FOR

State of New Mexico



Commissioner of Public Lands



GUYTON B. HAYS
COMMISSIONER

P. O. BOX 1148
SANTA FE, NEW MEXICO

October 5, 1967

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas 76102

Re: Big Eddy Unit
Changing well location
from NW/4SE/4, to NE/4SE/4,
Section 7, Township 20 South,
Range 31 East

ATTENTION: Mr. Joe Durkee

Gentlemen:

Reference to your telephone conversation of this date with, Mr. Ted Bilberry, regarding a change in the well location; we find that since this is Federal land we cannot give you permission, but we have no objection to the change, provided you obtain approval from the United States Geological Survey and the New Mexico Oil Conservation Commission.

Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

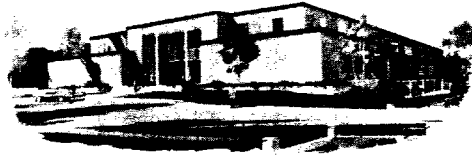
BY:
Eddie Lopez, Supervisor
Unit Division

GBH/TB/EL/s

cc: USGS-Roswell, New Mexico
OCC-Santa Fe, New Mexico ✓

1967 OCT 6 AM 10 14

State of New Mexico



Commissioner of Public Lands



September 28, 1967

GUYTON B. HAYS
COMMISSIONER

P. O. BOX 1148
SANTA FE, NEW MEXICO

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth, Texas, 76101

Re: Designation of Agent
Big Eddy Unit
Eddy County, New Mexico

ATTENTION: Mr. Ben M. May

Gentlemen:

This is to acknowledge your letter of September 26, 1967, enclosing an executed copy of the Designation of Agent for the drilling of well No. 19, in the Big Eddy Unit, to be located in the NW/4SE/4 of Section 7, Township 20 South, Range 31 East, Eddy County, New Mexico.

By this Designation of Agent Perry R. Bass is in no way relieved of its responsibility as Unit Operator for the Big Eddy Unit.

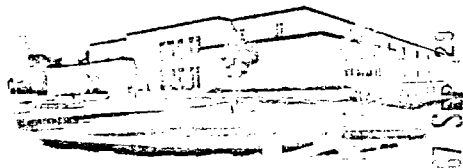
Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS
BY:
Eddie Lopez, Supervisor
Unit Division

GBH/TA/EL/s

cc: USGS-Roswell, New Mexico
OCC-Santa Fe, New Mexico

State of New Mexico



Commissioner of Public Lands



September 28, 1967

GUYTON B. HAYS
COMMISSIONER

P. O. BOX 1148
SANTA FE, NEW MEXICO

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas 76102

Re: Big Eddy Unit
Well No. 17
Tower Hills Morrow Gas
Section 2, Township 21 South,
Range 29 East.

ATTENTION: Mr. Howard Jennings

Gentlemen:

Our records indicate that the captioned well was completed February 24, 1967, in the Morrow Formation and that on May 24, 1967, you filed a form c-104. We feel that there has been ample time to make a determination of this well and to file a request for an Initial Participating Area for the Morrow Formation.

We will expect to hear from you in the immediate future regarding this matter and request that you forward like information to the United States Geological Survey in Roswell, New Mexico.

Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

BY:
Eddie Lopez, Supervisor
Unit Division

GBH/TB/EL/s

cc: USGS-Roswell, New Mexico

OCC-Santa Fe, New Mexico ✓



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Drawer 1857
Roswell, New Mexico 88201

36-
May 29, 1967

Perry R. Bass
12th Floor, Fort Worth
National Bank Building
Fort Worth, Texas 76102

Attention: Mr. Howard W. Jennings

Gentlemen:

The first, second, and third revisions of the Strawn "A" participating area, Big Eddy unit, Eddy and Lea Counties, New Mexico, were approved by the Acting Director, Geological Survey, on May 24, 1967, effective as of May 1, July 1, and October 1, 1966, respectively.

Two approved copies of the application are enclosed. You are requested to furnish all interested parties with appropriate evidence of this approval.

Sincerely yours,

(Orig.Sgd.) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Oil and Gas Supervisor

cc:
Washington (ltr. only)
Artesia (w/cy of approved appl.)
Com. of Pub. Lands - Santa Fe (ltr. only)
NMDC - Santa Fe (ltr. only) ✓

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

3-6

May 15, 1967

C
O
P
Y

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard W. Jennings

Re: 1967 Plan of Development
Big Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for 1967, dated December 27, 1966 for the Big Eddy Unit, Eddy 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.

Two approved copies of the plan are returned herewith.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og

cc: Commissioner of Public Lands - Santa Fe
United States Geological Survey - Roswell

PERRY R. BASS
12TH FLOOR FT. WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS

May 11, 1967

MAY 12 1967

A. L. Porter, Jr.
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

RE: Big Eddy Unit
Eddy County, N.M.

Gentlemen:

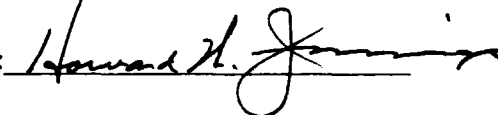
This will acknowledge receipt of your letter of May 2, 1967 regarding the Plan of Development covering the above captioned unit.

We sincerely regret to advise that an error was unfortunately made on our part in the preparation of this plan. Although we sent your office a copy of the plan, it provided no space for the approval of same. Please accept our apologies for this error and we are accordingly enclosing herewith four photocopies of our plan dated December 27, 1966 together with page 5 attached and respectfully request your approval together with the approval of Commissioner of Public Lands and United States Geological Survey, which we have previously received.

Your cooperation in approving this is respectfully requested.

Very truly yours

PERRY R. BASS

BY: 

HWJ: ar
enc: 4

December 27, 1966

67 May 12 PM 1 24

Subject: Plan of Development for 1967
Big Eddy Unit
Eddy County, New Mexico

United States Geological Survey (6)
Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands for (3)
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Gentlemen:

In compliance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, operator of record, and Pan American Petroleum Corporation, its agent, hereby submit for your approval a Plan of Development for 1967.

History of Past Development

Presently within the boundary of the Big Eddy Unit, Perry R. Bass has completed three oil wells and currently has one well drilling. Pan American has four completed oil wells, five plugged and abandoned wells and one well now being drilled. In addition, Union Texas Petroleum Corporation drilled a dry hole that is now plugged and abandoned. Three of the completed wells are located in the Lusk (Strawn) Pool while the remaining four producers are in the Big Eddy Strawn Pool. The wells now being drilled are wildcats. A brief summary of each well is presented below.

Perry R. Bass' - Sun-Tex Federal Well No. 1

This well was drilled to a total depth of 11,446' and the Strawn was perforated 11,350-360'. After acidizing with 2,500 gallons, the well potentialized flowing 342 BOPD on October 11, 1965 and is included in the Lusk (Strawn) Pool. Average production in September, 1966 equaled 117 BOPD and no water with a GOR of 5049 cubic feet per barrel.

Perry R. Bass' - Big Eddy Well No. 8

This well was drilled to a total depth of 11,631' and completed in the Strawn interval 11,462'-11,502'. Initial potential taken May 17, 1966, was 424 BO and 0 BW in 14 hours with a GOR of 4,662 cubic feet per barrel. The well is in the Big Eddy Strawn Pool.

Perry R. Bass' - Big Eddy No. 15

This well was drilled to a total depth of 11,517' and completed in the Strawn interval 11,468' to 11,489'. Initial potential taken July 29, 1966, was 413 BO and 0 BW with a GOR of 5,642 cubic feet per barrel. The well is in the Big Eddy Strawn Pool.

Union Texas Petroleum Corporation's Big Eddy Unit Well No. 14

This well was drilled to a total depth of 11,933' in mid-1966 in an attempt for a Big Eddy Strawn Pool development well. However, no Strawn pay was encountered and the well was plugged and abandoned.

Pan American's Big Eddy Unit Well No. 1

This well was drilled to a TD of 14,205' to test the Devonian which was found non-commercial. Casing was run and completion attempted in the Morrow Sand in two different intervals both of which were found to be non-commercial with no shows of oil or gas being recovered. The Morrow interval was then squeezed and the Strawn interval perforated after which 438 barrels of new oil and 1,479 barrels of water were eventually produced prior to this zone being squeezed. The next interval tested was the Wolfcamp in which a gas well completion was made on June 5, 1962 for a Calculated Open Flow of 10,500 MCFPD. The Wolfcamp was connected to gas sales on December 6, 1962 and produced 124,605 MCF and 3,518 barrels of distillate prior to Big Eddy Unit Well No. 1 being plugged and abandoned in early 1964.

Pan American's Big Eddy Unit Well No. 2

This well was drilled to test the Mississippian at a TD of 12,457'. A completion attempt was made in the Morrow and that zone flowed 156 MCFPD (Non-commercial) prior to being squeezed. The Strawn was then perforated and Big Eddy Unit Well No. 2 eventually completed for a flowing potential of 14 BO and 14 BWPD on July 30, 1963. This well was assigned to the Fenton Draw (Strawn) Pool and Big Eddy Unit Well No. 2 produced a total of 1,447 BO from the Strawn prior to its being plugged and abandoned in early 1964.

Pan American's Big Eddy Unit Well No. 3

This was also a Mississippian test with a TD of 13,091'. The Morrow was perforated and flowed 100 MCFPD (non-commercial) after which a bridge plug, capped with cement was placed above the Morrow perforations and a completion attempt made in the Strawn. On initial potential, the Strawn flowed 115 BO and 25 BWPD, dated May 11, 1964. This well was placed in the Lusk, West (Strawn) Pool and it produced a total of 8,901 BO prior to its being plugged and abandoned in the middle of 1965.

Pan American's Big Eddy Unit Well No. 4

This well was drilled to a TD of 11,470' and completed as a Lusk (Strawn) Pool oil well with a flowing potential of 382 BOPD and no water on July 2, 1965. This well continues to produce satisfactorily and in September 1966 had average production of 107 BOPD and no water with a GOR of 5,140 cubic feet per barrel.

Pan American Big Eddy Unit Well No. 5

This well was drilled to a TD of 11,486' and was also completed as a Lusk (Strawn) Pool oil well with flowing potential of 435 BOPD and no

water on August 27, 1965. In September 1966 the well had average productivity of 220 BOPD and no water with a GOR of 4,095 cubic feet per barrel.

Pan American's Big Eddy Unit Well No. 6

Another Lusk (Strawn) Pool completion attempt was Pan American's Big Eddy Unit Well No. 6, which was drilled to a TD of 11,527'. A DST over the Strawn pay interval recovered only 25' of drilling mud with no shows of oil or gas and this well was plugged and abandoned in November 1965.

Pan American's Big Eddy Unit Well No. 7

This well was drilled as a wildcat to a total depth of 14,208'. A successful attempt for completion in the Morrow formation, gross interval 12,656'-12,948', was made with an estimated absolute open flow potential of 2.5 MCFPD. However, due to a lack of marketing facilities, this zone was plugged off with a bridge plug and the well completed March 19, 1966, in the Strawn formation from 11,402'-468' for a flowing potential of 579 BO and 0 BWPD. This was the discovery well for the Big Eddy Strawn Pool. In October 1966, the well tested for 407 BO and 62 BW.

Pan American's Big Eddy Unit Well No. 9

This well was drilled to a total depth of 13,128 in the Morrow without encountering any productive Strawn or Morrow. Consequently, the well was plugged and abandoned.

Pan American's Big Eddy Unit Well No. 10

This well was drilled to a total depth of 11,449 and is completed in the Strawn interval 11,372'-399'. Initial flowing potential taken 10-13-66 was 504 BO and 0 BWPD with a GOR of 3730 cubic feet per barrel as a Big Eddy Strawn Field well.

Current Wildcat Program

Pan American's Big Eddy Unit Well No. 16

This wildcat well has been drilled to a depth of 12,977' in the Morrow. Plans are being made to test the Morrow.

Citgo's Big Eddy Unit Well No. 17

This wildcat well is currently drilling below 3,900' with a projected total depth of 11,800'.

Participating Area

The current participating area for the Big Eddy (Strawn) consists of 480 acres in the Lusk (Strawn) Pool, being the S/2 of Section 27 and the NW/4 of Section 34, T-19-S, R-31-E, Eddy County, New Mexico. This participating area was submitted to your office in late 1965, with a revision submitted in mid-1966.

In addition, an initial participating area designated as the Big Eddy Strawn "A" has been filed for Well No. 7 and includes 160 acres in the SE/4 of Section 19, T-20-S, R-31-E. This was submitted to your office in late 1966. Should Big Eddy Well No. 16 prove commercially productive, a separate participating area will be in order.

Future Development

The 1967 Plan of Development provides for no additional development drilling in the currently productive pools in the unit; however, the currently active exploratory program will continue into 1967. Should any additional development appear warranted as a result of this activity, a revised Plan of Development will be submitted.

Offset Obligations

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

Additional Development

This Plan of Development shall constitute the drilling obligations of the unit operator and his agent under the terms of the Big Eddy Unit Agreement for the period ending December 31, 1967. Prior to expiration of this Plan, a subsequent Plan of Development will be submitted.

Modifications

It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

Effective Date

This Plan of Development shall be effective January 1, 1967.

If this Plan of Development meets with your approval, please indicate in the appropriate space provided below and return one copy for our files.

Yours very truly,

PERRY R. BASS, UNIT OPERATOR

BY: 

APPROVED BY: _____
Supervisor, United States Geological Survey

DATE: _____

APPROVED BY: _____
Commissioner of Public Lands, State of
New Mexico

DATE: _____

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

Working Interest Owners

APPROVED BY:  DATE: 5/16/67
Oil Conservation Commission

MAIN OFFICE 600

'67 APR 11 AM 6 J1

April 3, 1967

Perry R. Bass
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas

Re: Big Eddy Unit
Eddy County, New Mexico
1967 Plan of Development

ATTENTION: Mr. Howard Jennings

Gentlemen:

The Commissioner of Public Lands has this date approved your 1967 Plan of Development for the Big Eddy Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

This plan calls for the drilling of no additional wells during 1967. A revised plan of development will be submitted if additional development appears after completion of Wells Nos. 16 and 17.

One approved copy of the plan is enclosed herewith.

Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

BY:
Ted Bilberry, Director
Oil and Gas Department

GBH/s

cc: USGS-Roswell, New Mexico
OCC- Santa Fe, New Mexico



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

MAIN OFFICE 10

67 APR 3 AM 8 08

IN REPLY REFER TO:

March 30, 1967

Perry E. Bass
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard Jennings

Gentlemen:

Your 1967 plan of development for the Big Eddy unit area, Eddy County, New Mexico, advising that unit wells Nos. 16 and 17 are currently being drilled and proposing the drilling of no additional wells, has been approved on this date subject to like approval by the appropriate State officials. A revised plan of development will be submitted if additional development appears warranted after the completion of unit wells Nos. 16 and 17.

Two approved copies of the plan are enclosed.

Sincerely yours,

(ORIG. SGD.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

cc:
Washington (w/cy of plan)
Artesia (w/cy of plan)
MSGCC, Santa Fe (ltr. only) ✓
Com. of Pub. Lands, Santa Fe (ltr. only)

December 27, 1966

Subject: Plan of Development for 1967
Big Eddy Unit
Eddy County, New Mexico

United States Geological Survey (6)
Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands for (3)
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Gentlemen:

In compliance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, operator of record, and Pan American Petroleum Corporation, its agent, hereby submit for your approval a Plan of Development for 1967.

History of Past Development

Presently within the boundary of the Big Eddy Unit, Perry R. Bass has completed three oil wells and currently has one well drilling. Pan American has four completed oil wells, five plugged and abandoned wells and one well now being drilled. In addition, Union Texas Petroleum Corporation drilled a dry hole that is now plugged and abandoned. Three of the completed wells are located in the Lusk (Strawn) Pool while the remaining four producers are in the Big Eddy Strawn Pool. The wells now being drilled are wildcats. A brief summary of each well is presented below.

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In addition, an initial participating area designated as the Big Eddy Strawn "A" has been filed for Well No. 7 and includes 160 acres in the SE/4 of Section 19, T-20-S, R-31-E. This was submitted to your office in late 1966. Should Big Eddy Well No. 16 prove commercially productive, a separate participating area will be in order.

Future Development

The 1967 Plan of Development provides for no additional development drilling in the currently productive pools in the unit; however, the currently active exploratory program will continue into 1967. Should any additional development appear warranted as a result of this activity, a revised Plan of Development will be submitted.

Offset Obligations

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

Additional Development

This Plan of Development shall constitute the drilling obligations of the unit operator and his agent under the terms of the Big Eddy Unit Agreement for the period ending December 31, 1967. Prior to expiration of this Plan, a subsequent Plan of Development will be submitted.

Modifications

It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

Effective Date

This Plan of Development shall be effective January 1, 1967.

If this Plan of Development meets with your approval, please indicate in the appropriate space provided below and return one copy for our files.

Yours very truly,

PERRY R. BASS, UNIT OPERATOR

BY: 

APPROVED BY: _____
Supervisor, United States Geological Survey

DATE: _____

APPROVED BY: _____
Commissioner of Public Lands, State of
New Mexico

DATE: _____

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

October 31, 1966

FILED 10-31-66

Perry R. Bass
12th Floor Fort Worth
National Bank
Fort Worth, Texas

Re: Application for Approval of
Initial Participating Area for
the Big Eddy Strawn Pool, Big
Eddy Unit
Eddy County, New Mexico

Gentlemen:

Your undated application for approval of the Initial Participating Area for the Strawn Pool, Big Eddy Unit, Eddy County, New Mexico was directed only to the United States Geological Survey.

However, the Roswell office of the United States Geological Survey, have advised us they are recommending approval, therefore, we are approving this application subject to approval by the United States Geological Survey.

Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

BY:
Ted Bilberry, Director
Oil and Gas Department

GBH/MMR/s

cc: United States Geological Survey
Roswell, New Mexico

Oil Conservation Commission
Santa Fe, New Mexico

Subject: Application for Approval of Initial
Participating Area for the Big Eddy-
Strawn Pool, Big Eddy Unit
Eddy County, New Mexico

Director
United States Geological Survey (7)
c/o Oil & Gas Supervisor
P. O. Box 1857
Roswell, New Mexico 88201

Dear Sir:

Please refer to your letter of August 2, 1966, on the above subject.

Perry R. Bass, operator of record, and Pan American Petroleum Corporation, his agent for the Big Eddy Unit agreement, approved by the Director of the USGS, effective October 1, 1952, approved by the Commissioner of Public Lands, effective June 18, 1952, and approved by the Oil Conservation Commission of New Mexico by Order R-152, dated May 1, 1952, pursuant to the provisions of Section 11, respectfully submits for the approval of the Director, Commissioner, and Commission the selection of the following described lands to constitute the initial participating area for the Strawn producing zone in the Big Eddy-Strawn Pool, to wit:

Township 20 South, Range 31 East, Section 19,
the SE/4 containing 160 acres, more or less.
Producing Strawn well in the initial partici-
pating area: Pan American Petroleum Corpora-
tion-Big Eddy Unit Well No. 7.

In support of this application, the following are attached hereto and made a part hereof:

Exhibit A, an ownership map showing thereon a portion of the boundary of the unit area and the boundary of the proposed initial participating area.

Exhibit B, a schedule showing lands entitled to participation in the unitized substances produced from the Strawn formation with the percentage of participation in each lease indicated thereon.

Also submitted in support of this application are a Geological and Engineering Report, a structure map contoured on top of the Strawn and a cross-section showing correlation of the Strawn formation between wells.

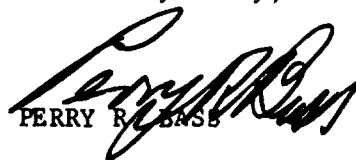
The proposed initial participating area is predicated upon the knowledge and information first obtained upon the completion in paying quantities, under terms of the Big Eddy Unit Agreement, on March 18, 1966 of Big Eddy Unit Well No. 7, located in the SW/4 of the SE/4 of Section 19, T-20-S, R-31-E, NMPM, with an initial potential test of 579 barrels of oil per day from the Strawn formation at a depth of 11,402'-11,468'. The effective date of this initial participating area shall be March 18, 1966, pursuant to Section 11 of the Big Eddy Unit Agreement.

Your letter of August 2, 1966 also requested the first revision to the Strawn "A" participating area to include the lands qualified for participation by the information contributed by the completion of Unit Well No. 8. However, it is our opinion that a determination of whether Well No. 8 is capable of producing unitized substances in paying quantities cannot be made at this time. This is due to high water production from this well which may cause a premature termination of its producing life. As more fully explained in the accompanying Geological and Engineering Report, water production from Well No. 8 has increased at a rapid rate, and an attempt to shut-off the high water production by workover operations in August 1966 was not successful. Therefore, we believe a suitable observation period to evaluate the future performance of Well No. 8 is necessary before a determination of its commercial status can be made.

The proposed participating area is consistent with the proration unit acreage assigned to Big Eddy Unit Well No. 7 in accordance with the Big Eddy Strawn Pool rules. This well is capable of producing unitized substances in paying quantities.

Consequently, applicant respectfully requests that the Director, Commissioner, and Commission approve the hereinabove selected lands to constitute the initial 160-acre Strawn participating area, to be known as the Strawn "A" Participating Area, to be effective as of March 18, 1966.

Yours very truly,


PERRY R. BASS

cc: Oil Conservation Commission for
the State of New Mexico (2)
P. O. Box 2088
Santa Fe, New Mexico

Commissioner of Public Lands for
the State of New Mexico (2)
P. O. Box 791
Santa Fe, New Mexico

APPROVED: _____
Director of United States Geological Survey

DATE: _____

APPROVED: _____
Commissioner of Public Lands for the
State of New Mexico

DATE: _____

APPROVED:  _____
Oil Conservation Commission for the State
of New Mexico

DATE: 12-5-66



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

365

August 24, 1966

Perry R. Bass
12th Floor
Fort Worth National Bank Bldg.
Fort Worth, Texas

Attention: Mr. Howard Jennings

Gentlemen:

Your 1966 plan of development for the Big Eddy unit area, Eddy County, New Mexico, proposing the drilling of two Strawn wells, has been approved on this date subject to like approval by the appropriate State officials. 1966 AUG 29 AM 7 5

Two approved copies of the plan are enclosed.

Sincerely yours,

(ORIG. SGD.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

cc:
Washington (w/cy of plan)
Artesia (w/cy of plan)
RMOC - Santa Fe (ltr. only) ✓
Com. of Pub. Lands - Santa Fe (ltr. only)



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

365

August 22, 1966

Perry E. Bass
12th Floor
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard Jennings

Gentlemen:

The second revision of the Strawn participating area, Big Eddy unit, Eddy County, New Mexico, was approved on August 11, 1966, by the Acting Director, Geological Survey.

Two approved copies of the application are enclosed. You are requested to furnish all interested parties with appropriate evidence of this approval.

Sincerely yours,

(ORIG. SGD.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

cc:
Washington (ltr. only)
Artesia (w/cy application)
Com. of Pub. Lands - Santa Fe (ltr. only)
NMCC - Santa Fe (ltr. only) ✓

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

July 22, 1966

Mr. Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Re: Second Revision of Strawn
Participating Area, Big
Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Second Revision of the Participating Area, Strawn Formation for the Big Eddy Unit, Eddy subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

One approved copy of the revision is returned herewith.

Very truly yours,

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

ALP/JEK/og

cc: Commissioner of Public Lands
Santa Fe, New Mexico

United States Geological Survey
Roswell, New Mexico

July 13, 1966

Perry R. Bass
12th Floor Fort Worth
National Bank
Fort Worth, Texas

Re: Big Eddy Unit
Eddy County, New Mexico

ATTENTION: Mr. Howard W. Jennings

Gentlemen :

The Commissioner of Public Lands approves as of this date the Second Revision of the Strawn Participating Area for the Big Eddy Unit, Eddy County, New Mexico, to become effective October 1, 1965, subject to like approval by the United States Geological Survey.

We are returning one approved copy of this Participating Area.

Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

GBH/MBR/s
cc: Oil Conservation Commission
Santa Fe, New Mexico

EY:
Ted Silberry, Director
Oil and Gas Department

United States Geological Survey
Roswell, New Mexico

PERRY R. BASS
12TH FLOOR, FT. WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS

June 22, 1966

Director
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico 88201

Commissioner of Public Lands
P. O. Box 1148
Santa Fe, New Mexico 87501

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

Gentlemen:

Please find enclosed copies of Application for Approval of
Second Revision of the Participating Area for Strawn Formation, Big
Eddy Unit, Lusk-Strawn Pool, Eddy County, New Mexico.

Very truly yours,

PERRY R. BASS

By: 
Howard W. Jennings

HWJ:loc
Encls.

cc: Mr. Neil S. Whitmore
Pan American Petroleum Corporation
P. O. Box 268
Lubbock, Texas 79401

6 JUL 24 AM 7

Subject: Application for Approval of the Second
Revision of the Participating Area for
the Strawn Formation, Big Eddy Unit,
Lusk-Strawn Pool, Eddy County,
New Mexico

Director (7)
United States Geological Survey
c/o Oil & Gas Supervisor
P. O. Box 6721
Roswell, New Mexico, 88201

Commissioner of Public Lands (2)
for State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Oil Conservation Commission (2)
for State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Perry R. Bass, operator of record, and Pan American Petroleum Corporation, his agent for the Big Eddy Unit Agreement, approved by the Commissioner of Public Lands, effective June 18, 1952 and approved by the Director of the United States Geological Survey, effective October 1, 1952, pursuant to the provisions of Section 11 thereof, respectfully submits for the approval of said Director, Commissioner and Commission, the selection of the following described lands to constitute the second revision of the participating area for the Strawn producing zone, to wit:

Township 19 South, Range 31 East, Section 27: the SW/4, containing 160 Acres. Producing Strawn well in the second revision of the participating area: Perry R. Bass's Sun-Tex Federal Well No. 1.

In support of this application, the following are attached hereto and made a part hereof:

Exhibit "A": An ownership map showing thereon a portion of the boundary of the unit area, the boundary of the participating area heretofore established, and the proposed second revision of the participating area.

Exhibit "B" Schedule showing the lands entitled to participation in the unitized substances produced from the Strawn formation, with the percentage of participation of each lease indicated thereon.

The proposed second revision of the participating area is predicated upon the knowledge and information first obtained upon completion in paying quantities, under the terms of the Big Eddy Unit Agreement on October 11, 1965 of Perry R. Bass's Sun-Tex Well No. 1 in the SE/4 of the SW/4 of Section 27, T-19-S, R-31-E with an initial production of 342 barrels of oil per day from the Strawn formation at a depth of 11,350 feet to 11,360 feet. The effective date of this second revision shall be October 1, 1965, pursuant to Section 11 of the Big Eddy Unit Agreement.

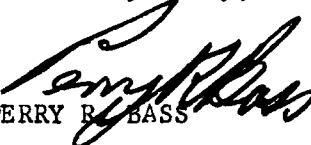
The Bass Sun-Tex Well No. 1 has produced a total of 62,162 barrels of oil to April 1, 1966. Production from this well for the month of March, 1966 was 11,459 barrels of oil. Perry R. Bass drilled the Sun-Tex Well No. 1 at a location 660 feet from the south line and 1980 feet from the west line of Section 27, Township-19-South, Range-31-East, Eddy County, New Mexico. The well was completed on October 11, 1965 with an initial flowing potential test for 342 barrels of oil in 24 hours with no water produced, through a 1/4" choke, flowing tubing pressure of 875 psi, and gas-oil ratio of 1831 standard cubic feet of gas per barrel of oil. This well is completed at the same approximate depth as the nearby Big Eddy Unit Wells No. 4 and No. 5. The bottom hole pressure in this well on January 5, 1966 was measured at 2777 psi at a datum of -7800 feet. This compares with a bottom hole pressure of 2646 psi measured in the Big Eddy Unit Well No. 4, also on January 5, 1966. The above mentioned production, completion and pressure information show that the proposed second revision to the participating area and the established participating area are in communication with each other and that the proposed 160 acre second revision to the participating area can be considered reasonably productive of oil in commercial quantities.

Basic geological and engineering data, covering the first two wells in the participating area, were furnished earlier in a Geological and Engineering Report, Strawn Formation, Big Eddy Unit, Eddy County, New Mexico, as submitted in triplicate with the application for approval of the initial participating area.

The proposed participating area of 160 acres is consistent with the acreage now assigned in accordance with the Lusk-Strawn Pool rules to the proration unit in effect for Perry R. Bass's Sun-Tex Well No. 1 and this well is capable of producing unitized substances in paying quantities.

Consequently, applicant respectfully requests that the Director, Commissioner, and Commission approve the hereinabove selection of lands to constitute the second revision of the Strawn Participating Area, to be effective October 1, 1965. This revision will result in a total Strawn participating area of 480 acres.

Yours very truly,


PERRY R. BASS

APPROVED: _____ DATE: _____
Director of United States Geological
Survey

APPROVED: _____ DATE: _____
Commissioner of Public Lands for
State of New Mexico

APPROVED: *A. L. Pitzer* DATE: *July 22, 1966*
Oil Conservation Commission for
State of New Mexico

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

3/5

May 4, 1966

C
O
P
Y

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard Jennings

Re: 1966 Plan of Development,
Big Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1966 Plan of Development for the Big Eddy Unit, Eddy 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 approved copy of the plan is returned herewith.

Very truly yours,

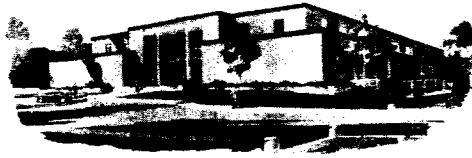
A. L. PORTER, Jr.,
Secretary-Director

ALP/JEK/og

cc: United States Geological Survey - Roswell

Commissioner of Public Lands - Santa Fe

State of New Mexico



Commissioner of Public Lands



GUYTON B. HAYS
COMMISSIONER

P. O. BOX 1148
SANTA FE, NEW MEXICO

April 20, 1966

Perry R. Bass
12th Floor Ft Worth National
Bank Building
Fort Worth, Texas

Re: Big Eddy Unit
Eddy County, New Mexico
1966 Plan of Development

Gentlemen:

The Commissioner of Public Lands has approved as of this date the 1966 Plan of Development for the Big Eddy Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and the New Mexico Oil Conservation Commission.

This Plan of Development provides for the drilling of wells No 8 and 9, however, locations have been filed on wells 10, 11, 12 and 13. We hope you will amend this Plan of Development in the event these wells are drilled.

We are returning one approved copy of this plan.

Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS
BY:
Ted Bilberry, Director
Oil and Gas Department

GBH/MMR/s

cc: United States Geological Survey
Roswell, New Mexico

New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Drawer 1857
Roswell, New Mexico 88201

April 4, 1966

Ferry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard Jennings

Gentlemen:

Notices of Intention to Drill Big Eddy unit wells Nos. 8 in the NW¼ sec. 30 and No. 9 NE¼ sec. 19, T. 20 S., R. 31 E., Eddy County, New Mexico, were approved by this office on March 17, and March 30, 1966, respectively. We have also recently received information copies of Notices to Drill five additional Strawn wells within the unit area.

The latest plan of development in our files for the Big Eddy unit agreement is dated November 19, 1964, and is for the period ending June 1, 1965. Section 10 of the unit agreement provides that before the expiration of any existing plan, the unit operator shall submit for approval of the Supervisor, the Commission, and the Commissioner a plan for an additional specified period for the development and operation of the unitized area.

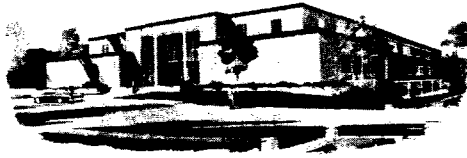
Please furnish this office a plan of development setting forth your proposed 1966 development program for the Big Eddy unit area.

Sincerely yours,

JOHN A. ANDERSON
Regional Oil & Gas Supervisor

cc:
Washington
Artesa
N.M.O.C.C. - Santa Fe ✓
Com. of Pub. Lands - Santa Fe (w/cys of Desig. of Agent)

State of New Mexico



Commissioner of Public Lands



April 7, 1966

GUYTON B. HAYS
COMMISSIONER

P. O. BOX 1148
SANTA FE, NEW MEXICO

Perry R. Bass
Fort Worth National Bank
Building
Fort Worth, Texas

Re: Big Eddy Unit
Lea and Eddy Counties,
New Mexico

ATTENTION: Mr. Howard Jennings

Gentlemen:

The latest approved Plan of Development for the Big Eddy Unit Agreement is dated November 19, 1964, for a period ending June 1, 1965. As I have previously pointed out the unit agreement provides that before an existing Plan of Development expires the operator shall submit a plan for approval for an additional specified period and that no wells should be drilled by the Unit Operator or an agent except as provided for under a Plan of Operation.

Please furnish this office a Plan of Development for 1966 at your earliest convenience.

Very truly yours,

GUYTON B. HAYS

COMMISSIONER OF PUBLIC LANDS

BY:

Ted Bilberry, Director
Oil and Gas Department

GBH/MMR/s

cc: United States Geological Survey
Roswell, New Mexico
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

March 9, 1966

Subject: Plan of Development for 1966
Big Eddy Unit
Eddy County, New Mexico

United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission

Gentlemen:

In compliance with Section 10 of the Big Eddy Unit Agreement, Perry R. Bass, operator of record, and Pan American Petroleum Corporation, its agent, hereby submit for your approval a Plan of Development for 1966.

History of Past Development

Presently within the boundary of the Big Eddy Unit, Perry R. Bass has completed one oil well and Pan American has two completed oil wells, four plugged and abandoned wells and one well now being drilled. The three completed wells are located in the Lusk (Strawn) Pool and the well now being drilled is a wildcat. A brief summary of each well is presented below.

Perry R. Bass' - Sun-Tex Federal Well No. 1

This well was drilled to a total depth of 11,446' and the Strawn was perforated 11,350-360'. After acidizing with 2,500 gallons, the well potentialized flowing 342 BOPD on October 11, 1965 and is included in the Lusk (Strawn) Pool. Average production in November, 1965 equaled 340 BOPD and no water with cumulative production to December 1, 1965 of 17,677 BO.

Pan American's Big Eddy Unit Well No. 1

This well was drilled to a TD of 14,205' to test the Devonian which was found non-commercial. Casing was run and completion attempted in the Morrow Sand in two different intervals both of which were found to be non-commercial with no shows of oil or gas being recovered. The Morrow interval was then squeezed and the Strawn interval perforated after which 438 barrels of new oil and 1,479 barrels of water were eventually produced prior to this zone being squeezed. The next interval tested was the Wolfcamp in which a gas well completion was made on June 5, 1962 for a Calculated Absolute Open Flow of

10,500 MCFPD. The Wolfcamp was connected to gas sales on December 6, 1962 and produced 124,605 MCF and 3,518 barrels of distillate prior to Big Eddy Unit Well No. 1 being plugged and abandoned in early 1964.

Pan American's Big Eddy Unit Well No. 2

This well was drilled to test the Mississippian at a TD of 12,457'. A completion attempt was made in the Morrow and that zone flowed 156 MCFPD (non-commercial) prior to being squeezed. The Strawn was then perforated and Big Eddy Unit Well No. 2 eventually completed for a flowing potential of 14 BO and 14 BWPD on July 30, 1963. This well was assigned to the Fenton Draw (Strawn) Pool and Big Eddy Unit Well No. 2 produced a total of 1,447 BO from the Strawn prior to its being plugged and abandoned in early 1964.

Pan American's Big Eddy Unit Well No. 3

This was also a Mississippian test with a TD of 13,091'. The Morrow was perforated and flowed 100 MCFPD (non-commercial) after which a bridge plug, capped with cement was placed above the Morrow perforations and a completion attempt made in the Strawn. On initial potential the Strawn flowed 115 BO and 25 BWPD, dated May 11, 1964. This well was placed in the Lusk, West (Strawn) Pool and it produced a total of 8,901 BO prior to its being plugged and abandoned in the middle of 1965.

Pan American's Big Eddy Unit Well No. 4

This well was drilled to a TD of 11,470' and completed as a Lusk (Strawn) Pool oil well with a flowing potential of 382 BOPD and no water on July 2, 1965. This well continues to produce satisfactorily and in November 1965 had average production of 320 BOPD and no water. Cumulative production as of December 1, 1965 equaled some 50,000 BO.

Pan American Big Eddy Unit Well No. 5

This well was drilled to a TD of 11,486' and was also completed as a Lusk (Strawn) Pool oil well with flowing potential of 435 BOPD and no water on August 27, 1965. In November 1965 the well had average productivity of 320 BOPD and no water. As of December 1, 1965, production totaled some 32,000 BO.

Pan American's Big Eddy Unit Well No. 6

Another Lusk (Strawn) Pool completion attempt was Pan American's Big Eddy Unit Well No. 6 which was drilled to a TD of 11,527'. A DST over the Strawn pay interval recovered only 25' of drilling mud with no shows of

oil or gas and this well was plugged and abandoned in November, 1965.

Pan American's Big Eddy Unit Well No. 7

This well is currently being completed as a Strawn producer @ 11,402-20 and 11,450-68.

Participating Area

The requested participating area for Pan American's Big Eddy Unit Wells No. 4 and 5 consist of 320 acres being the SE/4 of Section 27 and the NW/4 of Section 34, T-19-S, R-31-E, Eddy County, New Mexico. This participating area was submitted to your offices in late 1965.

Future Development

The 1966 Plan of Development includes the drilling of Big Eddy No. 8 in the NE/4 NW/4 of Section 30, T-20-S, R-31-E; Big Eddy No. 9 in the SE/4 NE/4 of Section 19, T-20-S, R-31-E. Possible additional development as geological data is obtained.

Offset Obligations

Appropriate and adequate measures will be taken to prevent drainage of unitized substances from land subject to the Big Eddy Unit Agreement, or, pursuant to applicable regulation, fair and reasonable compensatory royalty will be paid as provided by the Unit Agreement.

Additional Development

This Plan of Development shall constitute the drilling obligations of the unit operator and his agent under the terms of the Big Eddy Unit Agreement for the period ending December 31, 1966. Prior to expiration of this Plan, a subsequent Plan of Development will be submitted.

Modifications

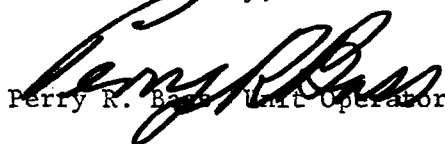
It is understood that this Plan of Development may be modified from time to time to meet changing conditions.

Effective Date

This Plan of Development shall be effective January 1, 1966.

If this Plan of Development meets with your approval please indicate in the appropriate space provided on the attached sheet and return one copy for our files.

Yours very truly,


Perry R. Bass, Unit Operator

APPROVED BY: _____ DATE: _____
Supervisor, United States Geological Survey

APPROVED BY: _____ DATE: _____
Commissioner of Public Lands, State of
New Mexico

APPROVED BY: A. K. Butler DATE: 5-4-66
Oil Conservation Commission

MAIN OFFICE 000

PERRY R. BASS
12TH FLOOR, FT. WORTH NAT'L BANK BLDG
FORT WORTH, TEXAS

MAR 14 AM 8:03

March 11, 1966

265

Commissioner of Public Lands
P. O. Box 1148
Santa Fe, New Mexico 87501

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

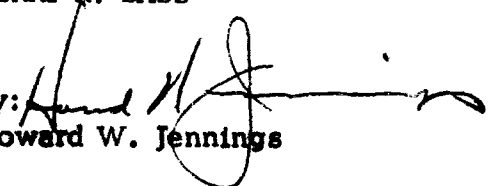
Gentlemen:

We are enclosing photocopies of approval by the United States Geological Survey of the Initial Strawn Participating Area and First Revision thereof, Big Eddy Unit, Eddy County, New Mexico, and photocopy of transmittal letter from the United States Geological Survey, dated March 8, 1966.

You were furnished copies of the above-mentioned applications in November, 1965. Since Federal approval has been obtained, we would appreciate your approving same at your earliest convenience.

Very truly yours,

PERRY R. BASS

By: 
Howard W. Jennings

HWJ:lcc

Encls. (3)



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

RECEIVED

MAR 11 AM 03

March 8, 1966

Perry R. Bass
12th Floor, Fort Worth National Bank Bldg.
Fort Worth, Texas

Attention: Mr. Howard Jennings

Gentlemen:

The initial Strawn participating area and first revision thereof, Big Eddy unit, Eddy County, New Mexico, were approved on February 25, 1966, by the Acting Director, Geological Survey.

The initial Strawn participating area and first revision, must be approved by the Oil Conservation Commission and Commissioner of Public Lands, State of New Mexico, before they are effective, pursuant to Section 11 of the Big Eddy unit agreement. Upon such approval the initial Strawn participating area and the first revision will be effective as of July 2 and August 1, 1965, respectively. Please furnish this office at least one copy of each application showing the original approval of the State officials in order that our records may indicate that complete approval was obtained.

One approved copy of each application is enclosed. You are requested to furnish all interested parties with appropriate evidence of this approval.

Sincerely yours,

Billy J. Shoger

BILLY J. SHOGER
Acting Oil & Gas Supervisor

RECEIVED
NOV 29 1965

U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

MAIN OFFICE CCC

MAR 14 AM 11-03

Subject: Application for Approval of
Initial Participating Area for the
Strawn Formation, Big Eddy Unit
Eddy County, New Mexico

Director (7)
United States Geological Survey
c/o Oil & Gas Supervisor
P. O. Box 6721
Roswell, New Mexico, 88201

Commissioner of Public Lands (2)
for State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Oil Conservation Commission (2)
for State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Perry R. Bass, operator of record, and Pan American Petroleum Corporation, its agent, for the Big Eddy Unit agreement, approved by the Commissioner of Public Lands on June 18, 1952 and approved by the Director of the United States Geological Survey, effective October 1, 1952, pursuant to the provisions of Section 11 thereof, respectfully submits for the approval of said Director, Commissioner and Commission, the selection of the following described lands to constitute the initial participating area for the Strawn producing zone, to wit:

Township 19 South, Range 31 East, Section 27: the SE/4
containing 160 Acres. Producing Strawn well in Initial
Participating Area: Big Eddy Unit No. 4.

In support of this application, the following are attached hereto and made a part hereof:

Exhibit "A": An ownership map showing thereon a portion of the boundary for the unit area and the proposed initial participating area.

Exhibit "B": Schedule showing the lands entitled to participation in the unitized substances produced from the Strawn formation, with the percentage of participation of each lease indicated thereon.


Applicant is submitting separately, in triplicate, a Geological and Engineering Report with an accompanying structural map and cross section supporting and justifying the proposed selection of the participating area.

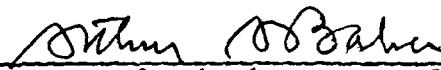
This proposed initial participating area is predicted upon the knowledge and information first obtained upon the completion in paying quantities under the terms of the Unit Agreement on July 2, 1965 of Big Eddy Unit Well No. 4 in the SW/4 of the SE/4, Section 27, T-19-S, R-31-E, with an initial production of 382 barrels of oil per day from the Strawn formation at a depth of 11,389-11,400 feet. The effective date of this initial area shall be July 2, 1965, pursuant to Section 11 of the Big Eddy Unit Agreement.

