

Case 3803.

Heard 7-10-68.

Rec. 7-10-68.

Approve Outlander- Redfield's  
request for the West Red Lake  
unit agreement.

Trusts. W.P.



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR

December 28, 1982

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

ARCO OIL & GAS CO.  
Permian District  
P.O. Box 1610  
Midland, Texas 79702

*Case 3802*

ATTENTION: Craig Tellinghuisen

RE: West Red Lake Unit  
Eddy County, NM

Dear Sir:

The above referenced submittal has been approved by the New Mexico Oil Conservation Division effective this date. Such approval is contingent upon like approval by the New Mexico Commissioner of Public Lands and the United States Minerals Management Service.

Sincerely,

Roy E. Johnson  
Petroleum Geologist

REJ/dp

cc: Commissioner of Public Lands - Santa Fe  
Minerals Management Service - Albuquerque  
OCD District Office

ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0100



December 10, 1982

*Case #3802*

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plans for Development for 1983

Gentlemen:

Past Operations

This Unit became effective on August 1, 1968, with Atlantic Richfield Company as Unit Operator. Water injection began on 1/1/69 into Well Nos. 4, 13, 14, and 16. Petroleum Corporation of Texas (offsetting our production to the north) started injection into Well No. 2 Patton Federal in February, 1969. The peripheral pattern was completed in April, 1970 with water injection into Unit Well Nos. 2, 11, and 17. All injection wells were initially completed in both the upper zone (Premier) and the lower zone (San Andres) and each zone was regulated and monitored separately.

Early water breakthrough occurred in the Premier zone due to channeling of the injected water. The desired oil bank was never formed in this zone, and therefore the water injection was discontinued in the Premier except for Well No. 17, which has the Premier and San Andres commingled. In 1977, injection was discontinued completely except for Well No. 13 which is disposing of produced water.

Cumulative water injected to October 31, 1982 was 3,407,124 barrels. The daily average during October, 1982 was 55 barrels per day with average pressure of 700 psig.

Cumulative oil production from the date of unitization to October 31, 1982 was 392,831 barrels. Oil production for October, 1982 averaged 83 barrels per day.

Development Plans for 1983

We plan to continue injection of produced water into the San Andres formation throughout 1983. We have no plans to drill any additional wells.