The proposed participating area is consistent with the acreage now assigned in accordance with Lusk (Strawn) Pool Rules to the proration unit in effect for Big Eddy Unit Well No. 4 and this well is capable of producing unitized substances in paying quantities.

Consequently, applicant respectfully requests that the Director, Commissioner and Commission approve the hereinabove selection of lands to constitute the initial 160 acre Strawn participating area to be effective July 2, 1965.

Yours very truly,


PERRY R. BASS

APPROVED:  DATE: FEB 25 1966
ACTING Director of United States Geological
Survey

APPROVED: _____ DATE: _____
Commissioner of Public Lands for
State of New Mexico

APPROVED: _____ DATE: _____
Oil Conservation Commission for
State of New Mexico

RECEIVED

NOV 29 1965

U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

Subject: Application for Approval of the
First Revision of the Participating Area
For the Strawn Formation, Big Eddy Unit
Eddy County, New Mexico

Director (7)
United States Geological Survey
c/o Oil and Gas Supervisor
P. O. Box 6721
Roswell, New Mexico

Commissioner of Public Lands (2)
for State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Oil Conservation Commission (2)
for State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Perry R. Bass, as operator of record, and Pan American Petroleum Corporation, its agent, for the Big Eddy Unit Agreement, approved by the Commissioner of Public Lands, effective June 18, 1952 and approved by the Director of the United States Geological Survey, effective October 1, 1952, pursuant to the provisions of Section 11, thereof, respectfully submits for the approval of the said Director, Commissioner and Commission, the selection of the following described land to constitute the first revision of the participating area for the Strawn producing zone, to wit:

Township 19 South, Range 31 East, Section 34: N/2 of the NW/4
containing 80 acres.

Township 19 South, Range 31 East, Section 34: S/2 of NW/4
containing 80 acres. Producing Strawn well in the first revision of
Participating Area: Big Eddy Unit No. 5.

In support of this application, the following are attached hereto and made a part hereof:

- Exhibit "A": An ownership map showing thereon a portion of the boundary for the Unit area, the boundary of the participating area heretofore established and the boundary of the proposed revision herein.
- Exhibit "B": Schedule showing the lands entitled to participation in the unitized substances produced from the Strawn formation, with percentage of participation in each lease indicated thereon.

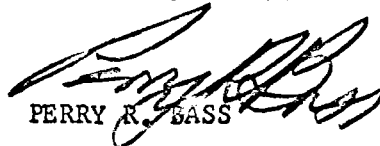
Applicant has submitted separately, in triplicate, a Geological and Engineering Report with an accompanying structural map and cross section with his letter supporting and justifying the proposed selection of the initial participating area. This Report is also applicable to this first revision of the participating area.


The proposed first revision of the participating area is predicted upon the knowledge and information first obtained upon completion in paying quantities under the terms of the Big Eddy Unit Agreement on August 27, 1965, of Big Eddy Unit Well No. 5, in the NE/4 of the NW/4, Section 34, T-19-S, R-31-E, with an initial production of 435 barrels of oil per day from the Strawn formation at a depth of 11,424-11,438 feet. The effective date of this first revision shall be August 1, 1965, pursuant to Section 11 of the Big Eddy Unit Agreement.

The proposed participating area expansion of 160 acres is consistent with the acreage now assigned in accordance with Lusk (Strawn) Pool Rules to the proration unit in effect for Big Eddy Unit Well No. 5 and this well is capable of producing unitized substances in paying quantities.

Consequently, applicant respectfully requests that the Director, Commissioner and Commission, approve the hereinabove selection of lands to constitute the first 160-acre revision of the Strawn participating area to be effective August 1, 1965. This revision will result in a total Strawn participating area of 320 acres.

Yours very truly,

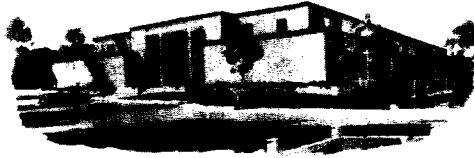

PERRY R. BASS

APPROVED:  DATE FEB 25 1966
ACTING Director, United States Geological Survey

APPROVED: _____ DATE _____
Commissioner of Public Lands for State of
New Mexico

APPROVED: _____ DATE _____
Oil Conservation Commission for State of
New Mexico

State of New Mexico



365

Commissioner of Public Lands

GUYTON B. HAYS
COMMISSIONER



P. O. BOX 1148
SANTA FE, NEW MEXICO

March 11, 1966

Perry R. Bass
12th Floor, Fort Worth National
Bank Bldg.
Fort Worth, Texas

Re: Big Eddy Unit
Eddy County, New Mexico

ATTENTION: Mr. Howard Jennings

Gentlemen:

The Initial Participating Area and First Revision of the Participating Area for the Big Eddy Unit, have been approved by the Commissioner of Public Lands as of March 10, 1966, to become effective as of July 2 and August 1, 1965 respectively.

One approved copy of each of the applications is enclosed.

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

BY:
Ted Bilberry, Director
Oil and Gas Department

GBH/MSR/s

cc: United States Geological
Survey
Roswell, New Mexico

Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

March 9, 1966

365

C
Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

O
Attention: Mr. Perry R. Bass

Re: Initial and First Revision,
Strawn Participating Area,
Big Eddy Unit, Eddy County,
New Mexico

P
Gentlemen:

Y
This is to advise that the New Mexico Oil Conservation
Commission has this date approved the Initial Participating
Area for the Strawn Formation and the First Revision of the
Participating Area, Strawn Formation for the Big Eddy Unit,
Eddy 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 approved copy of each application is returned herewith.

Very truly yours,

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

ALP/JER/og

cc: Commissioner of Public Lands - Santa Fe
U. S. G. S, Roswell, New Mexico

Drawer 1857
Roswell, New Mexico 88201

MAR 10 1966
March 8, 1966

Perry E. Bass
12th Floor, Fort Worth National Bank Bldg.
Fort Worth, Texas

Attention: Mr. Howard Jennings

Gentlemen:

The initial Strawn participating area and first revision thereof, Big Eddy unit, Eddy County, New Mexico, were approved on February 25, 1966, by the Acting Director, Geological Survey.

The initial Strawn participating area and first revision, must be approved by the Oil Conservation Commission and Commissioner of Public Lands, State of New Mexico, before they are effective, pursuant to Section 11 of the Big Eddy unit agreement. Upon such approval the initial Strawn participating area and the first revision will be effective as of July 2 and August 1, 1965, respectively. Please furnish this office at least one copy of each application showing the original approval of the State officials in order that our records may indicate that complete approval was obtained.

One approved copy of each application is enclosed. You are requested to furnish all interested parties with appropriate evidence of this approval.

Sincerely yours,

(ORIG. SGD.) BILLY J. SHOGER

BILLY J. SHOGER
Acting Oil & Gas Supervisor

cc:
Washington (w/ltr. only)
Artesia (w/cy of appins.)
BLM - Santa Fe (w/cy of appins.)
Com. of Pub. Lands - Santa Fe (ltr. only)
N.M.O.C.C. - Santa Fe (ltr. only)✓

Subject: Application for Approval of the
First Revision of the Participating Area
For the Strawn Formation, Big Eddy Unit
Eddy County, New Mexico

Director (7)
United States Geological Survey
c/o Oil and Gas Supervisor
P. O. Box 6721
Roswell, New Mexico

Commissioner of Public Lands (2)
for State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Oil Conservation Commission (2)
for State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Perry R. Bass, as operator of record, and Pan American Petroleum Corporation, its agent, for the Big Eddy Unit Agreement, approved by the Commissioner of Public Lands, effective June 18, 1952 and approved by the Director of the United States Geological Survey, effective October 1, 1952, pursuant to the provisions of Section 11, thereof, respectfully submits for the approval of the said Director, Commissioner and Commission, the selection of the following described land to constitute the first revision of the participating area for the Strawn producing zone, to wit:

Township 19 South, Range 31 East, Section 34: N/2 of the NW/4
containing 80 acres.

Township 19 South, Range 31 East, Section 34: S/2 of NW/4
containing 80 acres. Producing Strawn well in the first revision of
Participating Area: Big Eddy Unit No. 5.

In support of this application, the following are attached hereto and made a part hereof:

Exhibit "A": An ownership map showing thereon a portion of the boundary for the Unit area, the boundary of the participating area heretofore established and the boundary of the proposed revision herein.

Exhibit "B": Schedule showing the lands entitled to participation in the unitized substances produced from the Strawn formation, with percentage of participation in each lease indicated thereon.


Applicant has submitted separately, in triplicate, a Geological and Engineering Report with an accompanying structural map and cross section with his letter supporting and justifying the proposed selection of the initial participating area. This Report is also applicable to this first revision of the participating area.

The proposed first revision of the participating area is predicted upon the knowledge and information first obtained upon completion in paying quantities under the terms of the Big Eddy Unit Agreement on August 27, 1965, of Big Eddy Unit Well No. 5, in the NE/4 of the NW/4, Section 34, T-19-S, R-31-E, with an initial production of 435 barrels of oil per day from the Strawn formation at a depth of 11,424-11,438 feet. The effective date of this first revision shall be August 1, 1965, pursuant to Section 11 of the Big Eddy Unit Agreement.

The proposed participating area expansion of 160 acres is consistent with the acreage now assigned in accordance with Lusk (Strawn) Pool Rules to the proration unit in effect for Big Eddy Unit Well No. 5 and this well is capable of producing unitized substances in paying quantities.


Consequently, applicant respectfully requests that the Director, Commissioner and Commission, approve the hereinabove selection of lands to constitute the first 160-acre revision of the Strawn participating area to be effective August 1, 1965. This revision will result in a total Strawn participating area of 320 acres.

Yours very truly,


PERRY R. BASS

APPROVED: _____ DATE _____
Director, United States Geological Survey

APPROVED: _____ DATE _____
Commissioner of Public Lands for State of
New Mexico

APPROVED:  _____ DATE 3-9-66
Oil Conservation Commission for State of
New Mexico

Subject: Application for Approval of
Initial Participating Area for the
Strawn Formation, Big Eddy Unit
Eddy County, New Mexico

Director (7)
United States Geological Survey
c/o Oil & Gas Supervisor
P. O. Box 6721
Roswell, New Mexico, 88201

Commissioner of Public Lands (2)
for State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Oil Conservation Commission (2)
for State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Perry R. Bass, operator of record, and Pan American Petroleum Corporation, its agent, for the Big Eddy Unit agreement, approved by the Commissioner of Public Lands on June 18, 1952 and approved by the Director of the United States Geological Survey, effective October 1, 1952, pursuant to the provisions of Section 11 thereof, respectfully submits for the approval of said Director, Commissioner and Commission, the selection of the following described lands to constitute the initial participating area for the Strawn producing zone, to wit:

Township 19 South, Range 31 East, Section 27: the SE/4
containing 160 Acres. Producing Strawn well in Initial
Participating Area: Big Eddy Unit No. 4.

In support of this application, the following are attached hereto and made a part hereof:

- Exhibit "A": An ownership map showing thereon a portion of the boundary for the unit area and the proposed initial participating area.
- Exhibit "B": Schedule showing the lands entitled to participation in the unitized substances produced from the Strawn formation, with the percentage of participation of each lease indicated thereon.

Applicant is submitting separately, in triplicate, a Geological and Engineering Report with an accompanying structural map and cross section supporting and justifying the proposed selection of the participating area.

This proposed initial participating area is predicted upon the knowledge and information first obtained upon the completion in paying quantities under the terms of the Unit Agreement on July 2, 1965 of Big Eddy Unit Well No. 4 in the SW/4 of the SE/4, Section 27, T-19-S, R-31-E, with an initial production of 382 barrels of oil per day from the Strawn formation at a depth of 11,389-11,400 feet. The effective date of this initial area shall be July 2, 1965, pursuant to Section 11 of the Big Eddy Unit Agreement.

The proposed participating area is consistent with the acreage now assigned in accordance with Lusk (Strawn) Pool Rules to the proration unit in effect for Big Eddy Unit Well No. 4 and this well is capable of producing unitized substances in paying quantities.

Consequently, applicant respectfully requests that the Director, Commissioner and Commission approve the hereinabove selection of lands to constitute the initial 160 acre Strawn participating area to be effective July 2, 1965.

Yours very truly,


PERRY R. BASS

APPROVED: _____ DATE: _____
Director of United States Geological
Survey

APPROVED _____ DATE: _____
Commissioner of Public Lands for
State of New Mexico

APPROVED:  DATE: 3-9-66
Oil Conservation Commission for
State of New Mexico

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

March 5, 1965

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard W. Jennings

Re: Plan of Development
Period Ending June 1, 1965,
Big Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for the period ending June 1, 1965, for the Big Eddy Unit, Eddy 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.

Two approved copies of the plan are returned herewith.

Very truly yours,

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

ALP/JEK/og

cc: Commissioner of Public Lands - Santa Fe
U. S. Geological Survey - *Perkins*

February 3, 1965

Perry R. Bass
Twelfth Floor
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard W. Jennings

Re: Big Eddy Unit
Eddy County, New Mexico
Plan of Development

Gentlemen:

The Commissioner of Public Lands approves your Plan of Development for the period ending June 1, 1965, for the Big Eddy Unit area, Eddy County, New Mexico, subject to like approval by the United States Geological Survey. This Plan of Development proposes the drilling of one Devonian well.

We are returning one approved copy of this Plan of Development.

Very truly yours,

GUYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

BY:
(Mr.) Ted Bilberry, Director
Oil and Gas Department

GBR/th/mmr/d
Enclosure

cc: United States Geological Survey
P. O. Box 1857, Roswell, New Mexico
Attention: Mr. John Anderson

Oil Conservation Commission

Drawer 1857
Roswell, New Mexico 88201

December 9, 1964

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: M. Howard W. Jennings

Gentlemen:

Your plan of development dated November 19, 1964, for the period ending June 1, 1965, Big Eddy unit area, Eddy County, New Mexico, proposing the drilling of one Devonian well, has been approved on this date subject to like approval by the appropriate State officials.

Two approved copies of the plan are enclosed.

Sincerely yours,

(Orig. Sgd.) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Oil & Gas Supervisor

cc:
Washington (w/cy of plan)
Artesia (w/cy of plan)
NMOCC - Santa Fe (ltr. only)
Com. of Pub. Lands - Santa Fe (ltr. only)

PERRY R. BASS
12TH FLOOR FT. WORTH NATL BANK BLDG.
FORT WORTH, TEXAS

November 19, 1964

MAIL OFFICE

NOV 23 AM 6

United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission

Re. Plan of Development - Big
Eddy Unit No. 14-08-001-326
Covering Period Ending 6-1-65

Gentlemen:

In connection with the above captioned Unit and in compliance with Section 10 of the Unit Agreement, Perry R. Bass, Unit Operator, respectfully submits for your approval a Plan of Development for the period ending June 1, 1965.

Development

During the period of the previous Plan of Development, Pan American Petroleum Corporation drilled the No. 3 Big Eddy Unit well in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 6, Township 20 South, Range 31 East N.M.P.M., which well was initially completed on May 11, 1964 for an initial potential of 115 barrels of oil per day from the Strawn formation. The initial completion of this well from perforations at 11,334-54' indicated that this well would be a commercial producer. It had a flowing tubing pressure of 225# on a 24/64" choke; however, the production continued to decline, and a rework on June 29, 1964 was commenced. The Upper Strawn formation was perforated from 11,316-23', and the latest available production tests on the rework job are rather discouraging. We have continued to experiment with this well and through September, 1964 the well has produced 5,996 barrels of oil and 24,295 MCF of gas. It was anticipated that this well would stabilize; however, this does not seem apparent at the present time.

The productivity of the Strawn section is apparent on the Big Eddy Unit Area, although the above well at the present time is rather disappointing. Additional subsurface studies have been in progress covering this zone, and additional seismograph work has been accomplished during this period in anticipation of deeper development on the Unit.

United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission
November 19, 1964
Page 2


Future Development

During the period ending June 1, 1965, we will commence the drilling of another Devonian exploration well within the Unit. At this time, the exact location of same has not been selected, as further studies are in progress, but said well will be commenced during the allocated period.

The foregoing Plan of Development is hereby respectfully submitted.

Very truly yours,

PERRY R. BASS

By: 
Howard W. Jennings

HWJ:lcc

Approved: _____ Date: _____
Supervisor, United States Geological Survey

Approved: _____ Date: _____
Commissioner of Public Lands

Approved:  Date: 3-11-65
Oil Conservation Commission

Drawer 1857
Roswell, New Mexico 88201

February 12, 1965

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard Jennings

Gentlemen:

Your plans of development dated October 16, 1963, filed with this office on October 18, 1963, covering the periods from February 15, 1962, to February 15, 1963, and from February 15, 1963, to February 15, 1964, for the Big Eddy unit area, Eddy County, New Mexico, are hereby accepted for record purposes. One deep exploratory well was drilled within the unit area during each of the periods covered by the above plans. The Pan American No. 1 Big Eddy unit well in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 20 S., R. 31 E., N.M.P.M., was plugged back and completed on June 5, 1962, as a noncommercial Wolfcamp well after testing the Devonian at a total depth of 14,205 feet and the Pan American No. 2 Big Eddy well in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 21 S., R. 28 E., was completed on July 30, 1963, as a noncommercial Strawn well at a depth of 10,706-10,736 feet. Your plan of development covering the period ending June 1, 1965, which proposed the drilling of a Devonian test well, was approved by this office on December 9, 1964.

Copies of the plans covering the periods from February 15, 1962, to February 15, 1963, and from February 15, 1963, to February 15, 1964, are being distributed to the appropriate Federal offices to be filed with the official records.

Sincerely yours,

(ORIG. SGD.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil & Gas Supervisor

cc:
Washington (w/cy of plans)
Artesia (w/cy of plans)
NMOCC - Santa Fe (ltr, only) ✓
Com. of Pub. Lands - Santa Fe (ltr. only)

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

April 8, 1964

C
O
P
Y

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard W. Jennings

Re: 1963 Plan of Development,
Big Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development covering the period from February 15, 1963, to February 15, 1964, for the Big Eddy Unit, Eddy 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 approved copy of the plan is returned herewith.

Very truly yours,

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

ALP/JEK/og

cc: Commissioner of Public Lands - Santa Fe
U. S. Geological Survey - Roswell

March 3, 1964

Perry R. Bass
Fort Worth National Bank Bldg.
Fort Worth, Texas

Re: Big Eddy Unit
Eddy County, New Mexico
1963 Plan of Development

Attention: Mr. Howard W. Jennings

Gentlemen:

Please be advised that the Commissioner of Public Lands approved as of March 3, 1964, your Plan of Development for the Big Eddy Unit Area, Eddy County, New Mexico.

This Plan covers the period February 15, 1963 to February 15, 1964, and a well designated as Pan American No. 2 Big Eddy Unit, which is located in the SE/4SE/4 Section 19, Township 21 South, Range 28 East, and which was completed as a non-commercial well in the Strawn formation in July, 1963.

We are enclosing one approved copy of this Plan.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

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

ESW/mmrv

cc: Oil Conservation Commission
Santa Fe, New Mexico

United States Geological Survey
Roswell New Mexico



UNITED STATES
DEPARTMENT OF THE INTERIOR
~~GEOLOGICAL SURVEY~~
Roswell, New Mexico

IN REPLY REFER TO: 4.

RECEIVED

JAN 21 1964

ARTESIA OFFICE

January 20, 1964

Pan American Petroleum Corp.
P. O. Box 68
Hobbs, New Mexico

Gentlemen:

Your Notice of Intention to Drill well No. 3 Big Eddy Unit (copy attached) in the SE $\frac{1}{4}$ sec. 6, T. 20 S., R. 31 E., N.M.P.M., Eddy County, New Mexico, lease New Mexico 0251, to a depth of 13,300 feet to test the Mississippian, has been forwarded to this office for approval.

Pursuant to authority delegated to the Regional Oil and Gas Supervisor on May 10, 1962, 27 F.R. 4814, I hereby approve the Notice of Intention to Drill described in the foregoing.

Please notify the District Engineer, Geological Survey, Drawer U, Artesia, New Mexico, in sufficient time for a representative to witness all cementing operations.

Very truly yours,

(Orig. Sgd.) CARL C. TRAYWICK

for JOHN A. ANDERSON
Regional Oil & Gas Supervisor

Attachment

Copy to: Washington
Mining Branch (2)
NMOCC-Artesia (2) (w/2 cys Notice) —
Artesia
Roswell (2)

JAKnauf:hb 1-16-64



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

November 13, 1963

1963 NOV 13 AM 01

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Dear Sir:

Your application received October 28, 1963, requests approval of your determination that Big Eddy unit well No. 2 in the SE1/4 sec. 19, T. 21 S., R. 28 E., N.M.P.M., on lease Las Cruces 059365 is not capable of producing unitized substances in paying quantities.

This well was completed July 30, 1963, for an initial restricted potential of 14 barrels of oil and 260 MCF of gas per day from the Strawn 10,706 to 10,736 feet.

This office concurs with your determination that the well is not capable of production in paying quantities from the Strawn formation.

Sincerely yours,

(CCL 244) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Oil and Gas Supervisor

cc:
Washington (w/cy determination)
Artesia (w/cy determination)
BMOCC, Santa Fe (ltr. only)✓
N. Mex. Con. Pub. Lands, Santa Fe (ltr. only)
Accounts

PERRY R. BASS
12TH FLOOR FT. WORTH NAT'L BANK BLDG
FORT WORTH, TEXAS

MAIN OFFICE 000

October 16, 1963 1963 OCT 21 AM 8:25

United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission

Re: Plan of Development - Big Eddy
Unit No. 14-08-001-326 - February 15, 1963 to February 15, 1964

Gentlemen:

In connection with the above captioned Unit and in compliance with Section 10 of the Unit Agreement, Perry R. Bass, Unit Operator, respectfully submits for your approval a Plan of Development from February 15, 1963 to February 15, 1964.

History of Past Development

In reviewing the past development, it should be pointed out that one deep test was drilled during the last Plan of Development, which well was found nonproductive at a total depth of 14,205 feet, said well located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 3, Township 20 South, Range 31 East.

Development

During the period of this Plan of Development, one additional deep test has already been drilled, same being the Pan American Petroleum Corporation No. 2 Big Eddy Unit, at a location 660 feet from the South line and 660 feet from the East line of Section 19, Township 21 South, Range 28 East. This well was commenced December 30, 1962 and completed July 30, 1963 after being drilled to a total depth of 12,457 feet. The initial potential on this well was from the Strawn formation, and the well flowed at the rate of 14 barrels of oil and 14 barrels of water per day. The perforations were from 10,706-10, 10,716-20 and 10,730-36.

Although this well is apparently noncommercial, additional studies are in progress with the anticipation that a more productive Strawn section can be located on the Big Eddy Unit, as it appears that the trend from this well to the Lusk-Morrow Unit located in Township 19 South,

United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission
October 16, 1963
Page 2


MAIN OFFICE OCC
1963 OCT 21 AM 10 25

Range 31E-32E, does correlate.

The foregoing Plan of Development is hereby respectfully submitted.

Very truly yours,

PERRY R. BASS

By: 
Howard W. Jennings

HWJ:loc

Approved: _____ Date: _____
Supervisor, United States Geological Survey

Approved: _____ Date: _____
Commissioner of Public Lands

Approved:  Date: 10-21-63
Oil Conservation Commission

265
PERRY R. BASS
12TH FLOOR FT. WORTH NAT'L BANK BLDG
FORT WORTH, TEXAS

MAIN OFFICE OCC

October 16, 1963

1963 OCT 21 AM 10:28

United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission

Re: Plan of Development - Big Eddy
Unit No. 14-08-001-326 - February
15, 1962 to February 15, 1963

Gentlemen:

Perry R. Bass, as Unit Operator, herewith files Plan of Development, bringing up to date the development on the Big Eddy Unit, covering the period from February 15, 1962 to February 15, 1963. Inasmuch as this plan was discussed with the proper officials, same is being submitted for information purposes only in order to complete your files on the development within the Unit Area.

Proposed Additional Development

As was pointed out in our Plan of Development of February 15, 1961, a joint seismograph program was worked out with Pan American Petroleum Corporation to re-shoot portions of the Big Eddy Unit, which work was done in collaboration with the previous seismic work of the Unit Operator.

On the basis of this rework, a location was selected for a Devonian test, which was drilled as the Pan American No. 1 Big Eddy Unit, located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 3, Township 20 South, Range 31 East. This well was spudded November 23, 1961 and drilled to a total depth of 14,205 feet and was found barren at this depth. The well was ultimately plugged back and completed in the Wolfcamp formation in the perforated interval of 10,690-10,710 feet on June 5, 1962. You have previously been advised that this well was classified as noncommercial, although said well is still producing a very small amount of gas and condensate. It should be pointed out that this well was extremely expensive and took approximately seven months to drill and complete, having been commenced in November, 1961 and completed in June, 1962.

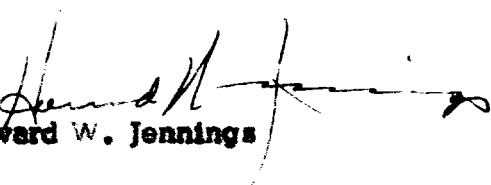
United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission
October 16, 1963
Page 2

RECEIVED
OCT 21 AM 10 28

As was stated above, this plan is being furnished for information purposes only, and same is hereby respectfully submitted.

Very truly yours,

PERRY R. BASS

By: 
Howard W. Jennings

HWJ:lcc

PERRY R. BASS
12TH FLOOR FT. WORTH NAT'L BANK BLDG
FORT WORTH, TEXAS

MAIN OFFICE 000

October 16, 1963

1963 OCT 21 AM 9:28

United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission

Re: Plan of Development - Big Eddy
Unit No. 14-08-001-326 - February
15, 1962 to February 15, 1963

Gentlemen:

Perry R. Bass, as Unit Operator, herewith files Plan of Development, bringing up to date the development on the Big Eddy Unit, covering the period from February 15, 1962 to February 15, 1963. Inasmuch as this plan was discussed with the proper officials, same is being submitted for information purposes only in order to complete your files on the development within the Unit Area.

Proposed Additional Development

As was pointed out in our Plan of Development of February 15, 1961, a joint seismograph program was worked out with Pan American Petroleum Corporation to re-shoot portions of the Big Eddy Unit, which work was done in collaboration with the previous seismic work of the Unit Operator.

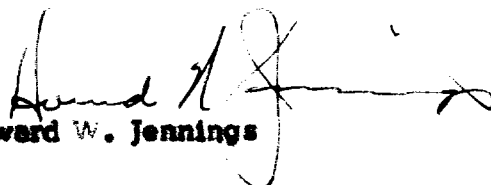
In the basis of this rework, a location was selected for a Devonian test, which was drilled as the Pan American No. 1 Big Eddy Unit, located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 3, Township 20 South, Range 31 East. This well was spudded November 23, 1961 and drilled to a total depth of 14,205 feet and was found barren at this depth. The well was ultimately plugged back and completed in the Wolfcamp formation in the perforated interval of 10,690-10,710 feet on June 5, 1962. You have previously been advised that this well was classified as noncommercial, although said well is still producing a very small amount of gas and condensate. It should be pointed out that this well was extremely expensive and took approximately seven months to drill and complete, having been commenced in November, 1961 and completed in June, 1962.

United States Geological Survey
Commissioner of Public Lands
New Mexico Oil Conservation Commission
October 16, 1963
Page 2

As was stated above, this plan is being furnished for information purposes only, and same is hereby respectfully submitted.

Very truly yours,

PERRY R. BASS

By: 
Howard W. Jennings

HWJ:lcc



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1827
Roswell, New Mexico 88201

September 17, 1963

Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard W. Jennings

Gentlemen:

By letter of April 29, 1963, Pan American Petroleum Corporation requested this office to concur in its determination that well No. 1 Big Eddy unit in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 20 S., R. 31 E., Eddy County, New Mexico, is not capable of producing unitized substances in paying quantities for the Wolfcamp Series. Your letter of September 9 advises that Perry R. Bass, as operator of the Big Eddy unit, has determined that said well is not capable of producing unitized substances in paying quantities.

Well No. 1 Big Eddy unit was completed on June 5, 1962, for an initial calculated open flow potential of 10,500 MCF of gas per day from the Wolfcamp. This well was producing at the average rate of 81,000 cubic feet of gas per day during July 1962.

This office concurs with the determination that the well is not capable of producing unitized substances in paying quantities from the Wolfcamp Series.

Sincerely yours,

(ORIG. SGD.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

cc:
Pan American Petroleum Corp. (ltr. only)
P. O. Box 268
Lubbock, Texas

Washington (w/cy Pan Am.'s determination)
Artesia (w/cy Pan Am.'s determination)
NMOCC Santa Fe (ltr. only) ✓
Com. of Pub. Lands, Santa Fe (ltr. only)
Accounts

C O P Y

March 27, 1963

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

Re: Big Eddy Unit Agreement
No. 14-08-001-326

Dear Mr. Anderson:

We have received a copy of your letter to Perry R. Bass Operator of the Big Eddy Unit Agreement No. 14-08-001-326 notifying us that a portion of tract 121 being LC 069876 is effectively committed to that Unit as of March 1st, 1963, and likewise that copies of such ratification and joinder be filed with the Commissioner of Public Lands of the State of New Mexico and the New Mexico Oil and Gas Conservation Commission.

On February 14th, 1963, we mailed copies of the ratification and joinder to both the Commission and the Commissioner of Public Lands, so compliance with this requirement has been made.

Yours truly,

WILLIAM A. & EDWARD R. HUDSON

ERHJr:n

By: 

CC: Mr. Perry R. Bass
Fort Worth National Bank Building
Fort Worth, Texas

CC: Commissioner of Public Lands
Santa Fe, New Mexico

CC: New Mexico Oil and Gas Conservation Commission
Santa Fe, New Mexico

William A. & Edward R. Hudson
1510 First National Building
Fort Worth, Texas

1963 FEB 13 AM 11 26

February 14th, 1963

265

Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

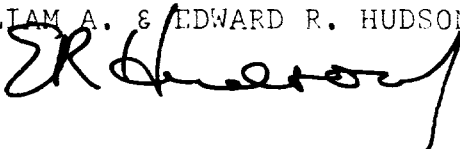
Gentlemen:

We enclose a single copy of a Consent and Ratification of the Big Eddy Unit Agreement and Unit Operating Agreement, committing Federal Lease LC-069876, to said Unit Agreement.

Yours very truly,

WILLIAM A. & EDWARD R. HUDSON

By:



ERHJr:m
Encl

MAIN OFFICE OCC

CONSENT AND RATIFICATION OF
BIG EDDY UNIT AGREEMENT
AND UNIT OPERATING AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

The undersigned acknowledge receipt of a copy of the Unit Agreement and Unit Operating Agreement for the development and operation of the Big Eddy Unit embracing lands situated in Eddy County, New Mexico, which said agreements are dated the 10th day of April, 1952, and acknowledge that they have read the same and are familiar with the terms and conditions thereof. The undersigned also being the owners of the leasehold interest in the lands or minerals embraced in said Unit Area, as indicated on the schedule attached to the Unit Agreement as Exhibit "B", do hereby commit all of their said interest to the Big Eddy Unit Agreement and Unit Operating Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof, exactly the same as if the undersigned had executed the original of said Unit Agreement and Unit Operating Agreement or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgments.

Lease Committed:

LC-069876

William A. Hudson
William A. Hudson

Roxie E. Hudson
Roxie E. Hudson

Edward R. Hudson
Edward R. Hudson

Josephine T. Hudson
Josephine T. Hudson

THE STATE OF TEXAS)
)
COUNTY OF TARRANT)

The foregoing instrument was acknowledged before me this 15th day of January, 1963, by WILLIAM A. HUDSON and wife, ROXIE E. HUDSON, and EDWARD R. HUDSON and wife, JOSEPHINE T. HUDSON.

J. B. Miller
Notary Public, Tarrant County,
Texas
My Commission Expires: 6/1/63



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico

RECEIVED
AUG 10 1961
D. C. C.
ARTESIA, OFFICE

August 9, 1961

Case # 365

Richardson and Bass
Fort Worth National Bank Bldg.
Fort Worth, Texas

Attention: Mr. Howard W. Jennings

Gentlemen:

Your plan of development dated February 15, 1961, covering the period from February 15, 1961, to February 15, 1961, for the Big Eddy unit area, Eddy County, New Mexico, has been approved on this date. The Commissioner of Public Lands and the New Mexico Oil Conservation Commission approved the plan on February 28 and June 5, 1961, respectively.

Very truly yours,

Carl C. Traywick

CARL C. TRAYWICK
Acting Regional Oil and Gas Supervisor

Copy to: Washington (w/cy of plan)
Artesia (w/cy of plan)
NEOCC, Santa Fe (ltr. only)
Com. of Pub. Lands, Santa Fe (ltr. only)

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Case # 265

June 5, 1961

C
O
P
Y

Richardson and Bass
Fort Worth National Bank Building
Fort Worth, Texas

ATTENTION: Mr. Howard W. Jennings

Re: Plan of Development
February 15, 1961, to
February 16, 1962, Big
Eddy Unit, Eddy County,
New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for the period February 15, 1961, to February 16, 1962, for the Big Eddy Unit, Eddy 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.

Three approved copies of the plan are returned herewith.

Very truly yours,

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

ALP/JEK/lq

cc: US Geological Survey

Commissioner of Public Lands

February 28, 1961

**Richardson and Bass
Fort Worth National Bank Building
Fort Worth, Texas**

**Re: Plan of Development
Big Eddy Unit
Eddy County**

Attention: Mr. Howard W. Jennings

Gentlemen:

We are handing to Mr. A. L. Porter, Director of the New Mexico Oil Conservation Commission four approved copies of your Plan of Development for the Big Eddy Unit Area for the period of February 15, 1961, to February 16, 1962.

The Commissioner approved this plan as of February 28, 1961, which calls for a complete review of the entire seismograph program and possibly further seismograph work and in collaboration with Pan American a selection of a location for a fourth deep Devonian test by August 15, 1961.

Please notify this office at such time as this plan is fully approved.

Very truly yours,

**E. S. JOHNSY WALKER
COMMISSIONER OF PUBLIC LANDS**

REW/umx/s

cc:

**Oil Conservation Commission-Santa Fe
US Geological Survey-Moswell, New Mexico**

RICHARDSON AND BASS

**FORT WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS**

February 15, 1961

**Mr. John A. Anderson
Supervisor
United States Geological Survey
P. O. Box 6721
Roswell, New Mexico**

**Mr. E. S. Walker
Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico**

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

**RE: Big Eddy Unit
No. 14-08-001-326**

Gentlemen:

In connection with the above captioned unit and in compliance with Section 10 of the unit agreement, Richardson & Bass, Unit Operator, respectfully submit for your approval a plan of development from February 15, 1961, to February 16, 1962.

HISTORY OF PAST DEVELOPMENT

The Big Eddy Unit Agreement was dated April 10, 1952, and approved by the Director, United States Geological Survey on October 1, 1952, and by the Commissioner of Public Lands on July 18, 1952. The unit agreement, as approved, required three deep tests to be drilled in the unit area, which three deep tests were drilled in the following locations:

- 1. Sec. 23,20S,31E - #1 Cobb**
- 2. Sec. 27,21S,29E - #1 Fidel**
- 3. Sec. 36,21S,28E - #1 Shell State**

Two out of the three above wells are presently producing at a plugged back depth in the Brushy Canyon formation, while the #1 Shell State was abandoned as a dry hole.

Mr. John A. Anderson
Mr. E. S. Walker
Mr. A. L. Porter, Jr.

February 15, 1961
Page 2

In addition to the above three deep tests, seven other Bone Springs tests have been drilled in the unit area, the location of which is set out below:

1. Sec. 27, 20S, 31E - #1 Rodke
2. Sec. 27, 20S, 31E - #1 Baxendale
3. Sec. 20, 20S, 31E - #1 Welch
4. Sec. 25, 20S, 31E - #1-25 Big Eddy State
5. Sec. 21, 20S, 32E - #1-21 Big Eddy Unit
6. Sec. 30, 20S, 31E - #2-30 Big Eddy Unit
7. Sec. 2, 20S, 31E - #1-2 Big Eddy Unit

As was mentioned previously, all of the above tests were drilled to a sufficient depth to test the Bone Springs formation at approximately 7500-7800 feet. Of the last four tests drilled, all were found to be non-productive; however, considerable encouragement was found in the Tansill zone at around 2500 feet.

PROPOSED ADDITIONAL DEVELOPMENT

Richardson & Bass, Unit Operator, has recently completed arrangements with the Pan American Petroleum Corporation for additional exploration and development of this unit. Pan American, in cooperation with Richardson & Bass geophysicists, are reviewing the entire seismograph program which Richardson & Bass conducted on this unit with the anticipation that additional seismograph work will be done in areas where record quality merits additional control. It is felt that recent technological changes in the instrumentation will more accurately reflect the subsurface data than was available when this original work was done. Richardson & Bass geophysicists, in collaboration with Pan American geophysicists, have begun a six months review of this area, and a location will be selected for a fourth deep Devonian test by August 15, 1961.

We propose to continue this seismic review and spend considerable money doing additional work on the unit area in selecting the location for this additional deep test.

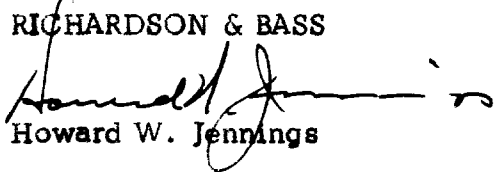
Mr. John A. Anderson
Mr. E. S. Walker
Mr. A. L. Porter, Jr.

February 15, 1961
Page 3

The foregoing Plan of Development is hereby respectfully submitted.

Yours very truly,

RICHARDSON & BASS


Howard W. Jennings

HWJ:pdf

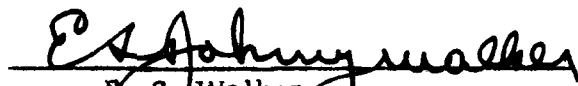
APPROVED:

UNITED STATES GEOLOGICAL SURVEY

John A. Anderson

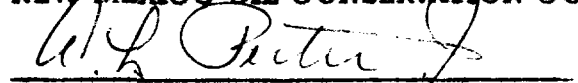
Date: _____

COMMISSIONER OF PUBLIC LANDS


E. S. Walker

Date: February 28, 1961

NEW MEXICO OIL CONSERVATION COMMISSION


A. L. Porter, Jr.

Date: 6-5-61

Case 3100

March 28, 1961

In reply refer to:
Unit Division

Mr. Howard W. Jennings
Richardson & Bass
Fort Worth National Bank Building
Fort Worth, Texas

Re: Change of Operator,
Big Eddy Unit, Lea and
Eddy Counties, New Mexico

Dear Mr. Jennings:

This office has received an application, dated March 10, 1961, by which Richardson & Bass, present operator of the Big Eddy Unit, resigns as Big Eddy Unit Operator. This same application designates Perry R. Bass as successor unit operator and by this instrument Perry R. Bass accepts all the obligations of unit operator, under and pursuant to all the terms of the Big Eddy Unit.

Therefore, the Commissioner of Public Lands approves as of March 28, 1961, this application for change of unit operator.

We are forwarding five approved copies to the Director of the U S Geological Survey in Roswell, New Mexico.

C
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Mr. Howard W. Jennings

March 28, 1961

-2-

At such time as this application is fully approved,
please furnish us another copy stating the effective
date thereof.

Yours very truly,

E. S. JOHNNY WALKER
Commissioner of Public Lands

By: *Ted Bilberry*
Ted Bilberry, Supervisor
Oil and Gas Division

ESW:MR:eq

cc: Oil Conservation Commission
Box 871
Santa Fe, New Mexico

U S Geological Survey
Roswell, New Mexico

C

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RICHARDSON AND BASS

FORT WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS

February 25, 1960

Mr. John A. Anderson
United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

RE: Big Eddy Unit


Dear Sir:

On March 5, 1959, we filed with your office a Plan of Development on the above captioned unit. This Plan of Development was for a period expiring March 1, 1960, and included the drilling of four Bone Springs tests. To date, three of these tests have been drilled, and we are at the present time negotiating for non-committed acreage within the Unit Area for the drilling of the fourth test well.

Inasmuch as our present Plan of Development has not been completed, we are going ahead with our plans to drill this additional well; and upon completion of this test, we will further advise you as to our Plan of Development.

Yours very truly,

RICHARDSON & BASS


Howard W. Jennings

HWI/pdf

cc: Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico
Attention: Mrs. Marian Rhea

✓ cc: Oil Conservation Commission
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

265

December 30, 1959

Richardson and Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention: Mr. Howard Jennings

Grant Letter:

**This is to acknowledge receipt of the following documents
relating to the Big Eddy unit agreement, New Mexico No. 14-08-001-326:**

Four copies of a Ratification and Joinder to the unit agreement and unit operating agreement, executed by Frank Yates and Jo Ann Yates who will own record title and working interest in Federal land unit tract 23, upon issuance of oil and gas lease New Mexico 099038. Approval and Consent of Richardson and Bass, unit operator, is affixed to each copy of the Ratification and Joinder.

By virtue of the Rectifications and Joinders listed above, Federal land unit trust 23 is considered effectively committed to the Big Eddy unit agreement, effective as of the issuance date of Lease New Mexico 039036.

Copies of the Ratifications and Joinders are being distributed to appropriate Federal offices for inclusion in the official case records. It is assumed you will furnish other interested parties with appropriate evidence of this action.

Very truly yours,

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Copy to: Washington (w/cy of Joinders)
 Artesia (w/cy of Joinders)
 ELM-Santa Fe (w/cy of Joinders)
 State Land Office, (Mrs. Rhea) (Ltr. only)
 BUREAU

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

File
125

April 2, 1959

Richardson And Bass
Fort Worth National Bank Building
Fort Worth, Texas

ATTENTION: Mr. Howard Jennings

RE: Plan of Development
March 1, 1959 to
March 1, 1960 Big Eddy
Unit Lea & Eddy Counties,
New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for the period March 1, 1959 to March 1, 1960 for the Big Eddy Unit Lea and Eddy Counties, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

We are holding one copy of this plan for our files if you wish a signed copy please submit another to us.

Very truly yours,

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

ALP:RLS:ig

cc: State Land Office - Santa Fe
U. S. Geological Survey - Roswell

C
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P. O. Box 6721
Roswell, New Mexico

March 30, 1959

Richardson & Bass
Fort Worth National Bank Bldg.,
Fort Worth, Texas

Attention: Howard W. Jennings

Gentlemen:

Your Plan of Development dated March 5, 1959, for a period ending March 1, 1960, for the Big Eddy unit area, No. 14-00-001-326, Eddy and Lea Counties, New Mexico, which proposes the drilling of four Bone Springs formation wells, has been approved on this date subject to like approval by the appropriate State Officials.

Two approved copies are being sent to the State offices.

One approved copy of the plan is enclosed.