Very truly yours,

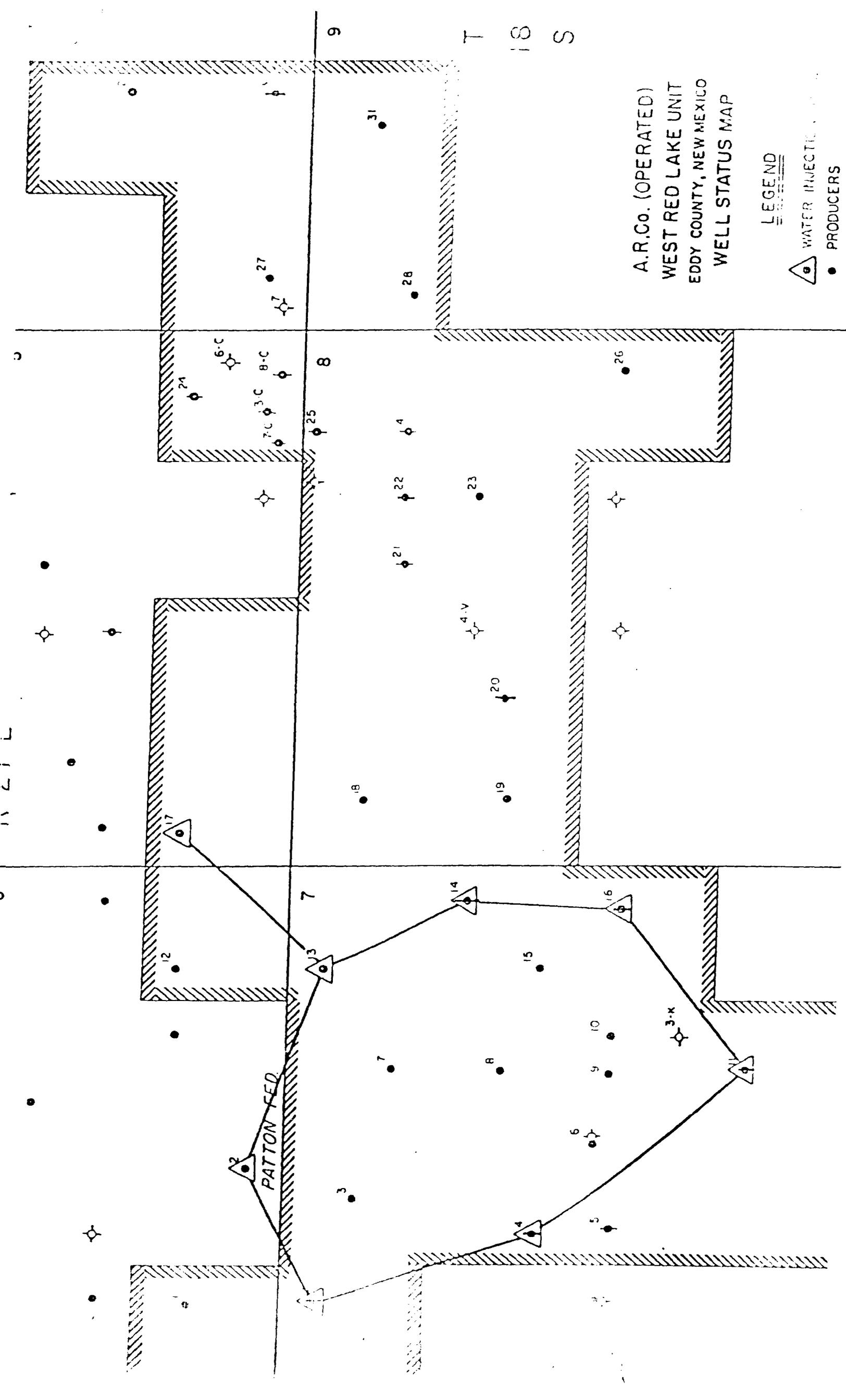
*Craig Tellinghuisen*

Craig Tellinghuisen  
Sr. Operations Engineer

*Ingrid Burton*

Ingrid T. Burton  
Associate Engineer

ITB:dmm



A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND



WATER INJECTORS

PRODUCERS

ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0100



December 10, 1982

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plans for Development for 1983

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Development Plans for 1983

We plan to continue injection of produced water into the San Andres formation throughout 1983. We have no plans to drill any additional wells.

Very truly yours,

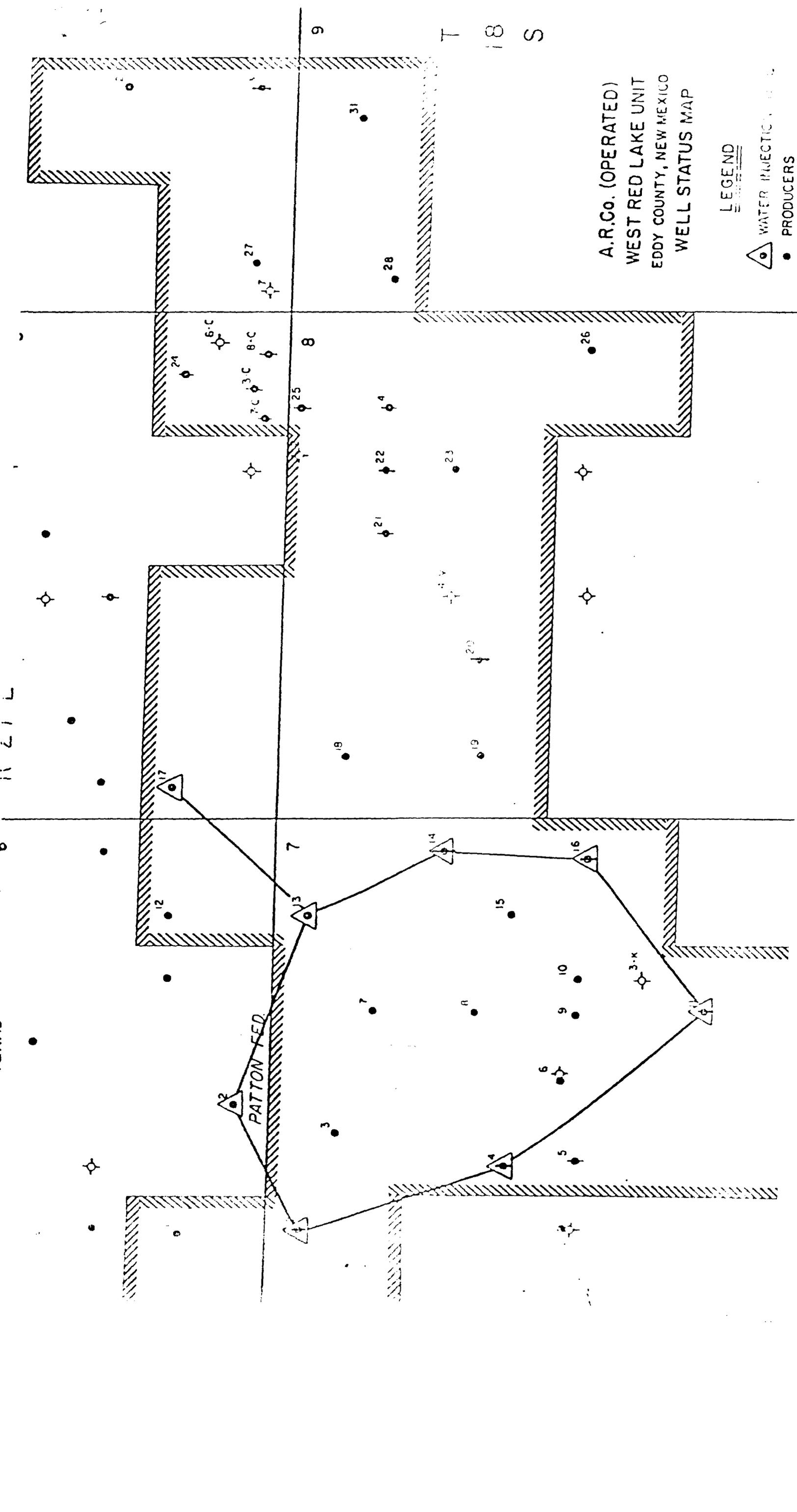
*Craig Tellinghuisen*

Craig Tellinghuisen  
Sr. Operations Engineer

*Ingrid Burton*

Ingrid T. Burton  
Associate Engineer

ITB:dmm



ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0100



December 10, 1982

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plans for Development for 1983

Gentlemen:

Past Operations

This Unit became effective on August 1, 1968, with Atlantic Richfield Company as Unit Operator. Water injection began on 1/1/69 into Well Nos. 4, 13, 14, and 16. Petroleum Corporation of Texas (offsetting our production to the north) started injection into Well No. 2 Patton Federal in February, 1969. The peripheral pattern was completed in April, 1970 with water injection into Unit Well Nos. 2, 11, and 17. All injection wells were initially completed in both the upper zone (Premier) and the lower zone (San Andres) and each zone was regulated and monitored separately.

Early water breakthrough occurred in the Premier zone due to channeling of the injected water. The desired oil bank was never formed in this zone, and therefore the water injection was discontinued in the Premier except for Well No. 17, which has the Premier and San Andres commingled. In 1977, injection was discontinued completely except for Well No. 13 which is disposing of produced water.

Cumulative water injected to October 31, 1982 was 3,407,124 barrels. The daily average during October, 1982 was 55 barrels per day with average pressure of 700 psig.

Cumulative oil production from the date of unitization to October 31, 1982 was 392,831 barrels. Oil production for October, 1982 averaged 83 barrels per day.

Development Plans for 1983

We plan to continue injection of produced water into the San Andres formation throughout 1983. We have no plans to drill any additional wells.