Very truly yours,

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Enclosure 1

Copy to: Washington (w/cy of plan)
Artesia r. c. h. h
NMDC, Santa Fe (w/cy of plan) ✓
Comm. of Pub. Lands, Santa Fe (w/cy of plan)

RICHARDSON & BASS
FORT WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS

March 5, 1959

**Mr. John A. Anderson, Supervisor
United States Geological Survey
P. O. Box 6721
Roswell, New Mexico**

**Mr. Murray E. Morgan
Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico**

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

**RE: Big Eddy Unit
No. 14-08-001-326**

Gentlemen:

In connection with the above captioned unit, and in compliance with Section 10 of said Unit Agreement, Richardson & Bass, as Unit Operator, respectfully submit for your approval a plan of development for the period from March 1, 1959, to March 1, 1960.

HISTORY OF PAST DEVELOPMENT

The Big Eddy Unit Agreement was dated April 10, 1952, and approved by the Director, United States Geological Survey, on October 1, 1952, and by the Commissioner of Public Lands on July 18, 1952. The Unit Agreement required that three deep tests be drilled as required wells in the Unit Area, and the first of these wells was the No. 1 Cobb, located in Section 23-208-31E. This well was drilled to a total depth of 16,489 feet and was completed on May 23, 1953, at a plugged back depth, and is presently producing in the Brushy Canyon formation.

The second of the required tests was the No. 1 Fidel, located in Section 27-218-29E. This well was drilled to a total depth of 15,611 feet and is presently producing at a plugged back depth in the Brushy Canyon formation.

Mr. John A. Anderson, Supervisor
United States Geological Survey

Mr. Murray E. Morgan
Commissioner of Public Lands

Mr. A. L. Porter, Jr.
Oil Conservation Commission

March 5, 1959 - Page 2

The third of the required tests was drilled by Shell Oil Company as agent for the Unit Operator, and was drilled in Section 36-21S-20E. This well was drilled to a total depth of 14,059 and was plugged and abandoned as a dry hole on September 24, 1958.

In addition to the above three deep tests, three other wells have been drilled in the Unit Area, one being the No. 1 Rodke in Section 27-20S-31E, which well was completed in the Cherry Canyon formation and is presently producing from that same formation. Two other Bone Springs tests were drilled, the same being the No. 1 Baxendale which was located in Section 27-20S-31E, this well being completed as a dry hole, and also the No. 1 Welch located in Section 20-20S-31E was plugged and abandoned as a dry hole.

On December 14, 1955, the Acting Director of the United States Geological Survey concurred in a determination that a discovery of unitized substances had been made on lands within the Unit Area sufficient to comply with the provisions of Section 19 (a) of the Unit Agreement; and three separate participating areas were established and approved by the Commissioner of Public Lands on October 14, 1957, by the Oil Conservation Commission on October 23, 1957, and the Acting Director of the United States Geological Survey on November 21, 1957.

As we have set out above, the third required deep test as provided in Section 9 of the Unit Agreement has been drilled, and Richardson & Bass, as Unit Operator, has complied with the required terms of the Unit Agreement.

PROPOSED ADDITIONAL WELLS

It is proposed that four Bone Springs tests be drilled within the Unit Area between now and March 1, 1960. The first of these tests has been commenced and is presently being drilled in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 25-20S-31E. The selection of the location of the additional tests will, of course, depend upon the geological information developed from the drilling of this well. It is anticipated that these wells will be carried to a minimum depth of 7,500 feet, and possibly to a lower horizon if the situation warrants.

Mr. John A. Anderson, Supervisor
United States Geological Survey

Mr. Murray E. Morgan
Commissioner of Public Lands

Mr. A. L. Porter, Jr.
Oil Conservation Commission

March 5, 1959 - Page 3


WELL CASING PROGRAM

A portion of this unit is within the confines of the Potash Area as outlined. A casing program is being planned to protect all salt formations in compliance with this order, and an effort is being made to cooperate fully with the potash companies involved in this area.

In the event the above set forth plan is modified or supplemented, all interested agencies will be notified; and Richardson & Bass, as Unit Operator, will make a diligent effort to comply with this proposal.

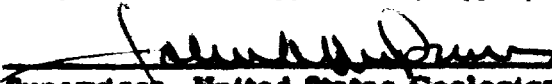
Respectfully submitted,

RICHARDSON & BASS, Unit Operator


By 
Howard W. Jennings

APPROVED:

Subject to like approval by appropriate state officials.


Supervisor, United States Geological Survey
March 30, 1959

Commissioner of Public Lands
_____, 1959


Oil Conservation Commission
4-2-59, 1959

RICHARDSON & BASS
FT. WORTH NAT'L BANK BLDG
FORT WORTH, TEXAS

March 26, 1959

Mr. R. L. Stamets
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

RE: Big Eddy Unit

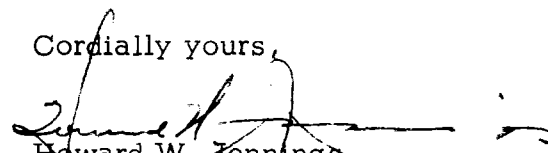
Dear Mr. Stamets:

This will acknowledge receipt of your letter of March 13, 1959, regarding a Plan of Development for the Big Eddy Unit. Please be advised that although we did not set forth a plan of development in our letter of February 6, 1959, a plan was submitted through the United States Geological Survey on March 5, 1959. I am sorry that you have not received same for approval, but I feel certain that this will shortly reach your desk.

Please be assured that we are most anxious to comply with all requirements of the Oil Conservation Commission; and since the Plan of Development must be approved by the Geological Survey, the Land Commissioner, and the Oil Conservation Commission, it was handled in the above manner.

With sincere regards, I remain

Cordially yours,


Howard W. Jennings
RICHARDSON & BASS

HWJ/pdf

RECEIVED
FEB 12 1959

P. O. Box 6721
Roswell, New Mexico

February 11, 1959

Richardson & Bass
Fort Worth National Bank Building
Fort Worth, Texas

Attention Mr. Howard W. Jennings

Gentlemen:

The third of the three deep test wells required to be drilled in the Big Eddy unit, Lea and Eddy Counties, New Mexico, under the provisions of section 9 of the unit agreement, was plugged and abandoned on September 24, 1958. In view of the drilling requirements of section 9, we have considered operations on the unit area to be in the exploration stage even though oil production has been obtained from the Delaware Mountain group in which three oil wells have been completed and participating areas have been established. For this reason we have not heretofore called on you for a plan of development.

Shell Oil Company, as agent for Richardson & Bass, unit operator, is now preparing to drill a Bone Springs test in the SW $\frac{1}{4}$ sec. 25, T. 20 S., R. 31 E., and I have been informally advised by Shell that such program may be extended to cover one or perhaps three additional Bone Springs wells.

It is requested that you submit for our consideration and approval a plan of development for the year 1959 proposing the drilling of the Bone Springs wells. The locations of the wells, other than the one now staked, need not be specified in the plan of development and may be made contingent upon the results of preceding wells. Three copies of the plan are needed for distribution to Survey offices. You should submit such additional copies as you may wish returned to you showing our approval.

Very truly yours,

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Copy to: Conservation Div., Wash.
Oil Conservation Comm., Santa Fe
Commissioner Public Land, Santa Fe
Artesia

RICHARDSON & BASS
FT. WORTH NAT'L BANK BLDG
FORT WORTH, TEXAS

February 6, 1959

Mr. R. L. Stamets
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

RE: Big Eddy Unit

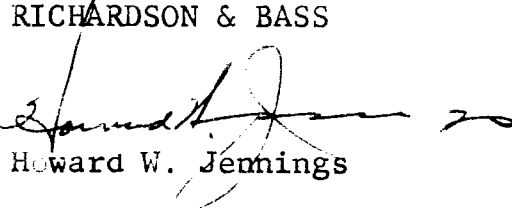
Dear Mr. Stamets:

This will acknowledge receipt of your letter of January 22, 1959, regarding the four Bone Springs tests which are to be drilled on the above captioned unit. The first location has been selected and will be located in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 25, T-20-S, R-31-E. The drilling of this well has presently been started, and depending upon the geological information developed, the next location will be selected.

We regret that we cannot at this time give you the other proposed locations; however, it is anticipated that all four of these wells will probably be drilled during the year 1959. If you will recall from our previous correspondence, a portion of this unit is within the Potash Area, and the location of this initial test had to be moved to reconcile the objections raised by one of the potash companies.

Yours very truly,

RICHARDSON & BASS


Howard W. Jennings

HWM/pdf

RICHARDSON & BASS
FT. WORTH NAT'L BANK BLDG
FORT WORTH, TEXAS

January 13, 1959

Mr. R. L. Stamets
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

RE: Big Eddy Unit

Dear Mr. Stamets:

This will acknowledge receipt of your letter of January 9, 1959, concerning the above captioned unit. We are extremely sorry that your letter of December 4, 1958, was not acknowledged; however, somehow it failed to come to the attention of the writer.

We are indeed regretful that your office has not been kept informed of the activity on this unit as monthly reports are furnished to the Oil Conservation Commission; however, apparently the information which is filed in Hobbs, New Mexico, has not reached your attention. A deep test on the West portion of this unit was drilled by the Shell Oil Company in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 36, T-21-S, R-28-E, and said well was drilled to water in the Devonian formation. This well was plugged and abandoned by the Shell on this state lease on September 24, 1958.

Plans have been formulated for the drilling of a series of Bone Springs tests to the approximate depth of 7500 feet. We anticipate drilling a minimum of four of these tests during 1959, the first of which is to be located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 25, T-20-S, R-31-E. Unfortunately this well has been delayed due to a protest by the National Potash Company. We announced the location and the well was to be commenced on or before January 15, 1959, but the National Potash Company, which is the potash lessee, has protested; and we are presently awaiting the outcome of this conflict of interest.

Although Order No. R-111 specifically states that drilling will be allowed subject to certain casing requirements, National Potash has entered a protest, and the Mining Division of the Department of Interior is presently discussing the matter with them. At the present there is no mine within several miles of

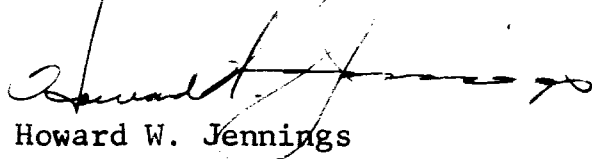
Mr. R. L. Stamets
Oil Conservation Commission
Page 2

this location, and we are somewhat at a loss to understand the protest; but we are hoping that the matter can be settled without a hearing before the Oil Conservation Commission in order that we may proceed with our development program.

We will certainly make every effort to continue to keep you informed on our activities in this unit, and may we assure you of our sincere cooperation in the future.

Yours very truly,

RICHARDSON & BASS



Howard W. Jennings

HWJ:pdf

cc: Mrs. Marion Rhea
State Land Office
Santa Fe, New Mexico

cc: United States Geological Survey
Roswell, New Mexico

File

P. O. Box 6721
Roswell, New Mexico

December 9, 1958

Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Attention: Mr. Ted Bilberry
Supervisor, Oil and Gas Division

Dear Sir:

Your letter of November 7, 1958, requests certain information regarding the Big Eddy Unit Agreement, Eddy County, New Mexico. Specifically, you inquire as to the status of a plan of development for the unit.

As you know, the Brushy Canyon "A" participating area, the Brushy Canyon "B" participating area, and the Cherry Canyon participating area were approved by the Acting Director, U. S. Geological Survey on November 21, 1957, effective as of May 23, 1953, September 18, 1953, and March 10, 1955, respectively. Each of the three participating areas embraces 40 acres, and are based on shallow, small completions of deep exploratory wells.

This office has not required a plan of development for the Brushy Canyon or Cherry Canyon formations because, in our opinion, and based on available information, the Brushy Canyon and Cherry Canyon reservoirs are so small and limited in volume that their further development is not warranted. Rather, this office has encouraged the unit operator to continue deep exploration of the Big Eddy unit, with the hope, of course, of discovering a major oil and gas reservoir. Toward this end, we informally understand that negotiations by the unit operator are now in progress to secure another deep test within the unit area.

This office is fully aware of its responsibility in the Big Eddy Unit, and will take all necessary action to secure diligent exploration and development.

Very truly yours,

E. M. THOMASSON
Acting Oil and Gas Supervisor

EMT:cs
12/9/58

1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.

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RECEIVED DCS
OCT 11 1958

File
365

In reply please refer to:
File 365-100-100

October 24, 1958

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Richardson and Bass
Fort Worth National Bank Building
Fort Worth, Texas

Re: 100-365-100-100
Tolly County, New Mexico

ATTENTION: Mr. Edward Berninger

Gentlemen:

This office approved the Mineral Partitioning Area
for the 11, 11th October 1957, however, you have
never submitted a Plan of Development to this office for
consideration.

May we hear from you immediately in respect to this,
as you are many months in default in your reports on this
matter.

Very truly yours,
MURRAY N. BOSTA
Assistant Secretary of the Interior

BY:
Leo J. Derry, Supervisor
Oil and Gas Division

MEM/AM /
cc: DCS - Santa Fe
HCH - Roswell

ILLEGIBLE

HOWARD W. JENNINGS

WHITE BUILDING

ROSWELL, NEW MEXICO

December 6, 1957

ADDRESS
POST OFFICE BOX 450

7
TELEPHONE
MAIN 2-3550

Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Re: Big Eddy Unit

Gentlemen:

Enclosed please find a photostatic copy of executed approval covering the participating areas which have been approved on the above captioned unit. These photostats are merely for information purposes.

Cordially yours,


Howard W. Jennings

HWJ:dms
Enclosure



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

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It is requested that you furnish the State of New York with whatever evidence is appropriate to these allegations.

Very truly yours,

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For the Director

Enclosure

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FILE
16

November 7, 1968

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United States Geological Survey
P. O. Box 6721
Corvallis, New Mexico

Re: My 1964 Field Agreement
Elroy County, New Mexico

ATTENTION: Mr. John A. Anderson

Gentlemen:

We wrote to Richardson and Bass, October 23, 1964, stating that although an initial participating area had been approved by the proper agencies in 1957, they had not submitted a Plan of Development for this unit.

Richardson and Bass replied to our letter on October 24, 1964, stating that the participating area was established at the request of the United States Geological Survey and no plan of development was anticipated when the participating areas were established. Evidently, this statement by Richardson and Bass is correct, since the United States Geological Survey would have required a plan of development, however, our interpretation of Section 101 would require a Plan of Development six months after the initial participating area.

May we hear from you concerning this interpretation between the United States Geological Survey and Richardson and Bass regarding Section 101 of the Initial Agreement.

Very truly yours,
MURRAY L. MOORE
Comptroller of the Public Lands

BY:
[Signature]
[Title]

ILLEGIBLE

October 14, 1957

In reply refer to:
Unit Division

Mr. Howard W. Jennings
P. O. Box 450
Roswell, New Mexico

Re: Big Eddy Unit

Dear Mr. Jennings:

We are enclosing five copies of the Initial Participating Area "A" for the Brushy Canyon Formation in the Big Eddy Unit Agreement.

These were approved by the Commissioner of Public Lands October 14, 1957, and, in compliance with your request, we return all copies to you, and upon execution by the United States Geological Survey you will return one copy for our files.

Very truly yours,

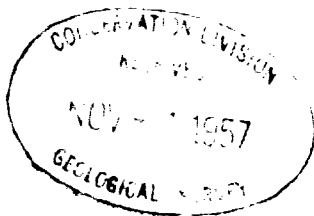
MURRAY E. MORGAN
Commissioner of Public Lands

By: Ted Bilberry, Supervisor
Oil and Gas Department

MEM:MMR/m
Enc.

cc: USGS-Roswell
OCC-Santa Fe

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RICHARDSON & BASS
FORT WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS

September 23, 1957

**Supervisor, United States Geological Survey
P. O. Box 6721
Roswell, New Mexico**

**RE: Big Eddy Unit
No. 14-08-001-326**

Dear Sir:

Reference is made to our recent conversation regarding the above captioned unit which covers lands located in Eddy and Lea Counties, New Mexico. In accordance with our discussion of this unit, Richardson & Bass, as Unit Operator, hereby requests that participating areas be established in accordance with the terms of the Unit Agreement.

In this connection we attach hereto as a part of this application a map marked Exhibit "A", which reflects the outline of the unit, together with all of the wells which have been drilled to date. We have shown in green on the map the proposed participating areas, and we have also designated the wells which have been dry holes and were plugged and abandoned. We also attach Exhibit "B" which reflects the initial participating areas designated as A, B and C.

As we discussed with you, the wells currently producing in this unit are producing from the Delaware Group of the Permian System. The Delaware Group consists of approximately 3,500 feet of sand with lime and shale stringers. All of the production to date in the Delaware Group has been found to be associated with stratigraphic or porosity type of accumulation rather than structural. As noted in our Cobb Area of Exhibit "A", we have drilled four wells that have penetrated the entire Delaware Group, two of said wells being dry holes. The Cobb pay at 7,000 feet was found to be water bearing in the No. 1 Rodke, but a zone at approximately 5,700 feet is producing; however, this 5,700 foot zone in the No. 1 Baxendale, as noted on Exhibit "A", was found to contain water. Due to the lack of continuity in the producing horizons in the wells, it is impossible to establish producing units larger than forty acres.

ILLEGIBLE

We have been unable to correlate the producing horizons in the wells which we have drilled, and it is entirely possible that when additional development has been done, we will be able to correlate these horizons.

In reviewing the producing wells on this unit, we submit the following resume:

1. Richardson & Bass No. 1 Cobb, located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 23, Township 20 South, Range 31 East.

This well was commenced on May 30, 1952, and drilled to a total depth of 16,459 feet in the granite formation. This well was plugged back to a depth of 7,173 feet and completed on May 23, 1953, for the initial production of 215 barrels of oil and 35 barrels of water per day. The well is producing 40.5 gravity oil, and the production at the present time is approximately 15 barrels of oil per day. As of August 1, 1957, this well has produced a total of 36,300 barrels of oil. As you will note, this well was drilled through all possible producing horizons and was completed in the Brushy Canyon formation with perforations 7003 to 7016 and 7022 to 7035 feet.

2. Richardson & Bass No. 1 Fidel, located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 27, Township 21 South, Range 29 East.

This well was commenced on September 29, 1952, and drilled to a total depth of 15,611 feet in the Simpson formation. This well was plugged back to a depth of 6,980 feet and completed on September 18, 1953, for the initial production of 170 barrels of oil per day. The well is producing 37.5 gravity oil, and the production at the present time is approximately 5 barrels of oil per day. As of August 1, 1957, this well has produced a total of 12,760 barrels of

ILLEGIBLE

oil. As you will note, this well was drilled through the Devonian formation and was completed in the Brushy Canyon formation with perforations 6890 to 6950 feet.

3. Richardson & Bass No. 1 Rodke, located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 27, Township 20 South, Range 31 East.

This well was commenced on January 20, 1955, and drilled to total depth of 7,600 feet in the lime formation. This was plugged back to a depth of 5,751 feet and completed on March 10, 1955, for the initial production of 257 barrels of oil per day. The well is producing 30.9 gravity oil, and the production at the present time is approximately 20 barrels of oil per day. As of August 1, 1957, this well has produced a total of 29,936 barrels of oil. As you will note, the well was drilled through the Delaware Group and was completed in the Cherry Canyon Section with perforations 5722 to 5734 feet.

On December 14, 1955, Arthur S. Baker, Acting Director of the United States Geological Survey, concurred in our determination that a valuable commercial discovery of unitized substances has been made on completed lands within the unit area sufficient to comply with the provisions of Section 19 (e) of the Unit Agreement.

As Unit Operator, we hereby respectfully submit that participating areas of forty acres each surrounding each of the above producing wells be established in accordance with the terms and provisions of the Big Eddy Unit Agreement.

Yours very truly,

RICHARDSON & BASS

ILLEGIBLE

By



RICHARDSON & BASS
FORT WORTH NAT'L BANK BLDG
FORT WORTH TEXAS

Approved this 14th of
October, 1957.

W. H. Meyer
Commissioner of Public Lands

Approved this 21st of
November, 1957.

Arthur O. Baker
Director, U. S. Geological Survey

Approved this 23rd of
December, 1957.

W. H. Meyer
Oil Conservation Commission
State of New Mexico

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Initial Participating Area "A" for the Rushy Canyon Formation

Tract No.	Lease No.	Description	No. Acres	Ownership	Percentage Admitted	Production
85-1	LC-065873-A	SW 1/4 of Section 20 23, Township 20 South, Range 31 East, Eddy County, New Mexico	40	Richardson Lease .400 - U.I. George W. Cobb .050 - U.I. Harry Elers Ramsey .020 - U.I. United States .1750- Royalty		

Richardson and Base #1 Cobb
Completed May 23, 1953

ILLEGIBLE

APPENDIX 2

SCHEDULE 1

Initial Participating Area "B" for the Brumby Canyon Formation

Tract No.	Lease No.	Description	No. Acres	Ownership	Percentage Committed	Participation %
110-A	LC-000144	SW 1/8 of Section 27, Township 21 South, Range 29 East, Mddy County, New Mexico	40	Richardson & Less .8480 - W.I. John W. Fidel .0500 - W.I. United States .1280 - Royalty	100% 100% 100%	100%

Richardson and Less & Fidel
Completed September 18, 1953

ILLEGIBLE

11/17/56

1000

Initial Distribution Area - Harry Canyon Extension

Area	Description	Area	Membership	Percentage Contributed	Article- Number
1000	of Section	Richardson & Bass .0450 - V.I.		100	110
1000	completing	one line Rodke .075 - .000		100	
1000	daily meeting	World angle .075 - .000		100	
1000	extension	Artin & top 111 .075 - .000		100	
1000		Edith & Mix .075 - .000		100	
1000		Edith & Mix .1250 - .000		100	

Richardson and Bass 11 Rodke
on letter 1000 1000 1000

ILLEGIBLE

File 30

June 25, 1957

In reply refer to:
Unit Division

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

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

Re: Lease E-2370
Big Eddy Unit Agreement

Gentlemen:

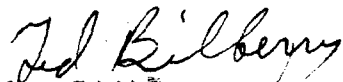
We have received from Malco Refineries, Inc., a commitment to Big Eddy Unit Agreement, of their acreage which is the S/2 SW/4 of Section 2-20S-31E contained in New Mexico State Lease E-2370.

This commitment was received June 24, 1957, and according to Section 31 of the Unit Agreement the effective date is the first day of the month following the filing of the commitment with the Supervisor, Commissioner and the Commission.

May we hear from you as to the date this commitment was filed with you, so we may ascertain the effective date of commitment of our State Lease E-2370.

Very truly yours,

MURRAY E. MORGAN
Commissioner of Public Lands


By: Ted Bilberry, Supervisor
Oil and Gas Department

MEM:MMR/m

cc: Mr. Howard W. Jennings
White Building, P. O. Box 450
Roswell, New Mexico

RICHARDSON & BASSFORT WORTH NAT'L BANK BLDG.
FORT WORTH, TEXAS

May 8, 1956

United States Geological Survey
Commissioner of Public Lands of New Mexico
New Mexico Oil Conservation Commission ✓Re: (Big Nddy Unit)
No.-14-08-001-326

Gentlemen:

Richardson and Bass, the unit operator for the above captioned unit area, hereby respectfully request an extension for a period of one year within which to commence the drilling of another well on the Big Nddy Unit.

In support of this request we wish to advise that we still have one seismograph crew working on the unit and a seismograph crew has been on said unit, or adjacent thereto, since June, 1950. This represents six years of continuous geophysical exploration work. In addition to this geological and geophysical work we have drilled five wells, two of them being extremely deep tests. The following is a resume of the wells which have been drilled to date:

	No. 1 <u>Gobb</u> 23-208-31E	No. 1 <u>Fidel</u> 27-318-29E	No. 1 <u>Velch</u> 20-208-31E	No. 1 <u>Backs</u> 27-208-31E	No. 1 <u>Barandale</u> 27-208-31E
<u>Date Spudded</u>	5-30-52	9-29-52	6-5-54	1-30-55	9-16-55
<u>Date Completed</u>	5-23-53	9-19-53	7-22-54	3-10-55	11-1-55
<u>Total Depth</u>	16,459'	15,611'	7500'	7600'	7618'

As we have discussed with the U. S. Geological Survey, we contemplate forming the Little Nddy Unit, which adjoins this unit on the east side and we propose to commence within the next thirty to sixty days a well on this Little Nddy Unit and drill same to 15,000 feet or the Devonian formation. On the Little Nddy Unit we also propose to drill or cause to be drilled two other Devonian tests which will be commenced within three months.

-Continued-

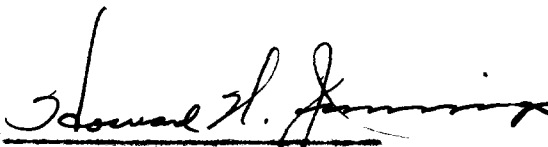
Continued

Page 2

As you can see from the above proposed exploration program additional time is necessary for us to correlate the three above tests with the geophysical work that has been done and accordingly we respectfully request that an extension of time be granted to May 1, 1937, for the commencement of another test well on this unit.

Very truly yours,

RICHARDSON AND BASS

By: 
Howard W. Jennings

HMF:amb

APPROVED:

Commissioner of Public Lands

APPROVED:

Director, U. S. Geological Survey



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
MAIN OFFICE OCGE GEOLOGICAL SURVEY

1954 APR 2 AM 8:42 P. O. Box 6721
Alamogordo, New Mexico

March 30, 1954

Richardson & Bass
Fort Worth National Bank Building
Fort Worth, Texas

Gentlemen:

Receipt is acknowledged of your letter of March 23 relating to the proposed remedial work and exploratory drilling in the Big Muddy unit area, New Mexico, No. 14-08-001-326.

You propose to move a rig on the Fidel No. 1 well within two or three weeks to stage hydraulic the well in an effort to increase the production and upon completion of this work you anticipate the commencement of a new well to test the Lower Delaware sands at a tentative location in the NE 1/4 sec. 20, T. 20 S., R. 31 E., N.M.P.M. You expressed the opinion that upon completion of the remedial work and the additional drilling, sufficient information will be available to formulate a plan for the further development of the unit area.

It is the opinion of this office that the work you propose meets with the drilling requirements of the unit agreement, and accordingly, no objection is offered to the proposed work.

Very truly yours,

(Orig. Sgd.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervision

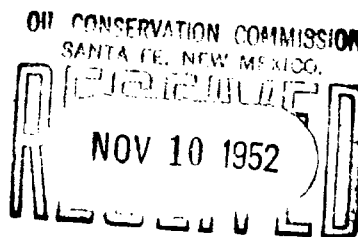
Copy to: ✓ New Mexico Oil Conservation Commission
State Land Commissioner
Mr. Howard Jennings

Fed. Fidel No. 1 - "M" 27-210-21E
Fed. Cobb No. 1 - "M" 23-205-31E

J. M. HERVEY
HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.
GEORGE H. HUNKER, JR.

WILLIAM C. SCHAUER
HOWARD C. BRATTON
S. B. CHRISTY IV

LAW OFFICES
HERVEY, DOW & HINKLE
ROSWELL, NEW MEXICO
November 4, 1952



New Mexico Oil Conservation Commission
Capitol Building
Santa Fe, New Mexico

Re: Big Eddy Unit Agreement

Gentlemen:

We hand you herewith a signed copy of the Consent and Ratification of the Big Eddy Unit Agreement, signed by G. C. Mann and wife, Mildred C. Mann, who are the owners of a certain royalty interest in connection with Tract #188 as shown by the Exhibit B attached to the original agreement. This copy should be attached to the approved copy of the Unit Agreement which we have hereto forwarded to you.

Yours very truly,

HERVEY, DOW & HINKLE

By: 

CEH:mm

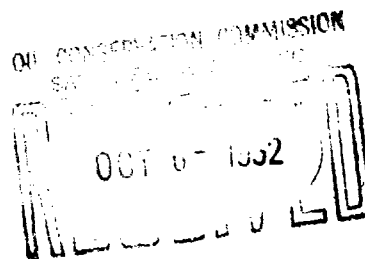
cc: Mr. Perry R. Bass
Richardson & Bass
Ft. Worth Nat'l Bank Bldg.
Fort Worth, Texas

J. M. HERVEY
HIRAN M. DOW
CLARENCE E. HINKLE
W. E. BONDJRANT, JR.
GEORGE H. HUNKER, JR.

WILLIAM C. SCHAUER
HOWARD C. BRATTON
S. B. CHRISTY IV

LAW OFFICES
HERVEY, DOW & HINKLE
ROSWELL, NEW MEXICO

October 4, 1952



Mr. R. R. Spurrier,
Executive Secretary
New Mexico Oil Conservation Commission
Capitol Building
Santa Fe, New Mexico

Re: Big Eddy Unit Agreement

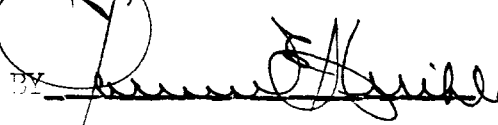
Dear Mr. Spurrier:

We enclose herewith an approved copy of the Unit Agreement for the Development and Operation of the Big Eddy Unit Area, Lea and Eddy Counties. You will note that this Agreement was approved by the Commission on May 1, 1952 and by the Commissioner of Public Lands on June 18, 1952, and by the Director of the United States Geological Survey on October 1, 1952.

Under the provisions of Section 22 of the Agreement the same became effective upon approval by the Director of the United States Geological Survey on October 1, 1952.

Yours very truly,

HERVEY, DOW & HINKLE

BY A handwritten signature, likely of Clarence E. Hinkle, written over a horizontal line.

CEH:Mel
1 Encls.

cc: Mr. Perry Bass, Richardson & Bass, 2105 Fort Worth
National Bank Bldg., Fort Worth, Texas.

365
RECEIVED

SEP 19 1952

U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION OF
THE BIG EDDY UNIT AREA
LEA & EDDY COUNTIES, STATE OF NEW MEXICO

I-Sec. No. _____



THIS AGREEMENT, entered into as of the 10th day of April, 1952, 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 or gas interests in the unit area subject to this agreement; and

WHEREAS, the Act of February 25, 1920, 41 Stat. 437, as amended by the Act of August 8, 1946, 60 Stat. 950, 30 U.S.C. Secs. 181 et seq., authorizes Federal lessees and their representatives to unite with each other, or jointly or separately with others, in collectively adopting and operating under a cooperative or unit plan of development or operation of any oil or gas pool, field, or like area, or any part thereof, for the purpose of more properly conserving the natural resources thereof whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by an Act of the Legislature (Chap. 88, Laws 1943) to consent to or approve this agreement on behalf of the State of New Mexico, insofar as it covers and includes lands and mineral interests of the State of New Mexico; and

WHEREAS, the Oil Conservation Commission of the State of New Mexico is authorized by law (Chap. 72, Laws of 1935, as amended by Chap. 198, Laws of 1937, Chap. 166, Laws of 1941, and Chap. 168, Laws of 1949) to approve this agreement and the conservation provisions hereof; and

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

WHEREAS, it is the purpose of the parties hereto 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 below defined unit area, and agree severally among themselves as follows:

1. ENABLING ACT AND REGULATIONS. The act of February 25, 1920, as amended, supra, and all valid pertinent regulations, including operating and unit plan regulations, heretofore issued thereunder or valid pertinent and reasonable regulations hereafter issued thereunder are accepted and made a part of this agreement as to Federal lands, provided such regulations are not inconsistent with the terms of this agreement; and as to non-Federal lands, 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 in which the non-Federal land is located, are hereby accepted and made a part of this agreement.

2. UNIT AREA: The following described land is hereby designated and recognized as constituting the unit area:

NEW MEXICO PRINCIPAL MERIDIAN, NEW MEXICO

T. 19 S., R. 31 E.

Sec. 27: S¹/₂
Sec. 33: E¹/₂
Sec. 34: All
Sec. 35: All

T. 20 S., R. 30 E.

Secs. 25--27 (incl.): All
Secs. 34--36 (incl.): All

T. 20 S., R. 31 E.
Secs. 2--36 (incl.); All

T. 20 S., R. 32 E.
Sec. 7: All
Sec. 8: $W\frac{1}{2}W\frac{1}{2}$
Secs. 17--21 (incl.): All
Sec. 27: $S\frac{1}{2}S\frac{1}{2}$
Secs. 28--34 (incl.): All

T. 21 S., R. 28 E.
Secs. 3--36 (incl.): All

T. 21 S., R. 29 E.
Secs. 1--3 (incl.): All
Secs. 7--36 (incl.): All

T. 21 S., R. 30 E.
Secs. 1--12 (incl.): All
Secs. 14--22 (incl.): All
Sec. 23: All
Sec. 27: $N\frac{1}{2}$
Secs. 28--30 (incl.): All

T. 21 S., R. 31 E.
Sec. 3: Lots 1 to 16, incl.
Secs. 4--6 (incl.): All
Sec. 7--9 (incl.): All

T. 22 S., R. 28 E.
Secs. 1--5 (incl.): All
Sec. 6: Lots 1, 2, 3, 4, 5, $SE\frac{1}{4}NW\frac{1}{4}$, $S\frac{1}{2}NE\frac{1}{4}$, $SE\frac{1}{4}$
Sec. 8: $E\frac{1}{2}$, $E\frac{1}{2}W\frac{1}{2}$
Secs. 9--14 (incl.): All
Sec. 15: $NE\frac{1}{4}$, $E\frac{1}{2}SE\frac{1}{4}$
Sec. 17: $N\frac{1}{2}N\frac{1}{2}$
Sec. 22: $E\frac{1}{2}NE\frac{1}{4}$
Secs. 23--25 (incl.): All

T. 22 S., R. 29 E.
Secs. 2--10 (incl.): All
Secs. 15--22 (incl.): All
Secs. 27--30 (incl.): All
Sec. 31: $E\frac{1}{2}$
Secs. 32--34 (incl.): All
Sec. 35: $W\frac{1}{2}$, $W\frac{1}{2}SE\frac{1}{4}$

T. 23 S., R. 29 E.
Sec. 2: All
Sec. 3: Lots 1, 2, 3, 4, $S\frac{1}{2}N\frac{1}{2}$, $N\frac{1}{2}S\frac{1}{2}$, $S\frac{1}{2}SE\frac{1}{4}$, $SE\frac{1}{4}SW\frac{1}{4}$
Sec. 4: Lots 1, 2, 3, 4, $S\frac{1}{2}N\frac{1}{2}$, $N\frac{1}{2}SE\frac{1}{4}$

Situated in Eddy and Lea Counties, containing 133,444.29 acres,
more or less.

Exhibit "A" attached hereto is a map showing the unit area and the boundaries and identity of tracts and leases in said area to the extent known to the Unit Operator. Exhibit "B" attached hereto is a schedule showing to the extent known to the Unit Operator the acreage, percentage, and kind of ownership of oil and gas interests in all land in the unit area. However, nothing herein or in said schedule or map shall be construed as a representation by any party hereto as to the ownership of any interest other than such interest or interests as are shown in said map or schedule as owned by such party. Exhibits "A" and "B" shall be revised by the Unit Operator whenever changes in the unit area render such revision necessary, or when requested by the Oil and Gas Supervisor, hereinafter referred to as "Supervisor", or the Commissioner of Public Lands, hereinafter referred to as "Commissioner", and not less than six copies of the revised exhibits shall be filed with the Supervisor, and at least one copy shall be filed with the Commissioner and one copy with the New Mexico Oil Conservation Commission, hereinafter referred to as "Commission".

The above described unit area shall when practicable be expanded to include therein any additional tract or tracts regarded as reasonably necessary or advisable for the purpose of this agreement, or shall be contracted to exclude lands not within any participating area whenever such expansion or contraction is necessary or advisable to conform with the purposes of this agreement. Such expansion or contraction shall be effected in the following manner:

(a) Unit Operator, on its own motion or on demand of the Director of the Geological Survey, hereinafter referred to as "Director", or on demand of the Commissioner shall prepare a notice of proposed expansion or contraction describing the contemplated changes in the boundaries of the unit area, the reasons therefor, and the proposed effective date thereof.

(b) Said notice shall be delivered to the Supervisor and Commissioner and copies thereof mailed to the last known address of each working

interest owner, lessee, and lessor whose interests are affected, advising that 30 days will be allowed for submission to the Unit Operator of any objections.

(c) Upon expiration of the 30-day period provided in the preceding item (b) hereof, Unit Operator shall file with the Supervisor and Commissioner evidence of mailing of the notice of expansion or contraction and a copy of any objections thereto which have been filed with the Unit Operator.

(d) After due consideration of all pertinent information, the expansion or contraction shall, upon approval by the Director, and Commissioner, become effective as of the date prescribed in the notice thereof.

In the event any operating rights are surrendered by the Unit Operator to lands embraced in the unit area the Unit Operator may contract the unit area to conform to the conditions then known, by application submitted to and approved by the Director and the Commissioner. After ten years from the date of discovery of unitized substances in paying quantities, the Director and Commissioner shall have the right to determine the acreage believed to be proved productive in formations subject to this agreement and may declare acreage not believed to be productive as no longer subject to this agreement by appropriate notice to the Unit Operator provided, however, no elimination of acreage shall be made so long as Unit Operator is actually and diligently engaged in expanding the productive limits within the unit area.

All land committed to this agreement shall constitute land referred to herein as "unitized land" or "land subject to this agreement."

3. UNITIZED SUBSTANCES. All oil and gas in any and all formations below the base of the Delaware sand or below a depth of 5,000 feet, whichever is the lesser, underlying the unitized land are unitized under the terms of this agreement and herein are called "unitized substances."

4. UNIT OPERATOR. Richardson & Bass, a co-partnership, Ft. Worth National Bank Bldg., Ft. Worth, Texas, is hereby designated as Unit Operator and by signature hereto as Unit Operator agrees and consents to accept the duties and obligations of Unit Operator for the discovery, 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 interests 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 an interest is owned by it.

5. RESIGNATION OR REMOVAL OF UNIT OPERATOR. Unit Operator shall have the right to resign at any time prior to the establishment of a participating area or areas hereunder, 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 6 months after notice of intention to resign has been served by Unit Operator on all working interest owners, the Director, and Commissioner, and until all wells then drilled hereunder are placed in a satisfactory condition for suspension or abandonment whichever is required by the Supervisor as to Federal lands and the Commission as to State and privately-owned 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. Unit Operator shall have the right to resign in like manner and subject to like limitations as above provided at any time a participating area established hereunder is in existence, but until a successor Unit Operator is selected and approved as hereinafter provided, the working interest owners shall be jointly responsible for performance of the duties of Unit Operator, and shall not later than 30 days before such resignation becomes effective appoint a common agent to represent them in any action to be taken hereunder.

The resignation of Unit Operator shall not release Unit Operator from any liability for any 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 the same percentage vote of the owners of working interests determined in like

manner as herein provided for the selection of a new Unit Operator. Such removal shall be effective upon notice thereof to the Director and Commissioner.

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 interest 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 and owned by the working interest owners to the new duly qualified successor Unit Operator or to the owners 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.

6. SUCCESSOR UNIT OPERATOR. Whenever the Unit Operator shall tender his or its resignation as Unit Operator or shall be removed as hereinabove provided, the owners of the working interests in the participating area or areas according to their respective acreage interests in such participating area or areas, or, until a participating area shall have been established, the owners of the working interests according to their respective acreage interests in all unitized land, shall by majority vote select a successor Unit Operator; Provided, That, if a majority but less than 75 percent of the working interest qualified to vote are owned by one party to this agreement, a concurring vote of one or more additional working interest owners shall be required to select a new 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 Director and Commissioner. If no successor Unit Operator is selected and qualified as herein provided, the Director and Commissioner at their election may declare this unit agreement terminated.

7. ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT. If the Unit Operator is not the sole owner of working interests, costs and expenses incurred by Unit Operator in conducting unit operations hereunder shall be paid and apportioned among and borne by the owners of working interests, all in accordance with the agreement or agreements entered into by and between the Unit Operator and the owners of working interests, whether one or more, separately or collectively. Any agreement or agreements entered into between the working interest owners and the Unit Operator as provided in this section, whether one or more, are herein referred to as the "unit operating agreement." Such 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 may be agreed upon by Unit Operator and the working interest owners; however, no such unit operating agreement shall be deemed either to modify any of the terms and conditions of this unit agreement or to relieve the Unit Operator of any right or obligation established under this unit agreement, and in case of any inconsistency or conflict between the unit agreement and the unit operating agreement this unit agreement shall prevail. Three true copies of any unit operating agreement executed pursuant to this section shall be filed with the Supervisor, and one true copy with the Commissioner.

8. 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 which are necessary or convenient for prospecting for, producing, storing, allocating, and distributing the unitized substances are hereby delegated to and shall be exercised by the Unit Operator as herein provided. 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 or to any lease or operating 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.

9. DRILLING TO DISCOVERY. Unit Operator shall drill three exploratory test wells within the unit area, one each in the eastern, central and western sectors thereof and for the purpose of locating said wells, the boundaries of said sectors shall be agreed upon by the Unit Operator and the Supervisor. Accordingly, within six months after the effective date hereof, the Unit Operator shall begin to drill the first of said test wells at a location approved by the Supervisor if such location is upon lands of the United States, and if upon State or privately owned lands, such location shall be approved by the Commission or Commissioner whichever is appropriate, unless on such effective date a well commenced subsequent to February 1, 1952, is being drilled or has been drilled conformably with the terms hereof, and thereafter continues such drilling diligently until the Ellenberger formation has been tested, or until at a lesser depth unitized substances shall be discovered which can be produced in paying quantities, (to-wit: quantities sufficient to repay the cost of drilling and producing operations with a reasonable profit) or the Unit Operator shall at any time establish to the satisfaction of the Supervisor that further drilling of said well would be unwarranted or impracticable, provided, however, that Unit Operator shall not in any event be required to drill said well to a depth in excess of 14,500 feet. Until the discovery of a deposit of unitized substances capable of being produced in paying quantities, the Unit Operator shall continue drilling diligently one well at a time, allowing not more than six months between the completion of one well and the beginning of the next well, until a well capable of producing unitized substances in paying quantities is completed to the satisfaction of said Supervisor if on Federal

land, or the Commissioner if on State land or the Commission if on privately owned land, or until it is reasonably proved that the unitized land is incapable of producing unitized substances in paying quantities in the formation drilled hereunder. Nothing in this Section shall be deemed to limit the right of the Unit Operator to resign as provided in Section 5 hereof, or as requiring Unit Operator to commence or to continue any drilling during the period pending such resignation becoming effective in order to comply with the requirements of this Section. The Director and the Commissioner may modify the drilling requirements of this Section by granting reasonable extensions of time when, in their opinion, such action is warranted.

Notwithstanding the foregoing, the Unit Operator shall commence the last of the three test wells above provided for within five years from the effective date of this agreement subject to the rights contained in this unit agreement pertaining to surrender of leases and operating rights and contraction of the unit agreement.

No well shall be drilled for oil and gas at a location which, in the opinion of the Supervisor, would result in undue waste of potash deposits or constitute a hazard to or unduly interfere with mining operations being conducted for the extraction of potash deposits.

The drilling or the abandonment of any well within the unit area shall be done in accordance with applicable oil and gas operating regulations including such requirements as the Supervisor may prescribe as necessary to prevent the infiltration of oil, gas, or water into formations containing potash deposits or into mines or workings being utilized in the extraction of such deposits. Upon failure to comply with the drilling provisions of this Section, the Director and the Commissioner may, after reasonable notice to the Unit Operator and each working interest owner, lessee, and lessor at their last known addresses declare this unit agreement terminated.