Very truly yours,

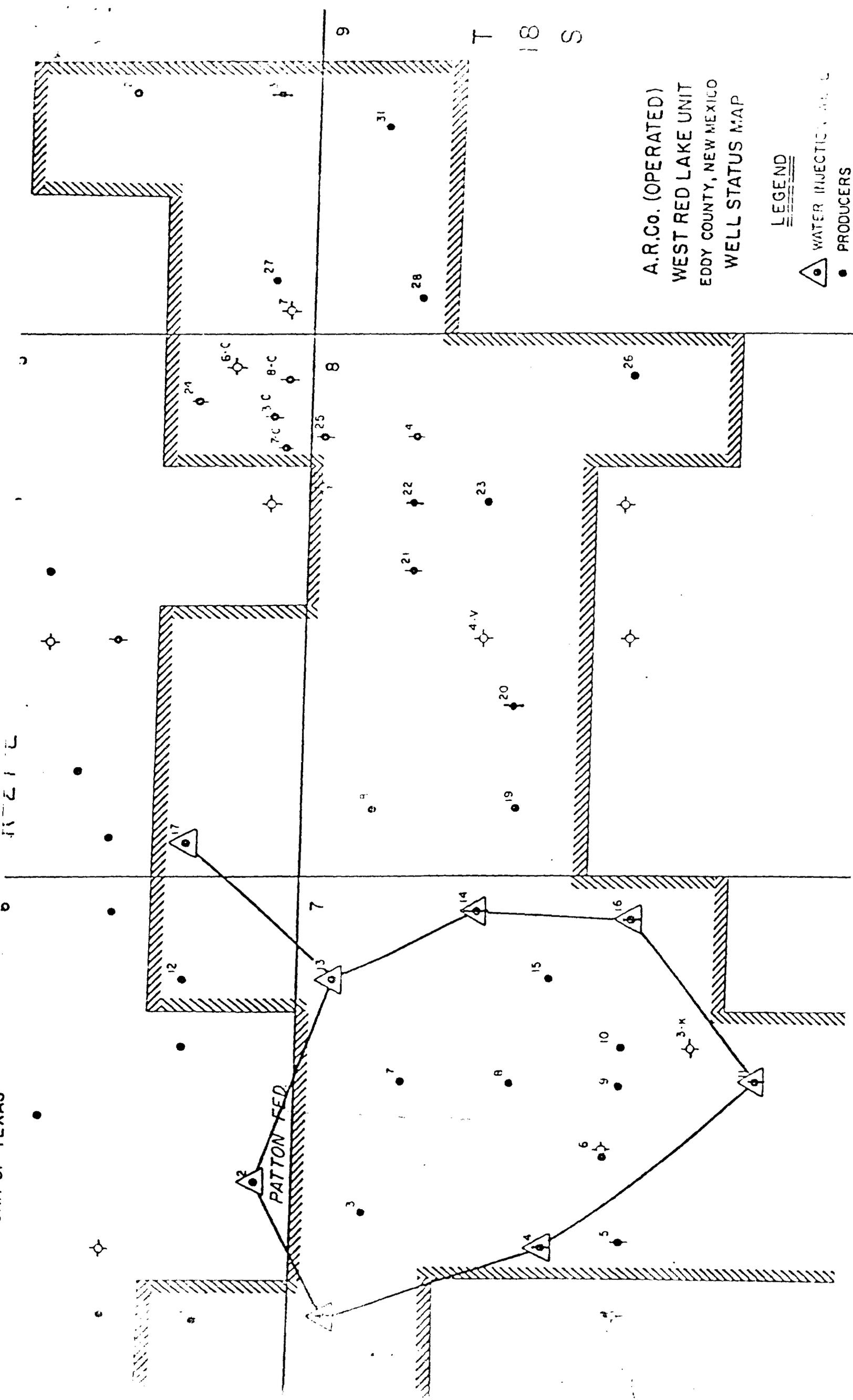
*Craig Tellinghuisen*

Craig Tellinghuisen  
Sr. Operations Engineer

*Ingrid Burton*

Ingrid T. Burton  
Associate Engineer

ITB:dmm



A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

- ▲ WATER INJECTION WELLS
- PRODUCERS



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Roswell District Office

P. O. Box 1397

Roswell, New Mexico 88201

#3802

IN REPLY  
REFER TO:

West Red Lake Unit

April 6, 1984

ARCO Oil and Gas Company  
Attention: Mr. Timothy Detmering  
P.O. Box 1610  
Midland, TX 79702

Gentlemen:

Enclosed are three approved copies of your 1984 Plan of Development and Operation for the West Red Lake Unit Area, Eddy County, New Mexico, covering the period beginning January 1, 1984 and ending December 31, 1984. This plan, proposing to continue injection of produced water into the San Andres Formation and to drill Unit Well No. 32 during 1984, was approved this date, subject to like approval of the New Mexico Commissioner of Public Lands and the New Mexico Oil Conservation Division.

Sincerely yours,

~~Orig. Sgd.~~ Earl R. Cunningham

District Manager

Enclosures: (3)

cc: ✓ NMOCD, Santa Fe

RECEIVED

APR 11 10 21 AM '84

STATE LAND OFFICE  
SANTA FE, N. M.

ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915-684 0100



#3802

October 5, 1983

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plans for Development for 1984

Gentlemen:

Past Operations

This Unit became effective on August 1, 1968, with Atlantic Richfield Company as Unit Operator. Water injection began on 1/1/69 into Well Nos. 4, 13, 14, and 16. Petroleum Corporation of Texas (offsetting our production to the north) started injection into Well No. 2 Patton Federal in February, 1969. The peripheral pattern was completed in April, 1970 with water injection into Unit Well Nos. 2, 11, and 17. All injection wells were initially completed in both the upper zone (Premier) and the lower zone (San Andres) and each zone was regulated and monitored separately.

Early water breakthrough occurred in the Premier zone due to channeling of the injected water. The desired oil bank was never formed in this zone, and therefore the water

injection was discontinued in the Premier except for Well No. 17, which has the Premier and San Andres commingled. In 1977, injection was discontinued completely except for Well No. 13 which is disposing of produced water.

Cumulative water injected to June 30, 1983 was 3,418,958 barrels. The daily average during June, 1983 was 42 barrels per day with average pressure of 700 psig.

Cumulative oil production from the date of unitization to June 30, 1983 was 409,748 barrels. Oil production for October, 1983 averaged 51 barrels per day.

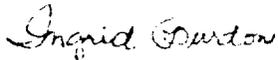
Development Plans for 1984

We plan to continue injection of produced water into the San Andres formation throughout 1984. We plan to drill one well, Well No. 32, which is spotted on the attached map. Drilling of this well is expected to commence in the last quarter of this year.