10. PLAN OF FURTHER DEVELOPMENT AND OPERATION. Within 6 months after completion of a well capable of producing unitized substances in paying quantities, the unit operator shall submit for the approval of the Supervisor, the Commissioner, and the Commission, an acceptable plan of development and

operation for the unitized land which, when approved by the Supervisor, the Commissioner, and the Commission, shall constitute the further drilling and operating obligations of the Unit Operator under this agreement for the period specified therein. Thereafter, from time to time before the expiration of any existing plan, the Unit Operator shall submit for the approval of the Supervisor, the Commissioner, and the Commission, a plan for an additional specified period for the development and operation of the unitized land. Any plan submitted pursuant to this section shall provide for the exploration of the unitized area and for the determination of the area or areas thereof capable of producing unitized substances in paying quantities in each and every productive formation and shall be as complete and adequate as the Supervisor, the Commissioner and the Commission may determine to be necessary for timely development and proper conservation of the oil and gas resources of the unitized area and shall (a) specify the number and locations of any wells to be drilled and the proposed order and time for such drilling; and (b) to the extent practicable specify the operating practices regarded as necessary and advisable for proper conservation of natural resources. Separate plans may be submitted for separate productive zones, subject to the approval of the Supervisor, the Commissioner and the Commission. Said plan or plans shall be modified or supplemented when necessary to meet changed conditions or to protect the interests of all parties to this agreement. Reasonable diligence shall be exercised in complying with the obligations of this approved plan of development. The Supervisor and Commissioner are authorized to grant a reasonable extension of the 6-month period herein prescribed for submission of an initial plan of development where such action is justified because of unusual conditions or circumstances. After completion hereunder of a well capable of producing any unitized substances in paying quantities no further wells, except such as may be necessary to afford protection against operations not under this agreement or such as may be specifically approved by the Supervisor and Commission shall be drilled except in accordance with a plan of development approved as herein provided.

11. PARTICIPATION AFTER DISCOVERY. Upon completion of a well capable of producing unitized substances in paying quantities or as soon thereafter

as required by the Supervisor or the Commissioner, the Unit Operator shall submit for approval by the Director, the Commissioner and the Commission a schedule, based on sub-divisions of the public-land survey or aliquot parts thereof, of all unitized land then regarded as reasonably proved to be productive of unitized substances in paying quantities; all land in said schedule on approval of the Director, the Commissioner and the Commission to constitute a participating area, effective as of the date of first production. Said schedule also shall set forth the percentage of unitized substances to be allocated as herein provided to each unitized tract in the participating area so established, and shall govern the allocation of production from and after the date the participating area becomes effective. A separate participating area shall be established in like manner for each separate pool or deposit of unitized substances or for any group thereof produced as a single pool or zone, and any two or more participating areas so established may be combined into one with the consent of the owners of all working interests in the lands within the participating areas so to be combined, on approval of the Director, the Commissioner and the Commission. The participating area or areas so established shall be revised from time to time, subject to like approval, whenever such action appears proper as a result of further drilling operations or otherwise, to include additional land then regarded as reasonably proved to be productive in paying quantities, and the percentage of allocation shall also be revised accordingly. The effective date of any revision shall be the first of the month in which is obtained the knowledge or information on which such revision is predicated, unless a more appropriate effective date is specified in the schedule. No land shall be excluded from a participating area on account of depletion of the unitized substances.

It is the intent of this section that a participating area shall represent the area known or reasonably estimated to be productive in paying quantities; but, regardless of any revision of the participating area, nothing herein contained shall be construed as requiring any retroactive adjustment for production obtained prior to the effective date or revision of the participating area.

In the absence of agreement at any time between the Unit Operator

and the Director, the Commissioner and the Commission as to the proper definition or redefinition of a participating area, or until a participating area has, or areas have, been established as provided herein, the portion of all payments affected thereby may be impounded in a manner mutually acceptable to the owners of working interests, except royalties due the United States and the State of New Mexico, which shall be determined by the Supervisor and the Commissioner, respectively, and the amount thereof deposited, as directed by the Supervisor and Commissioner, to be held as unearned money until a participating area is finally approved and then applied as earned or returned in accordance with a determination of the sum due as Federal and State royalty on the basis of such approved participating area.

Whenever it is determined, subject to the approval of the Supervisor, as to wells on Federal land, and Commissioner as to wells on State land, and the Commission as to wells on privately-owned land, that a well drilled under this agreement is not capable of production in paying quantities and inclusion of the land on which it is situated in a participating area is unwarranted, production from such well shall, for the purposes of settlement among all parties other than working interest owners, be allocated to the land on which the well is located so long as such land is not within a participating area established for the pool or deposit from which such production is obtained. Settlement for working interest benefits from such a well shall be made as provided in the unit operating agreement.

12. ALLOCATION OF PRODUCTION. All unitized substances produced from each participating area established under this agreement, except any part thereof used in conformity with good operating practices within the unitized area for drilling, operating, camp and other production or development purposes, for repressuring or recycling in accordance with a plan of development approved by the Supervisor, Commissioner and the Commission, or unavoidably lost, shall be deemed to be produced equally on an acreage basis from the several tracts of unitized land of the participating area established for such production, and, for the purpose of determining any benefits accruing under this agreement each such tract of unitized land shall have allocated to it such percentage of said production as the number of acres of such tract included in said participating area bears to

the total number of acres of unitized land in said participating area except that allocation of production hereunder for purposes other than for settlement of the royalty, overriding royalty, or payment out of production obligations of the respective working interest owners, shall be on the basis prescribed in the unit operating agreement whether in conformity with the basis of allocation herein set forth or otherwise. It is hereby agreed that production of unitized substances from a participating area shall be allocated as provided herein regardless of whether any wells are drilled on any particular part or tract of said participating area. If any gas produced from one participating area is used for repressuring or recycling purposes in another participating area, the first gas withdrawn from such last mentioned participating area for sale during the life of this agreement shall be considered to be the gas so transferred until an amount equal to that transferred shall be so produced for sale and such gas shall be allocated to the participating area from which initially produced as constituted at the time of such final production.

13. DEVELOPMENT OR OPERATION OF NON-PARTICIPATING LAND OR FORMATIONS. Any party hereto owning or controlling the working interest in any unitized land having thereon a regular well location may with the approval of the Supervisor as to Federal land, the Commissioner as to State land, and the Commission as to privately owned land, at such party's sole risk, cost and expense, drill a well to test any formation for which a participating area has not been established or to test any formation for which a participating area has been established if such location is not within said participating area, unless within 90 days of receipt of notice from said party of his intention to drill the well the Unit Operator elects and commences to drill such well in like manner as other wells are drilled by the Unit Operator under this agreement.

If any well drilled as aforesaid by a Working Interest Owner results in production such that the land upon which it is situated may properly be included in a participating area, such participating area shall be established or enlarged as provided in this agreement and the well shall thereafter be operated by Unit Operator in accordance with the terms of this

agreement and the unit operating agreement.

If any well drilled as aforesaid by a working interest owner obtains production in quantities insufficient to justify the inclusion in a participating area of the land upon which such well is situated, such well may be operated and produced by the party drilling the same subject to the conservation requirements of this agreement. The royalties in amount or value of production from any such well shall be paid as specified in the underlying lease and agreements affected.

14. ROYALTY SETTLEMENT. The United States and the State of New Mexico and all royalty owners who, under existing contract, are entitled to take in kind a share of the substances now unitized hereunder produced from any tract, shall hereafter be entitled to the right to take in kind their share of the unitized substances allocated to such tract, and Unit Operator, or in case of the operation of a well by a working interest owner as herein in special cases provided for, such working interest owner shall make deliveries of such royalty share taken in kind in conformity with the applicable contracts, laws and regulations. Settlement for royalty interests not taken in kind shall be made by working interest owners responsible therefor under existing contracts, laws, and regulations, on or before the last day of each month for unitized substances produced during the preceding calendar month; provided, however, that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any royalties due under their leases.

If gas obtained from lands not subject to this agreement is introduced into any participating area hereunder, for use in repressuring, stimulation of production, or increasing ultimate recovery, which shall be in conformity with a plan first approved by the Supervisor, the Commissioner and the Commission, a like amount of gas, after settlement as herein provided for any gas transferred from any other participating area, and with due allowance for loss or depletion 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 at such time as may be provided in the plan of operations or as may otherwise be consented to by the Supervisor, the Commissioner, and the Commission as conforming to good petroleum engineering practice, and provided further, that such right of withdrawal shall terminate on the termination of this unit agreement.

Royalty due the United States shall be computed as provided in the operating regulations and paid in value or delivered in kind as to all unitized substances on the basis of the amounts thereof allocated to unitized Federal land as provided herein at the rates specified in the respective Federal leases, or at such lower rate or rates as may be authorized by law or regulation; provided, that for leases on which the royalty rate depends on the daily average production per well, said average production shall be determined in accordance with the operating regulations as though each participating area were a single consolidated lease.

Royalty due on account of State and privately-owned lands shall be computed and paid on the basis of all unitized substances allocated to such lands.

15. RENTAL SETTLEMENT. Rentals or minimum royalties 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 or minimum royalty in lieu thereof due under their leases. Rental or minimum royalty for lands of the United States subject to this agreement shall be paid at the rate specified in the respective leases from the United States, unless such rental or minimum royalty is waived, suspended, or reduced by law or by approval of the Secretary or his duly authorized representative.

With respect to any lease on non-Federal land containing provisions which would terminate such lease unless drilling operations were within the time therein specified commenced upon the land covered thereby or rentals paid for the privilege of deferring such drilling operations,

the rentals required thereby shall, notwithstanding any other provision of this agreement, be deemed to accrue and become payable during the term thereof as extended by this agreement, and until the required drilling operations are commenced upon the land covered thereby or some portion of such land is included within a participating area.

16. RIGHTS OF WORKING INTEREST OWNERS IN UNITIZED SUBSTANCES.

Notwithstanding any provision contained herein to the contrary, each working interest owner shall have the right to take such owner's proportionate share of the unitized substances in kind or to personally sell or dispose of the same, and nothing herein contained shall be construed as giving or granting to the Unit Operator the right to sell or otherwise dispose of the proportionate share of any working interest owner without specific authorization from time to time so to do.

Any working interest owner who takes its share of the unitized substances in kind shall pay or secure the payment of the royalty on its interest and furnish at its own expense all tankage and other equipment necessary for taking said unitized substances in kind and shall also pay any other additional expenses of Unit Operator occasioned thereby. Likewise, any royalty owners who under existing contracts are entitled to take their share of the unitized substances in kind shall furnish at their own expense all equipment necessary in connection therewith, and shall reimburse Unit Operator for all expenses incurred on account thereof; provided, that as to Federal lands such expense, equipment and storage of royalty oil taken in kind shall be assumed and furnished pursuant to the provisions of the Federal leases involved.

17. CONSERVATION. Operations hereunder and production of unitized substances shall be conducted to provide for the most economical and efficient recovery of said substances without waste, as defined by or pursuant to State or Federal law or regulations.

18. DRAINAGE. The Unit Operator shall take appropriate and adequate measures to prevent drainage of unitized substances from unitized land by wells on land not subject to this agreement or pursuant to applicable regulations pay a fair and reasonable compensatory royalty as determined by the Supervisor for Federal land, or as approved by the Commissioner as to State land, or as determined by agreement between the Unit Operator and the royalty owner as to fee land.

19. 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 or gas of 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 Secretary and the Commissioner, respectively, shall and by their approval hereof, or by the approval hereof by their duly authorized representatives do hereby establish, alter, change or revoke the drilling, producing, rental, minimum royalty, and royalty requirements of Federal and 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 subject to this agreement, regardless of whether there is any development of any particular part or tract of the unit area, 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 lands will be accepted and deemed to be performed upon and for the benefit of each and every tract of unitized land, and no Federal or State lease shall be deemed to expire by reason of failure to drill or produce wells situated on land therein embraced.

(c) Suspension of drilling or producing operations on all unitized lands pursuant to direction or consent of the Secretary and Commissioner, or their duly authorized representatives shall be deemed to constitute such suspension pursuant to such direction or consent as to each and every tract of unitized lands.

(d) Each lease, sublease or contract relating to the exploration, drilling, development or operation for oil or gas of lands other than those of the United States and the State of New Mexico committed to this agreement 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, provided, however, each such lease, sublease or contract shall only be extended in the event unitized substances are capable of being produced from some part of the lands committed to this agreement prior to the expiration of the primary term of such lease, sublease or contract. Termination of this agreement shall not affect any lease which pursuant to the terms thereof or applicable law shall continue in full force and effect thereafter.

(e) Any Federal lease for a fixed term of twenty (20) years or any renewal thereof or any part of such lease which is made subject to this agreement shall continue in force beyond the term provided therein until the termination hereof. Any other Federal lease committed hereto shall continue in force beyond the term so provided therein or by law as to the committed land so long as such land remains committed hereto, provided unitized substances are discovered in paying quantities within the unit area prior to the expiration date of the primary term of such lease.

(f) Each sublease or contract relating to the operation and development of unitized substances from lands of the United States committed to this agreement, which by its terms would expire prior to the time at which the underlying lease, as extended by the immediately preceding paragraph, will expire, 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 the underlying lease as such term is herein extended.

(g) Any lease having only a portion of its lands committed hereto shall be segregated as to the portion committed and the portion not committed, and the terms of such lease shall apply separately to such segregated portions commencing as of the effective date hereof. In the event any such lease provides for a lump-sum rental payment, such payment shall be prorated between the portions so segregated in proportion to the acreage of the respective tracts.

20. MAPS AND SURVEYS. Well records and survey plats that an oil and gas lessee or Unit Operator must file, pursuant to applicable operating regulations, shall be available for inspection at the office of the Supervisor as to all lands of the United States and at the office of the Commissioner and Commission as to State and privately owned lands, to any party holding a potash permit or lease on the land upon which the well is situated insofar as such records are pertinent to the mining and protection of potash deposits.

21. COVENANTS RUN WITH LAND. The covenants herein shall be construed to be covenants running with the land with respect to the interest of the parties hereto and their successors in interest until this agreement terminates, and any grant, transfer, or conveyance of interest in land or leases subject hereto shall be and hereby is conditioned upon the assumption of all privileges and obligations hereunder by the grantee, transferee, or other successor in interest. No assignment or transfer of any working interest, royalty, or other interest subject hereto shall be binding upon

Unit Operator until the first day of the calendar month after Unit Operator is furnished with the original, photostatic, or certified copy of the instrument of transfer.

22. EFFECTIVE DATE AND TERM. This agreement shall become effective upon approval by the Secretary or his duly authorized representative and shall terminate five years after such date unless (a) such date of expiration is extended by the Director and Commissioner, or (b) it is reasonably determined prior to the expiration of the fixed term or any extension thereof that the unitized land is incapable of production of unitized substances in paying quantities in the formation tested hereunder and after notice of intention to terminate the agreement on such ground is given by the Unit Operator to all parties in interest at their last known addresses, the agreement is terminated with the approval of the Director and Commissioner, or (c) a valuable discovery of unitized substances has been made on unitized land during said initial term or any extension thereof, in which event the agreement shall remain in effect for such term and so long as unitized substances can be produced in paying quantities, i.e., in this particular instance in quantities sufficient to pay for the cost of producing the same from wells on unitized land within any participating area established hereunder, and should production cease, so long thereafter as diligent operations are in progress for the restoration of production or discovery of new production and so long thereafter as the unitized substances so discovered can be produced as aforesaid, or (d) it is terminated as heretofore provided in this agreement.

This agreement may be terminated at any time by not less than 75 per centum, on an acreage basis, of the owners of working interests signatory hereto, with the approval of the Director; notice of any such approval to be given by the Unit Operator to all parties hereto.

23. RATE OF PROSPECTING, DEVELOPMENT, AND PRODUCTION. The Director is hereby vested with authority to alter or modify from time to

time, in his discretion, the quantity and rate of production under this agreement, when such quantity and rate is not fixed pursuant to Federal or State law or does not conform to any state-wide voluntary conservation or allocation program, which is established, recognized, and generally adhered to by the majority of operators in such State, such authority being hereby limited to alteration or modification in the public interest, the purpose thereof and the public interest to be served thereby to be stated in the order of alteration or modification. Without regard to the foregoing, the Director is also hereby vested with authority to alter or modify from time to time in his discretion the rate of prospecting and development and the quantity and rate of production under this agreement when such alteration or modification is in the interest of attaining the conservation objectives stated in this agreement and is not in violation of any applicable Federal or State law; provided, however, that no such alteration or modification shall be effective as to any land of the State of New Mexico as to the rate of prospecting and development in the absence of the specific written approval thereof by the Commissioner and as to any lands of the State of New Mexico or privately-owned lands subject to this agreement as to the quantity and rate of production in the absence of specific written approval thereof by the Commission.

Powers in this section vested in the Director shall only be exercised after notice to Unit Operator and opportunity for hearing to be held not less than 15 days from notice.

24. CONFLICT OF SUPERVISION. Neither the Unit Operator nor the working interest owners nor 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 provision 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 failure of the Unit Operator to obtain, in the exercise of due diligence, the concurrence of proper representatives of the United States and proper representatives of the State of New Mexico in and about any matters or thing concerning which it is required herein that such concurrence be obtained.

25. 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 Department of the Interior, the Commissioner of Public Lands and the New Mexico Oil Conservation Commission and to appeal from orders issued under the regulations of said Department, the Commissioner or Commission, or to apply for relief from any of said regulations or in any proceedings relative to operations before the Department of the Interior, the Commissioner or Commission, or any other legally constituted authority; provided, however, that any other interested party shall also have the right at his own expense to be heard in any such proceeding.

26. NOTICES. All notices, demands or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if given in writing and personally delivered to the party or sent by postpaid registered mail, addressed to such 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.

27. 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 wherein said unitized lands are located, or of the United States, 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.

28. UNAVOIDABLE DELAY. All obligations under this agreement requiring the Unit Operator to commence or continue drilling or to operate on or produce unitized substances from any of the lands covered by this agreement shall be suspended while, but only so long as the Unit Operator despite the exercise of due care and diligence is prevented from complying with such obligations, in whole or in part, by strikes, acts of God, Federal, State, or municipal law or agencies, unavoidable accident, uncontrollable delays in transportation, inability to obtain necessary materials in open market, or other matters beyond the reasonable control of the Unit Operator whether similar to matters herein enumerated or not.

29. FAIR EMPLOYMENT. The Unit Operator shall not discriminate against any employee or applicant for employment because of race, creed, color, or national origin, and an identical provision shall be incorporated in all sub-contracts.

30. LOSS OF TITLE. In the event title to any tract of unitized land shall fail and the true owner cannot be induced to join this unit agreement, such tract shall be automatically regarded as not committed hereto and there shall be such readjustment of future costs and benefits as may be required on account of the loss of such title. In the event of a dispute as to title as to any royalty, working interest, or other interests subject thereto, payment or delivery on account thereof may be withheld without liability for interest until the dispute is finally settled; provided, that as to Federal and State land or leases, no payments of funds due the United States or the State of New Mexico should be withheld, but such funds shall be deposited as directed by the Supervisor, and with the Commissioner of Public Lands of the State of New Mexico, 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.

Unit Operator as such is relieved from any responsibility for any defect or failure of any title hereunder.

31. NON-JOINDER AND SUBSEQUENT JOINDER. If the owner of any substantial interest in a tract within the unit area fails or refuses to subscribe or consent to this agreement, the owner of the working interest in that tract may withdraw said tract from this agreement by written notice to the Director, Commissioner and the Unit Operator prior to the approval of this agreement by the Director. Any oil or gas interests in lands within the unit area not committed hereto prior to submission of this agreement for final approval may thereafter be committed hereto by the owner or owners thereof subscribing or consenting to this agreement, and if the interest is a working interest, by the owner of such interest also subscribing to the Unit Operating Agreement. After operations are commenced hereunder, the right of subsequent joinder, as provided in this section, by a working interest owner is subject to such requirements or approvals, if any, pertaining to such joinder, as may be provided for in the Unit Operating Agreement. After final approval hereof joinder by a non-working interest owner must be consented to in writing by the working interest owner committed hereto and responsible for the payment of any benefits that may accrue hereunder in behalf of such non-working interest. Prior to final approval hereof, joinder by any owner of a non-working interest must be accompanied by appropriate joinder by the owner of the corresponding working interest in order for the interest to be regarded as effectively committed hereto. Except as may otherwise herein be provided, subsequent joinders to this Agreement shall be effective as of the first day of the month following the filing with the Supervisor, the Commissioner and the Commission of duly executed counterparts of all or any papers necessary to establish effective commitment of any tract to this agreement unless objection to such joinder is duly made within 60 days by the Director, Commissioner or Commission.

32. COUNTERPARTS. This agreement may be executed in any number of counterparts no one of which needs to be executed by all parties or may be ratified or consented to by separate instrument in writing specifically referring hereto and shall be binding upon all those parties who have executed such a counterpart, ratification, or consent hereto with the same force and effect as if all such parties had signed the same document and regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands within the above described unit area.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed and have set opposite their respective names the date of execution.

RICHARDSON & BASS, a Co-partnership

Date _____

By _____

Address _____

UNIT OPERATOR AND
WORKING INTEREST OWNER

WORKING INTEREST OWNERS

Millie Bradley
O E Bradley

Address: 1115 Billing Bldg
Indian Harb

Date 6-27-1952

ATTEST:

S B Robinson
Assistant Secretary

Address: Kerr-McGee Bldg
Oklahoma City, Okla

Date 9-17-52

KERR-McGEE OIL INDUSTRIES, INC.

By J C Love
Vice-President

Attn
P 89
68

Address: _____

Date _____

Address: _____

Date _____

Address _____

Date _____

Address _____

Date _____

STATE OF Kansas }
COUNTY OF Adair } SS

On this 27th day of June, 1952, before me personally appeared O. E. Bradley & Millie Bradley, his wife to me personally known to be the person s described in and who executed the foregoing instrument, and acknowledged that They executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year in this certificate above written.

My Commission Expires:
12-22-54

Jane E. Macaulay
Notary Public

STATE OF _____ }
COUNTY OF _____ } SS

On this _____ day of _____, 195__, before me personally appeared _____ to me personally known to be the person _____ described in and who executed the foregoing instrument, and acknowledged that he executed the same as _____ free act and deed.

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

My Commission Expires:

Notary Public

STATE OF _____)
COUNTY OF _____) SS

On this _____ day of _____, 195__, before me personally appeared _____ to me personally known to be the person _____ described in and who executed the foregoing instrument and acknowledged that he executed the same as _____ free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year in this certificate last above written.

My Commission Expires:

Notary Public

STATE OF _____)
COUNTY OF _____) SS

On this _____ day of _____, 195__, before me personally appeared _____ to me personally known to be the person _____ described in and who executed the foregoing instrument and acknowledged that he executed the same as _____ free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year in this certificate last above written.

My Commission Expires:

Notary Public

STATE OF _____)
COUNTY OF _____) SS

On this _____ day of _____, 195__, before me personally appeared _____ to me personally known who being by me duly sworn, did say that he is the _____ President of _____ 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 _____ 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 official seal on this the day and year last above written.

My Commission Expires:

Notary Public

STATE OF Oklahoma)
COUNTY OF Oklahoma) SS

On this 17 day of September, 1952, before me personally appeared F. C. Love to me personally known who being by me duly sworn did say that he is the Vice President of Kerr-McGee Oil Industries, Inc. 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 F. C. Love 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 official seal on this the day and year last above written.

My Commission Expires: October 19, 1952

Lucile Gorden
Notary Public
Lucile Gorden

STATE OF _____)
COUNTY OF _____) SS

On this _____ day of _____, 195__, before me personally appeared _____ to me personally known who being by me duly sworn did say that he is the _____ President of _____ 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 _____ 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 official seal on this the day and year last above written.

My Commission Expires:

Notary Public

CERTIFICATE OF APPROVAL
BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO, OF UNIT
AGREEMENT FOR DEVELOPMENT AND OPERATION OF BIG EDDY UNIT AREA
EDDY AND LEA COUNTIES, NEW MEXICO

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, an agreement for the development and operation of the Big Eddy Unit Area, Eddy and Lea Counties, New Mexico dated _____ day of _____, 195____ in which Richardson and Bass, a Co-Partnership, is designated as Operator, and which has been executed by various parties owning and holding oil and gas leases embracing lands within the Unit Area 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 field;
- (b) That under the operations proposed, the State will receive its fair share of the recoverable oil or gas in place under its land in the area affected;
- (c) That the agreement is in other respects for the best interest of the State;
- (d) That the agreement provides for the unit operation of the field, for the allocation of production, and the sharing of proceeds from a part of the area covered by the agreement on an acreage basis as specified in the agreement.

NOW, THEREFORE, by virtue of the authority conferred upon me by Chapter 88 of the Laws of the State of New Mexico, 1943, approved April 14, 1943, I, 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, as to the lands of the State of New Mexico included in said Big Eddy Unit Agreement, and subject to all of the provisions of the aforesaid Chapter 88 of the Laws of the State of New Mexico, 1943.

EXECUTED this _____ day of _____, 195_____.

Commissioner of Public Lands
of the State of New Mexico

CERTIFICATION _ DETERMINATION

Pursuant to the authority vested in the Secretary of the Interior, under the Act approved February 25, 1920, 41 Stat. 437, 30 U.S.C. Secs. 181, et seq., as amended by the Act of August 8, 1946, 60 Stat. 950, and delegated to the Director of the Geological Survey pursuant to Departmental Order 2365 of October 8, 1947, 43 C.F.R. Sec. 4.611, 12 F.R. 6784, I do hereby:

A. Approve the attached agreement for the development and operation of the Big Eddy Unit Area, State of New Mexico.

B. Certify and determine that the unit plan of development and operation set forth in the attached agreement is necessary and advisable in the public interest and is for the purpose of more properly conserving the natural resources.

C. Certify and determine that the drilling, producing, rental, minimum royalty, and royalty requirements of all Federal leases committed to said agreement are hereby established, altered, changed, or revoked to conform with the terms and conditions of this agreement.

Director, United States
Geological Survey

Dated _____

EXHIBIT "B"
BIG EDDY UNIT AREA, EDDY & LEA COUNTIES, NEW MEXICO
TWPS. 19, 20, 21, 22 and 23, S., Rges. 28, 29, 30, 31 and 32 E., N.M.P.M.

SCHEDULE SHOWING THE PERCENTAGE AND KIND OF OWNERSHIP OF OIL AND GAS
INTERESTS IN ALL LANDS IN THE UNIT AREA

Tract No.	Description of Land	No. of Acres	Application or Ser. No. & Effective date	Basic Royalty & Percentage	Lessee of Record	Overriding Royalty & Percentage	Working Interest & Percentage
FEDERAL LAND							
1.	<u>T-20S, R-31-E</u> Sec. 5: SW $\frac{1}{4}$ Sec. 6: SE $\frac{1}{4}$ Sec. 7: E $\frac{1}{2}$ Sec. 8: All Sec. 9: W $\frac{1}{2}$	1600	NM 0251 7-1-52	USA-All	Bertrand O. Baetz	Bertrand O. Baetz Obligation \$500 per acre out of 3% of production	S. W. Richardson & Perry R. Bass
2-a	<u>T-21-S, R-30-E</u> Sec. 3: Lots 1, 2, 7, 8, 9, 10, 15 & 16, SE $\frac{1}{4}$	471.70	NM 0299 7-1-51	USA-All	Thelma L. Rhodes	Thelma L. Rhodes	S. W. Richardson & Perry R. Bass
2-b	<u>T-21-S, R-30-E</u> Sec. 14: SW $\frac{1}{4}$ NE $\frac{1}{4}$	40	NM 0299 7-1-51	USA-All	Thelma L. Rhodes	None	O. E. Bradley
3.	<u>T-21-S, R-28-E</u> Secs. 21, 22, 27 & 28: All	2560	NM 0486 11-1-51	USA-All	Jerry Curtis	Jerry Curtis	S. W. Richardson & Perry R. Bass
4.	<u>T-21-S, R-29-E</u> Sec. 8: NW $\frac{1}{4}$ Sec. 10: W $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$	400	NM 0505 2--1-50	USA-All	Marian D. Harris	Marian D. Harris	S. W. Richardson & Perry R. Bass
5.	<u>T-21-S, R-29-E</u> Sec. 8: SW $\frac{1}{4}$ Sec. 17: NW $\frac{1}{4}$, SE $\frac{1}{4}$ Sec. 20: SW $\frac{1}{4}$	640	NM 0509 2-1-50	USA-All	Marian D. Harris	Marian D. Harris	S. W. Richardson & Perry R. Bass
6.	<u>T-20-S, R-31-E</u> Sec. 11: NW $\frac{1}{4}$	160	NM 0783 6-1-50	USA-All	E. A. Culbertson Wallace W. Irwin Malco Ref. Inc. Culbertson & Irwin	1/8 1/8 1/4 1/4	Any McNutt 1.875% 1/4 1/4

7.	<u>T-21-S, R-29-E</u> Sec. 22: S $\frac{1}{2}$, S $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 23: S $\frac{1}{2}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ Sec. 24: S $\frac{1}{2}$, S $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 25: All Sec. 26: N $\frac{1}{2}$, SE $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$	2560	NM 0915	USA-A11	E. J. Shepard	Ralph M $\frac{1}{2}$ x D. E. Kester & wife, Mattie Lou Kester, Obligation \$10 per acre out of 6.25% production	2%	S. W. Richardson & Perry R. Bass
8.	<u>T-20-S, R-31-E</u> Sec. 20: N $\frac{1}{2}$	320	NM 01083	USA-A11	E. A. Culbertson Wallace W. Irwin Culbertson & Irwin, Inc. $\frac{1}{2}$ $\frac{1}{4}$	The Nordon Oil Corp.	2%	E. A. Culbertson & Wallace W. Irwin $\frac{1}{2}$ Culbertson & Irwin, Inc. $\frac{1}{2}$
9.	<u>T-20-S, R-31-E</u> Sec. 11: E $\frac{1}{2}$, SW $\frac{1}{4}$	480	NM 01084	USA-A11	E. A. Culbertson Wallace W. Irwin Culbertson & Irwin Fred Turner, Jr. $\frac{1}{4}$ $\frac{1}{2}$	Amy McNutt	1.875%	Fred Turner, Jr. $\frac{1}{2}$ Culbertson & Irwin $\frac{1}{4}$ E. A. Culbertson & Wallace W. Irwin $\frac{1}{4}$
10.	<u>T-21-S, R-28-E</u> Sec. 31: W $\frac{1}{2}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 32: N $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 33: N $\frac{1}{2}$	600	NM 01148	USA-A11	Loneta S. Curtis	Lorraine A. Nelson & James C. Nelson Loneta S. Curtis	3% 2%	S. W. Richardson & Perry R. Bass
11-a	<u>T-20-S, R-31-E</u> Sec. 20: SW $\frac{1}{4}$	160	NM 01189	USA-A11	Marian Condrey Welch & Van S. Welch, Trustee of the Estates of Wendell Condrey Welch, Thomas Flynn Welch & Phoebe Jane Welch	None		Marian Condrey Welch & Van S. Welch, Trustee
11-b	<u>T-20-S, R-31-E</u> Sec. 19: E $\frac{1}{2}$ Sec. 20: SE $\frac{1}{4}$	480	NM 01189	USA-A11	Marian Condrey Welch & Van S. Welch, Trustee of Estates of Wendell Condrey Welch, Thomas Flynn Welch & Phoebe Jane Welch	Robert B. R $\frac{1}{2}$ wa Joe S. Mellard V. E. Cottingham Marian Condrey Welch & Van S. Welch, Trustee of Estates of Wendell Condrey Welch, Thomas Flynn Welch % Phoebe Jane Welch	.25% .25% .25%	S. W. Richardson & Perry R. Bass
12.	<u>T-20-S, R-32-E</u> Sec. 7: Lots 1, 2, 3, 4, E $\frac{1}{2}$ W $\frac{1}{2}$, E $\frac{1}{2}$ Sec. 8: W $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 17: All Sec. 18: Lots 1, 2, 3, 4, E $\frac{1}{2}$ W $\frac{1}{2}$, E $\frac{1}{2}$	2075.40	NM 01206	USA-A11	W. E. Bondurant, Jr.	W. E. Bondurant, Jr. Obligation \$500 per acre out of 3% of production		S. W. Richardson & Perry R. Bass
13.	<u>T-20-S, R-28-E</u> Sec. 3: Lots 1, 2 (N $\frac{1}{2}$ NE $\frac{1}{4}$)	80.37	NM 01353	USA-A11	John D. Meredith	John D. Meredith	3%	S. W. Richardson & Perry R. Bass
14.	<u>T-20-S, R-31-E</u> Sec. 3: SE $\frac{1}{4}$	160	NM 01877	USA-A11	Culbertson & Irwin, Inc. $\frac{1}{2}$ Malco Ref., Inc. $\frac{1}{2}$	The Texas Company Amy Meredith	3.125% 1.875%	E. A. Culbertson & Wallace W. Irwin $\frac{1}{4}$ Culbertson & Irwin, Inc. $\frac{1}{4}$ Malco Ref., Inc. $\frac{1}{2}$

15.	<u>T-21-S, R-28-E</u> Sec. 15; NE $\frac{1}{4}$ NW $\frac{1}{4}$	80	NM 01960	USA-All	F. P. Schuster S. A. Schuster C. S. Messinger	F. P. Schuster, S. A. Schuster C. S. Messinger	5%	S. W. Richardson & Perry R. Bass
16.	<u>T-20-S, R-31-E</u> Secs. 34 and 35; All	1280	NM 02045	USA-All	Vilas P. Sheldon *	B. E. Spencer & wife, Elsie M. Spencer Vilas P. Sheldon & wife, Della Sheldon, until \$50 per acre received out of Sun-Tex. Petr. Co.	1.5% 3.125%	S. W. Richardson & Perry R. Bass
17.	<u>T-19S, R-31-E</u> Sec. 27; SE $\frac{1}{4}$ Sec. 34; E $\frac{1}{2}$; NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 35; All	1360	NM 02447	USA-All	Sun-Tex Petr. Co.		5%	S. W. Richardson & Perry R. Bass
18.	<u>T-21-S, R-28-E.</u> Sec. 5; SE $\frac{1}{4}$	160	NM 02536	USA-All	Leland J. Price	Leland J. Price	3%	S. W. Richardson & Perry R. Bass
19.	<u>T-21-S, R-31-E</u> Sec. 8; SE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$	120	NM 02627	USA-All	Wilshire Oil Company	Magdalene Childers Markham	1.5%	Wilshire Oil Company
20.	<u>T-21-S, R-31-E</u> Sec. 5; Lots 12, 13, 14, 15, 16; SE $\frac{1}{4}$ Sec. 8; NE $\frac{1}{4}$ NW $\frac{1}{4}$ E $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$	920	NM 02628	USA-All	Magdalene Markham	Magdalene Childers Markham	3%	S. W. Richardson & Perry R. Bass
21.	<u>T-21-S, R-29-E</u> Sec. 10; NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 8; NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 17; NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 20; NW $\frac{1}{4}$	800	NM 02918	USA-All	Jo Rodke	Josephine Rodke Marian D. Harris	1% 2%	S. W. Richardson & Perry R. Bass
22.	<u>T-21-S, R-29-E</u> Sec. 20; NE $\frac{1}{4}$ NW $\frac{1}{4}$	160	NM 02922	USA-All	Joe W. Lackey	Joe W. Lackey Marian D. Harris	2% 2%	S. W. Richardson & Perry R. Bass
23.	<u>T-21-S, R-29E</u> Sec. 8; SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 10; E $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$	400	NM 02946	USA-All	Frances Nix	Marian D. Harris Frances Nix	2% 1%	S. W. Richardson & Perry R. Bass
24.	<u>T-21-S, R-30-E</u> Sec. 15; NE $\frac{1}{4}$ NW $\frac{1}{4}$	160	NM 02977	USA-All	I. W. Boemorth	Leverge Harris I. W. Boemorth	1% 2%	S. W. Richardson & Perry R. Bass

25.	<u>T-21-S, R-30-E</u> Sec. 15: NW $\frac{1}{2}$	320	NM 02978 10-1-48	USA-All	Wilshire Oil Co.	Laverge Harris	1%	Wilshire Oil Co.
26.	<u>T-21-S, R-30-E</u> Sec. 10: SE $\frac{1}{4}$	160	NM 02979 10-1-48	USA-All	Eugene H. Perry	Laverge Harris	1%	S. W. Richardson & Perry R. Bass
27.	<u>T-21-S, R-30-E</u> Sec. 10: NE $\frac{1}{4}$	160	NM 02980 10-1-48	USA-All	Eugene H. Perry	Laverge Harris	1%	S. W. Richardson & Perry R. Bass
28.	<u>T-21-S, R-31-E</u> Sec. 6: Lots 9, 10, 15, 16	160	NM 03057 9-1-48	USA-All	Eugene H. Perry	William R. Thompson	1%	S. W. Richardson & Perry R. Bass
29.	<u>T-21-S, R-31-E</u> Sec. 6: Lots 11, 12, 13, 14	156.39	NM 03059 9-1-48	USA-All	Eugene H. Perry	William R. Thompson	1%	S. W. Richardson & Perry R. Bass
30.	<u>T-21-S, R-31-E</u> Sec. 3: Lots 3, 4, 5, 6, Sec. 4: Lots 3, 4, 5, 6	329.04	NM 03183 3-1-52	USA-All	Mary Didlake	Mary Didlake, Obligation \$500 per acre out of 3% of production		S. W. Richardson & Perry R. Bass
31.	<u>T-21-S, R-29-E</u> Sec. 21: NW $\frac{1}{2}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 33: E $\frac{1}{2}$ NE $\frac{1}{4}$	320	NM 03205 2-1-50	USA-All	Ralph Nix	John S. Harris Ralph Nix	2% 1%	S. W. Richardson & Perry R. Bass
32.	<u>T-21-S, R-30-E</u> Sec. 29: NW $\frac{1}{2}$ SE $\frac{1}{4}$, NW $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$	600	NM 03297 4-1-52	USA-All	Lucy M. English	Lucy English	3%	S. W. Richardson & Perry R. Bass
33.	<u>T-22-S, R-29-E</u> Sec. 5: Lots 1, 2, 3, 4, SE $\frac{1}{2}$ NE $\frac{1}{2}$ Sec. 6: Lots 1, 2, 3, 4, E $\frac{1}{2}$ NE $\frac{1}{2}$, NE $\frac{1}{4}$ Sec. 7: Lots 1, 2, 3, 4, E $\frac{1}{2}$ NE $\frac{1}{2}$ Sec. 18: Lots 1, 2, 3, 4, E $\frac{1}{2}$ NE $\frac{1}{2}$	1440.60	NM 03302 9-1-51	USA-All	Buck Russell	Buck Russell	3%	S. W. Richardson & Perry R. Bass
34.	<u>T-21-S, R-29-E</u> Sec. 21: SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$	80	NM 03364 2-1-50	USA-All	Joe W. Lackey	John S. Harris Joe W. Lackey	2% 2%	S. W. Richardson & Perry R. Bass
35.	<u>T-21-S, R-28-E</u> Sec. 3: Lots 1, 2, 7, 8, 9, 10, 11	253.96	NM 03926 6-1-52	USA-All	M. E. Chappell	None		S. W. Richardson & Perry R. Bass

36.	<u>T-20-S, R-31-E</u> Sec. 17: E $\frac{1}{2}$, E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 21: W $\frac{1}{2}$, W $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 27: NW $\frac{1}{4}$	1040	NM 04082 12-1-51	USA-A11	Victor B. Vanhook	Victor B. Vanhook	3.125%	S. W. Richardson & Perry R. Bass
37.	<u>T-21-S, R-30-E</u> Sec. 19: Lots 5, 6, 7, 8 Sec. 20: S $\frac{1}{2}$ SE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 29: SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 30: All Sec. 23: SE $\frac{1}{4}$	1197.71	NM 04105 3-1-52	USA-A11	W. R. Seltzer	None		S. W. Richardson & Perry R. Bass
38.	<u>T-21-S, R-29-E</u> Sec. 20: SE $\frac{1}{4}$	160	NM 04228 2-1-50	USA-A11	Marian Blomberg	Marian D. Harris Marian Blomberg	2% 1%	S. W. Richardson & Perry R. Bass
39.	<u>T-21-S, R-31-E</u> Sec. 3: Lots 1, 2, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Sec. 4: Lots 1, 2, 7, 8, 11, 12, 13, 14, SW $\frac{1}{4}$ Sec. 9: E $\frac{1}{2}$, SW $\frac{1}{4}$	1449.20	NM 04383 7-1-52	USA-A11	Manley O. VanOrsdol	Manley O. Van Orsdol	3%	S. W. Richardson & Perry R. Bass
40.	<u>T-20-S, R-31-E</u> Sec. 3: Lot 4, SW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 4: Lots 1, 2, 3, SE $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$	552.10	NM 04557 8-1-52	USA-A11	Mrs. Frances Price	Frances M. Price Obligation \$500 per acre out of 3% of production		S. W. Richardson & Perry R. Bass
41.	<u>T-21-S, R-31-E</u> Sec. 4: Lots 9, 10, 15, 16, SE $\frac{1}{4}$	320	NM 04835 6-1-52	USA-A11	Elizabeth Ann Elliott	Elizabeth Ann Elliott	3%	S. W. Richardson & Perry R. Bass
42.	<u>T-21-S, R-28-E</u> Sec. 3: Lots 14 & 15	80	NM 05214 6-1-51	USA-A11	Elizabeth Ann Elliott	Elizabeth Ann Elliott	5%	S. W. Richardson & Perry R. Bass
43.	<u>T-21-S, R-28-E</u> Sec. 12: SW $\frac{1}{4}$	160	NM 05965 8-1-51	USA-A11	Maurine Barnett	Maurine Barnett	3%	S. W. Richardson & Perry R. Bass