Very truly yours,



Tim Detmering  
Operations Engineer



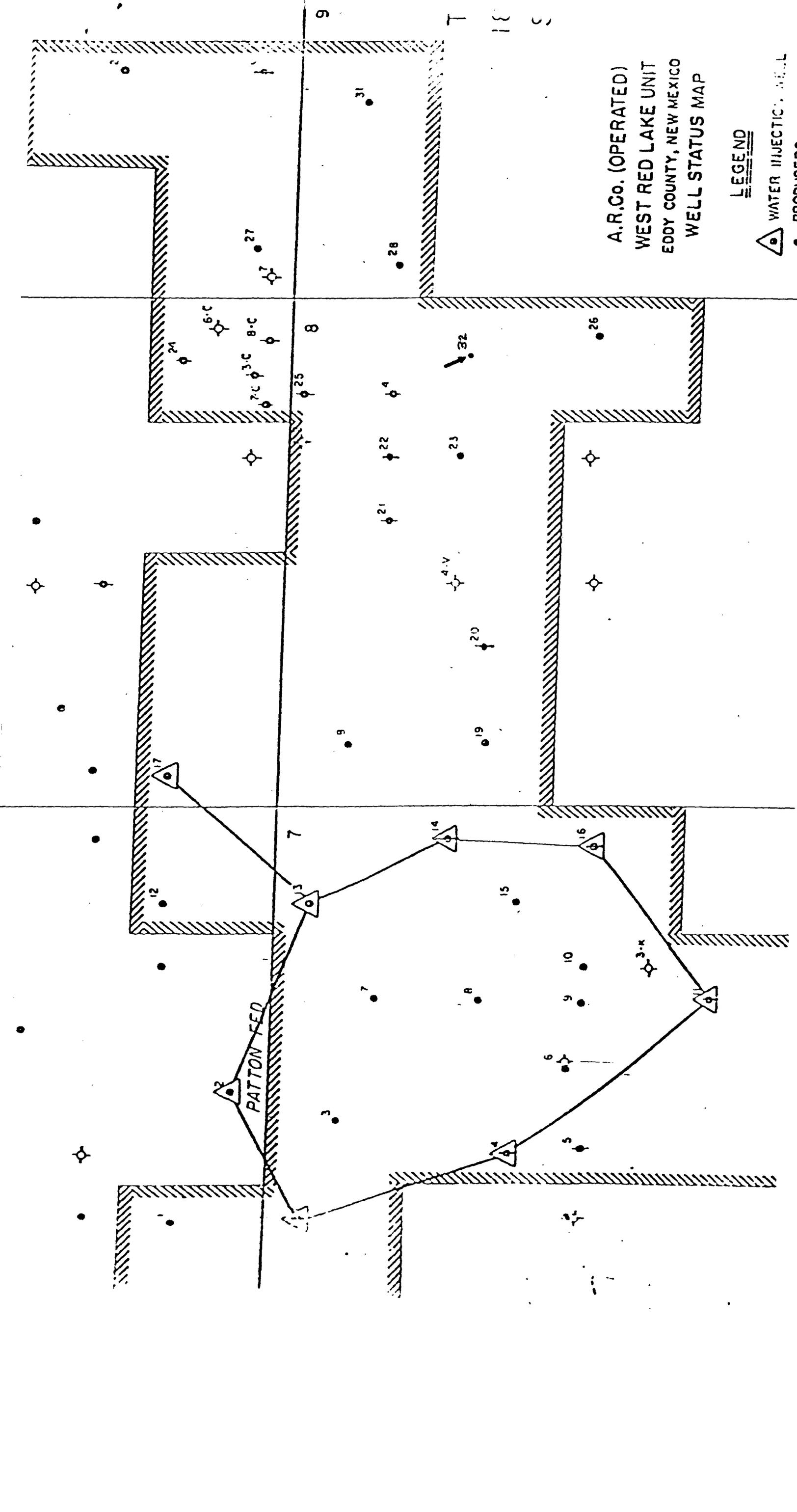
Ingrid T. Burton  
Associate Engineer

ITB:dmm

A.R.Co. (OPERATED)  
WEST RED LAKE UNIT  
EDDY COUNTY, NEW MEXICO  
WELL STATUS MAP

LEGEND

▲ WATER INJECTOR WELL  
● PRODUCER



ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0149  
Jerry L. Tweed  
District Engineer



3002

November 13, 1981

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plans for Development for 1982

Gentlemen:

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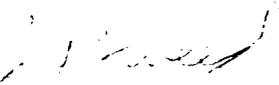
Cumulative water injected to September 1, 1981, was 3,379,231 barrels. The daily average during August, 1981, was 64 barrels per day with average pressure of 600 psig.

Cumulative oil production from the date of unitization to September 1, 1981, was 367,877 barrels. Oil production for August, 1981, averaged 67 barrels per day.

Development Plans for 1982

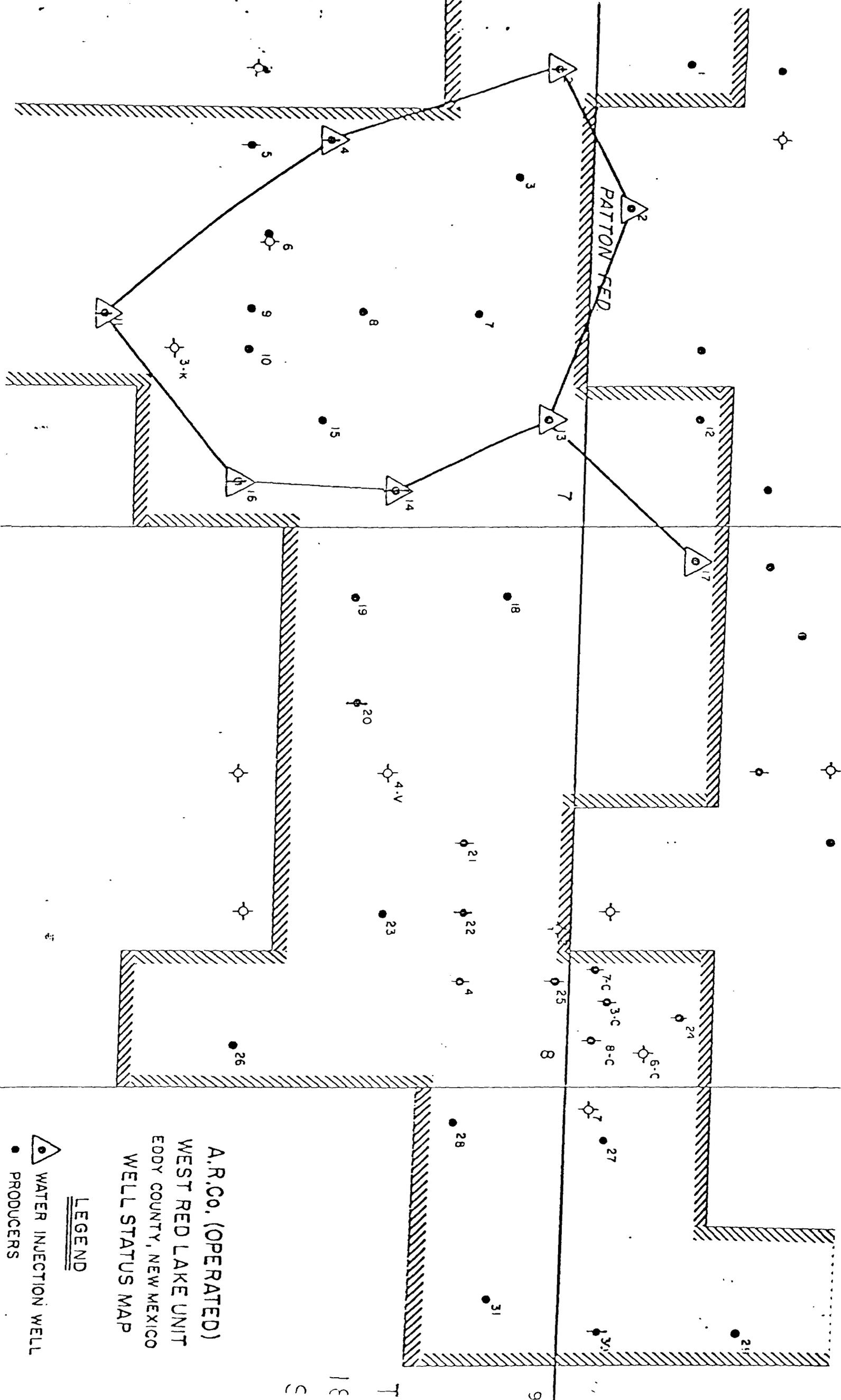
We plan to continue injection of produced water into the San Andres formation throughout 1982. We have no plans to drill any additional wells.

Very truly yours,



J. L. Tweed  
District Engineer

GLP:JLT:cn



A.R.CO. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

-  WATER INJECTION WELL
-  PRODUCERS

ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0149  
Jerry L. Tweed  
District Engineer



November 13, 1981

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
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Cumulative water injected to September 1, 1981, was 3,379,231 barrels. The daily average during August, 1981, was 64 barrels per day with average pressure of 600 psig.

Cumulative oil production from the date of unitization to September 1, 1981, was 367,877 barrels. Oil production for August, 1981, averaged 67 barrels per day.