44.	<u>T-21-S-R-28-E</u> Sec. 8: <u>SW¹</u> , SE ¹ Sec. 17: <u>NW¹NE¹</u> , NW ¹ Sec. 18: <u>E¹</u> , Lots 3,4, <u>E¹SW¹</u> Sec. 19: <u>E¹</u> , <u>E¹W¹</u> Sec. 20: <u>E¹</u> , <u>SW¹</u> , <u>SW¹NE¹</u> Sec. 30: Lots 1,2,3, <u>E¹W¹</u> , <u>E¹</u>	2553.61	LC 059365 5-1-50	USA-All	Ralph Nix	Ralph Nix	5%	S. W. Richardson & Perry R. Bass
45-a	<u>T-21-S-R-28-E</u> Sec. 3: Lots 3,6 Sec. 4: Lots 1,2,3,4,5,6, 7,8,9,10,11,12	494.38	LC 060515 9-1-50	USA-All	Ralph S. Trigg	Ralph S. Trigg	5%	S. W. Richardson & Perry R. Bass
45-b	<u>T-21-S-R-28-E</u> Sec. 5: Lot 4 Sec. 6: Lots 1,2,3	110.52	LC 060515 9-1-50	USA-All	Ralph S. Trigg	Ralph S. Trigg	6.25%	S. W. Richardson & Perry R. Bass
45-c	<u>T-21-S-R-28-E</u> Sec. 3: Lots 5, 12	80.00	LC 060515 9-1-50	USA-All	Ralph S. Trigg	None		Clint Ross
45-d	<u>T-21-S-R-28-E</u> Sec. 3: Lot 4	26.66	LC 060515 9-1-50	USA-All	Ralph S. Trigg	None		New Mexico Asphalt & Refining Co.
46-a	<u>T-21-S-R-28-E</u> Sec. 5: <u>SW¹</u> Sec. 6: Lots 14,15, <u>E¹SW¹</u> , SE ¹ Sec. 7: All Sec. 8: <u>N¹</u> , <u>N¹SW¹</u>	^{1520.80} 1000.00	LC 060572 9-1-50	USA-All	Blanche Trigg	Blanche Trigg	5%	S. W. Richardson & Perry R. Bass
46-b	<u>T-21-S-R-28-E</u> Sec. 5: Lots 1,2,3,5,6,7, 8,9,10,11,12,13,14,15,16 Sec. 6: Lots 4,5,6,7,8,9, 10,11,12,13,16	990.37	LC 060572 9-1-50	USA-All	Blanche Trigg	Blanche Trigg	6.25%	S. W. Richardson & Perry R. Bass
47.	<u>T-21-S-R-28-E</u> Sec. 4: Lots 1,2, <u>SW¹NE¹</u> , <u>SW¹</u> Sec. 5: Lots 2,3, <u>SW¹NE¹</u> <u>SW¹NE¹</u>, <u>SW¹</u> Sec. 6: Lots 1,2,3,5, <u>SW¹NE¹</u> Sec. 9: <u>NE¹</u> Sec. 10: <u>NE¹</u>	1156.51	LC 060613 9-1-48	USA-All	Lillie May Yates	Lillie May Yates	5%	S. W. Richardson & Perry R. Bass

48.	<u>T-22-S, R-23-E</u> Sec. 3: Lots 3, 4, S ¹ W ² , S ² Sec. 4: Lots 3, 4, S ² W ¹ , S ² Sec. 5: Lots 1, 4, S ¹ W ¹ , S ² W ¹ , S ² W ² , S ² W ³ , S ² Sec. 6: S ² W ¹ , S ² W ² , S ² W ³ Sec. 9: NE ¹ W ¹	1479.16	LC 060853 8-1-49	USA-A11	J. E. Metcalf	J. E. Metcalf	5%	S. W. Richardson & Perry R. Bass
49.	<u>T-22-S, R-28-E</u> Sec. 6: Lot 4 <u>T-21-S, R-28-E</u> Sec. 31: Lot 4, S ² W ¹ , W ² S ²	195.08	LC 061277 5-1-50	USA-A11	Martin Yates III	Martin Yates III	5%	S. W. Richardson & Perry R. Bass
50.	<u>T-21-S, R-29-E</u> Sec. 21: S ²	320	LC 061396 4-1-49	USA-A11	Edna Ione Hall	Edna Ione Hall	3%	S. W. Richardson & Perry R. Bass
51.	<u>T-21-S, R-31-E</u> Sec. 8: S ² W ¹	80	LC 061641 3-1-47	USA-A11	Eugene H. Perry	Magdalene Childers Markham	1.5%	S. W. Richardson & Perry R. Bass
52.	<u>T-21-S, R-31-E</u> Sec. 8: S ² W ¹	40	LC 062568 9-1-48	USA-A11	Esther Bosworth	William R. Thompson	1%	Esther Bosworth
53.	<u>T-21-S, R-29-E</u> Sec. 7: Lots 1, 2, 3, 4, E ¹ W ² , S ² Sec. 18: Lots 2, 3, 4, E ² W ¹ , NE ¹ W ¹ , E ² Sec. 19: Lots 1, 2, E ² W ¹ , NE ¹ Sec. 30: Lot 3, 4, E ² W ¹ , E ² Sec. 31: Lot 1, NE ¹ W ¹	1805.21	LC 062573 1-1-51	USA-A11	Helen E. Mapes	Helen E. Mapes	3%	S. W. Richardson & Perry R. Bass
54-a	<u>T-21-S, R-31-E</u> Sec. 7: Lots 1, 2, 3, 4, E ¹ W ² , NE ¹ W ¹ , S ² W ¹	434.24	LC 062727 1-1-51	USA-A11	Gladys H. Hunter	Gladys H. Hunter	3%	S. W. Richardson & Perry R. Bass
54-b	<u>T-21-S, R-31-E</u> Sec. 7: NE ¹ W ¹	40	LC 062727-C 1-1-51	USA-A11	Wilshire Oil Co.	Gladys H. Hunter	1%	Wilshire Oil Co.
55.	<u>T-21-S, R-31-E</u> Sec. 6: Lots 17, 18, S ² W ¹ Sec. 7: S ² W ¹	236.76	LC 062727-A 1-1-51	USA-A11	Eugene H. Perry	Gladys H. Hunter	1%	S. W. Richardson & Perry R. Bass

56.	<u>I-21-S, R-31-E</u> Sec. 6: SE $\frac{1}{2}$ Sec. 7: W $\frac{1}{2}$ SE $\frac{1}{4}$	240	LC 062727-B USA-A11 1-1-51	Eugene H. Perry	Gladys H. Hunter	1%	S. W. Richardson & Perry R. Bass
57.	<u>I-21-S, R-30-E</u> Sec. 15: SE $\frac{1}{4}$	160	LC 062793 USA-A11 1-1-51	Esther Bosworth	James D. Sprecher Mrs. Esther Bosworth	1% 2%	S. W. Richardson & Perry R. Bass
58.	<u>I-21-S, R-29-E</u> Sec. 15: NW $\frac{1}{4}$ NW $\frac{1}{4}$	40	LC 062940 USA-A11 1-1-51	George E. Currier	George E. Currier	3%	S. W. Richardson & Perry R. Bass
59.	<u>I-21-S, R-30-E</u> Sec. 19: EASW $\frac{1}{4}$, SE $\frac{1}{4}$ Sec. 20: S $\frac{1}{2}$ N $\frac{1}{2}$, NW $\frac{1}{2}$ SW $\frac{1}{2}$ Sec. 21: W $\frac{1}{2}$	800	LC 063167 USA-A11 10-1-48	LaVerge Harris	I. W. Bosworth LaVerge Harris	1% 2%	S. W. Richardson & Perry R. Bass
60.	<u>I-20-S, R-31-E</u> Sec. 19: Lots 1, 2, E $\frac{1}{2}$ NW $\frac{1}{4}$	158.71	LC 063346 USA-A11 10-1-46	Channing Brown	Channing Brown	3%	S. W. Richardson & Perry R. Bass
61.	<u>I-21S-R-28-E</u> Sec. 9: E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 15: S $\frac{1}{2}$ SE $\frac{1}{4}$	160	LC 063410 USA-A11 5-1-50	Robert E. McKee	Robert E. McKee	5%	S. W. Richardson & Perry R. Bass
62.	<u>I-21-S, R-29-E</u> Sec. 9: A11	640	LC 063418 USA-A11 11-1-46	Max Enzinger *	Max Enzinger	3%	S. W. Richardson & Perry R. Bass
63.	<u>I-20-S, R-31-E</u> Sec. 12: A11 Sec. 13: W $\frac{1}{2}$, NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$, SW $\frac{1}{2}$ SE $\frac{1}{4}$	1240	LC 063484 USA-A11 9-1-48	Amy McNutt	Amy McNutt	3%	S. W. Richardson & Perry R. Bass
64.	<u>I-21-S, R-28-E</u> Sec. 9: SE $\frac{1}{4}$	160	LC 063510 USA-A11 10-1-50	Bassett & Birney, a partnership composed of Myra Bassett Daugherty, Barbara Bassett Birmingham, Elizabeth Bassett Hammond, nee Elizabeth Bassett, J. E. Jetcelf, Madelyn Birney Metcalf, Leo J. Momsen, Gus Momsen, Jr., Reuben Momsen, C. A. Beers, C. L. Knight Executor of Estate of Bernie E. Knight, dec'd., Archie Campbell, J. E. Jetcelf, Trustee for Nancy Metcalf, Martin Yates III	Bassett & Birney, a partnership	5%	S. W. Richardson & Perry R. Bass

* Assigned to Ralph Nix - Assignment filed and pending approval.

65.	<u>T-21-S, R-28-E</u> Sec. 9: NE $\frac{1}{4}$ Sec. 10: E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 11: SW $\frac{1}{4}$ Sec. 14: NW $\frac{1}{4}$ Sec. 15: NE $\frac{1}{4}$	1120	LC 063516 7-1-51	USA-A11	Max Friess	None		Max Friess
66.	<u>T-20-S, R-31-E</u> Sec. 10: NE $\frac{1}{4}$ Sec. 3: W $\frac{1}{2}$ NE $\frac{1}{4}$	238.31	LC 063537 7-1--47	USA-A11	E. A. Culbertson & Wallace W. Irwin 1/2 Culbertson & Irwin, Inc. 1/2	The Texas Co.	3.125%	E. A. Culbertson & Wallace W. Irwin 1/2 Culbertson & Irwin 1/2 Inc.
67.	<u>T-21-S, R-28-E</u> Sec. 11: W $\frac{1}{2}$ NW $\frac{1}{4}$	80	LC 063541 6-1-50	USA-A11	Maurice Schwartz	Maurice Schwartz	5%	S. W. Richardson & Perry R. Bass
68.	<u>T-21-S, R-28-E</u> Sec. 9: W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 10: E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 11: E $\frac{1}{2}$ NW $\frac{1}{4}$	240	LC 063543 7-1-50	USA-A11	C. S. Messinger	C. S. Messinger	5%	S. W. Richardson & Perry R. Bass
69.	<u>T-21-S, R-28-E</u> Sec. 15: NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 14: W $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$	160	LC 063545 6-1-50	USA-A11	Myra B. Daugherty, & Madelyn B. Metcalf, a partnership	Myra B. Daugherty & Madelyn B. Metcalf	5%	S. W. Richardson & Perry R. Bass
70.	<u>T-21-S, R-28-E</u> Sec. 15: NW $\frac{1}{4}$ SE $\frac{1}{4}$	40	LC 063548 6-1-50	USA-A11	F. P. Schuster & S. A. Schuster	F. P. Schuster & S. A. Schuster	5%	S. W. Richardson & Perry R. Bass
71	<u>T-20-S, R-31-E</u> Sec. 14: W $\frac{1}{2}$ E $\frac{1}{2}$, W $\frac{1}{2}$ Sec. 15: E $\frac{1}{2}$, E $\frac{1}{2}$ W $\frac{1}{2}$	960	LC 063667 9-1--46	USA-A11	William Spurck & Vada Spurck	William Spurck & Vada Spurck	4.167%	S. W. Richardson & Perry R. Bass
72.	<u>T-20-S, R-31-E</u> Sec. 14: E $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 23: E $\frac{1}{2}$ Sec. 24: W $\frac{1}{2}$	800	LC 063674 2-1-48	USA-A11	Culbertson & Irwin, Inc. 1/2 E. A. Culbertson 1/4 Wallace W. Irwin 1/4	None * *	*	Culbertson & Irwin, Inc. 1/2 E. A. Culbertson & Wallace W. Irwin 1/2
73.	<u>T-21-S, R-31-E</u> Sec. 5: Lot 9 <u>T-20-S, R-32-E</u> Sec. 31: SW $\frac{1}{4}$	200	LC 063862-A 2-1-51	USA-A11	Eugene H. Perry	Thomas J. Sivley	3%	S. W. Richardson & Perry R. Bass

* The owners of this tract have agreed to assign the lease as to the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 23, E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 24 to S. W. Richardson and Perry R. Bass as a contribution toward the drilling of the initial test well.

74.	<u>I-22-S, R-29-E</u> Sec. 21: NW Sec. 28: NW Sec. 29: ESE, SWSE Sec. 33: NW, SWNE, WSE	1280	LC 064806 2-1-51	USA-All	Naydeen C. Lackey	Naydeen C. Lackey	4%	S. W. Richardson C. Perry R. Bass
75-a	<u>I-22-S, R-29-E</u> Sec. 15: NE, S Sec. 22: N Sec. 27: N, SW Sec. 34: N, SW	1760	LC 064828 3-1-51	USA-All	Patricia Gaylord Anderson	Patricia Gaylord Anderson	4%	S. W. Richardson C. Perry R. Bass
75-b	<u>I-22-S, R-29-E</u> Sec. 15: NW Sec. 22: S Sec. 27: SE	640	LC 064828 3-1-51	USA-All	Patricia Gaylord Anderson	None		Patricia Gaylord Anderson
76-a	<u>I-22-S, R-29-E</u> Sec. 10: E, NW, SW, NW, S Sec. 21: E Sec. 28: E Sec. 33: E, E, NWNE Sec. 34: SE	1440	LC 064829 4-1-51	USA-All	Bonnie H. Matlock Exec. Estate of Bruce K. Matlock, dec'd.	Bonnie H. Matlock, Obligation payable out of 3% production until \$720,000 received		S. W. Richardson C. Perry R. Bass
76-b	<u>I-22-S, R-29-E</u> Sec. 35: W, WSE <u>I-22-S, R-29-E</u> Sec. 3: Lots 1, 2, 3, 4, S, NW Sec. 4: Lots 1, 2, 3, 4, S, NW	1041.60	LC064829 4-1-51	USA-All	Bonnie H. Matlock Exec. Estate of Bruce K. Matlock, dec'd.	Bonnie H. Matlock, Obligation \$750 per acre out of 3% of production		S. W. Richardson C. Perry R. Bass
77.	<u>I-22-S, R-29-E</u> Sec. 9: All Sec. 10: NW, NW Sec. 17: ESE, SWNE, WSE Sec. 20: All Sec. 29: W, WNE, NWSE Sec. 30: E, E Sec. 31: E	2520	LC 065035 6-1-51	USA-All	Joe W. Lackey	Joe W. Lackey	4%	S. W. Richardson C. Perry R. Bass
78.	<u>I-20-S, R-31-E</u> Sec. 27: SNE, NW	240	LC 065431 3-1-51	USA-All	Josephine Rodke	Josephine Rodke	3%	S. W. Richardson C. Perry R. Bass

85-b	<u>T-20-S, R-31-E</u> Sec. 23: EJNW , WJSE	160	LC 065873 9-1-48	USA-All	George H. Cobb *	George H. Cobb	.5%	S. W. Richardson & Perry R. Bass
86-a	<u>T-20-S, R-31-E</u> Sec. 21: EJSE	80	LC 065874 9-1-48	USA-All	Robert E. Anderson *	Robert E. Anderson	.5%	Kerr-McGee Oil Industries, Inc.
86-b	<u>T-20-S, R-31-E</u> Sec. 21: EJNE	80	LC 065874 9-1-48	USA-All	Robert E. Anderson *	Robert E. Anderson	.5%	S. W. Richardson & Perry R. Bass
87-a	<u>T-20-S, R-31-E</u> Sec. 27: WJSE	80	LC 065897 10-1-48	USA-All	James N. Baxendale *	James N. Baxendale	.5%	Kerr-McGee Oil Industries, Inc.
87-b	<u>T-20-S, R-31-E</u> Sec. 27: EJSE	80	LC 065897 10-1-48	USA-All	James N. Baxendale *	James N. Baxendale	.5%	S. W. Richardson & Perry R. Bass
88-a	<u>T-20-S, R-31-E</u> Sec. 25: EJNW , WJSE , WJSE	320	LC 065914 9-1-48	USA-All	Thomas L. Glover *	Thomas L. Glover	.5%	Kerr-McGee Oil Industries, Inc.
88-b	<u>T-20-S, R-31-E</u> Sec. 25: WJNW , WJNE , EJSE , EJSE	320	LC 065914 9-1-48	USA-All	Thomas L. Glover *	Thomas L. Glover	.5%	S. W. Richardson & Perry R. Bass
89-a	<u>T-20-S, R-31-E</u> Sec. 22: WJNW , WJNE , EJSE , EJSE	320	LC 065944 9-1-48	USA-All	Joseph W. Fletcher *	Joseph W. Fletcher	.5%	Kerr-McGee Oil Industries, Inc.
89-b	<u>T-20-S, R-31-E</u> Sec. 22: EJNW , EJNE , WJSE , WJSE	320	LC 065944 9-1-48	USA-All	Joseph W. Fletcher *	Joseph W. Fletcher	.5%	S. W. Richardson & Perry R. Bass
90	<u>T-21-S, R-28-E</u> Sec. 17: SW Sec. 20: SJSE	240	LC 066067 9-1-48	USA-All	Ralph Petty	Ralph Nix	.5%	S. W. Richardson & Perry R. Bass

* Assignment to Kerr-McGee Oil Industries pending approval.

91.	<u>T-21-S, R-28-E</u> <u>Sec. 17: NWSE$\frac{1}{4}$</u>	80	LC 066067-A USA-A11 9-1-48	Harvey E. Yates *	Harvey E. Yates	5%	S. W. Richardson & Perry R. Bass
92.	<u>T-20-S, R-30-E</u> <u>Sec. 25: NW$\frac{1}{4}$</u> Secs. 26, 27, 34; All	2080	LC 066156 USA-A11 6-1-52	Helen Orton Ham nee Helen O'Patson	Helen Orton Ham L. E. Elliott	1% 4%	S. W. Richardson & Perry R. Bass
93.	<u>T-21-S, R-28-E</u> <u>Sec. 24: SW$\frac{1}{4}$</u> <u>Sec. 25: NE$\frac{1}{4}$, SW$\frac{1}{4}$</u> <u>Sec. 35: All</u>	1280	LC 067144 USA-A11 10-1-51	Rosemary Murphy Barnett	Rosemary Murphy Barnett	3%	S. W. Richardson & Perry R. Bass
94.	<u>T-21-S, R-28-E</u> <u>Sec. 24: NE$\frac{1}{4}$</u> <u>Sec. 3: SE$\frac{1}{4}$</u> <u>Sec. 9: NW$\frac{1}{4}$</u> <u>Sec. 10: NW$\frac{1}{4}$, NW$\frac{1}{4}$</u> <u>Sec. 17: ESE$\frac{1}{4}$</u> <u>Sec. 12: SE$\frac{1}{4}$</u> <u>Sec. 13: NE$\frac{1}{4}$, SE$\frac{1}{4}$</u> <u>Sec. 14: SW$\frac{1}{4}$, SW$\frac{1}{4}$</u>	1480	LC 067145 USA-A11 4-1-51	Dixie Dresser Flood	Dixie Dresser Flood	3%	S. W. Richardson & Perry R. Bass
95.	<u>T-22-S, R-28-E</u> <u>Sec. 9: SW$\frac{1}{4}$, NW$\frac{1}{4}$</u> <u>Sec. 17: NE$\frac{1}{4}$</u>	200	LC 067186 USA-A11 7-1-51	Betsy Dixon Morrison	Betsy Dixon Morrison Bonnie H. Matlock, obligation \$750 per acre out of 2.5% production	.5%	S. W. Richardson & Perry R. Bass
96-a	<u>T-21-S, R-30-E</u> <u>Sec. 1: Lots 3, 4, 5, 6, 11, 12, 13, 14, SE$\frac{1}{4}$</u> <u>Sec. 11: All</u> <u>Sec. 12: SW$\frac{1}{4}$</u> <u>Sec. 14: NW$\frac{1}{4}$</u>	1592.10	LC 067297-A USA-A11 3-1-51	I. W. Bosworth	H. C. Bretschneider & Harry A. Aurand I. W. Bosworth	2% 3%	S. W. Richardson & Perry R. Bass
96-b	<u>T-21-S, R-30-E</u> <u>Sec. 12: NE$\frac{1}{4}$</u>	160	LC 067297-B USA-A11 3-1-51	Eugene H. Perry	H. C. Bretschneider & Harry A. Aurand	2%	S. W. Richardson & Perry R. Bass
96-c	<u>T-21-S, R-30-E</u> <u>Sec. 12: SE$\frac{1}{4}$</u> <u>Sec. 14: NE$\frac{1}{4}$, NE$\frac{1}{4}$, NE$\frac{1}{4}$, NW$\frac{1}{4}$</u>	320	LC 067297-C USA-A11 3-1-51	Eugene H. Perry	H. C. Bretschneider & Harry A. Aurand	2%	S. W. Richardson & Perry R. Bass

* Committed to Unit Agreement by S. W. Richardson and Perry R. Bass by Option Agreement.

96-d	<u>T-21-S, R-30-E</u> Sec. 1: Lots 1,2,7,8, 9,10,15,16 Sec. 12: NW $\frac{1}{4}$	472.14	LC 067297	USA-A11	Wilshire Oil Co.	H.C. Bretschneider & Harry A. Aurand	2%	Wilshire Oil Co.
97.	<u>T-21-S, R-30-E</u> Sec. 23: SW $\frac{1}{4}$	160	LC 067793-A	USA-A11	Eugene H. Perry	None		S. W. Richardson & Perry R. Bass
98.	<u>T-21-S, R-29-E</u> Sec. 33: NE $\frac{1}{4}$ Sec. 34: NE $\frac{1}{4}$ Sec. 35: NE $\frac{1}{4}$	800	LC 067964	USA-A11	Mabel E. Todhunter	Mabel E. Todhunter	3%	S. W. Richardson & Perry R. Bass
99.	<u>T-20-S, R-32-E</u> Sec. 34: All	640	LC 068104	USA-A11	Terence Kyle Underwood	Terence Kyle Underwood Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
100.	<u>T-21-S, R-28-E</u> Sec. 24: NW $\frac{1}{4}$, SE $\frac{1}{4}$ Sec. 25: SE $\frac{1}{4}$ <u>T-21-S, R-29-E</u> Sec. 7: NE $\frac{1}{4}$ Sec. 30: Lots 1,2, E $\frac{1}{2}$ NW $\frac{1}{4}$	781.10	LC 068284	USA-A11	Aileen T. Taylor	Aileen T. Taylor	3%	S.S. W. Richards & Perry R. Bass
101.	<u>T-21-S, R-28-E</u> Sec. 12: NE $\frac{1}{4}$ Sec. 13: SW $\frac{1}{4}$ Sec. 15: S $\frac{1}{2}$ SW $\frac{1}{4}$	400	LC 068368	USA-A11	Harry F. Schram	Harry F. Schram	3%	S. W. Richardson & Perry R. Bass
102.	<u>T-21-S, R-29-E</u> Sec. 33: Lots 1,2,3,4, NE $\frac{1}{4}$ Sec. 34: Lots 1,2,3,4, NE $\frac{1}{4}$ Sec. 35: Lots 1,2,3,4, NE $\frac{1}{4}$	916.04	LC 068379	USA-A11	Betty Ruth Wright	Betty Ruth Wright Ora R. Hall, Jr.	1% 2%	S. W. Richardson & Perry R. Bass
103.	<u>T-20-S, R-31-E</u> Sec. 9: E $\frac{1}{2}$ Sec. 10: W $\frac{1}{2}$	640	LC 068399	USA-A11	T. V. Price	T. V. Price, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
104.	<u>T-20-S, R-31-E</u> Sec. 4: Lot 4, SW $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ Sec. 5: Lots 1,2,3,4, S $\frac{1}{2}$ N $\frac{1}{2}$, SE $\frac{1}{4}$ Sec. 6: Lots 1,2,3,4,5,6,7, S $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 7: Lots 1,2, E $\frac{1}{2}$ NW $\frac{1}{4}$	1328.58	LC 068408	USA-A11	Woodlan P. Saunders	Woodlan P. Saunders, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass

105.	<u>T-21-S, R-28-E</u> Sec. 11: N $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 14: NE $\frac{1}{4}$	240	LC 068669 10-1-49	USA-All	Robert E. McKee General Contractor , Inc.	Robert E. McKee General Contractor , Inc.	5%	S. W. Richardson & Perry R. Bass
106-a	<u>T-21-S, R-31-E</u> Sec. 6: Lots 1,2,3,4,5, 6,7,8	325.72	LC 068996 6-1-51	USA-All	Mrs. Ella Belle Robinson	Mrs. Ella Belle Robinson	3%	S. W. Richardson & Perry R. Bass
106-b	<u>T-21-S, R-31-E</u> Sec. 5: Lots 1,2,3,4, 5,6,7,8,10,11	409.40	LC 068996 6-1-51	USA-All USA-All	Mrs. Ella Belle Robinson	Mrs. Ella Belle Robinson Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
107.	<u>T-22-S, R-28-E</u> Sec. 1: All Sec. 8: E $\frac{1}{2}$; E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 9: NW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ Sec. 10: NW $\frac{1}{4}$ Sec. 11: N $\frac{1}{2}$	2029.25	LC 069140 8-1-51	USA-All	Mrs. Jane Stapp	Mrs. Jane Stapp, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
108.	<u>T-21-S, R-29-E</u> Sec. 3: All	940.96	LC 069141 6-1-51	USA-All	Gilbert F. Scheib	Gilbert F. Scheib	5%	S. W. Richardson & Perry R. Bass
109.	<u>T-22-S, R-28-E</u> Sec. 10: S $\frac{1}{2}$ Sec. 11: S $\frac{1}{2}$ Secs. 12 and 14: All Sec. 15: E $\frac{1}{2}$ E $\frac{1}{2}$; W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 22: E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 23: W $\frac{1}{2}$ NW $\frac{1}{4}$	2359.67	LC 069142 8-1-51	USA-All	George L. Erwin, Jr.	George L. Erwin, Jr., obliga- tion \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
110-a	<u>T-21-S, R-29-E</u> Sec. 27: N $\frac{1}{2}$ NE $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ Sec. 28: E $\frac{1}{2}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ Sec. 29: W $\frac{1}{2}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ Sec. 31: Lots 2,3,4,5,6,7; NE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$	1620.86	LC 069144 7-1-49	USA-All	John N. Fidel	John N. Fidel	3%	S. W. Richardson & Perry R. Bass
110-b	<u>T-21-S, R-29-E</u> Sec. 27: E $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ Sec. 29: E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 28: W $\frac{1}{2}$ NW $\frac{1}{4}$	400	LC 069144-A 7-1-49	USA-All	Frances Nix	John N. Fidel Frances Nix	2% 1%	S. W. Richardson & Perry R. Bass

111-a	<u>T-22-S, R-28-E</u> Sec. 24: Lots 1 thru 16, incl.	671.85	LC 069157 7-1-51	USA--All	Naydeen C. Lackey	Nadeen C. Lackey	4%	S. W. Richardson & Perry R. Bass
111-b	<u>T-22-S, R-28-E</u> Sec. 23: E ₁	320	LC 069157 7-1-51	USA--All	Naydeen C. Lackey	None		Malco Refineries, Inc.
112.	<u>T-22-S, R-28-E</u> Sec. 13: All Sec. 23: E ₁ NW ₁ , SW ₁ Sec. 25: All	1596.49	LC 069159 8-1-51	USA--All	R. O. Champeau	R. O. Champeau, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
113-a	<u>T-21-S, R-28-E</u> Sec. 26: E ₁	320	LC 069219 4-1-51	USA--All	Mrs. Mabel E. Todhunter	Mrs. Mabel E. Todhunter 3%		S. W. Richardson & Perry R. Bass
113-b	<u>T-21-S, R-28-E</u> Sec. 11: NE ₁ , S ₁ SE ₁ Sec. 14: SE ₁ Sec. 23: All Sec. 26: W ₁	1360	LC 069219 4-1-51	USA--All	Mrs. Mabel E. Todhunter	Mrs. Mabel E. Todhunter, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
114.	<u>T-20-S, R-30-E</u> Sec. 35: N ₁	320	LC 069227 3-1-52	USA--All	Elaine V. Scheib	Elaine V. Scheib	5%	S. W. Richardson & Perry R. Bass
115-a	<u>T-21-S, R-29-E</u> Sec. 27: S ₁ NE ₁ Sec. 28: S ₁ NE ₁ Sec. 29: NE ₁	320	LC 069241 6-1-51	USA--All	Luther Cullens	Luther Cullens	3%	S. W. Richardson & Perry R. Bass
115-b	<u>T-21-S, R-29-E</u> Sec. 28: N ₁ NE ₁	80	LC 069241 6-1-51	USA--All	Luther Cullens	Luther Cullens Malco Refineries, Inc.	2%	S. W. Richardson & Perry R. Bass
116-	<u>T-23-S, R-29-E</u> Sec. 3: N ₁ SE ₁ , S ₁ SE ₁ SE ₁ SW ₁	280	LC069504 9-1-51	USA--All	Bonnie H. Matlock Exec. Est. of Bruce K. Matlock, dec'd.	Bonnie H. Matlock, obliga- tion \$750 per acre out of 3% production		S. W. Richardson & Perry R. Bass
117.	<u>T-23-S, R-29-E</u> Sec. 4: N ₁ SE ₁	80	LC 069506 9-1-51	USA--All	Evelyn M. Dixon	Evelyn M. Dixon Bonnie H. Matlock, Obligation \$750 per acre out of 2.5% production	.5%	S. W. Richardson & Perry R. Bass

118.	<u>T-21-S, R-28-E</u> Sec. 4: SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	200	LC 062550 7-1-49	USA-A11	O. H. Randel & R. S. Magruder	O. H. Randel & R. S. Magruder Oil Royalties Corp. Heirs of J. J. Johnson* Estate of F. A. Andrews	2.75% 1.5% .5% .25%	S. L. Richardson & Perry R. Bass
119.	<u>T-19-S, R-31-E</u> Sec. 33: E $\frac{1}{2}$ Sec. 34: SW $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$	560 797.88	LC 069705 7-1-51	USA-A11	Thomas L. Pearson	Thomas L. Pearson Frank O. Elliott	1% 4%	S. W. Richardson & Perry R. Bass
120.	<u>T-21-S, R-28-E</u> Sec. 3: Lots 13, 16 Sec. 4: Lot 13, NW $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 6: Lots 17, 18 Sec. 17: E $\frac{1}{2}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 19: Lots 1, 2 Sec. 34: N $\frac{1}{2}$	2000.00 797.88	LC 069707 6-1-51	USA-A11	Bob Bear	Bob Bear Ora R. Hall, Jr.	1% 4%	S. W. Richardson & Perry R. Bass
121.	<u>T-22-S, R-29-E</u> Sec. 4: SW $\frac{1}{4}$ Sec. 5: S $\frac{1}{2}$ Sec. 6: SE $\frac{1}{4}$ Sec. 7: E $\frac{1}{2}$ Sec. 8: All Sec. 17: W $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 18: E $\frac{1}{2}$ <u>T-20-S, R-32-E</u> Sec. 33: All	2280	LC 069876 5-1-51	USA-A11	Josephine T Hudson 1/2 William A. Hudson 1/2	None		Josephine T Hudson 1/2 William A. Hudson 1/2
122.	<u>T-21-S, R-28-E</u> Sec. 12: NW $\frac{1}{4}$	160	LC 070060 12-1-49	USA-A11	Robert E. McKee, General Contractor, Inc.	Robert E. McKee, General Contractor, Inc.	5%	S. W. Richardson & Perry R. Bass
123.	<u>T-21-S, R-28-E</u> Sec. 33: S $\frac{1}{2}$ Sec. 34: SW $\frac{1}{4}$	480	LC 070061 7-1-49	USA-A11	Robert E. McKee General Contractor, Inc.	Robert E. McKee General Contractor, Inc.	5%	S. W. Richardson & Perry R. Bass
124.	<u>T-20-S, R-31-E</u> Sec. 7: Lots 3, 4, E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 15: W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 17: W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 18: All Sec. 19: Lots 3, 4, E $\frac{1}{2}$ SW $\frac{1}{4}$	1433.26	LC 070220 9-1-51	USA-A11	Gilbert Scheib	Gilbert Scheib	3.125%	S. W. Richardson & Perry R. Bass

126.	<u>T-21-S, R-28-E</u> Sec. 34; SE $\frac{1}{4}$	160	LC 070711	USA-All	Mabel E. Jodhunter	Mabel E. Jodhunter	3%	S. W. Richardson & Perry R. Bass
127.	<u>T-21-S, R-29-E</u> Sec. 33; NW $\frac{1}{4}$	80	LC 071033	USA-All	Frances Nix	John S. Harris	3%	S. W. Richardson & Perry R. Bass
128.	<u>T-21-S, R-31-E</u> Sec. 9; NW $\frac{1}{4}$	160	LC 071396	USA-All	Wiltshire Oil Co., Inc.	M. D. Bryant	2%	Wiltshire Oil Co., Inc.
129.	<u>T-22-S, R-29-E</u> Sec. 19; Lots 1, 2, 3, 4, E $\frac{1}{2}$ NW $\frac{1}{2}$, E $\frac{1}{2}$	1113.92	LC 071917	USA-All	Morris Cannan **	Morris Cannan	3%	S. W. Richardson & Perry R. Bass
130.	<u>T-22-S, R-29-E</u> Sec. 3; Lots 1, 2, 3, 4, S $\frac{1}{2}$ NW $\frac{1}{2}$, S $\frac{1}{2}$	1281.08	LC 071918	USA-All	Morris Cannan **	Morris Cannan	3%	S. W. Richardson & Perry R. Bass
131.	<u>T-21-S, R-28-E</u> Sec. 15; NW $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$	160	NM-07964	USA-All	Ewell H. Muse, Jr.	None		S. W. Richardson & Perry R. Bass
132-a	<u>T-20-S, R-31-E</u> Sec. 24; NE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	80	NM 06864-A	USA-All	Robert C. Glines	Robert C. Glines	5%	S. W. Richardson & Perry R. Bass
132-b	<u>T-20-S, R-31-E</u> Sec. 24; NW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	240	NM 06864	USA-All	Edna Ione Hall	Edna Ione Hall	3%	S. W. Richardson & Perry R. Bass

*Heirs of Anna B. Johnson: Ida Anderson
Faye Rowland
Blaine Daughtry
Joyce Minizy
Jack Malarney, Jr.
Jo Ann Idtse
Mary M. Yeller
Jeanne Bennitt

** Assignment to S. W. Richardson & Perry R. Bass pending approval

THE FOLLOWING DESCRIBED TRACTS EMBRACE LANDS FORMERLY WITHDRAWN FROM LEASING UNDER ORDER OF THE SECRETARY OF THE INTERIOR DATED FEBRUARY 6, 1939 (4 F.R. 1012), LEASES UPON WHICH HAVE BEEN ISSUED UNDER ORDER OF THE SECRETARY DATED OCTOBER 16, 1951 (16 F. R. 10669)

Tract. No.	Description	No. of Acres	Serial No. All are Applications	Basic		Lessee of Record	Overriding Royalty & Percentage	Working Interest & Percentage
				Royalty & Per-centage				
T-21-S, R-29-E								
133.	Sec. 1: All	941.40	NM 06745 8-1-52	USA-All	J. William McElvain	None		J. William McElvain
134.	Sec. 11: NE $\frac{1}{4}$ NE $\frac{1}{4}$, W $\frac{1}{2}$ NE $\frac{1}{4}$ E $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$	400	NM 06746 6-1-52	USA-All	R. L. Burrow	R. L. Burrow	3%	S. W. Richardson & Perry R. Bass
135.	Sec. 12: All	640	NM 06747 6-1-52	USA-All	Gertrude B. Stiehler	None		U. S. Potash
136.	Sec. 13: E $\frac{1}{2}$, S $\frac{1}{2}$ SW $\frac{1}{4}$	400	NM 06748 6-1-52	USA-All	H. V. Tull, Jr.	H. V. Tull, Jr.	5%	S. W. Richardson & Perry R. Bass
137.	Sec. 14: SW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$	280	NM 06749 7-1-52	USA-All	Sterling C. Holloway	Sterling C. Holloway	1%	S. W. Richardson & Perry R. Bass
138.	Sec. 15: E $\frac{1}{2}$, E $\frac{1}{2}$ W $\frac{1}{2}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$	600	NM 06750 6-1-52	USA-All	Paul Blake	Paul Blake, 5% and production payment of \$200 per acre out of 12.5% of net working interest		S. W. Richardson & Perry R. Bass
139.	Sec. 22: N $\frac{1}{2}$ N $\frac{1}{2}$	160	NM 06751 7-1-52	USA-All	Meryl F. Mogensen	Meryl F. Mogensen	1%	S. W. Richardson & Perry R. Bass
140.	Sec. 23: N $\frac{1}{2}$ N $\frac{1}{2}$	160	NM 06752 6-1-52	USA-All	Emmett D. White	Emmett D. White, 5% production payment of \$200 per acre out of 6.25%		S. W. Richardson & Perry R. Bass
141.	Sec. 24: N $\frac{1}{2}$ N $\frac{1}{2}$, S $\frac{1}{2}$ NE $\frac{1}{4}$	240	NM 06753 7-1-52	USA-All	Mrs. R. R. C. Sharp	Mrs. R. R. C. Sharp, 5% and production payment of \$200 per acre out of 12.5% net working interest		S. W. Richardson & Perry R. Bass

I-20-S, R-30-E

142. Sec. 25: NE $\frac{1}{4}$, S $\frac{1}{2}$	460	NM 06787 6-1-52	USA-All	T. N. McLennan	T. N. McLennan	1%	S. W. Richardson & Perry R. Bass
143. Sec. 35: S $\frac{1}{2}$	320	NM 06789 6-1-52	USA-All	David M. Lutkoff	David M. Lutkoff, 5% and pro- duction payment of \$200 per acre out of 12.5% of net working interest		S. W. Richardson & Perry R. Bass
<u>I. 21-S, R-30-E</u>							
144. Sec. 3: Lots 3,4,5, 6,11,12,13,14, SW $\frac{1}{4}$	471.66	NM 06790 7-1-52	USA-All	Thomas Johnston	Thomas Johnston, 1/3 of 5% and production payment of \$200 per acre out of 12.5% of net working interest.		S. W. Richardson & Perry R. Bass
145. Sec. 4: All	943.16	NM 06791 6-1-52	USA-All	Betty Madole	Betty Madole	1%	S. W. Richardson & Perry R. Bass
146. Sec. 5: All	942.40	NM 06792 8-1-52	USA-All	W. Cooley, Jr.	None		W. Cooley, Jr.
147. Sec. 6: All	1016.27	NM 06793 6-1-52	USA-All	Myron S. Prager	Myron S. Prager	5%	Stanolind Oil & Gas Company
148. Sec. 7: All	691.20	NM 06794 Appl'n	USA-All	Lucile Willis	Lucile Willis	5%	S. W. Richardson & Perry R. Bass
149. Sec. 8: E $\frac{1}{2}$, E $\frac{1}{4}$ W $\frac{1}{2}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$	600	NM 06795 6-1-52	USA-All	W. C. English, Jr.	W. C. English, Jr., 5% and production payment of \$150 per acre out of 6.25% net working interest		S. W. Richardson & Perry R. Bass
150. Sec. 9: All	640	NM 06796 6-1-52	USA-All	Charles E. Ramsey	Charles E. Ramsey	1%	S. W. Richardson & Perry R. Bass
151. Sec. 10: W $\frac{1}{2}$	320	NM 06797 6-1-52	USA-All	Lverage Harris	Lverage Harris, 5% and production payment of \$100 per acre out of 6.25% net working interest.		S. W. Richardson & Perry R. Bass

I-21-S, R-30-E-Cont.

152. Sec. 17: All	640	NM 06798 6-1-52	USA-All	Merlon C. Tomson	Merlon C. Tomson, 5% and production payment of \$200 per acre out of 6.25% net working interest	1%	S. W. Richardson & Perry R. Bass
153. Sec. 18: All	691.24	NM 06799 7-1-52	USA-All	Mary H. Connally	Mary H. Connally	1%	S. W. Richardson & Perry R. Bass
154. Sec. 19: Lots 1,2,3, 4, E $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$	345.65	NM 06800 7-1-52	USA-All	J. B. Mulcock	J. B. Mulcock	1%	S. W. Richardson & Perry R. Bass
155. Sec. 20: NW $\frac{1}{4}$	160	NM 06801 7-1-52	USA-All	Kenneth Franzheim II	Kenneth Franzheim II, 5% and production payment of \$150 per acre out of 6.25% net working interest		S. W. Richardson & Perry R. Bass
<u>I-20-S, R-31-E</u>							
156. Sec. 28: All	640	NM 06816 7-1-52	USA-All	Roy Snyder	Roy Snyder	5%	Stanolind Oil & Gas Company
157. Sec. 29: All	640	NM 06817 8-1-52	USA-All	Virginia B. Dingley	None		U.S. Potash Company
158. Sec. 30: All	639.32	NM 06818 6-1-52	USA-All	Victor Salazar	Victor Salazar	5%	S. W. Richardson & Perry R. Bass
159. Sec. 31: All	639.80	NM 06819 7-1-52	USA-All	George B. Parks	George B. Parks	.5%	Kerr-McGee Oil Industries, Inc.
160. Sec. 33: All	640	NM 06820 8-1-52	USA-All	Meljamar Oil & Gas Corp.	Buffalo Petroleum Corporation	5%	Meljamar Oil & Gas Corp.