Development Plans for 1982

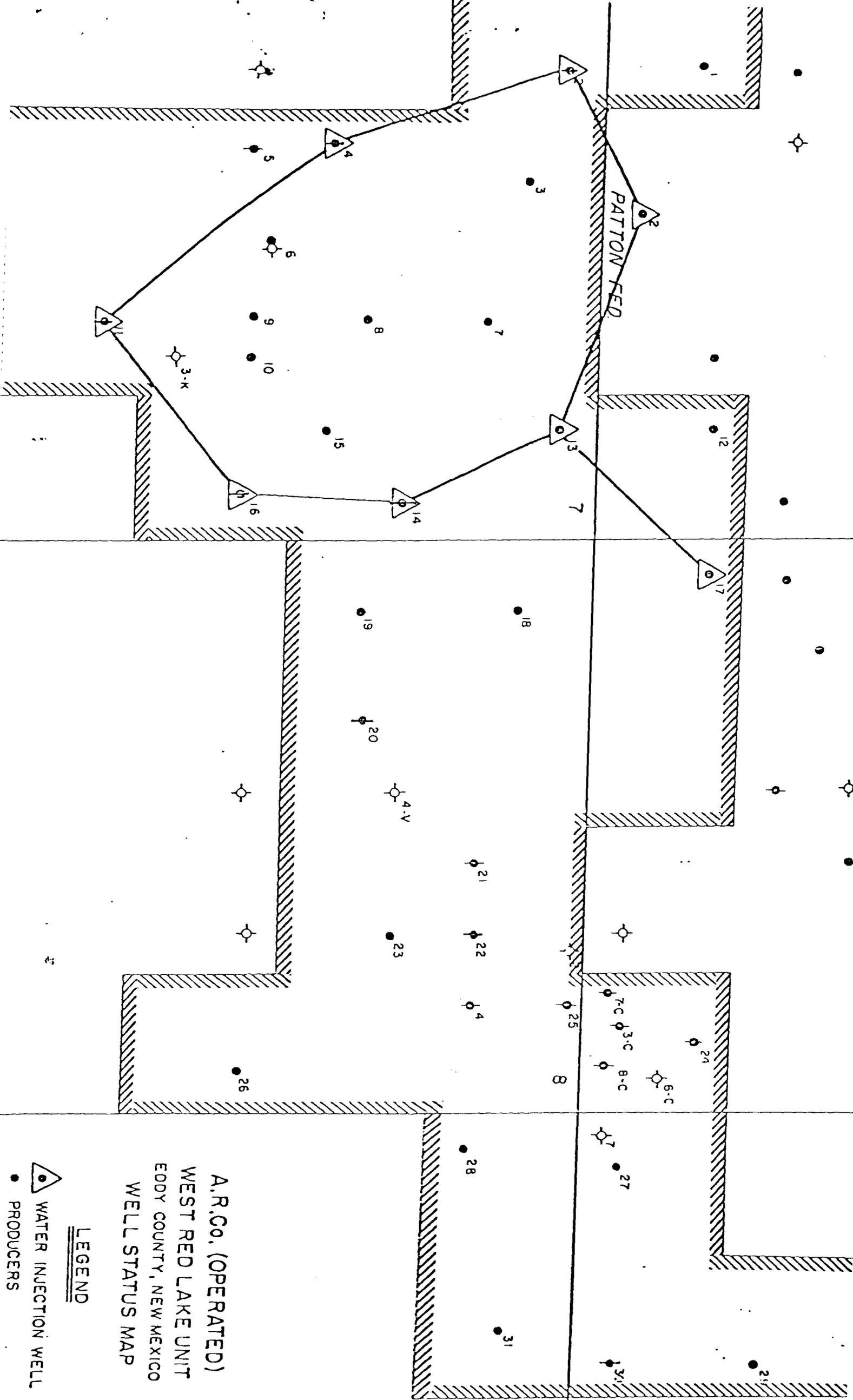
We plan to continue injection of produced water into the San Andres formation throughout 1982. We have no plans to drill any additional wells.

Very truly yours,



J. L. Tweed  
District Engineer

GLP:JLT:cn



A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

- ▲ WATER INJECTION WELL
- PRODUCERS

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ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0149  
Jerry L. Tweed  
District Engineer



November 13, 1981

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit  
Eddy County, New Mexico

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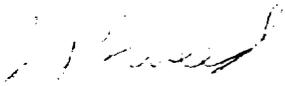
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Development Plans for 1982

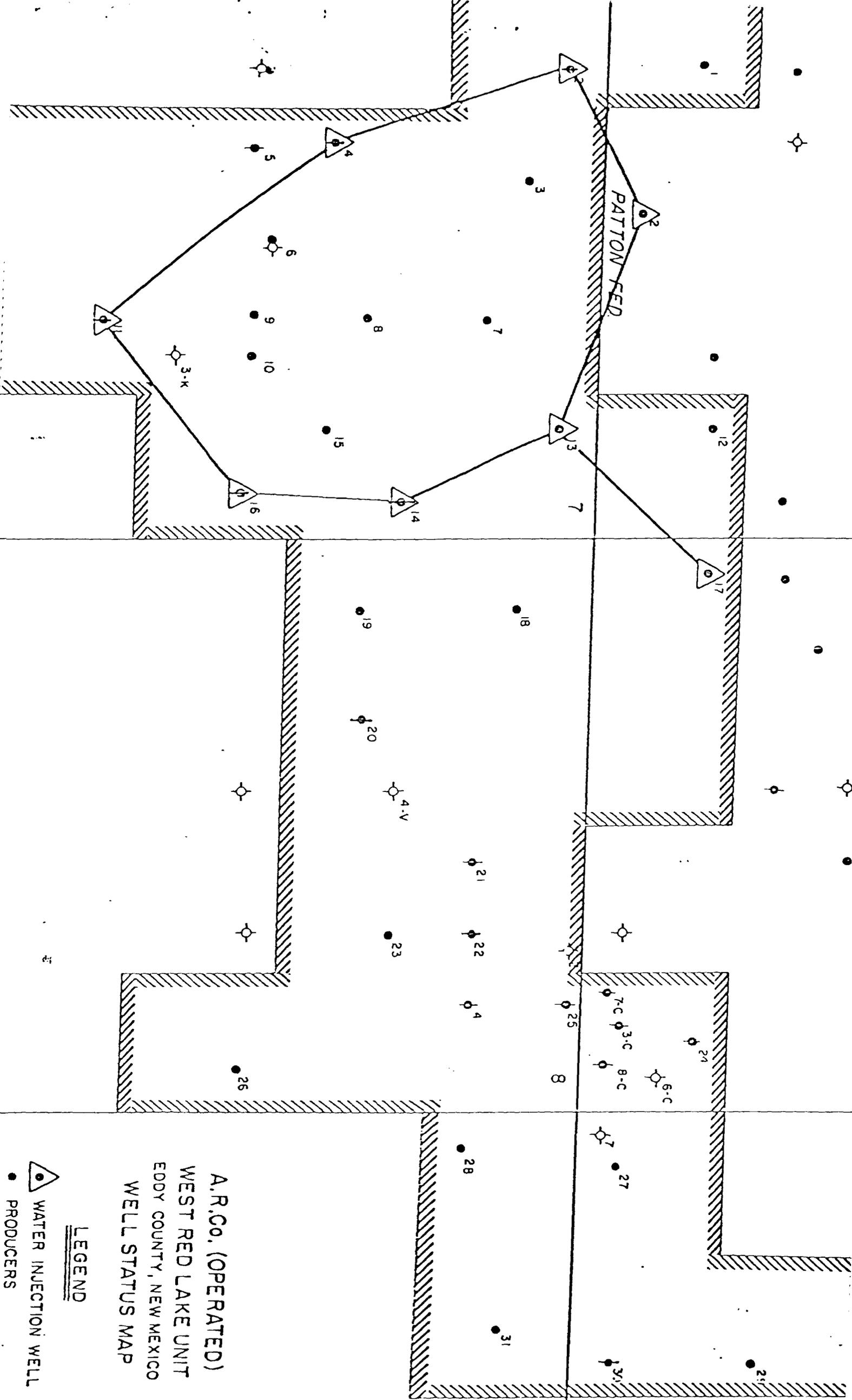
We plan to continue injection of produced water into the San Andres formation throughout 1982. We have no plans to drill any additional wells.