160 FEDERAL TRACTS, CONTAINING 115,235.80 ACRES, OR 86.37% OF UNIT AREA

Tract No.	Description	No. of Acres	Serial No. & expiration date of lease	Basic Royalty & Percentage	Lessee of Record	Overriding Royalty & Percentage	Working Interest & Percentage
<u>STATE LAND</u>							
161.	<u>T-20-S, R-31-E</u> Sec. 2: N $\frac{1}{2}$ S $\frac{1}{2}$	160	B-1327 11-16-32 H.B.P.	State of New Mexico 12 $\frac{1}{2}$ %	Skelly Oil Co.	None	Skelly Oil Co.
162.	<u>T-21-S, R-28-E</u> Sec. 16: E $\frac{1}{2}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$	400	E-5559 9-10-61	State of New Mexico 12 $\frac{1}{2}$ % & Perry R. Bass	S. W. Richardson	None	S. W. Richardson & Perry R. Bass
163.	<u>T-21-S, R-28-E</u> Sec. 16: NW $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$	80	B-9960 12-10-52	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	Robert E. McKee, General Contractor, Inc. 3 $\frac{1}{2}$ % Ralph Nix 2%	S. W. Richardson & Perry R. Bass
164.	<u>T-21-S, R-28-E</u> Sec. 32: N $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 18: N $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$	199.89	B-10005 1-11-53	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	Ralph Nix	S. W. Richardson & Perry R. Bass
165.	<u>T-21-S, R-28-E</u> Sec. 32: N $\frac{1}{2}$ SW $\frac{1}{4}$	80	B-10005-1 1-11-53	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	W. R. Petty	S. W. Richardson & Perry R. Bass
166.	<u>T-20-S, R-30-E</u> Sec. 36: S $\frac{1}{2}$, NE $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$	560	B-10620-1 9-10-53	State of New Mexico 12 $\frac{1}{2}$ %	Gulf Oil Corp.	None	Gulf Oil Corp.
167.	<u>T-20-S, R-31-E</u> Sec. 2: E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 16: SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 32: W $\frac{1}{2}$, S $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 36: E $\frac{1}{2}$ NW $\frac{1}{4}$	638.70	B-10621 9-10-53	State of New Mexico 12 $\frac{1}{2}$ %	Stanolind Oil & Gas Co.	None	Stanolind Oil & Gas Co.
168.	<u>T-21-S, R-28-E</u> Sec. 32: SW $\frac{1}{4}$ SW $\frac{1}{4}$	40	B-10748 11-10-53	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	Martin Yates 111	S. W. Richardson & Perry R. Bass

169.	<u>T-21-S, R-29-E</u> Sec. 2: Lots 1,2,3,4,5, 6,7,8,15,16	381.44	B-11555 10-10-54	State of New Mexico-12½%	U. S. Potash Co.	None	U. S. Potash Co.
170.	<u>T-21-S, R-29-E</u> Sec. 16: NW¼, NE¼NE¼, SE¼NE¼, SW¼, NE¼SE¼, SE¼SE¼	560	B-11556 10-10-54	State of New Mexico 12½%	U. S. Potash Co.	None	U. S. Potash Co.
171.	<u>T-21-S, R-29-E</u> Sec. 18: Lot 1, SE¼SW¼ Sec. 32: Lots 1,2,3,4, NE¼SW¼	283.08	B-11557 10-10-54	State of New Mexico 12½%	U. S. Potash Co.	None	U. S. Potash Co.
172.	<u>T-20-S, R-31-E</u> Sec. 16: SE¼, NE¼NE¼, SW¼NE¼, E¼NW¼	360	E-264 4-10-55	State of New Mexico 12½%	S. W. Richardson & Perry R. Bass	John M. Kelly, obligation \$500 per acre out of 5% of production	S. W. Richardson & Perry R. Bass
173.	<u>T-22-S, R-29-E</u> Sec. 2: SE¼SW¼ <u>T-21-S, R-30-E</u> Sec. 16: S¼SE¼ Sec. 28: NE¼NW¼	160	E-831-1 4-10-56	State of New Mexico 12½%	U. S. Potash Co.	None	U. S. Potash Co.
174.	<u>T-21-S, R-29-E</u> Sec. 2: Lots 11,12,13, 14, SW¼	320	E-1620 12-10-57	State of New Mexico 12½%	U. S. Potash Co.	None	U. S. Potash Co.
175.	<u>T-21-S, R-30-E</u> Sec. 2: Lots 1,3,4,5,6, 7,8,9,10,11,12,13,14,15,16, S¼	907.83	E-1621 12-10-57	State of New Mexico 12½%	U. S. Potash Co.	None	U. S. Potash Co.
176.	<u>T-20-S, R-31-E</u> Sec. 2: S¼SW¼	80	E-2370 1-10-59	State of New Mexico 12½%	Malco Refineries, Inc.	None	Malco Refineries, Inc.
177.	<u>T-22-S, R-28-E</u> Sec. 2: Lots 1,2,3,4, S¼NE¼, S¼ (A11)	641.02	E-4205 9-11-60	State of New Mexico 12½%	Gulf Oil Corp.	None	Gulf Oil Corp.
178.	<u>T-20-S, R-31-E</u> Sec. 2: Lots 2,3,4, S¼NW¼, SW¼NE¼, S¼SE¼ (continued on next page)	5111.63	E-5230 5-10-61	State of New Mexico 12½%	S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass

178. T-20-S, R-31-E (continued)

Sec. 16: SW $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$
Sec. 32: NW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 36: S $\frac{1}{2}$, NE $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$
T-20-S, R-32-E
Sec. 32: All
T-20-S, R-30-E
Sec. 36: E $\frac{1}{2}$ NW $\frac{1}{4}$
T-21-S, R-30-E
Sec. 2: Lot 2
Sec. 14: SE $\frac{1}{4}$, S $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$
Sec. 16: NW $\frac{1}{4}$, SW $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 20: NE $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 21: E $\frac{1}{2}$
Sec. 22: All
Sec. 23: NW $\frac{1}{4}$
Sec. 27: NW $\frac{1}{4}$
Sec. 28: NE $\frac{1}{4}$, SW $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$

179.

T-21-S, R-28-E 4635.81 E-5232 State of New S. W. Richardson None
Sec. 16: S $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$ 5-10-61 Mexico 12 $\frac{1}{2}$ % & Perry R. Pass S. W. Richardson
Sec. 18: Lot 2
Sec. 32: S $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$
S $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$
Sec. 36: All
T-21-S, R-29-E
Sec. 32: NW $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 36: NW $\frac{1}{4}$, NE $\frac{1}{4}$ S $\frac{1}{2}$, Lots 1,2,3,4 (All)
T-22-S, R-29-E
Sec. 2: Lots 1,2,3,4,SE $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$
Sec. 16 & 32: All
T-23-S, R-29-E
Sec. 2: Lots 1,2,3,4, S $\frac{1}{2}$, S $\frac{1}{2}$ N $\frac{1}{2}$ (All)

180.

T-21-S, R-29-E 1040 E-5233 State of New U. S. Potash Co. None U. S. Potash Co.
Sec. 2: Lots 9,10,SE $\frac{1}{4}$ 5-10-61 Mexico 12 $\frac{1}{2}$ %
Sec. 11: SE $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$
Sec. 13: NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$
Sec. 14: NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 16: SW $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$
T-21-S, R-30-E
Sec. 8: NW $\frac{1}{4}$ NW $\frac{1}{4}$

20 STATE TRACTS, CONTAINING 16,639.40 ACRES, OR 12.47% OF UNIT AREA

Tract. No.	Description	No. of Acres	Expiration date of lease	Basic Royalty Owner & Percentage		Lessee of Record	Overriding Royalty & Percentage		Working Interest & Percentage
FEE OR PRIVATELY OWNED LAND									
181.	<u>T-21-S, R-28-E</u> Sec. 4: Lots 14, 15, 16, NE $\frac{1}{4}$ SE $\frac{1}{4}$	160		W. R. Fenton R. E. Bybee Dudley Ussery	1/2 1/4 1/4	S. W. Richardson & Perry R. Bass	None		S. W. Richardson & Perry R. Bass Dudley Ussery 3/4 1/4
182.	<u>T-21-S, R-28-E</u> Sec. 19: Lots 3, 4	77.16		G. G. Ison		S. W. Richardson & Perry R. Bass	None		S. W. Richardson & Perry R. Bass
183.	<u>T-21-S, R-28-E</u> Sec. 20: NE $\frac{1}{4}$	320	12-6-59	Claude & Mamie M. West	All	Magnolia Petr. Co.	None		Magnolia Petr. Co.
184.	<u>T-21-S, R-28-E</u> Sec. 20: NE $\frac{1}{4}$ S $\frac{1}{2}$	160	12-6-59	Joe V. & Mayme Lusk	All	Magnolia Petr. Co.	None		Magnolia Petr. Co.
185.	<u>T-21-S, R-28-E</u> Sec. 20: S $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 29: NE $\frac{1}{4}$ NW $\frac{1}{4}$	160	6-4-56	Joe V. Lusk	All	S. W. Richardson & Perry R. Bass	None		S. W. Richardson & Perry R. Bass
186.	<u>T-21-S, R-28-E</u> Sec. 30: Lot 4 Sec. 31: E $\frac{1}{2}$ NE $\frac{1}{4}$, Lot 1, NE $\frac{1}{4}$ NW $\frac{1}{4}$	196.27	11-18-59	C. P. & Mattie E. Pardue L. A. & Runeor E. Swigart	66-2/3% 33-1/3%	Magnolia Petr. Co.	None		Magnolia Petr. Co.
187.	<u>T-21-S, R-28-E</u> Sec. 31: Lot 2, 3, SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$	155.66		Damon U. & Paul Bond	All	S. W. Richardson & Perry R. Bass	None		S. W. Richardson & Perry R. Bass
188.	<u>T-21-S, R-28-E</u> Sec. 32: SW $\frac{1}{4}$ NW $\frac{1}{4}$	40		Comdr. G. C. Mann	All	S. W. Richardson & Perry R. Bass	None		S. W. Richardson & Perry R. Bass
189.	<u>T-21-S, R-28-E</u> Sec. 32: NW $\frac{1}{4}$ NW $\frac{1}{4}$	40		F. F. & Olive Doepp	All	S. W. Richardson & Perry R. Bass	None		S. W. Richardson & Perry R. Bass
190.	<u>T-21-S, R-29-E</u> Sec. 13: SW $\frac{1}{4}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 14: SE $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$	160		U. S. Potash Co.	(Fee Owner)		None		U. S. Potash Co.

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191.	<u>T-21-S, R-30-E</u> Sec. 28: NW ¹ / ₄ SE ¹ / ₄	40	J. J. Crawford	ALL	S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass
192.	<u>T-20-S, R-31-E</u> Sec. 13: NW ¹ / ₄ SE ¹ / ₄	40	John A. and Sara Mae Lusk	ALL	S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass

12 FEE OR PRIVATELY OWNED TRACTS, CONTAINING 1,549.09 ACRES, OR 1.16% OF UNIT AREA

TOTAL 192 TRACTS, CONTAINING 133,444.29 ACRES IN ENTIRE BIG EDDY UNIT AREA

EXHIBIT "B"
BIG EDDY UNIT AREA, EDDY & LEA COUNTIES, NEW MEXICO
TWPS. 19, 20, 21, 22 and 23, S., Rgees. 28, 29, 30, 31 and 32 E., N.M.P.M.

SCHEDULE SHOWING THE PERCENTAGE AND KIND OF OWNERSHIP OF OIL AND GAS INTERESTS IN ALL LANDS IN THE UNIT AREA

Tract No.	Description of Land	No. of Acres	Application or Ser. No. & Effective date	Basic Royalty & Percentage	Lessee of Record	Overriding Royalty & Percentage	Working Interest & Percentage
FEDERAL LAND							
1.	T-20S, R-31-E Sec. 5: SW $\frac{1}{4}$ Sec. 6: SE $\frac{1}{4}$ Sec. 7: E $\frac{1}{2}$ Sec. 8: All Sec. 9: W $\frac{1}{2}$	1600	NM 0251 7-1-52	USA-All	Bertrand O. Baetz	Bertrand O. Baetz Obligation \$500 per acre out of 3% of production	S. W. Richardson & Perry R. Bass
2-a	T-21-S, R-30-E Sec. 3: Lots 1, 2, 7, 8, 9, 10, 15 & 16, SE $\frac{1}{4}$	471.70	NM 0299 7-1-51	USA-All	Thelma L. Rhodes	Thelma L. Rhodes	S. W. Richardson & Perry R. Bass
2-b	T-21-S, R-30-E Sec. 14: SW $\frac{1}{4}$	40	NM 0299 7-1-51	USA-All	Thelma L. Rhodes	None	O. E. Bradley
3.	T-21-S, R-28-E Secs. 21, 22, 27 & 28: All	2560	NM 0486 11-1-51	USA-All	Jerry Curtis	Jerry Curtis	S. W. Richardson & Perry R. Bass
4.	T-21-S, R-29-E Sec. 8: NW $\frac{1}{4}$ Sec. 10: NW $\frac{1}{4}$, SE $\frac{1}{4}$	400	NM 0505 2-1-50	USA-All	Marian D. Harris	Marian D. Harris	S. W. Richardson & Perry R. Bass
5.	T-21-S, R-29-E Sec. 17: NW $\frac{1}{4}$, SE $\frac{1}{4}$ Sec. 20: SW $\frac{1}{4}$	640	NM 0509 2-1-50	USA-All	Marian D. Harris	Marian D. Harris	S. W. Richardson & Perry R. Bass
6.	T-20-S, R-31-E Sec. 11: NW $\frac{1}{4}$	160	NM 0763 6-1-50	USA-All	E. A. Culbertson Wallace W. Irwin Culbertson & Irwin	1/8 1/8 Any interest 1.875%	E. A. Culbertson & Wallace W. Irwin Culbertson & Irwin Inc. Irwin & Co., Inc.

7.	<u>T-21-S, R-29-E</u> Sec. 22: S $\frac{1}{2}$, S $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 23: S $\frac{1}{2}$ W $\frac{1}{2}$, S $\frac{1}{2}$ Sec. 24: S $\frac{1}{2}$, S $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 25: All Sec. 26: N $\frac{1}{2}$, S $\frac{1}{2}$, E $\frac{1}{2}$ S $\frac{1}{2}$ W $\frac{1}{2}$	2560	NM 0915	USA-All	E. J. Shepard			2%	S. W. Richardson & Perry R. Bass
8.	<u>T-20-S, R-31-E</u> Sec. 20: N $\frac{1}{2}$	320	NM 01063	USA-All	E. A. Culbertson Wallace W. Irwin Culbertson & Irwin, Inc. $\frac{1}{4}$			2%	E. A. Culbertson & Wallace W. Irwin $\frac{1}{2}$
9.	<u>T-20-S, R-31-E</u> Sec. 11: E $\frac{1}{2}$, S $\frac{1}{2}$ W $\frac{1}{2}$	480	NM 01064	USA-All	E. A. Culbertson Wallace W. Irwin Culbertson & Irwin $\frac{1}{8}$ Fred Turner, Jr. $\frac{1}{4}$	Amy McNutt	1.875%		Fred Turner, Jr. $\frac{1}{2}$ Culbertson & Irwin $\frac{1}{4}$ E. A. Culbertson & Wallace W. Irwin $\frac{1}{4}$
10.	<u>T-21-S, R-28-E</u> Sec. 31: W $\frac{1}{2}$ N $\frac{1}{2}$ E $\frac{1}{2}$, E $\frac{1}{2}$ S $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 32: N $\frac{1}{2}$ N $\frac{1}{2}$ E $\frac{1}{2}$, N $\frac{1}{2}$ E $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 33: N $\frac{1}{2}$	600	NM 01148	USA-All	Loneta S. Curtis	Lorraine A. Nelson & James C. Nelson Loneta S. Curtis	3% 2%		S. W. Richardson & Perry R. Bass
11-a	<u>T-20-S, R-31-E</u> Sec. 20: S $\frac{1}{2}$ W $\frac{1}{2}$	160	NM 01189	USA-All	Marian Condrey Welch & Van S. Welch, Trustee of the Estates of Wendell Condrey Welch, Thomas Flynn Welch & Phoebe Jane Welch	None			Marian Condrey Welch & Van S. Welch, Trustee
11-b	<u>T-20-S, R-31-E</u> Sec. 19: E $\frac{1}{2}$ Sec. 20: S $\frac{1}{2}$ E $\frac{1}{2}$	480	NM 01189	USA-All	Marian Condrey Welch & Van S. Welch, Trustee of Estates of Wendell Condrey Welch, Thomas Flynn Welch & Phoebe Jane Welch	Robert B. R ick Joe S. M ellard V. E. C ottinham Marian Condrey Welch & Van S. Welch, Trustee of Estates of Wendell Condrey Welch, Thomas Flynn Welch & Phoebe Jane Welch	.25% .25% .25%		S. W. Richardson & Perry R. Bass
12.	<u>T-20-S, R-32-E</u> Sec. 7: Lots 1, 2, 3, 4, E $\frac{1}{2}$ W $\frac{1}{2}$, E $\frac{1}{2}$ Sec. 8: W $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 17: All Sec. 18: Lots 1, 2, 3, 4, E $\frac{1}{2}$ W $\frac{1}{2}$, E $\frac{1}{2}$	2075.40	NM Q206	USA-All	W. E. Bondurant, Jr.	W. E. Bondurant, Jr. Obligation \$500 per acre out of 3% of production			S. W. Richardson & Perry R. Bass
13.	<u>T-20-S, R-31-E</u> Sec. 3: Lots 1, 2 (N $\frac{1}{2}$ N $\frac{1}{2}$ E $\frac{1}{2}$)	80.37	NM 01393	USA-All	John D. Meredith	John D. Meredith	3%		S. W. Richardson & Perry R. Bass
14.	<u>T-20-S, R-31-E</u> Sec. 3: S $\frac{1}{2}$ E $\frac{1}{2}$	160	NM 01877	USA-All	Culbertson & Irwin $\frac{1}{2}$ Malco Ref., Inc. $\frac{1}{2}$	The Texas Company Any interest	3.125% 1.875%		E. A. Culbertson & Wallace W. Irwin $\frac{1}{4}$ Culbertson & Irwin $\frac{1}{4}$ Malco Ref., Inc. $\frac{1}{2}$

15.	<u>T-21-S, R-29-E</u> Sec. 15; NW $\frac{1}{4}$	80	NM 01960	USA-All	F. P. Schuster S. A. Schuster C. S. Messinger	F. P. Schuster, S. A. Schuster C. S. Messinger	5%	S. W. Richardson & Perry R. Bass
16.	<u>T-20-S, R-31-E</u> Secs. 34 and 35; All	1280	NM 02045	USA-All	Vilas P. Sheldon *	B. E. Spencer & wife, Elsie M. Spencer Vilas P. Sheldon & wife, Della Sheldon, until 550 per acre received out of Sun-Tex. Petr. Co.	1.5% 3.125%	S. W. Richardson & Perry R. Bass
17.	<u>T-19S, R-31-E</u> Sec. 27; S $\frac{1}{2}$ Sec. 34; E $\frac{1}{2}$, NW $\frac{1}{4}$ Sec. 35; All	1360	NM 02447	USA-All	Sun-Tex Petr. Co.		5%	S. W. Richardson & Perry R. Bass
18.	<u>T-21-S, R-29-E.</u> Sec. 5; SE $\frac{1}{4}$	160	NM 02536	USA-All	Leland J. Price	Leland J. Price	3%	S. W. Richardson & Perry R. Bass
19.	<u>T-21-S, R-31-E</u> Sec. 8; S $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{2}$ SW $\frac{1}{4}$	120	NM 02827	USA-All	Wilshire Oil Company	Magdalene Childers Martham	1.5%	Wilshire Oil Company
20.	<u>T-21-S, R-31-E</u> Sec. 5; Lots 12, 13, 14, 15, 16, S $\frac{1}{2}$ Sec. 8; NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{2}$ SW $\frac{1}{4}$, NWSE $\frac{1}{4}$, SW $\frac{1}{2}$ SE $\frac{1}{4}$	920	NM 02828	USA-All	Magdalene Markham	Magdalene Childers Markham	3%	S. W. Richardson & Perry R. Bass
21.	<u>T-21-S, R-29-E</u> Sec. 10; NE $\frac{1}{4}$ Sec. 8; NE $\frac{1}{4}$ Sec. 17; NE $\frac{1}{4}$, SW $\frac{1}{4}$ Sec. 20; NW $\frac{1}{4}$	800	NM 02918	USA-All	Jo Rodke	Josephine Rodke Marian D. Harris	1% 2%	S. W. Richardson & Perry R. Bass
22.	<u>T-21-S, R-29-E</u> Sec. 20; NE $\frac{1}{4}$	160	NM 02922	USA-All	Joe W. Lackey	Joe W. Lackey Marian D. Harris	2% 2%	S. W. Richardson & Perry R. Bass
23.	<u>T-21-S, R-29-E</u> Sec. 8; SW $\frac{1}{4}$ Sec. 10; E $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$	400	NM 02946	USA-All	Frances Nix	Marian D. Harris Frances Nix	2% 1%	S. W. Richardson & Perry R. Bass
24.	<u>T-21-S, R-29-E</u> Sec. 15; NE $\frac{1}{4}$	160	NM 02977	USA-All	I. W. Boomerth	Loydgo Hunsale I. W. Boomerth	1% 2%	S. W. Richardson & Perry R. Bass

* Assigned to S. W. Richardson and Perry R. Bass.
Assignment filed and pending approval.

25.	T-21-S, R-30-E Sec. 15; NE $\frac{1}{4}$	320	NM 02978 10-1-48	USA-All	Wilshire Oil Co.	Laverge Harris	1%	Wilshire Oil Co.
26.	T-21-S, R-30-E Sec. 10; SE $\frac{1}{4}$	160	NM 02979 10-1-48	USA-All	Eugene H. Perry	Laverge Harris	1%	S. W. Richardson & Perry R. Bass
27.	T-21-S, R-30-E Sec. 10; NE $\frac{1}{4}$	160	NM 02980 10-1-48	USA-All	Eugene H. Perry	Laverge Harris	1%	S. W. Richardson & Perry R. Bass
28.	T-21-S, R-31-E Sec. 6; Lots 9, 10, 15, 16	160	NM 03057 9-1-48	USA-All	Eugene H. Perry	William R. Thompson	1%	S. W. Richardson & Perry R. Bass
29.	T-21-S, R-31-E Sec. 6; Lots 11, 12, 13, 14	156.39	NM 03059 9-1-48	USA-All	Eugene H. Perry	William R. Thompson	1%	S. W. Richardson & Perry R. Bass
30.	T-21-S, R-31-E Sec. 3; Lots 3, 4, 5, 6, Sec. 4; Lots 3, 4, 5, 6	329.04	NM 03183 3-1-52	USA-All	Mary Didlake	Mary Didlake, Obligation \$500 per acre out of 3% of production		S. W. Richardson & Perry R. Bass
31.	T-21-S, R-29-E Sec. 21; NE $\frac{1}{4}$, SE $\frac{1}{4}$, NE $\frac{1}{4}$, SW $\frac{1}{4}$ Sec. 33; E $\frac{1}{2}$ NE $\frac{1}{4}$	320	NM 03205 2-1-50	USA-All	Ralph Nix	John S. Harris Ralph Nix	2% 1%	S. W. Richardson & Perry R. Bass
32.	T-21-S, R-30-E Sec. 29; NE $\frac{1}{4}$, SE $\frac{1}{4}$, NE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$	600	NM 03297 4-1-52	USA-All	Lucy M. English	Lucy English	3%	S. W. Richardson & Perry R. Bass
33.	T-22-S, R-29-E Sec. 5; Lots 1, 2, 3, 4, SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 6; Lots 1, 2, 3, 4, E $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ Sec. 7; Lots 1, 2, 3, 4, E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 18; Lots 1, 2, 3, 4, E $\frac{1}{2}$ NE $\frac{1}{4}$	1440.60	NM 03302 9-1-51	USA-All	Buck Russell	Buck Russell	3%	S. W. Richardson & Perry R. Bass
34.	T-21-S, R-30-E Sec. 21; SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$	80	NM 03364 2-1-50	USA-All	Joe W. Lackey	John S. Harris Joe W. Lackey	2% 2%	S. W. Richardson & Perry R. Bass
35.	T-21-S, R-30-E Sec. 3; Lots 1, 2, 7, 8, 9, 10, 11	253.96	NM 03926 6-1-52	USA-All	M. E. Chappell	None		S. W. Richardson & Perry R. Bass

36.	<u>T-20-S, R-31-E</u> Sec. 17: E $\frac{1}{2}$, E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 21: NW $\frac{1}{4}$, NW $\frac{1}{4}$ E $\frac{1}{2}$ Sec. 27: NW $\frac{1}{4}$ E $\frac{1}{2}$	1040	NM 04082 12-1-51	USA-A11	Victor B. Vanhook	Victor B. Vanhook	3.125%	S. W. Richardson & Perry R. Bass
37.	<u>T-21-S, R-30-E</u> Sec. 19: Lots 5, 6, 7, 8 Sec. 20: SW$\frac{1}{4}$, NW $\frac{1}{4}$ E $\frac{1}{2}$ Sec. 29: SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 30: A11 Sec. 23: SE $\frac{1}{2}$	1197.71	NM 04105 3-1-52	USA-A11	W. R. Seltzer	None		S. W. Richardson & Perry R. Bass
38.	<u>T-21-S, R-29-E</u> Sec. 20: SE $\frac{1}{2}$	160	NM 04228 2-1-50	USA-A11	Marian Blomberg	Marian D. Harris Marian Blomberg	2% 1%	S. W. Richardson & Perry R. Bass
39.	<u>T-21-S, R-31-E</u> Sec. 3: Lots 1, 2, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Sec. 4: Lots 1, 2, 7, 8, 11, 12, 13, 14, SW $\frac{1}{4}$ Sec. 9: E $\frac{1}{2}$, SW $\frac{1}{4}$	1449.20	NM 04383 7-1-52	USA-A11	Manley O. Vandroscot	Manley O. Van Orsdol	3%	S. W. Richardson & Perry R. Bass
40.	<u>T-20-S, R-31-E</u> Sec. 3: Lot 4, SW $\frac{1}{4}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 4: Lots 1, 2, 3, SE $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{2}$ E $\frac{1}{2}$, SE $\frac{1}{2}$	552.10	NM 04557 8-1-52	USA-A11	Mrs. Frances Price	Frances M. Price Obligation \$500 per acre out of 3% of production		S. W. Richardson & Perry R. Bass
41.	<u>T-21-S, R-31-E</u> Sec. 4: Lots 9, 10, 15, 16, SE $\frac{1}{2}$	320	NM 04835 6-1-52	USA-A11	Elizabeth Ann Elliott	Elizabeth Ann Elliott	3%	S. W. Richardson & Perry R. Bass
42.	<u>T-21-S, R-28-E</u> Sec. 3: Lots 14 & 15	80	NM 05214 6-1-51	USA-A11	Elizabeth Ann Elliott	Elizabeth Ann Elliott	5%	S. W. Richardson & Perry R. Bass
43.	<u>T-21-S, R-28-E</u> Sec. 12: SW $\frac{1}{4}$	160	NM 05965 8-1-51	USA-A11	Maurine Barnett	Maurine Barnett	3%	S. W. Richardson & Perry R. Bass

44.	<u>T-21-S-R-28-E</u> Sec. 8: SW¹ , SE ¹ Sec. 17: NE¹ , NW ¹ Sec. 18: NE¹ , Lots 3, 4, E ¹ SW ¹ Sec. 19: NE¹ , E ¹ W ¹ Sec. 20: NE¹ , SW ¹ , SE ¹ W ¹ Sec. 20: Lots 1, 2, 3, E ¹ W ¹ , E ¹	2553.61	LC 060365 5-1-50	USA-All	Ralph Nix	Ralph Nix	5%	S. W. Richardson & Perry R. Bass
45-a	<u>T-21-S, R-28-E</u> Sec. 21: Lots 3, 6 Sec. 4: Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	494.38	LC 060315 9-1-50	USA-All	Ralph S. Trigg	Ralph S. Trigg	5%	S. W. Richardson & Perry R. Bass
45-b	<u>T-21-S, R-28-E</u> Sec. 5: Lot 4 Sec. 6: Lots 1, 2, 3	110.52	LC 060315 9-1-50	USA-All	Ralph S. Trigg	Ralph S. Trigg	6.25%	S. W. Richardson & Perry R. Bass
45-c	<u>T-21-S, R-28-E</u> Sec. 3: Lots 5, 12	80.00	LC 060315 9-1-50	USA-All	Ralph S. Trigg	None		Clint Ross
45-d	<u>T-21-S, R-28-E</u> Sec. 3: Lot 4	26.66 1520.80	LC 060315 9-1-50	USA-All	Ralph S. Trigg	None		New Mexico Asphalt & Refining Co.
46-a	<u>T-21-S, R-28-E</u> Sec. 5: SW¹ Sec. 6: Lots 14, 15, E ¹ SW ¹ , SE ¹ Sec. 7: All Sec. 8: NE¹ , NW ¹	266.70 1520.80	LC 060372 9-1-50	USA-All	Blanche Trigg	Blanche Trigg	5%	S. W. Richardson & Perry R. Bass
46-b	<u>T-21-S, R-28-E</u> Sec. 5: Lots 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Sec. 6: Lots 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16	990.37	LC 060372 9-1-50	USA-All	Blanche Trigg	Blanche Trigg	6.25%	S. W. Richardson & Perry R. Bass
47.	<u>T-21-S, R-28-E</u> Sec. 4: Lots 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Sec. 5: Lots 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Sec. 6: Lots 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Sec. 9: NE¹ Sec. 10: NE¹	1156.51	LC 060313 9-1-48	USA-All	Lillie May Yates	Lillie May Yates	5%	S. W. Richardson & Perry R. Bass

48.	<u>T-22-S, R-28-E</u> Sec. 3: Lots 3, 4, S½NW¼, S½ Sec. 4: Lots 3, 4, S½NW¼, S½ Sec. 5: Lots 1, 4, SW¼NW¼, SE¼NE¼, S½ Sec. 6: S½, S½NE¼ Sec. 9: NE¼NW¼	1479.16	LC 060853 8-1-49	USA-All	J. E. Metcalf	J. E. Metcalf	5%	S. W. Richardson & Perry R. Bass
49.	<u>T-22-S, R-28-E</u> Sec. 6: Lot 4 <u>T-21-S, R-28-E</u> Sec. 31: Lot 4, SE¼SW¼, W½SE¼	195.08	LC 061277 5-1-50	USA-All	Martin Yates III	Martin Yates III	5%	S. W. Richardson & Perry R. Bass
50.	<u>T-21-S, R-29-E</u> Sec. 21: S½	320	LC 061396 4-1-49	USA-All	Edna Ione Hall	Edna Ione Hall	3%	S. W. Richardson & Perry R. Bass
51.	<u>T-21-S, R-31-E</u> Sec. 8: S½NW¼	80	LC 061641 3-1-47	USA-All	Eugene H. Perry	Magdalene Childers Marham	1.5%	S. W. Richardson & Perry R. Bass
52.	<u>T-21-S, R-31-E</u> Sec. 8: SE¼SE¼	40	LC 062568 9-1-48	USA-All	Esther Bosworth	William R. Thompson	1%	Esther Bosworth
53.	<u>T-21-S, R-29-E</u> Sec. 7: Lots 1, 2, 3, 4, E½NW¼, SE¼ Sec. 18: Lots 2, 3, 4, E½NW¼, NE¼SW¼, E½ Sec. 19: Lots 1, 2, E½NW¼, NE¼ Sec. 30: Lot 3, 4, E½SW¼, E½ Sec. 31: Lot 1, NE¼NW¼	1805.21	LC 062573 1-1-51	USA-All	Helen E. Mapes	Helen E. Mapes	3%	S. W. Richardson & Perry R. Bass
54-a	<u>T-21-S, R-31-E</u> Sec. 7: Lots 1, 2, 3, 4, E½NW¼, NE¼NE¼, SE¼SE¼	434.24	LC 062727 1-1-51	USA-All	Gladys H. Hunter	Gladys H. Hunter	3%	S. W. Richardson & Perry R. Bass
54-b	<u>T-21-S, R-31-E</u> Sec. 7: NE¼SE¼	40	LC 062727-C 1-1-51	USA-All	Wilshire Oil Co.	Gladys H. Hunter	1%	Wilshire Oil Co.
55.	<u>T-21-S, R-31-E</u> Sec. 6: Lots 17, 18, 3½SW¼ Sec. 7: S½NE¼	236.76	LC 062727-A 1-1-51	USA-All	Eugene H. Perry	Gladys H. Hunter	1%	S. W. Richardson & Perry R. Bass

56.	<u>T-21-S, R-31-E</u> Sec. 6: SE ₁ Sec. 7: W ₁ SE ₁	240	LC 062727-B USA-A11 1-1-51	Eugene H. Perry	Clady's H. Hunter	1%	S. W. Richardson & Perry R. Bass
57.	<u>T-21-S, R-30-E</u> Sec. 15: SE ₁	160	LC 062793 USA-A11 1-1-51	Esther Bosworth	James D. Sprecher Mrs. Esther Bosworth	1% 2%	S. W. Richardson & Perry R. Bass
58.	<u>T-21-S, R-29-E</u> Sec. 15: NW ₁ NW ₁	40	LC 062940 USA-A11 1-1-51	George E. Currier	George E. Currier	3%	S. W. Richardson & Perry R. Bass
59.	<u>T-21-S, R-30-E</u> Sec. 19: E ₁ SW ₁ , SE ₁ Sec. 20: S ₁ N ₁ , NW ₁ SW ₁ Sec. 21: W ₁	800	LC 063167 USA-A11 10-1-48	LaVerge Harris	I. W. Bosworth LaVerge Harris	1% 2%	S. W. Richardson & Perry R. Bass
60.	<u>T-20-S, R-31-E</u> Sec. 19: Lots 1, 2, E ₁ NW ₁	158.71	LC 063346 USA-A11 10-1-46	Channing Brown	Channing Brown	3%	S. W. Richardson & Perry R. Bass
61.	<u>T-21S-R-28-E</u> Sec. 9: E ₁ SW ₁ Sec. 15: S ₁ SE ₁	160	LC 063410 USA-A11 5-1-50	Robert E. McKee General Contractor, Inc.	Robert E. McKee General Contractor, Inc.	5%	S. W. Richardson & Perry R. Bass
62.	<u>T-21-S, R-29-E</u> Sec. 9: A11	640	LC 063418 USA-A11 11-1-46	Max Enzinger *	Max Enzinger	3%	S. W. Richardson & Perry R. Bass
63.	<u>T-20-S, R-31-E</u> Sec. 12: A11 Sec. 13: W ₁ , NE ₁ , E ₁ SE ₁ , SW ₁ SE ₁	1240	LC 063484 USA-A11 9-1-48	Amy McNutt	Amy McNutt	3%	S. W. Richardson & Perry R. Bass
64.	<u>T-21-S, R-28-E</u> Sec. 9: SE ₁	160	LC 063510 USA-A11 10-1-50	Bassett & Birney, a partnership composed of Myra Bassett Daugherty, Barbara Bassett Birmingham, Elizabeth Bassett Hammond, nee Elizabeth Bassett, J. E. Metcalf, Madelyn Birney Metcalf, Leo J. Monsen, Gus Monsen, Jr., Reuben Monsen, C. A. Beers, C. L. Knight Executor of Estate of Bernie E. Knight, dec'd., Archie Campbell, J. E. Metcalf, Trustee for Nancy Metcalf, Martin Yates III	Bassett & Birney, a partnership	5%	S. W. Richardson & Perry R. Bass

* Assigned to Ralph Mix - Assignment filed and pending approval.

65.	T-21-S, R-28-E Sec. 9: NE 1/4 Sec. 10: E 1/2 SW 1/4 Sec. 11: SW 1/4 Sec. 14: NW 1/4 Sec. 15: NE 1/4	1120	LC 063516	USA-A11	Max Friess	None		Max Friess
66.	T-20-S, R-31-E Sec. 10: NE 1/4 Sec. 3: NW 1/4	238.31	LC 063537	USA-A11	E. A. Culbertson & Wallace W. Irwin 1/2 Culbertson & Irwin, Inc. 1/2	The Texas Co.	3.125%	E. A. Culbertson & Wallace W. Irwin 1/2 Culbertson & Irwin 1/2 Inc.
67.	T-21-S, R-28-E Sec. 11: NW 1/4	80	LC 063541	USA-A11	Maurice Schwartz	Maurice Schwartz	5%	S. W. Richardson & Perry R. Bass
68.	T-21-S, R-28-E Sec. 9: NW 1/4 Sec. 10: E 1/2 NW 1/4 Sec. 11: E 1/2 NW 1/4	240	LC 063543	USA-A11	C. S. Messinger	C. S. Messinger	5%	S. W. Richardson & Perry R. Bass
69.	T-21-S, R-28-E Sec. 15: NE 1/4 SE 1/4 Sec. 14: NW 1/4 SE 1/4	160	LC 063545	USA-A11	Myra B. Daugherty, & Madelyn B. Metcalf, a partnership	Myra B. Daugherty & Madelyn B. Metcalf	5%	S. W. Richardson & Perry R. Bass
70.	T-21-S, R-28-E Sec. 15: NW 1/4 SE 1/4	40	LC 063548	USA-A11	F. P. Schuster & S. A. Schuster	F. P. Schuster & S. A. Schuster	5%	S. W. Richardson & Perry R. Bass
71	T-20-S, R-31-E Sec. 14: NW 1/4 Sec. 15: E 1/2 E 1/2 NW 1/4	960	LC 063667	USA-A11	William Spurck & Vada Spurck	William Spurck & Vada Spurck	4.167%	S. W. Richardson & Perry R. Bass
72.	T-20-S, R-31-E Sec. 14: E 1/2 E 1/2 Sec. 23: E 1/2 Sec. 24: NW 1/4	800	LC 063674	USA-A11	Culbertson & Irwin, Inc. 1/2 E. A. Culbertson 1/4 Wallace W. Irwin 1/4	None * * *		Culbertson & Irwin, Inc. 1/2 E. A. Culbertson & Wallace W. Irwin 1/2
73.	T-21-S, R-31-E Sec. 5: Lot 9 T-20-S, R-28-E Sec. 31: NE 1/4	200	LC 063862-A	USA-A11	Eugene H. Perry	Thomas J. Sivley	3%	S. W. Richardson & Perry R. Bass

* The owners of this tract have agreed to assign the lease as to the NW 1/4 Sec. 23, E 1/2 NW 1/4 Sec. 24 to S. W. Richardson and Perry R. Bass as a contribution toward the drilling of the initial test well.

74.	<u>I-22-S, P-29-E</u> Sec. 21: W₁ Sec. 28: W₁ Sec. 29: E₁E₂, SW₁SE₁ Sec. 33: W₁, SW₁NE₁, W₁SE₁	1280	LC 064806 2-1-51	USA-All	Naydeen C. Lackey	Naydeen C. Lackey	4%	S. W. Richardson C. Perry R. Bass
75-a	<u>I-22-S, R-29-E</u> Sec. 15: NE₁, S₁ Sec. 22: N₁ Sec. 27: N₁, SW₁ Sec. 34: N₁, SW₁	1760	LC 064828 3-1-51	USA-All	Patricia Gaylord Anderson	Patricia Gaylord Anderson	4%	S. W. Richardson C. Perry R. Bass
75-b	<u>I-22-S, R-29-E</u> Sec. 15: NW₁ Sec. 22: S₁ Sec. 27: SE₁	640	LC 064828 3-1-51	USA-All	Patricia Gaylord Anderson	None		Patricia Gaylord Anderson
76-a	<u>I-22-S, R-29-E</u> Sec. 10: E₁NW₁, SW₁NW₁, S₁ Sec. 21: E₁ Sec. 28: E₁ Sec. 33: E₁E₂, NW₁NE₁ Sec. 34: SE₁	1440	LC 064829 4-1-51	USA-All	Bonnie H. Matlock Exec. Estate of Bruce K. Matlock, dec'd.	Bonnie H. Matlock, Obligation payable out of 3% production until \$720,000 received		S. W. Richardson C. Perry R. Bass
76-b	<u>I-22-S, R-29-E</u> Sec. 35: W₁, W₁SE₁ <u>I-22-S, R-29-E</u> Sec. 3: Lots 1, 2, 3, 4, S ₁ NW ₁ Sec. 4: Lots 1, 2, 3, 4, S ₁ NW ₁	1041.60	LC064829 4-1-51	USA-All	Bonnie H. Matlock Exec. Estate of Bruce K. Matlock, dec'd	Bonnie H. Matlock, Obligation \$750 per acre out of 3% of production		S. W. Richardson C. Perry R. Bass
77.	<u>I-22-S, R-29-E</u> Sec. 9: All Sec. 10: NW₁NW₁ Sec. 17: E₁E₂, SW₁NE₁, W₁SE₁ Sec. 20: All Sec. 29: W₁, W₁NE₁, NW₁SE₁ Sec. 30: E₁E₂ Sec. 31: N₁	2520	LC 065035 6-1-51	USA-All	Joe W. Lackey	Joe W. Lackey	4%	S. W. Richardson C. Perry R. Bass
78.	<u>I-20-S, R-31-E</u> Sec. 27: S₁NE₁, NW₁	240	LC 065431 3-1-51	USA-All	Josephine Roetke	Josephine Roetke	3%	S. W. Richardson C. Perry R. Bass

79.	<u>T-21-S, R-29-E</u> Sec. 19: Lots 3,4, E ₂ SW ₄ , SE ₄ Sec. 26: W ₂ SW ₄	380.98	LC 065609 9-1-48	USA-All	Robert C. Glines	Sunshine Royalty Co. Robert C. Glines	2.5% 2.5%	S. W. Richardson & Perry R. Bass
80.	<u>T-20-S, R-31-E</u> Sec. 3: E ₂ NE ₄ , E ₂ W ₂ Sec. 10: SE ₄	396.63	LC 065713 7-1-47	USA-All	The Southern California Petroleum Corp.	The Texas Company	3.125%	The Southern California Petroleum Corp.
81.	<u>T-20-S, R-32-E</u> Sec. 28: E ₂ , SW ₄ Sec. 27: S ₄ SE ₄	640	LC 065750 7-1-51	USA-All	Paul Wallach	Paul Wallach	3%	S. W. Richardson & Perry R. Bass
82.	<u>T-20-S, R-32-E</u> Sec. 29: SW ₄ , S ₂ NE ₄ Sec. 30: All Sec. 31: Lots 1,2,3,4, E ₂ W ₂ , NE ₄	1358.92	LC 065751 8-1-51	USA-All	Paul Wallach	Paul Wallach	3%	S. W. Richardson & Perry R. Bass
83.	<u>T-20-S, R-32-E</u> Sec. 19: All Sec. 20: All Sec. 21: All Sec. 28: NW ₄ Sec. 29: E ₂ , N ₂ NE ₄	2478.48	LC 065752 7-1-51	USA-All	Paul Wallach	Paul Wallach	3%	S. W. Richardson & Perry R. Bass
84-a	<u>T-20-S, R-31-E</u> Sec. 26: E ₂ NE ₄ , E ₂ NE ₄ W ₂ SW ₄ , W ₂ SE ₄	320	LC 065872 9-1-48	USA-All	Kerr-McGee Oil Industries, Inc.	Letha F. Hubbard	.5%	Kerr-McGee Oil Industries, Inc.
84-b	<u>T-20-S, R-31-E</u> Sec. 26: W ₂ NE ₄ , W ₂ NE ₄ , E ₂ SW ₄ , E ₂ SE ₄	320	LC 065872 9-1-48	USA-All	Kerr-McGee Oil Industries, Inc.	Letha F. Hubbard	.5%	S. W. Richardson & Perry R. Bass
85-a	<u>T-20-S, R-31-E</u> Sec. 23: W ₂ NE ₄ , E ₂ SW ₄	160	LC 065873 9-1-48	USA-All	George H. Cobb*	George H. Cobb	.5%	Kerr-McGee Oil Industries, Inc.

* Assignment to Kerr-McGee Oil Industries, Inc.
pending approval.

86-b	<u>T-20-S, R-31-E</u> Sec. 23: EJNW , WJSW	160	LC 065873 9-1-48	USA-All	George H. Cobb*	George H. Cobb	.5%	S. W. Richardson & Perry R. Bass
86-a	<u>T-20-S, R-31-E</u> Sec. 21: EJSE	80	LC 065874 9-1-48	USA-All	Kerr-McGee Oil Industries, Inc.	Robert E. Anderson	.5%	Kerr-McGee Oil Industries, Inc.
86-b	<u>T-20-S, R-31-E</u> Sec. 21: EJNE	80	LC 065874 9-1-48	USA-All	Kerr McGee Oil Industries, Inc.	Robert E. Anderson	.5%	S. W. Richardson & Perry R. Bass
87-a	<u>T-20-S, R-31-E</u> Sec. 27: WJSE	80	LC 065897 10-1-48	USA-All	Kerr McGee Oil Industries, Inc.	James N. Baxendale	.5%	Kerr-McGee Oil Industries, Inc.
87-b	<u>T-20-S, R-31-E</u> Sec. 27: EJSE	80	LC 065897 10-1-48	USA-All	Kerr McGee Oil Industries, Inc.	James N. Baxendale	.5%	S. W. Richardson & Perry R. Bass
88-a	<u>T-20-S, R-31-E</u> Sec. 25: EJNW , EJNE , WJSW , WJSE	320	LC 065914 9-1-48	USA-All	Thomas L. Glover*	Thomas L. Glover	.5%	Kerr-McGee Oil Industries, Inc.
88-b	<u>T-20-S, R-31-E</u> Sec. 25: WJNW , WJNE , EJSW , EJSE	320	LC 065914 9-1-48	USA-All	Thomas L. Glover*	Thomas L. Glover	.5%	S. W. Richardson & Perry R. Bass
89-a	<u>T-20-S, R-31-E</u> Sec. 22: WJNW , WJNE , EJSW , EJSE	320	LC 065944 9-1-48	USA-All	Kerr McGee Oil Industries, Inc.	Joseph W. Fletcher	.5%	Kerr-McGee Oil Industries, Inc.
89-b	<u>T-20-S, R-31-E</u> Sec. 22: EJNW , EJNE , WJSW , WJSE	320	LC 065944 9-1-48	USA-All	Kerr McGee Oil Industries, Inc.	Joseph W. Fletcher	.5%	S. W. Richardson & Perry R. Bass
90	<u>T-21-S, R-28-E</u> Sec. 17: SW Sec. 20: SJSE	240	LC 066067 9-1-48	USA-All	Ralph Petty	Ralph Nix	.5%	S. W. Richardson & Perry R. Bass

* Assignment to Kerr-McGee Oil Industries, Inc.
pending approval

91.	<u>T-21-S, R-28-E</u> Sec. 17: NWSE $\frac{1}{4}$	80	LC 066067-A	USA-All	Harvey E. Yates *	Harvey E. Yates	5%	S. W. Richardson & Perry R. Bass
92.	<u>T-20-S, R-30-E</u> Sec. 25: NW $\frac{1}{4}$ Secs. 26, 27, 34: All	2080	LC 066156	USA-All	Helen Orton Ham nee Helen C. Watson	Helen Orton Ham L. E. Ellfott	1% 4%	S. W. Richardson & Perry R. Bass
93.	<u>T-21-S, R-28-E</u> Sec. 24: SW $\frac{1}{4}$ Sec. 25: NE $\frac{1}{4}$, SW $\frac{1}{4}$ Sec. 35: All	1280	LC 067144	USA-All	Rosemary Murphy Barnett	Rosemary Murphy Barnett	3%	S. W. Richardson & Perry R. Bass
94.	<u>T-21-S, R-28-E</u> Sec. 24: NE $\frac{1}{4}$ Sec. 3: SE $\frac{1}{4}$ Sec. 9: NW $\frac{1}{4}$ Sec. 10: W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 17: E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 12: SE $\frac{1}{4}$ Sec. 13: NE $\frac{1}{4}$, SE $\frac{1}{4}$ Sec. 14: SW $\frac{1}{4}$ SW $\frac{1}{4}$	1480	LC 067145	USA-All	Dixie Dresser Flood	Dixie Dresser Flood	3%	S. W. Richardson & Perry R. Bass
95.	<u>T-22-S, R-28-E</u> Sec. 9: SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 17: NE $\frac{1}{4}$ NE $\frac{1}{4}$	200	LC 067186	USA-All	Betsy Dixon Morrison	Betsy Dixon Morrison Bonnie H. Matlock, obligation \$750 per acre out of 2.5% production	.5%	S. W. Richardson & Perry R. Bass
96-a	<u>T-21-S, R-30-E</u> Sec. 1: Lots 3, 4, 5, 6, 11, 12, 13, 14, SE $\frac{1}{4}$ Sec. 11: All Sec. 12: SW $\frac{1}{4}$ Sec. 14: NW $\frac{1}{4}$	1592.10	LC 067297-A	USA-All	I. W. Bosworth	H. C. Bretschneider & Harry A. Aurand I. W. Bosworth	2% 3%	S. W. Richardson & Perry R. Bass
96-b	<u>T-21-S, R-30-E</u> Sec. 12: NE $\frac{1}{4}$	160	LC 067297-B	USA-All	Eugene H. Perry	H. C. Bretschneider & Harry A. Aurand	2%	S. W. Richardson & Perry R. Bass
96-c	<u>T-21-S, R-30-E</u> Sec. 12: SE $\frac{1}{4}$ Sec. 14: NE $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$	320	LC 067297-C	USA-All	Eugene H. Perry	H. C. Bretschneider & Harry A. Aurand	2%	S. W. Richardson & Perry R. Bass

* Committed to Unit Agreement by S. W. Richardson and Perry R. Bass by Option Agreement.

96-d	T-21-S, R-30-E Sec. 1: Lots 1, 2, 7, 8, 9, 10, 15, 16 Sec. 12: NW $\frac{1}{4}$	472.14	LC 067297 3-1-51	USA-A11	Wilshire Oil Co.	H C. Bretschneider & Harry A. Aurand	2%	Wilshire Oil Co.
97.	T-21-S, R-30-E Sec. 23: SW $\frac{1}{4}$	160	LC 067793-A 3-1-51	USA-A11	Eugene H. Perry	None		S. W. Richardson & Perry R. Bass
98.	T-21-S, R-29-E Sec. 33: NE $\frac{1}{4}$ Sec. 34: NW $\frac{1}{4}$ Sec. 35: NW $\frac{1}{4}$	800	LC 067964 7-1-51	USA-A11	Mabel E. Todhunter	Mabel E. Todhunter	3%	S. W. Richardson & Perry R. Bass
99.	T-20-S, R-32-E Sec. 34: All	640	LC 068104 8-1-51	USA-A11	Terence Kyle Underwood	Terence Kyle Underwood Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
100.	T-21-S, R-28-E Sec. 24: NW $\frac{1}{4}$, SE $\frac{1}{4}$ Sec. 25: SE $\frac{1}{4}$ T-21-S, R-29-E Sec. 7: NE $\frac{1}{4}$ Sec. 30: Lots 1, 2, E $\frac{1}{2}$ NW $\frac{1}{4}$	781.10	LC 068284 11-1-51	USA-A11	Aileen T. Taylor	Aileen T. Taylor	3%	S. S. W. Richards & Perry R. Bass
101.	T-21-S, R-28-E Sec. 12: NE $\frac{1}{4}$ Sec. 13: SW $\frac{1}{4}$ Sec. 15: S $\frac{1}{2}$ SW $\frac{1}{4}$	400	LC 068368 7-1-51	USA-A11	Harry F. Schram	Harry F. Schram	3%	S. W. Richardson & Perry R. Bass
102.	T-21-S, R-29-E Sec. 33: Lots 1, 2, 3, 4, NW $\frac{1}{4}$ Sec. 34: Lots 1, 2, 3, 4, NW $\frac{1}{4}$ Sec. 35: Lots 1, 2, 3, 4, NW $\frac{1}{4}$	916.04	LC 068379 8-1-51	USA-A11	Betty Ruth Wright	Betty Ruth Wright Ora R. Hall, Jr.	1% 2%	S. W. Richardson & Perry R. Bass
103.	T-20-S, R-31-E Sec. 9: E $\frac{1}{2}$ Sec. 10: NW $\frac{1}{4}$	640	LC 068399 6-1-51	USA-A11	T. V. Price	T. V. Price, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
104.	T-20-S, R-31-E Sec. 4: Lot 4, SW $\frac{1}{4}$, SW $\frac{1}{4}$ Sec. 5: Lots 1, 2, 3, 4, SW $\frac{1}{4}$, SE $\frac{1}{4}$ Sec. 6: Lots 1, 2, 3, 4, 5, 6, 7, 8, NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 7: Lots 1, 2, E $\frac{1}{2}$ NW $\frac{1}{4}$	1328.56	LC 068408 11-1-51	USA-A11	Woodlan P. Saunders	Woodlan P. Saunders, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass

105.	<u>T-21-S, R-28-E</u> Sec. 11: N ¹ SE ¹ Sec. 14: NE ¹	240	LC 068669 10-1-49	USA-All	Robert E. McKee General Contractor , Inc.	Robert E. McKee General Contractor , Inc.	5%	S. W. Richardson & Perry R. Bass
106-a	<u>T-21-S, R-31-E</u> Sec. 6: Lots 1,2,3,4,5, 6,7,8	325.72	LC 068996 6-1-51	USA-All	Mrs. Ella Belle Robinson	Mrs. Ella Belle Robinson	3%	S. W. Richardson & Perry R. Bass
106-b	<u>T-21-S, R-31-E</u> Sec. 5: Lots 1,2,3,4, 5,6,7,8,10,11	409.40	LC 068996 6-1-51	USA-All USA-All	Mrs. Ella Belle Robinson	Mrs. Ella Belle Robinson Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
107.	<u>T-22-S, R-28-E</u> Sec. 1: All Sec. 8: E ¹ , E ¹ W ¹ Sec. 9: NW ¹ NE ¹ , SE ¹ NW ¹ , S ¹ Sec. 10: NW ¹ Sec. 11: NE ¹	2029.25	LC 069140 8-1-51	USA-All	Mrs. Jane Stapp	Mrs. Jane Stapp, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
108.	<u>T-21-S, R-29-E</u> Sec. 3: All	940.96	LC 069141 6-1-51	USA-All	Gilbert F. Scheib	Gilbert F. Scheib	5%	S. W. Richardson & Perry R. Bass
109.	<u>T-22-S, R-28-E</u> Sec. 10: S ¹ Sec. 11: S ¹ Secs. 12 and 14: All Sec. 15: E ¹ E ¹ W ¹ NE ¹ Sec. 22: E ¹ NE ¹ Sec. 23: W ¹ NW ¹	2359.67	LC 069142 8-1-51	USA-All	George L. Erwin, Jr.	George L. Erwin, Jr., obliga- tion \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
110-a	<u>T-21-S, R-29-E</u> Sec. 27: N ¹ NE ¹ , W ¹ NW ¹ , SW ¹ Sec. 28: E ¹ NW ¹ , S ¹ Sec. 29: W ¹ NW ¹ , S ¹ Sec. 31: Lots 2,3,4,5,6,7, NE ¹ , N ¹ SE ¹ , SE ¹ NW ¹ , NE ¹ SW ¹	1620.86	LC 069144 7-1-49	USA-All	John N. Fidel	John N. Fidel	3%	S. W. Richardson & Perry R. Bass
110-b	<u>T-21-S, R-29-E</u> Sec. 27: E ¹ NW ¹ , SE ¹ Sec. 29: E ¹ NW ¹ Sec. 28: W ¹ NW ¹	400	LC 069144-A 7-1-49	USA-All	Frances Mix	John N. Fidel Frances Mix	2% 1%	S. W. Richardson & Perry R. Bass

111-a	<u>T-22-S, R-28-E</u> Sec. 24: Lots 1 thru 16, incl.	671.85	LC 069137 7-1-51	USA-All	Naydeen C. Lackey	Nadeen C. Lackey	4%	S. W. Richardson & Perry R. Bass Malco Refineries, Inc.
111-b	<u>T-22-S, R-28-E</u> Sec. 23: E ₂	320	LC 069157 7-1-51	USA-All	Naydeen C. Lackey	None		
112.	<u>T-22-S, R-28-E</u> Sec. 13: All Sec. 23: E ₂ NW ₄ , SW ₄ Sec. 25: All	1596.49	LC 069159 8-1-51	USA-All	R. O. Champeau	R. O. Champeau, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
113-a	<u>T-21-S, R-28-E</u> Sec. 26: E ₂	320	LC 069219 4-1-51	USA-All	Mrs. Mabel E. Todhunter	Mrs. Mabel E. Todhunter	3%	S. W. Richardson & Perry R. Bass
113-b	<u>T-21-S, R-28-E</u> Sec. 11: NE ₄ , S ₂ SE ₄ Sec. 14: SE ₄ Sec. 23: All Sec. 26: W ₂	1360	LC 069219 4-1-51	USA-All	Mrs. Mabel E. Todhunter	Mrs. Mabel E. Todhunter, Obligation \$500 per acre out of 3% production		S. W. Richardson & Perry R. Bass
114.	<u>T-20-S, R-30-E</u> Sec. 35: N ₂	320	LC 069227 3-1-52	USA-All	Elaine V. Scheib	Elaine V. Scheib	5%	S. W. Richardson & Perry R. Bass
115-a	<u>T-21-S, R-29-E</u> Sec. 27: S ₂ NE ₄ Sec. 28: S ₂ NE ₄ Sec. 29: NE ₄	320	LC 069241 6-1-51	USA-All	Luther Cullens	Luther Cullens	3%	S. W. Richardson & Perry R. Bass
115-b	<u>T-21-S, R-29-E</u> Sec. 28: N ₂ NE ₄	80	LC 069241 6-1-51	USA-All	Luther Cullens	Luther Cullens Malco Refineries, Inc.	2% 2%	S. W. Richardson & Perry R. Bass
116-	<u>T-23-S, R-29-E</u> Sec. 3: N ₂ SE ₄ , S ₂ SE ₄ SE ₄ SW ₄	280	LC069504 9-1-51	USA-All	Bonnie H. Matlock Exec. Est. of Bruce K. Matlock, dec'd.	Bonnie H. Matlock, obliga- tion \$750 per acre out of 3% production		S. W. Richardson & Perry R. Bass
117.	<u>T-23-S, R-29-E</u> Sec. 4: N ₂ SE ₄	80	LC 069506 9-1-51	USA-All	Evelyn M. Dixon	Evelyn M. Dixon Bonnie H. Matlock, Obligation \$750 per acre out of 2.3% production	.5%	S. W. Richardson & Perry R. Bass

118.	T-21-S, R-28-E Sec. 4: SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	200	LC 062550 7-1-49	USA-A11	O. H. Randel & R. S. Magruder	O. H. Randel & R. S. Magruder Oil Royalties Corp. Heirs of James L. Johnson* Estate of F. A. Andrews	2.75% 1.5% .5% .25%	S. W. Richardson & Perry R. Bass
119.	T-19-S, R-31-E Sec. 33: E $\frac{1}{2}$ Sec. 34: SW $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$	560 797.88	LC 069705 7-1-51	USA-A11	Thomas L. Pearson	Thomas L. Pearson Frank O. Elliott	1% 4%	S. W. Richardson & Perry R. Bass
120.	T-21-S, R-28-E Sec. 3: Lots 13, 16 Sec. 4: Lot 13, NW $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 6: Lots 17, 18 Sec. 17: E $\frac{1}{2}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 19: Lots 1, 2 Sec. 34: NE $\frac{1}{4}$	2280 797.88	LC 069707 6-1-51	USA-A11	Bob Bear	Bob Bear Ora R. Hall, Jr.	1% 4%	S. W. Richardson & Perry R. Bass
121.	T-22-S, R-29-E Sec. 4: SW $\frac{1}{4}$ Sec. 5: S $\frac{1}{2}$ Sec. 6: SE $\frac{1}{4}$ Sec. 7: E $\frac{1}{2}$ Sec. 8: All Sec. 17: NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 18: E $\frac{1}{2}$ T-20-S, R-32-E Sec. 33: All	2280	LC 069876 5-1-51	USA-A11	Josephine T Hudson 1/2 William A. Hudson 1/2	None		Josephine T Hudson 1/2 William A. Hudson 1/2
122.	T-21-S, R-28-E Sec. 12: NW $\frac{1}{4}$	160	LC 070060 12-1-49	USA-A11	Robert E. McKee, General Contractor, Inc.	Robert E. McKee, General Contractor, Inc.	5%	S. W. Richardson & Perry R. Bass
123.	T-21-S, R-28-E Sec. 33: S $\frac{1}{2}$ Sec. 34: SW $\frac{1}{4}$	480	LC 070061 7-1-49	USA-A11	Robert E. McKee General Contractor, Inc.	Robert E. McKee General Contractor, Inc.	5%	S. W. Richardson & Perry R. Bass
125.	T-20-S, R-31-E Sec. 7: Lots 3, 4, E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 15: NW $\frac{1}{4}$ Sec. 17: NW $\frac{1}{4}$ Sec. 18: All Sec. 19: Lots 3, 4, E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 27: SW $\frac{1}{4}$	1433.26	LC 070220 9-1-51	USA-A11	Gilbert Scheib	Gilbert Scheib	3.125%	S. W. Richardson & Perry R. Bass

126.	<u>T-21-S, R-28-E</u> Sec. 34; SE $\frac{1}{4}$	160	LC 070711 8-1-51	USA-All	Mabel E. Todhunter	Mabel E. Todhunter	3%	S. W. Richardson & Perry R. Bass
127.	<u>T-21-S, R-29-E</u> Sec. 33; NW $\frac{1}{4}$	80	LC 071033 2-1-50	USA-All	Frances Nix	John S. Harris	3%	S. W. Richardson & Perry R. Bass
128.	<u>T-21-S, R-31-E</u> Sec. 9; NW $\frac{1}{4}$	160	LC 071396 4-1-50	USA-All	Wilshire Oil Co., Inc.	M. D. Bryant	2%	Wilshire Oil Co., Inc.
129.	<u>T-22-S, R-29-E</u> Sec. 19; Lots 1, 2, 3, 4, E $\frac{1}{2}$ W $\frac{1}{2}$, E $\frac{1}{2}$	1113.92	LC 071917 8-1-51	USA-All	Morris Cannan **	Morris Cannan	3%	S. W. Richardson & Perry R. Bass
130.	<u>T-22-S, R-29-E</u> Sec. 3; Lots 1, 2, 3, 4, S $\frac{1}{2}$ N $\frac{1}{2}$, S $\frac{1}{2}$	1281.08	LC 071918 7-1-51	USA-All	Morris Cannan **	Morris Cannan	3%	S. W. Richardson & Perry R. Bass
131.	<u>T-21-S, R-28-E</u> Sec. 15; NW $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$	160	NM-07964 6-1-52	USA-All	Ewell H. Muse, Jr.	None		S. W. Richardson & Perry R. Bass
132-a	<u>T-20-S, R-31-E</u> Sec. 24; NE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	80	NM 06864-A 8-1-51	USA-All	Robert C. Glines	Robert C. Glines	5%	S. W. Richardson & Perry R. Bass
132-b	<u>T-20-S, R-31-E</u> Sec. 24; NW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	240	NM 06864 8-1-51	USA-All	Edna Ione Hall	Edna Ione Hall	3%	S. W. Richardson & Perry R. Bass

*Heirs of Anna B. Johnson: Ida Anderson Jack Malarney, Jr.
 Faye Rowland Jo Ann Idtse
 Blaine Daughtry Mary M. Yeller
 Joyce Hinzzy Jeanne Bennitt

** Assignment to S. W. Richardson & Perry R. Bass pending approval

THE FOLLOWING DESCRIBED TRACTS EMERAGE LANDS FORMERLY WITHDRAWN FROM LEASING UNDER ORDER OF THE SECRETARY OF THE INTERIOR DATED FEBRUARY 6, 1939 (4 F.R. 1012), LEASES UPON WHICH HAVE BEEN ISSUED UNDER ORDER OF THE SECRETARY DATED OCTOBER 16, 1951 (16 F. R. 10669)

Tract. No.	Description	No. of Acres	Serial No. All are Applications	Basic		Overriding Royalty & Percentage	Working Interest & Percentage
				Royalty & Per-centage	Lessee of Record		
T-21-S, R-29-E							
133.	Sec. 1: All	941.40	NM 06745 8-1-52	USA-A11	J. William McElvain	None	J. William McElvain
134.	Sec. 11: NE ¹ / ₄ NE ¹ / ₄ , W ¹ / ₂ NE ¹ / ₄ E ¹ / ₂ NW ¹ / ₄ , NW ¹ / ₂ NW ¹ / ₄ , SE ¹ / ₄	400	NM 06746 8-1-52	USA-A11	R. L. Burrow	R. L. Burrow	3% S. W. Richardson & Perry R. Bass
135.	Sec. 12: All	640	NM 06747 8-1-52	USA-A11	Gertrude B. Stiehler	None	U. S. Potash
136.	Sec. 13: E ¹ / ₂ , S ¹ / ₂ SW ¹ / ₄	400	NM 06748 8-1-52	USA-A11	H. V. Tull, Jr.	H. V. Tull, Jr.	5% S. W. Richardson & Perry R. Bass
137.	Sec. 14: SW ¹ / ₄ NE ¹ / ₄ , S ¹ / ₂ SE ¹ / ₄ SW ¹ / ₄	280	NM 06749 7-1-52	USA-A11	Sterling C. Holloway	Sterling C. Holloway	1% S. W. Richardson & Perry R. Bass
138.	Sec. 15: E ¹ / ₂ , E ¹ / ₂ W ¹ / ₂ , SW ¹ / ₄ NW ¹ / ₄ , W ¹ / ₂ SW ¹ / ₄	600	NM 06750 6-1-52	USA-A11	Paul Blake	Paul Blake, 5% and production payment of \$200 per acre out of 12.5% of net working interest	S. W. Richardson & Perry R. Bass
139.	Sec. 22: N ¹ / ₂ N ¹ / ₂	160	NM 06751 7-1-52	USA-A11	Meryl F. Mogensen	Meryl F. Mogensen	1% S. W. Richardson & Perry R. Bass
140.	Sec. 23: N ¹ / ₂ N ¹ / ₂	160	NM 06752 6-1-52	USA-A11	Emmett D. White	Emmett D. White, 5% production payment of \$200 per acre out of 6.25%	S. W. Richardson & Perry R. Bass
141.	Sec. 24: N ¹ / ₂ N ¹ / ₂ , S ¹ / ₂ NE ¹ / ₄	240	NM 06753 7-1-52	USA-A11	Mrs. R. C. Sharp	Mrs. R. C. Sharp, 5% and production payment of \$200 per acre out of 12.5% net working interest	S. W. Richardson & Perry R. Bass

I-20-S, R-30-E

142. Sec. 25: NE $\frac{1}{4}$, S $\frac{1}{2}$	480	NM 06787 6-1-52	USA-All	T. N. McLennan	T. N. McLennan	1%	S. W. Richardson & Perry R. Bass
143. Sec. 35: S $\frac{1}{2}$	320	NM 06789 6-1-52	USA-All	David M. Luttkoff	David M. Luttkoff, 5% and pro- duction payment of \$200 per acre out of 12.5% of net working interest		S. W. Richardson & Perry R. Bass
<u>I. 21-S, R-30-E</u>							
144. Sec. 3: Lots 3,4,5, 6,11,12,13,14, SW $\frac{1}{4}$	471.66	NM 06790 7-1-52	USA-All	Thomas Johnston	Thomas Johnston, 1/3 of 5% and production payment of \$200 per acre out of 12.5% of net working interest.		S. W. Richardson & Perry R. Bass
145. Sec. 4: All	943.16	NM 06791 6-1-52	USA-All	Betty Madole	Betty Madole	1%	S. W. Richardson & Perry R. Bass
146. Sec. 5: All	942.40	NM 06792 8-1-52	USA-All	W. Cooley, Jr.	None		W. Cooley, Jr.
147. Sec. 6: All	1016.27	NM 06793 6-1-52	USA-All	Myron S. Prager	Myron S. Prager	5%	Stanolind Oil & Gas Company
148. Sec. 7: All	691.20	NM 06794 Appl'n	USA-All	Lucile Willis	Lucile Willis	5%	S. W. Richardson & Perry R. Bass
149. Sec. 8: E $\frac{1}{2}$, E $\frac{1}{4}$ W $\frac{1}{2}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$	600	NM 06795 6-1-52	USA-All	W. C. English, Jr.	W. C. English, Jr., 5% and production payment of \$150 per acre out of 6.25% net working interest		S. W. Richardson & Perry R. Bass
150. Sec. 9: All	640	NM 06796 6-1-52	USA-All	Charles E. Ramsey	Charles E. Ramsey	1%	S. W. Richardson & Perry R. Bass
151. Sec. 10: W $\frac{1}{2}$	320	NM 06797 6-1-52	USA-All	Lverage Harris	Lverage Harris, 5% and production payment of \$100 per acre out of 6.25% net working interest.		S. W. Richardson & Perry R. Bass

I-21-S, R-30-E-Cont.

152. Sec. 17: All	640	NM 06798 6-1-52	USA-All	Merlon C. Tomson	Merlon C. Tomson, 5% and production payment of \$200 per acre out of 6.25% net working interest	1%	S. W. Richardson & Perry R. Bass
153. Sec. 18: All	691.24	NM 06799 7-1-52	USA-All	Mary H. Connally	Mary H. Connally	1%	S. W. Richardson & Perry R. Bass
154. Sec. 19: Lots 1,2,3, 4, E2NW1/4, NE1/4	345.65	NM 06800 7-1-52	USA-All	J. B. Mulcock	J. B. Mulcock	1%	S. W. Richardson & Perry R. Bass
155. Sec. 20: NW1/4	160	NM 06801 7-1-52	USA-All	Kenneth Franzheim II	Kenneth Franzheim II, 5% and production payment of \$150 per acre out of 6.25% net working interest		S. W. Richardson & Perry R. Bass

I-20-S, R-31-E

156. Sec. 28: All	640	NM 06816 7-1-52	USA-All	Roy Snyder	Roy Snyder	5%	Stanolind Oil & Gas Company
157. Sec. 29: All	640	NM 06817 8-1-52	USA-All	Virginia B. Dingley	None		U.S. Potash Company
158. Sec. 30: All	639.32	NM 06818 6-1-52	USA-All	Victor Salazar	Victor Salazar	5%	S. W. Richardson & Perry R. Bass
159. Sec. 31: All	639.80	NM 06819 7-1-52	USA-All	George B. Parks	George B. Parks	.5%	Kerr-McGee Oil Industries, Inc.
160. Sec. 33: All	640	NM 06820 8-1-52	USA-All	Meljamer Oil & Gas Corp.	Buffalo Petroleum Corporation	5%	Meljamer Oil & Gas Corp.

160 FEDERAL TRACTS, CONTAINING 115,235.80 ACRES, OR 86.37% OF UNIT AREA

Tract No.	Description	No. of Acres	Serial No. & expiration date of lease	Basic Royalty & Percentage	Lessee of Record	Overriding Royalty & Percentage	Working Interest & Percentage
<u>STATE LAND</u>							
161.	<u>T-20-S, R-31-E</u> Sec. 2: N $\frac{1}{2}$ S $\frac{1}{2}$	160	B-1327 11-16-32 H.B.P.	State of New Mexico 12 $\frac{1}{2}$ %	Skelly Oil Co.	None	Skelly Oil Co.
162.	<u>T-21-S, R-28-E</u> Sec. 16: E $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{2}$ SE $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{2}$ SW $\frac{1}{4}$, NE $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{2}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$	400	E-5559 9-10-61	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass
163.	<u>T-21-S, R-28-E</u> Sec. 16: NW $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$	80	B-9960 12-10-52	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	Robert E. McKee, General Contractor, Inc. 3 $\frac{1}{2}$ % Ralph Nix 2%	S. W. Richardson & Perry R. Bass
164.	<u>T-21-S, R-28-E</u> Sec. 32: NW $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 18: N $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$	199.89	B-10005 1-11-53	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	Ralph Nix	S. W. Richardson & Perry R. Bass
165.	<u>T-21-S, R-28-E</u> Sec. 32: N $\frac{1}{2}$ SW $\frac{1}{4}$	80	B-10005-1 1-11-53	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	W. R. Petty	S. W. Richardson & Perry R. Bass
166.	<u>T-20-S, R-30-E</u> Sec. 36: S $\frac{1}{2}$, NE $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$	560	B-10620-1 9-10-53	State of New Mexico 12 $\frac{1}{2}$ %	Gulf Oil Corp.	None	Gulf Oil Corp.
167.	<u>T-20-S, R-31-E</u> Sec. 2: E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 16: SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 32: W $\frac{1}{2}$, S $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 36: E $\frac{1}{2}$ NW $\frac{1}{4}$	638.70	B-10621 9-10-53	State of New Mexico 12 $\frac{1}{2}$ %	Stanolind Oil & Gas Co.	None	Stanolind Oil & Gas Co.
168.	<u>T-21-S, R-28-E</u> Sec. 32: SW $\frac{1}{2}$ SW $\frac{1}{4}$	40	B-10748 11-10-53	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	Martin Yates 111	S. W. Richardson & Perry R. Bass

169.	<u>T-21-S, R-29-E</u> Sec. 2: Lots 1,2,3,4,5, 6,7,8,15,16	381.44	B-11555 10-10-54	State of New Mexico-12 $\frac{1}{2}$ %	U. S. Potash Co.	None	U. S. Potash Co.
170.	<u>T-21-S, R-29-E</u> Sec. 16: NW $\frac{1}{4}$, NE $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$, NE $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	560	B-11556 10-10-54	State of New Mexico 12 $\frac{1}{2}$ %	U. S. Potash Co.	None	U. S. Potash Co.
171.	<u>T-21-S, R-29-E</u> Sec. 18: Lot 1, SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 32: Lots 1,2,3,4, NE $\frac{1}{2}$ SW $\frac{1}{4}$	283.08	B-11557 10-10-54	State of New Mexico 12 $\frac{1}{2}$ %	U. S. Potash Co.	None	U. S. Potash Co.
172.	<u>T-20-S, R-31-E</u> Sec. 16: SE $\frac{1}{4}$, NE $\frac{1}{2}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$	360	E-264 4-10-55	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	John M. Kelly, obligation \$500 per acre out of 5% of production	S. W. Richardson & Perry R. Bass
173.	<u>T-22-S, R-29-E</u> Sec. 2: SE $\frac{1}{4}$ SW $\frac{1}{4}$ <u>T-21-S, R-30-E</u> Sec. 16: SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 28: NE $\frac{1}{4}$ NW $\frac{1}{4}$	160	E-831-1 4-10-56	State of New Mexico 12 $\frac{1}{2}$ %	U. S. Potash Co.	None	U. S. Potash Co.
174.	<u>T-21-S, R-29-E</u> Sec. 2: Lots 11,12,13, 14, SW $\frac{1}{4}$	320	E-1629 12-10-57	State of New Mexico 12 $\frac{1}{2}$ %	U. S. Potash Co.	None	U. S. Potash Co.
175.	<u>T-21-S, R-30-E</u> Sec. 2: Lots 1,3,4,5,6, 7,8,9,10,11,12,13,14,15,16,S $\frac{1}{2}$	907.83	E-1621 12-10-57	State of New Mexico 12 $\frac{1}{2}$ %	U. S. Potash Co.	None	U. S. Potash Co.
176.	<u>T-20-S, R-31-E</u> Sec. 2: SE $\frac{1}{4}$ SW $\frac{1}{4}$	80	E-2370 1-10-59	State of New Mexico 12 $\frac{1}{2}$ %	Malco Refineries, Inc.	None	Malco Refineries, Inc
177.	<u>T-22-S, R-28-E</u> Sec. 2: Lots 1,2,3,4, SE $\frac{1}{4}$, S $\frac{1}{2}$ (All)	641.02	E-4205 9-11-60	State of New Mexico 12 $\frac{1}{2}$ %	Gulf Oil Corp.	None	Gulf Oil Corp.
179.	<u>T-20-S, R-31-E</u> Sec. 2: Lots 2,3,4, SE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$ (continued on next page)	5111.63	E-5230 5-10-61	State of New Mexico 12 $\frac{1}{2}$ %	S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass

178. T-20-S, R-31-E (continued)

Sec. 16: SW $\frac{1}{4}$, NW $\frac{1}{4}$
Sec. 32: NW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 36: S $\frac{1}{2}$, NE $\frac{1}{4}$, NW $\frac{1}{4}$
T-20-S, R-32-E
Sec. 32: All
T-20-S, R-30-E
Sec. 36: E $\frac{1}{2}$ NW $\frac{1}{4}$
T-21-S, R-30-E
Sec. 2: Lot 2
Sec. 14: SE $\frac{1}{4}$, S $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$
Sec. 16: NW $\frac{1}{4}$, SW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 20: NE $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 21: E $\frac{1}{2}$
Sec. 22: All
Sec. 23: NW $\frac{1}{4}$
Sec. 27: NW $\frac{1}{4}$
Sec. 28: NE $\frac{1}{4}$, SW $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$, NW $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$

179. T-21-S, R-28-E 4635.81 E-5232

Sec. 16: S $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$ State of New S. W. Richardson None
Sec. 18: Lot 2 Mexico 12 $\frac{1}{2}$ % & Perry R. Pass
Sec. 32: S $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$
S $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$
Sec. 36: All

T-21-S, R-29-E
Sec. 32: NW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 36: NW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, Lots 1,2,3,4 (All)
T-22-S, R-29-E
Sec. 2: Lots 1,2,3,4,SE $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$,NE $\frac{1}{4}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$,S $\frac{1}{2}$ NE $\frac{1}{4}$
Sec. 16& 32: All
T-23-S, R-29-E
Sec.2: Lots 1,2,3,4, S $\frac{1}{2}$,S $\frac{1}{2}$ N $\frac{1}{2}$ (All)

180. T-21-S, R-29-E 1040 E-5233 State of New U. S. Potash Co. None U. S. Potash Co.
Sec.2: Lots 9,10,SE $\frac{1}{4}$ Mexico 12 $\frac{1}{2}$ %
Sec.11: SE $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$
Sec. 13: NW $\frac{1}{4}$,SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$
Sec. 14: NW $\frac{1}{4}$, NW $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$
Sec. 16: SW $\frac{1}{4}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$
T-21-S, R-30-E
Sec. 8: NW $\frac{1}{4}$ NW $\frac{1}{4}$

20 STATE TRACTS, CONTAINING 16,639.40 ACRES, OR 12.47% OF UNIT AREA

Tract. No.	Description	No. of Acres	Expiration date of lease	Basic Royalty Owner & Percentage	Lessee of Record	Overriding Royalty & Percentage	Working Interest & Percentage
<u>FEE OR PRIVATELY OWNED LAND</u>							
181.	<u>T-21-S, R-28-E</u> Sec. 4: Lots 14, 15, 16, NE $\frac{1}{4}$ SE $\frac{1}{4}$	160		W. R. Fenton R. E. Bybee Dudley Ussery	1/2 1/4 1/4 S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass Dudley Ussery 3/4 1/4
182.	<u>T-21-S, R-28-E</u> Sec. 19: Lots 3, 4	77.16		G. G. Ison	S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass
183.	<u>T-21-S, R-28-E</u> Sec. 20: NE $\frac{1}{2}$	320	12-6-59	Claude & Mamie M. West	All Magnolia Petr. Co.	None	Magnolia Petr. Co.
184.	<u>T-21-S, R-28-E</u> Sec. 20: NE $\frac{1}{2}$ SE $\frac{1}{2}$	160	12-6-59	Joe V. & Mayme Lusk	All Magnolia Petr. Co.	None	Magnolia Petr. Co.
185.	<u>T-21-S, R-28-E</u> Sec. 20: SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 29: NE $\frac{1}{4}$ NW $\frac{1}{4}$	160	6-4-56	Joe V. Lusk	All S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass
186.	<u>T-21-S, R-28-E</u> Sec. 30: Lot 4 Sec. 31: E $\frac{1}{2}$ NE $\frac{1}{4}$, Lot 1, NE $\frac{1}{4}$ NW $\frac{1}{4}$	196.27	11-18-59	C. P. & Mattie E. Pardue L. A. & Runeor E. Swigart	66-2/3% Magnolia Petr. Co.	None	Magnolia Petr. Co.
187.	<u>T-21-S, R-28-E</u> Sec. 31: Lot 2, 3, SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$	155.66		Damon U. & Paul Bond	All S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass
188.	<u>T-21-S, R-28-E</u> Sec. 32: SW $\frac{1}{4}$ NW $\frac{1}{4}$	40		Comdr. G. C. Mann	All S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass
189.	<u>T-21-S, R-28-E</u> Sec. 32: NW $\frac{1}{4}$ NW $\frac{1}{4}$	40		F. F. & Olive Doepp	All S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass
190.	<u>T-21-S, R-29-E</u> Sec. 13: SW $\frac{1}{4}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 14: SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$	160		U. S. Potash Co.	(Fee Owner)	None	U. S. Potash Co.

191.	<u>T-21-S. R-30-E</u> Sec. 28; NW ¹ / ₄ SE ¹ / ₄	40	J. J. Crawford	ALL	S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass
192.	<u>T-20-S. R-31-E</u> Sec. 13; NW ¹ / ₄ SE ¹ / ₄	40	John A. and Sara Mae Lusk	ALL	S. W. Richardson & Perry R. Bass	None	S. W. Richardson & Perry R. Bass

12 FEE OR PRIVATELY OWNED TRACTS, CONTAINING 1,549.09 ACRES, OR 1.16% OF UNIT AREA

TOTAL 192 TRACTS, CONTAINING 133,444.29 ACRES IN ENTIRE BIG EDDY UNIT AREA

LEASE AND ROYALTY OWNERS

Address _____

Date _____

Address _____

Date _____

Address _____

Date _____

Address _____

Date _____

Address _____

Date _____

Address _____

Date _____

Purin
Unit ~~Well~~ file

A report of all cores, drill stem tests and production tests on the Richardson & Bass #1 Well, 660' fr S & W Lines, Sec. 27-21S-29E. Elevation 3433' D. F.

The well was spudded 9-29-52 and completed 9-18-53. The total depth by the driller was 15,611' and by the electric log it was 15,608'. The well was completed at a plug back total depth of 6980' thru perfs 6890 to 6950 in the lower Delaware Sand.

The report was made possible through the courtesy of Richardson & Bass, Carlsbad, New Mexico.

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Diamond Core #1 3336-3361. cut 25' recovered 19' being 5 $\frac{1}{2}$ ' sd, fn to v. fn grained, very silty and calc. No poro, stain, fluor, cut or odor $\frac{1}{2}$ ' sd as above except sli friable, tr. stain, good yellow fluor, light cut and sulfur odor. 6' (Last core considered to be missing at this depth) 13' sd fn to v f grained very silty and calc, no poro stain, fluor cut or odor. (No dip recognized in core.)

DST #1 3321-3361 op 42 min. Rec. 170' uncut mud and 90' SWCM (tstd 14,500' PP M cl)
FP 40-60

15" SIP failed

Diamond Core #2 3361-3386 cut 25' and recovered 25' being 6' sand, gry fine very silty and calc. No show. 3' sand gry fn silty and sli calc friable no show. 1' sd, gry fn silty, very calc, tight no show. 1' sand gry fn silty and calc, friable, light spotted golden fluor, and sli odor. 14' sand as above, friable with no show. (No dip recognized.)

Diamond Core #3 3386-3409.5 cut 23.5' recovered 23.5' being 15' sd, gry, fn to med grained, loosely cemented w/calc, silty, sli friable no show. 1' sd, gry fn-med grained, loosely cemented w/calc., friable no show. 1' sd, gry, fn to med, loosely cemented w/calc, silty w/1" streaks of black sh., sli friable w/no show. 1' sd gry, fn to med, loosely cemented w/calc., friable, no show. 5 $\frac{1}{2}$ ' sand, gry, fn to med, loosely cemented w/calc., silty, sli friable, no show.
(Fair 2° dip in sand w/2 paper thin sh partings in entire core.)

Diamond Core #4 3578-3603, cut 25' recovered 25' being 11' sd, gry, med, grained, sli calc, sli shaley, sli friable, no show. 4' sd, gry, very fine, very silty & hard, sli calc w/numerous shale laminations, very tight, no show. 2 $\frac{1}{2}$ ' sd as above w/numerous sh fragments, not laminated, very tight, no show. $\frac{1}{2}$ ' sh. black $\frac{1}{2}$ ' sd, gry, very fine, very silty and hard, sli calc. w/numerous small shale laminations and frag., very tight, no show. $\frac{1}{2}$ ' sh, black. 1' sd gry, fn to med sli calc, very silty and shaley, very tight, no show. 1' sd, gry, med sli calc and silty w/4 1/32" lamin of fair spotted fluor in sd, very tight, very light fluor, and stain in lamin. 4' sd, gry, med grained, sli calc and silty, w/numerous sh lamin and frag. very tight, no show.
(Fair 0° dip 3578-3603 in sand w/thin shale laminations)

DST #2 4565-4596 open 2 hrs Rec. 146' sli O & GCM, 174' sli O&G&H
SWCM (very sweet gas and light green oil) Salt water tested 23,800'
PPM cl
FPC 185

15SIP 960

DST #3 4933-4972 open 1' 35" Rec 124' sli C & GCM (Sweet gas and greenish brown oil) Salt water tested 5600 PPM cl, Drilling mud tested 2600 PPM cl
FP 100

15 SIP 130

Diamond Core #5 4972-4983 cut 11' recovered 6 $\frac{1}{2}$ ' being 3' sd, gry, med, sli silty to silty, sli poro, no show. $\frac{1}{2}$ ' sd, gry, med grained, sli silty, sli to fair poro, light stain, fair to good fluor; fair cut, good odor. 1 $\frac{1}{2}$ ' sd, gry, fn to med grained, silty, tight no show. $\frac{1}{2}$ ' sh black w/thin gry sd streaks, no show. $\frac{1}{2}$ ' sd, gry, fn grained, sli calc, tight, light scattered fluor, sli odor. $\frac{1}{2}$ ' sd, gry, fn grained, very silty, sli calc, tight, no show.

NOTE: Bottom of core considered to be lost. (No dip recognized.)

Diamond Core #6 4984-4998 cut 14' recovered 14' being 2' sd and sh; very thinly lamin. w/3" streaks of blk sh @4984 $\frac{1}{2}$, tight, sli odor, scattered dull golden fluor in lamin. 7' sd, gry, fn to med, sli calc cement, fair poro, no show. 2' sd and sh lamin., tight, scat dull gold in lamin., tr. odor. 1' shale, very thinly lamin. w/sd., tight scat dull golden fluor in lamin. tr. of odor. $\frac{1}{2}$ ' sd and sh., very thinly lamin, tight, tr. stain and odor, dull golden fluor in lamin. 1 $\frac{1}{2}$ ' sd and sh, very thin by laminated, tight, no show. (good 3-7° dip 4984-97 in sd and shale, thinly laminated.)

NOTE: core from 4984-95 (11') was saturated with salt water and bleeding salt water in several places.)

Diamond Core #7 5079-5090' cut 11' and recovered 11' of sand, gry, med grained, scat. cement, non calc, silty, sli friable, wet and bleeding salt water, sli glauconitic w/2" streak of blk shale @5086 $\frac{1}{2}$ ", sli poro, no show. (No dip recognized.)

Diamond Core #8 5258-5283 cut 25' recovered 25' being 1' sand, brn, very argil, silty, tight, very fn grn; the zones of stain were scat.

and only the size of a peabut within this zone the core was bleeding freely, drk brn heavy oil. no poro, excellent scat stain and fluor and excellent cut and odor. 1½' shale, drk gry, silty, no poro, no show. 1' dolo, drk brn, dense, hard, xln., no poro, no show. 1½' shale, dense, blk sli silty, no poro, no show. 4' sd, gry med, sli calc, soft and friable, salty tastes wet sand, sli poro, no show. 1' sd as above w/tr of stain, sli fluor, tr. scat stain and fluor, tr. odor. 5' sd, gry, med grained, friable, wet sand, sli poro, no show. 3' sand as above w/numerous thin shale streaks. tr. poro, no show. 7' sd, gry-med fine to fine, soft friable wet sand; sli poro, no show. NOTE: @5261 ½-¾" very fine grained, sand, tight quartzitic w/sploches of excellent stain and active bleeding of a dark brown, heavy oil. Good 2° dip 5258-74 in sand w/scat thin shale laminations.

DST #4 5684-5708 open 1 hr. Rec. 10' mud with rainbow show of oil no gas
FPO 15 SIP 0

Diamond Core #9 5708-5720 cut 12' and had no recovery.

Diamond Core #10 5832-5848 cut 16' Recovered 16' being 1' sd, very fn, gry, firm, well cemented, tight, sli poro., sli stain, excellent fluor, good cut and excellent odor. 1' sd, gry, fine, silty, very shly, w/numerous sh lenses, no poro, no show. 10' sd, fn to med, firm to sli friable, gry, sli tight (very dull, pin point fluor) (bleeding SW) tight, tr. scat fluor. 4' sh and sd, very thinly lam, sd as above and black sh., no poro, no show. very good 4° dip 5832-48 in sand w/sh lamin.

Diamond Core #11 5860-5885 cut 25' recovered 25' being 1' sand, buff to gry, fn grained, sli silty, tight, non-calc, firm, w/good lt brn oil stain. fair poro; fair to good stain, excellent fluor, cut and odor. 3' sand, very fine grained, gran, very shaly and silty w/numerous sh lenses and sh stringers, tr. poro and odor otherwise no show. 2' sand, gry-med, non calc, sli friable, tight, sli silty cementation to non silty, sli pyritic, core is wet and has salty taste, good poro, no show. 4' sd as above, w/more silty cementation such that the core is tighter, fair poro, no show. 15' sand, gry-med to med fine, tight, to sli friable, calc cementing material, pores are well filled. sli poro, no show. Good 2° dip 5860-68 in sand w/sh stringers.

Diamond Core #12 5885-5935 cut 50' and recovered 50' being 25' sand, gry, med, sli calc, tight to sli friable, salty taste, appears to be salt water bearing, fair poro, no show. 18' sand, as above only much tighter and more firmly cemented w/sd sizes ranging from med fine to fine grained (The above sand was bleeding salt water very lightly) Sli poro, no show. 1' sand, very fine grained, gry, tight, well cemented, sli calc, w/numerous gry sh lamin, and very sdy sh streaks no poro, tr. poro, cut and odor. 2' sand, very fine grained, gry, tight, sli argil and calc tight, w/a 1" strk @5930, no poro, no show. 1' sh, brownish blk, very silty to sli sandy, scat vitreous luster from sd grains, no poro, no show. 2' sand and sh as above thinly lamin., no poro, no show. 1' sd and sh as above, thinly strked w/light show of oil in bedding planes between the sand and shale. (The show in the bottom foot was confined to the bedding planes.) Good 8° dip 5929 in sand, sh lamin, fair 1° dip 5933 in sand, sh lamin.

Diamond Core #13 5935-5984 cut 49' recovered 49' being 2' sd, gry, med, silty w/thin lamin and some sand, very shaley, sli poro, fair stain, 1/16" streaks of fluor in sd, tr odor. 2' sand, gry, fn grained very silty, sli shaley, w/a few thin shaley lamin. tight poro, no show. 1' sand as above except more shale, tight poro, scat dull fluor in bedding planes tr. odor. 5' sand, gry, med grained, silty w/a few scat thin sh lamin., sli friable no show. 1' sd, gry med grained, sli silty, not too well cemented, friable poro, no show. 1' sd and sh, very thinly lamin, tight, tr. dull scat fluor in bedding planes, tr. odor. 11' as above, except no fluor. 2' sh and sd, very thinly, lamin mostly sh., tight, no show. 1' sd and sh as above, no poro, no show. 1' sh. black, 1½' sd and sh very thinly lamin. no poro, tr dull spotted fluor in bedding planes, tr. odor. 1½' sd gry, fn, well cemented, sli calc, w/vitreous luster, very hard, no poro, no show. 2' sh and sd very thinly lamin, no poro, tr dull fluor in bedding planes, tr. odor. 17' sd and sh, very thinly lamin, no poro, no show. Fair 2° dip 5935-84 in sd and sh lamin.

Diamond Core #14 6422-6435 cut 13' recovered 13' being 1' sd, drk gry very shly and silty no poro, tr spotted fluor, fair odor. 1' sd gry

Diamond Core #14 fn grained, silty w/few thin sh lamin, no poro, tr, spotted fluor, fair odor. 2' sd, and sh, paper thin lamin no poro, lt scat fluor in lamin, sli odor. 1' sd, gry, v f g, silty no poro, tr. odor. 3' sd and sh paper thin lamin, no poro no show. 2' sd, gry v f g very silty, calc, no poro, no show. 3' sd, drk gry very silty fine grained, very shly sli calc. no poro, tr spt fluor.
NOTE: Light scat salt water bleeding throughout entire core.
Fair 20 dip 6422-35 in sd; w/few scat sh laminations.

DST #6 6405-6435 open 3' 6" Rec. 130' HGCM with some free oil # 270'
SW (tstd 142,000 PPC cl)
FP 75-190 30 SIP 1585

Diamond Core #15 6436-6486 cut 50' recovered 44' being 2' sd, gry fn grained silty w/a few scat. $\frac{1}{2}$ " sh partings, no poro, tr fluor in shale lamin only, tr. odor. 10' sd, gry fn grained very silty, no poro, no show. 2' sd, as above, w/thin sh strks, no poro tr fluor in sh lamin only, tr odor. 2 $\frac{1}{2}$ ' sd, gry, fn grained, very silty, no poro, no show 6' sd, gry, v f g, w/a few scat thin sh lamin ($\frac{1}{2}$ ") no poro, tr fluor in sh lamin only, tr odor. 9' sd, gry, fn grained, very silty, sli calc to non calc, very hard, no poro, no show. 3 $\frac{1}{2}$ ' sh, black, w/thin sd, lamin, no poro, no show. 1' sh, blk w/a few thin scat sd lamin., no poro, tr fluor in lamin only, tr odor. 2' sd, gry, med grained, s silty and shly, w/2 2" sh strks, no poro, tr. fluor in sh streaks, tr. odor. 1' sd, gry, med to coarse grained, silty, hard, sli poro, no show. 2' sd, gry, med to coarse grained, very silty and hard, vitreous luster, no poro, no show. 1' sd, gry, fn to med grained, very silty and shaley no poro, tr dull scat fluor., tr. odor. 2' sd, gry, fn grained, very silty, hard w/a vitreous luster, no poro no show. Fair to poor 30 dip 6436-86' in sand shale lamin.

Diamond Core #16 6489-6518 cut 29' recovered 29' being 2' sd, gry, v f g., very silty, shaley and tight, mottled appearance due to sh concentration in local areas, no poro, no show. 2 $\frac{1}{2}$ ' sd, v f to f grained, well consolidated, tight sli calc to very shly and sli lamin. bleeding profusely in small section @6492; remainder of show was in scat lamin., tr to sli poro, good to excellent stain, tr. to excellent fluor, light to excellent cut, good to excellent odor. 10 $\frac{1}{2}$ ' sd, gry, v f to f g., well consolidated, very tight, ranges from shaley to silty to sli friable, tr to light poro, no show. 1' sd, gry, v f g, silty, tight, very shaley giving mottled appear. w/tr. of bleeding oil, tr. poro, tr. to excellent stain and fluor, tr. cut; excellent odor. 11' sd, gry, v f to m f g, well consolidated tight, sli calc to very shly, tr poro, no show. 2' sd, gry, v f to med grained, tight, sli calc, silty to very shly, tr poro, light stain, excellent fluor and odor, good cut.
NOTE: The show from 651618 was separated by 4" of barren sand, no visible reason. The fluor was a bright blue-white.
Fair to poor 30 dip 6489-6518 in sand, shale lamin.

Diamond Core #17 6521-6569 cut 48' and recovered none.

Diamond Core #18 6753-6773 Cut 20' recovered 20' being $\frac{1}{2}$ ' sd, gry, fn to med grained, sli calc, friable, silty, light poro, tr. stain, excellent fluor and odor, 3 $\frac{1}{2}$ ' sd, as above, very thinly lamin, w/sh and 6" strks of dolo, tan, xln, sdy, light poro in sd, no show. 1' sd and sh very thinly lamin. no poro, tr. scat fluor in lamin, fair odor. 1 $\frac{1}{2}$ ' sd, gry, fn to med grained, not too well cemented, very silty w/small sh lamin, tr. poro, excellent fluor in sd, excellent, odor. $\frac{1}{2}$ ' sd and sh very thinly lamin, tight, no show. 2' sd, gry, fn to med gr sli calc, friable, very silty w/excellent fluor in small zones, light poro, excellent fluor in bottom 2", excellent odor in bottom 2"
Good 3-40 dip 6753-73 in sd w/sh lamin.

Diamond Core #19 6773-6798' cut 25' recovered 25' being 2 $\frac{1}{2}$ ' sd, gry, fn to med grained, silty, sli calc cement, w/very thin shaley lamin and 2" streaks of lime, no poro, tr. scat fluor in lamin, tr. odor. 2 $\frac{1}{2}$ ' sd, gry, med grained, sli calc cement, friable, silty w/2" scat good fluor @6775 $\frac{1}{2}$, a $\frac{1}{2}$ " scat good fluor @6777, a 2" ls streaks @ 6776, sli poro, good scat odor and fluor as noted above. 20' sd, gry, fn to med grained, not too well. cemented (sli calc.) friable, silty, w/4 scat 3" strks of lime, light poro, no show.
Poor 20 dip 6773-80 in sd w/sh lamin.

Diamond Core #20 6844-6862 cut 18' recovered 18' being 2' sd, gry, v f to f grained, sli calc, sli silty, tight to sli friable, broken w/2 sh strks, tr. poro, excellent fluor and odor, light cut. 1' sd, gry, fn grained, very tight, calc to sli quartz, no poro, no show. 1' sd, very fine to med fine grained. very argill, very sli calc, tight, w/

Diamond Core #20 w/scat zones of show; no poro, good scat fluor and odor, tr. cut. 1' sh, drk gry, very sdy and silty, w/tr. thin sd gry, very sdy and silty, w/tr thin sd lamin, no poro, no show. 3' sd, gry, v f to med fine, tight, sli calc, intermixed w/gry fn grained, argill very tight sd, tr. scat poro, stain and cut, good to excellent fluor and odor. 5' 5' sd, gry, v f to med f, v sli calc, tight, sli silty w/tr argill material scattered silty w/tr. poro, tr to light stain excellent fluor and odor, light cut. 1' sd, v f to f grained, gry, sli calc, very silty, tight, tr. poro, tr scat stain; fluor, and cut, fair odor. 4' sd, v f to f gr, very silty and argill, very tight w/occasional thin sh laminations. no poro, very dull brown spotted fluor tr. cut.

Good to fair 20 dip 6844-62 in sand w/shale lamin.

DST #7 6830-6862 open 6 hrs, recovered 195' HG & OGM (20,000 PP M cl) 39' muddy salt water (87,000-158,000 PPMcl) no oil or gas to surface. 3390' gas in drill pipe
FP 5s-230 30 SIP 1775

Diamond Core #21 6862-6914' Cut 52' recovered 52' being $\frac{1}{2}$ ' sh, blk sdy, w/very small sd lamin, no poro, tr fluor, and odor in lamin. 2 $\frac{1}{2}$ ' sd, gry, med grained calc, silty, sli friable, tr poro, light stain, excellent fluor and odor, light cut. 1' Ls, tan, xln, very sdy, very tight, no show. 1' sd, gry, to tan, med grained very limey, very tight good scat fluor and odor, light cut. 8' sd and sh, very thinly lamin, w/a few scat streaks of lime, tr stain and fluor in lamin, fair odor in lamin 2' Ls, drk brn, med to coarse xln, very dns, foss, no poro, no show. 3' sh, blk w/one tight vert frac. w/a tr. of calc fill no poro, no show. 3' sd, gry, v f g, very silty and shaley, very tight to tight poro., light stain, good scat fluor and odor, tr. cut. 4' Ls, brn, coarse xln, very sdy, foss w/sd frag scat throughout, tr. pyritic very tight, light scat fluor, good cut, fair odor. 5' sd, gry, v f g very silty, sli calc cemented, very hard, very tight, light stain and fluor and cut, good odor. 1' Ls, drk brn, xln, shaley, dns, very tight no show. 4' sd, gry, v f g, very silty to sli shaley, very hard, very tight, tr. stain and cut, light scat fluor, good odor. 1' Ls drl brn, xln, shaley, dense, very tight, no show. 15' sd, gry, f-med grained, sli calc, very silty w/scat 2"-6" sh strks w/sd between sh streaks no larger than 2', some sand zones friable, tight good stain and cut; excellent fluor and odor. very good 20 dip 6862-77 in sd w/sh lamin.

DST #8 6860-6914 open 2' 40" g 20" est 122 MCFGPD recovered out 450' HO & GCM Recovered 498' fluid being 345' VHO & GCM (30,000'-40,000 PPMcl) 150' Sli MC oil 43.3 grav.
FP 90-240 30 SIP 2680

Diamond Core #22 6914-6926 cut 12' recovered 12' being 1' sd, gry, fn to med grained, very silty, w/very thin sh laminations, very tight, good scat fluor and odor, tr cut. 1' sd, gry, fn to med grained, completely filled w/Ls, no poro, no show. 10' sd, fn to med grained, sli calc cement, very silty, w/6" streaks of Ls @6924, w/a few scat very thin sh lamin in bottom 2', very tight, light stain, excellent fluor and odor, fair cut.
Fair to poor 50 dip 6914-15 in sd w/sh lamin.

Diamond Core #23 6926-6951 cut 25' recovered 21' being 5' sd, v f to f g, very hard, well consolidated, silty tight, sli calc., tight to very tight tr to light stain and cut, good fluor and odor. 1' Dolo, tan, dense, xln, very foss., no poro, tr spotted dull fluor and cut. 9' sd, v f-f g silty, hard, tight, sli calc w/bottom foot sli argill, tr. poro, fair stain, good fluor, cut and odor. 1' Dolo tan v f xln, very dense and hard with sli sandy zones included, no poro, no show. 5' sd, v f-m f g, very tight, very silty, very hard w/zones of very Dolo sd throughout, no poro, tr dull fluor and cut. 4' not recovered, core lost.
Poor 20 dip @6942 in sd, w/scat dolo strks.

DST #9 6913-6951 open 1 hr. Rec. 60' mud (28,000 PPM cl) normal drlg fluid tstd (22,000 PP M cl)
FP 20-45 15 SIP 70

Diamond Core #24 6951-6983 cut 32' recovered 25' being $\frac{1}{2}$ ' sd, brn, fn grained, calo, hard, tight, silty, no poro, light gold fluor, light odor, tr cut; 1' sh, blk, dense, sub-nit, sli calc, no poro, no show. 1 $\frac{1}{2}$ ' sd, brn, fn grained, hard, tight silty to sli calc, no poro, no show. 4' Ls, brn, coarse, xln, hard, dense, v foss, w/bottom foot frac and bleeding oil. sli poro in frac, excellent stain, fluor, cut

Diamond Core #24 and odor in frac. 1½' sd, blk, dense, sli frac. w/ no show in frac. no poro, no show. 1' Ls brn, dense, xln, foss, well frac, bleeding yellow-green oil from frac and scat PP poro., Light por excellent scat stain, fluor, cut and odor. 8' sh, blk, dense hard w/ scat zones very limey, xln, no poro, no show. 8' Ls drk brn, dns, mass, small cobbled, w/brn, sub xln to very shaley Ls, well frac to broken, w/conchoidal frac, traces secondary calc in frac, very scat spotted show in frac or xln calc zone., sli poro in frac., tr scat stain, fluor, cut and odor. 7' Lost core.

NOTE: From 6973-74 (1') showed a very good, large vug, with several smaller vugs, there was good xln growth in the vugs, as well as a very heavy dead oil stain. The largest vug was ¾" across w/one calcite xln ½" long.

Poor 2° dip 6951-67 in sd and shale

DST #10 6952-6983 open 1 hr. Recovered 5' uncut drilling mud.
FP 30 15 SIP 30

Diamond Core #25 6983-6994 cut 11' recovered 6½' being lime, dns, drk brn-gry, massive, sub xln, well broken, frac. 6988-89 one thin show in frac. 4½' lost core no poro, tr stain, fluor and cut. No dip recognized.

Diamond Core #26 6994-6996 cut 2' recovered 1' being limestone, drk brn, sub xln, very dns and hard w/conchoidal frac and numerous small frac filled w/coarse xln Ls. Bottom 3" of core contained several shale fragments, no poro. Light stain, fluor and cut in frac, tr. stain in frac. No dip recognized.

Diamond Core #27 8059-8084 cut 25' recovered 25' being 7' sd, gry, v f. silty, very sli calc, w/uniform very thin sh, lamin about 1/16" apart very tight poro, tr. scat fluor in lamin, tr. odor. 7' sd, gry, v f g, silty, limey, w/sh lamin as above. very tight poro, no show. 4' sh, blk, w/thin sd lamin and sd frag very tight poro, no show. 7' sh, black, no poro, no show.

Good to fair 2° dip 8059-84 in sd w/sh lamin.

DST #11 8015-8084 open 45" Rec. 55' of uncut mud (2200 PP M cl)
FP 60 15 SIP 60

Diamond Core #28 8880-8903½ cut 23½ feet recovered 23½ feet being 8' sd, gry, v f g, sli calc., shaley, silty and mica, no poro, light spotted fluor and cut, excellent odor; 5' sd as above w/paper thin sh laminations about 1/16" apart. no poro, tr stain, light spotted fluor and cut; good odor. 1' sd as above only very shaley, no poro, no stain light spotted fluor and cut, fair odor. 1' sd and sh, very thinly laminated, no poro, no show. 1' sd, drk gry, quartzitic w/thin sh laminations, very tight, no show. 1' blk sh, very tight no show. 1' sd, drk gry, quartzitic w/thin sh laminations, bleeding oil, very tight good fluor in shale lamin., good cut, light odor. 2' sd, tan, f g., limey and shaley, w/vert frac. bleeding oil very tight, good spotted fluor, excellent spotted fluor, cut and odor. 1' blk shale, very tight no show. 1' blk, limey shale, very tight, no show. 1½' lime, blk, fn to med xln, very shaley, very dense, no poro, no show. Good 2° dip 8880-8900 in sand w/sh laminations.

DST #12 8827-8903½ open 2 hrs 30 min. Rec. 1100' gas in drill pipe, 380' sli g & OCM (oil was light green and appeared to be very high gravity)
FP 200-200 15 SIP 270

Diamond Core #29 8913-8915 cut 2' and recovered 2' being 1' sd, drk gry, v f g to silty, very shaley dirty and hard, very tight, fair cut and light odor. 1' lime, drk brown, dns, hard, sub-xln to very shaley, no show, no poro, no show. (No dip recognized)

Diamond Core #30 10,107-10,132 cut 25' recovered 25' being 4' sd, cl to light gry, sli calc, v f to f grained silty, very hard, well cemented, sd-siliceous, very tight, no stain, light scat fluor., cut and odor 2' sd, v f g, gry, tight as above, w/thin sh lamin, well frac, both horizontal and vertical, very tight, light scat stain and fluor. cut and odor. 2' sd, light gry, v f g, sli calc, silty, hard as above, v very tight, no stain, light scat fluor, cut and odor. 2' sd, drk gry v f g, silty, very shaley, no poro or stain, tr. scat fluor, cut and odor. 3' sd, gry, v f g, hard, silty, tight siliceous. (had wet look but not bleeding water) no poro, no show. 10½' sand, gry, very tight and shaley, silty, sli calc, no poro, no show. 1' sd, gry, v f grain-ed quartzitic, no poro, no show. ½' shale, drk gry, very sdy, sli laminated, w/very thin sd streaks, no poro, no show.

Diamond Core #30 (No dip recognized.)

DST 10,081-10,132 2018' WB open 1 hr. Rec. WB plus 10' mud.
 FP 930-930 15 SIP 930

Diamond Core #31 10,160-208 cut 49' recovered 48' being 5' sd, gry, f g, very hard, sli calc, silty, sli quartzitic, bleeding salt water, very tight, no show. 1' sd, as above, w/sli scat show, very tight, no stain, tr. scat fluor, cut and odor. 3' sd as above, no poro, no show. 4' sd, gry, f g, calc to silty (sd is softer than above) no poro, tr. stain, fluor, cut and odor. 6' sd, gry, v f g, hard, calc, w/traces of blk carb, residue, sli shows in horiz bedding planes where shale is concentrated (bottom 2' has calc filled vert frac.) no poro, very, sli scat fluor, cut and odor. 4' sh, drk brn to blk, silty, calc, no poro, no show. 18' sh, as above, very silty to sli sdy and limey, no poro, no show. 4' sh, blk dns; no poro, no show. 1' sd, v f g, gry to brn calc, very silty and sli shaley, no poro, no show. 1' blk shale no poro no show. 1' Limes, brn, xln, dns (bleeding slightly) (oil is light green) very tight, tr. stain fluor, cut and odor. (Good to poor 30° dip 10,160-208 in sd and sh)

Diamond Core #32 10,208-10,258 cut 50' feet, recovered 50' being 4' shale, very limey and sli sdy, drk gry, sli lamin no show. 3' sh, drk gry, finely lamin w/silty gry sh no show. 3' shale, gry and blk silty to sdy lamin no show. 4' blk shale, no show. 2' sd, drk gry, finely lamin, w/silt., no show. 1' Limes, grv, finely xln, dns, no poro, no show. 4' Limes, grv, finely xln, thinly lamin w/sh. no poro no show. 7' sh, drk gry to grv finely lamin, w/silty lime no poro no show. 1' lime, gry, silty w/thin sh lamin, no poro, no show. 6' lime, gry, finely xln, silty, dense no poro, tr. fluor and odor. 3' Lime, finely xln, gry brn, dns, no poro, tr. fluor, good odor. 3' lime, finely xln, very shaley, gry to blk, no poro no show. 9' blk sh, no show
 NOTE: No fractures found in this core
 (Good 30° dip 10,208-258 in shale, w/lime streaks and sd and bedding planes.)

DST #14 10,248-10,405 2022 WB open 1 hr 8 min. Rec. 702' uncut WB, 1274 sli GCWB, 140' sli GCM, 30' sli G & CCM
 FP 900-900 15 SIP 1035

Diamond Core #33 10,405-10,455 cut 50' recovered 50' being 3' sd, brn, v f g, very shaley, sli calc, and silty, very tight, light odor. 4' sd as above, w/numerous thin sh lamin no poro, light odor. 3' sd, as above, w/a few thin sub xln lime streaks, no poro, light odor. 5' sh, blk, w/one near vert very thin fracture filled w/calc. no poro, 1 light odor. 3' sd, blk calc, w/very thin streaks of subxln Ls no poro, sli odor. 18' Lime & Shale, heterogeneously mixed, lime coarse xln, very foss, w/occasional sil and pyritic Ls nodules. sh, slickensides found @10,433-10435 no poro, sli odor. 1' sd, gry to brn, v f g, very shaley, calc., very tight, sli odor. 9' sh, blk sli calc, w/occasional, very thin strks sub xln Ls., no poro, sli odor. 3' Lime, drk brn to blk, sub-xln to coarse xln, very foss and shaley, w/top 1' having calc, filled vert frac., no poro, sli odor. 1' sd, gry to tan, v f g very shaley, calc and silty. very dense sli odor.
 NOTE: Entire core has light sweet gas bleeding from it.
 (Good 30° dip 10,405-10,455 in sh and sd.)

Diamond Core #34 10,455-10,505 Cut 50' recovered 50' being 1' sh, drk gry to brn, sdy, micaceous, no poro sli odor. 6' sh, blk sli micaceous no poro, sli odor. 10' sd, drk gry to brn, extremely shaley, sli calc, v f g, no poro, sli odor. 19' sh, drk gry to blk, sli calc. no poro, sli odor. 14' sh, drk gry to blk, limey, sli silty to sandy, no poro, sli odor.
 NOTE: 1. No frac 2. very sli bleeding of gas 10,493-502
 (Poor 50° dip 10,455-505 in sh and sd bedding planes.)

Diamond Core #35 10,619 to 10,659 cut 40' recovered 40' being 1/2' blk sh, no show. 2 1/2' lime, brn fn xln, dns, w/vert partly filled frac w/tr. bleeding in frac., fair PP, tr. vuggy poro and tr. frac poro., tr. stain, fluor cut and sli odor. 13' blk sh, no show. 2' lime, brn fn xln, dns, w/some filled foss molds, very foss., good PP, tr vuggy poro, sli odor. 2' lime, drk gry to brn, dns, foss, w/tr bleeding in frac, horiz and vert, frac., indicated horiz open frac., tr stain and fluor in bleeding spots only, tr. odor. 2' Lime, drk brn fn xln, very foss, good PP poro, tr stain and fluor in bleeding spots only, good odor. 2' Lime, drk brn, fn xln, dns, no poro, no show. 1' sh, blk thin vert, calc filled frac. no poro, no show. 2' Lime and shale, brn

Diamond Core #35 fn xln dns lime w/wavey layers of blk sh, no poro, no show. 3' sh, blk, w/a few scat, limey pieces, thin tight vert frac good bleeding (1") from bedding planes, no poro tr fluor in bleeding spots only. 3' sh, blk, conglomeritic w/small brn lime pieces, very foss. no poro, tr scat fluor in bleeding spots only, 3' conglomerate, blk shale matrix, lm cobbles, very foss (crinoids) no poro, 4' blk sh, no show.

NOTE: Fluorescence: found only on bleeding spots. (sweet odor)

Fossils: Brachiopods, pelecypods and crinoid stems, no definite fusulinids.

(Poor to fair 2° dip 10,619-644 in shale and lime, poor 12° dip 10,644 10,646 in shale and lime.)

DST #15 10,599-10,659 2700' WB, open 3 hrs, no gas to surface during the three hrs that the tool was open but come to the surface 28 min. after the tool was closed to take shut-in press. Rec. 7663' gas in drill pipe, 2780' GC and sli dist cut WB, 120' sli GC and sli dest CM FP 1210-1295 30 SIP 3360

Diamond Core #36 10,663-10,713 cut 50' and recovered 50' being 21' sh, blk w/multiple tight very thin calc filled vert. frac., no poro, no show. 5' Lime, drk gry, fn xln to dense. no poro no show except sli odor. 16' shale, black as above. no show 4' sh, drk gry as above no show. 4' sh, blk as above no show.

NOTE Entire core had traces of fluor on exterior, but none on the interior, traces from mud.

Good to poor 15° dip 10,663-705 in shale (bedding planes.)

Good 26° dip 10,705-709 in shale, green and blk lam.

Good 75° dip 10,709-710 in shale, green and blk lam.

Fair 15° dip 10,710-712 in shale w/shaley silty lam.

Diamond Core #37 11,832-11,846 cut 14' feet and recovered 7' being 3' limestone, brn, dns, fn xln to sub xln no poro, no show. 1/2' shale, blk, flakey, micaceous, sli silty w/tr of gilsonite residue, no poro, no show. 1 1/2' chert, light gry tan, glauconitic, w/sli greenish tint, no poro, no show. 2' shale, greenish gry, glauconitic, soft to hard flakey, sli bentonitic, sli micaceous w/few scat lime and chert nodules in bottom 1/2 foot. no poro, no show.

NOTE: Hair line vert frac from 35 1/2 to 37, poor indications of 2° dip in shale at 11,836 and 11,838.

Diamond Core #38 11,956-11,981 cut 25' recovered 24' being 1' sd, cl, very large grained, w/sub angular to rounded w/calc cement and a small amount of scat gyp material, micaceous, no poro, tr cut and good odor. 3' Lime, tan, sub-xln, very dns, w/conch fractures on fresh break. no poro, no show. 1' Limes as above w/scat strks of shale w/slickensides in the shale, sli limey, w/tr of gilsonite or lignite, no poro, no show. 4' lime, tan to brn, sub-xln very dns, w/conch frac on fresh break, no poro, no show. 5' Lime, as above w/scat sh streaks (very small) limey w/some glauc, no poro, no show. 1' shale, blk, limey and very glauconitic, w/a few scat lime strks, no poro, no show. 1' Lime, drk brn, sub xln, w/thin scat shale strks, lime, sli foss, very dns, no poro, no show. 4' Lime, drk, brn to blk, fn-med xln very dns foss. no poro, no show. 4' sh, blk, sli limey w/strks of very soft blk sh no show. 1' lost core.

NOTE: Poor 35° dip (11,960-961 sh and ls strks,

Poor 30° dip (11,970-971) sh, bedding planes.

Poor 30° dip (11,976-980) sh bedding planes.

DST #16 11,936-11,981 4000' WB, open 4 hrs. WBTS 1 hr. 29 min. g 1' hr 49 min. gu. 3,810 MCF/GPD, dropped sharply for 2 hrs and leveled off at 1,000 MCF/GPD Rec. 2112' HG & MCWB, no oil or distillate. FP 1525-765 45 SIP 5755.

Diamond Core #39 12,254-12,304 cut 50' recovered 50' being 1 1/2' lime, brn, dns, med xln, to coarsely xln, frac, vert. open, no poro except open frac. no show. 3 1/2' lime, brn, dns, oolitic w/large oolites (good calc xln lined frac w/inter xln poro) no poro except open frac. no show 4' lime, brn, very dns, xln w/scat oolites. no poro except open frac. no show. 1' lime, drk brn, very dns, sub xln, foss no poro, sli sour odor. 13 1/2' limestone drk brn, very dns, conc. frac, massive to sub xln, w/occasional scat sh partings, foss, no poro, sli sour odor. 2 1/2' sh, blk, w/scat thin strks of brn, sdy ls, dns, fn xln w/tr scat glauconite no poro no show. 4' lime, brn, dns to massive, sub xln. no poro no show. 4' lime, as above to coarse xln, no poro no show. 13' lime, brn, v dns, massive to sub xln no poro, no show. 1' sh, light tan, soft, bentonitic, no poro no show. 1 1/2' sh and lime, thin lam blk sh w/brn xln sdy glauc ls. no poro, no show. 1/2' shale, drk gry to blk,

Diamond Core #39 splintery no poro no show.

NOTE: open vert frac from 12,254-261 very poor indication of 13° dip @ 12264 to flat dip @ 12,301.

Diamond Core #40 12,314-12,337 cut 23' recovered 19' being 4' sh, blk w/v thin coarse grained clear sand lamin and occasional lime lamin. no poro, no show. 10' sh, blk, w/occasional very thin pyritic lime lamin no poro, no show. 2' lime, tan, fn-med xln, very shaley w/lt med-crs xln, sli foss and glauconitic w/scat Qtz grains, sli oolitic. no poro, no show. 1' lime, brn, crs xln, sli fossil and oolitic w/1" sh strks in middle and sub xln lime bottom 3" no poro, no show. 4' lost core. NOTE: Fair 8° dip in shale bedding planes.

DST #17 12,231-12,337 4700' WB open 5 hrs, g 2 hrs 36 min gu. 60 MCF GPD decreased to TSTM at end of test Rec. 4982' GCB (unloaded after breaking off each stand) 240' G & MCB 120' G & WCM
FP 2200-2200 30 SIP 4630'

Diamond Core #41 12,734-12,768 cut 34' recovered 33' being 1' lime, drk brn, med to crs xln, very dns, sli sdy and oolitic, very dns poro, no show. 2' sd, light gry to white, v f g, very limey and glauconitic and micaceous, very tight poro, no show. 4' lime drk brn, massive, oolitic, sli foss., very dns poro, no show. 1' sd, gry to white, v f g very limey and glauconitic and micaceous, very tight poro, no show. 2' Lime, drk brn, massive, oolitic, sli foss, very dns, no show. 7' sd, lt gry to white, v f g, sli cement w/scat irregular spolches of gilsonite and pyrite. (appears to be replacement material of plane foss w/3" strks of blk shale @ 12,750, 6.4% ang. poro, sli odor. 10' sd, light tan to clear, large sub-angular to angular quartz grains w/sli cement and very soft gyp material filling pore space w/a few scat gilsonite strks, 8.4% ang poro, fair odor. 6' sand white to light gry, v f g, sli cement w/tr of scat mica and gilsonite and scat paper thin sh and gilsonite strks. 4.8% ang poro, no show. 1' lost core
NOTE: Poor to fair 0° dip 12,761-767, in thin shale and gilsonite partings.

Diamond Core #42 12,768-12,787 cut 19' recovered 19' being 1' sh, drk gry to blk, v sdy and mica, conc frac. no poro, no show. 5' Lime, drk brn to drk gry, massive to med xln, sli oolitic and sdy (large Qtz grains) no poro, no show. 3' Lime, brn, med xln, w/blk oolites, lime is almost pure oolites w/bottom 1' becoming very sdy, no poro, no show. 7½' sd, light gry, v f g, calc, w/numerous paper thin shale lamin and occasional limey strks 8.2% ang poro, sli odor. 1' shale, blk w/strks of sd, w/indicated flowage, no poro, no show. 1½' sd, light gry to white, large Qtz grains sub angular to angular, sli cement, top 1' w/several shale strks, bottom ½' clean sd no poro, no show.
NOTE: one very tight vertical fracture from 12,769-774 and 12,777-784 ½. Fair to poor 1° dip from 12,777-784½ in sh laminations.

Diamond Core #43 12,795-12,845 cut 50' recovered 50' being 42½' sh, drk gry to blk, laminated w/ v f quartzitic sd and sil Ls w/1' brn med xln foss Ls from 12,833-834. Sh is very micaceous in some places grading near slate w/numerous slickensides, both horizontal and 45°, w/scat foss thru out, no poro, no show. 5½' sd, gry to lt tan, fn to med grained, quartzitic, micaceous, no poro, no show. 2' shale, drk gry to blk, almost slate, no poro, no show.
NOTE: fair to good flat dip from 12,795-12,806, good 5° dip from 12,806-12,813, good 9° dip from 12,813-12,845.

Diamond Core #44 12,845-12,892 cut 47' and recovered 47' being 1' sh, blk foss, no show. 1' lime blk to drk brn, med xln, foss, w/scat Qtz, grains, sli oolitic, no poro, no show. 1' sd, gry to light tan, v f, tight, w/calc cement, no poro, no show. 2' sh, blk, pyritic, w/thin sd strks, no poro, no show. 4' sd, gry to light tan, fn to coarse grained, mostly large sub angular to angular w/fn sd, filling between large grains, micaceous, sli glauconitic, very tight poro, no show. 13' shale, blk, w/very thin strks of gilsonite and very foss w/plant life, no poro, no show. 9' sh, brn, v sdy, w/very large rounded Qtz grains, no poro, no show. 8' sd, blk, almost slate, w/1' of quartzitic sd @ 12,880, becoming very sdy in bottom foot, no poro, no show. 3' sd, clear to white, med to large grains, sil cement w/a small amount of gyp material, 0-5.6 millidarcies perm. no show. 5' sd, clear to white, very large rounded to sub angular to angular grains, all porous spaces filled w/soft gyp material, sil cement. 10.6 to 22.0 millidarcies, no show.
NOTE: Fair 9-13° dip in shale and sd lamin and shale and gilsonite partings.

DST #18 12,722-12,892 5000' WB open 3 hrs 30 min. Recovered 3948' uncut WB, 564' sli gc WB, 94' sli g C & MC WB, 282' GC & WCA, 940' GC & HNC brackish water, 1224' brackish water, sli mud cut and sli gas cut (28,000 PPM cl) 90' sli gas cut mud (31,000 PPM cl) FP 2550-3485 30 SIP 5305.

Diamond Core #45 14,358-14,408 cut 50' recovered 48' being 20' dolo, light gry to white fn xln, dns, broken and brecciated, possibly by consolidation; matrix varies from shale to calc sand and sdy lime, several stylolites are also present, fractured secondary xls are all calcite, tr vuggy poro, tr yellow very spotted fluor, no stain, tr. cut, strong sulph odor. 11' shale, black hard, w/large dolo and shale cobbles included. Some shale slickensides, indicated flowage upward into the dolo fractures, no show, strong sulph odor. 17' Dolo, lt gry to white, fn xln, dns, grading to drk brn fn xln, dns, brecciated, fractured, and w/gry dolo cobbles predominate in top to brn dolo cobbles in bottom, gry and brn pieces intermixed over interval, good scattered poro, sulph odor, no show. 2' Lost core.

NOTE: very sli fluor, in frac @ 14,375'.

Dip: very poor 35° dip planes in shale, Dolo- shale contacts irregular, over all data indicates shale flowage.

DST #19 14,341-14,408 6682' WB. open 2 hrs. Recovered WB plus 765' black salty sulph water, sli mud cut (13,750 PPM cl) FP 3180-3480 30 SIP 4800

Diamond Core #46 14,410-14,460 Cut 50' recovered 40' being Dolo, drk brn to brn dns, v f xln to f xln with lt gry dns fn xln dolo matrix secondary calcite in upper part of entire core is brecciated w/ large cobbles, tight poro, sulph odor. no show.

NOTE: Sulphur odor in top 5' of core, no odor in rest of core. No dip recognized.

Diamond Core #47 14,460-14,510 cut 50' recovered 48' being Dolo, drk brn, dns, fn xln, brecciated and frac w/secondary calc fill. Scattered occasional vuggy poro, w/calc xls bottom 6" of core brn, dns, fn xln to sucrose, very vuggy excellent poro.

NOTE: Sulphur odor on fresh break, no apparent dip.

Diamond Core #48 14,510-14,524, cut 14' and recovered 14' being 14' Dolo, drk brn, dns, fn xln, appears to be sli brecciated, frac, w/ calcite filling. tr. vuggy poro in top 2 feet rest of core tight. Tr. sulph odor. no show.

NOTE: a 2 foot section 14,519-4521 appeared to be detrital with brn silty dolomite as a matrix around brn dense fn xln dolo.

Diamond Core #49 14,524-14,561 Cut 37' recovered 37' being 20' dol fn xln, dns, brn, frac, does not appear brecciated, scat stylolites, fractures and vugs well filled w/calcite, scat large vuggy poro, lt sulph odor. 16' Dolo, as above except numerous nearly filled vugs, fu vug filling all calcite, vuggy poro, mostly filled w/calc., sli supl odor. 1' calc., calcite xls only, apparently core barrel stopped in a large filled vug or a large filled fracture., vuggy poro, sli sulph odor. No apparent dip.

Diamond Core #50 14,662-14,612 cut 50' recovered 50' being 10' Dolo, drk brn to gry, dns, fn xln, w/fractures and brecciated appearance, light scat vuggy poro, sulph odor. 10' Dolo, tan, fn xln, and white med xln to coarse xln intermingled, light scat vuggy poro, sulph odor. 12' Dolo, white coarse xln to med xln excellent vuggy poro, sulph odor. 18' Dolo, white and scat tan med to fn xln, light to fair vuggy poro, sulph odor, no apparent dip.

Diamond Core #51 14,612-14,662 Cut 50' recovered 50' being 17' dolo, lt gry, dns fn to med xln, closed fractures to brecciated irregular, w/scat inclusions of brn, fn xln dns dol, good to excellent vuggy por scat fluor in vugs, sli sulph odor. 5' Dolo, as above, w/white, opaque to milky chert inclusions scat good vuggy poro, fluor as above and odor as above. 8' Dolo, as above w/chert as above to white earthy, semi-powdered (weathered) chert, good vuggy poro, fluor and odor as above. 10' Dolo, lt gry, dns, fn xln closed fracturing to med xln. Tr. vuggy poro, fluor and odor as above. 8' Dolo as above w/good to excellent vuggy poro. 2' Dolo as above w/tr vuggy poro, no indicated dip.

NOTE: Fluorescence is due to filtrate from mud which has some fluor.

DST #20 14,571-14,662, 5800' WB. open 2 hrs. steady blow through-out test recovered 5800' uncut water blanket-pipe dry after recovery

of WB (916' dry pipe). Drill collars underneath packer gave appearance of having been in sulfur water worked 16 min. to close T. C. valve for SIBHP could not close. Found T.C. valve had rotated open to circulating position while coming out of hole, therefore formation fluid recovered was lost.

FP 2665-3075

15 SIP failed

DST #21 14,571-14,662 (re-test) 5800' WB. open 4 hrs Recovered 5612' uncut WB, 188' slt MCWB, 1173' slt MC brackish water. (Top tstd 10,000 PPM cl, middle 12,000 PPMcl and bottom 10,700 PPMcl.) could not close / c valve for SIBHP.

FP 2605-3285

30 SIP failed

DST #22 15,454-15,611 5000' WB open 45 min. Rec. WB / 40' uncut drilling mud. (2400 PPMcl.) (bottom hole temp 208° F)

FP 2250-2250

15 SIP 2465.

The total depth of 15,611 was reached in 338 days.

Ran. Schl., velocity survey and dip meter. Schl T.D. 15,608.

PB 12,035 w/110 sx cmt.

ran. 7" liner 9192--12,030 w/925 sx cmt. DO 11,991

Perf. w/108 Jet shots 11,944-11971

ran 2" tbg w/pkr @ 11,943.

Swb 4 hrs, and then flowed gas at initial rate of 182 MCFGPD after four hrs gas gu. 226 MCFGPD

after 12 hrs gas gu 236 MCFGPD

PB 6980

Perf w/240

6890-6950

ran tbg to 6889 w/pkr @6758

swb. 1 hr. then flowed 159 BF 12 H being 137 BO / 22 B wtr.

1/4" /C gas gu. 187 MCFGPD., GOR. 1361/1 37.9 grav. TP 300-350

Sd frac w/3000 gal. (2 1/2 sd per. gal.)

I.P. fl 219 BF 24 H 1/4" /C being 175 BO / 44 B wtr. / P 250, gas vol. 373 MCFGPD. GOR. 2131/1 completed 9-18-53

fl 170 BF 26 H. 1/4" / C being 136 BO / 34 BW. GOR. 2190/1 / P 200.

fl 143 BF 24 H. 1/4" /C being 107 BO / 26 B wtr. GOR. 2245/1 / P 150-200

fl. 135 BF 24 H 1/4" being 124 BO / 11 BW GOR. 2000/1 / P 150

Put on intermitter, flowed 50 min, and shut in 70 min.

fl. 38 BF 12 H. 3/8" /C being 30 BO / 8 B wtr. / P flowing 150 SI/P 380

flowing 1 1/2 hrs on and 1 1/2 hrs on fl. 33 BF 12 H. 3/8" being 26 BO / 7 B wtr. F/P 25., WI / P 450.

Sept. 27, 1953

Flowed 71 B oil plus 17 B wtr. 24 H. 3/8" F / P 150 SI / P 225.

Oct. 4, 1953

fl. 55 B oil plus 15% wtr. 24 H. GOR 1807/1

Oct. 12, 1953

fl 35 BO plus 10 B wtr. 24 H. GOR 2085 F / P 25 to 200 SI / P 350. flowing 20 min and off 40 min.

Oct. 19, 1953

fl. 49 BO plus 12 B wtr. 24 H. flowing 12 min and off 8 min.

Oct. 26, 1953

fl 45 BO / 12 BW 24 H. GOR. 1733/1 / P 50-150 3/8" / C flowing 12 min and off 8 min.