Very truly yours,



J. L. Tweed  
District Engineer

GLP:JLT:cn



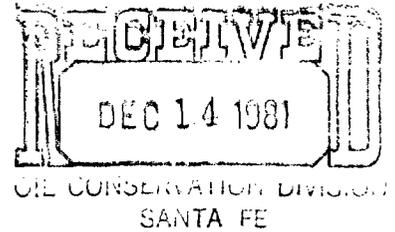
A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

- ▲ WATER INJECTION WELL
- PRODUCERS

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T  
13  
C

South Central Region  
P. O. Box 26124  
Albuquerque, New Mexico 87125



DEC 11 1981

3802

Arco Oil and Gas Company  
Attention: J. L. Tweed  
P. O. Box 1610  
Midland, Texas 79702

Gentlemen:

Four approved copies of your 1982 plan of development for the West Red Lake unit area, Eddy County, New Mexico are enclosed. Such plan, proposing no additional drilling and to continue to inject produced water into the San Andres Formation, was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

Sincerely yours,

(ORIG. SGD.) JOE G. LARA

FOR Gene F. Daniel  
Deputy Conservation Manager  
Oil and Gas

Enclosures

cc:  
NMOCD, Santa Fe  
DS, Roswell (w/encl)



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
South Central Region  
P. O. Box 26124  
Albuquerque, New Mexico 87125



21 APR 1981

3802

Arco Oil and Gas Company  
Attention: J. L. Tweed  
P. O. Box 1610  
Midland, Texas 79702

Gentlemen:

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Sincerely yours,

ORIGINAL SIGNED BY:

Gene F. Daniel  
Deputy Conservation Manager  
Oil and Gas

Enclosures

cc:  
NMOCD, Santa Fe /  
DS, Roswell (w/enclosure)

OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

February 17, 1981

ARCO Oil and Gas Company  
Post Office Box 1610  
Midland, Texas 79702

Attention: J. L. Tweed

Re: Case No. 3802  
West Red Lake Unit  
1981 Plan of Development

Gentlemen:

We hereby approve the 1981 Plan of Development for the West Red Lake Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands.

Two approved copies of the Plan of Development are returned herewith.

Yours very truly,

JDE D. RAMEY  
Director

JDR/EP/fd  
enc.

cc: U.S.G.S. - Albuquerque  
Commissioner of Public Lands

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Y

ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0100



3802

November 24, 1980

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

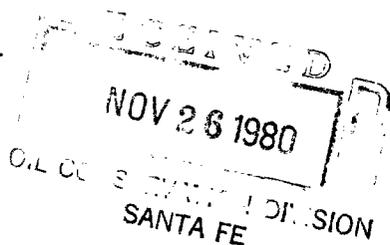
File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plans for Development for 1981

Gentlemen:

Past Operations

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at  
EJP  
2/6/81

Early water breakthrough occurred in the Premier zone due to channeling of the injected water. The desired oil bank was never formed in this zone, and therefore the water injection was discontinued in the Premier except for well no. 17, which has the Premier and San Andres commingled. In 1977, injection was discontinued completely except for well no. 13 which is disposing of produced water.

Cumulative water injected to September 1, 1980 was 3,367,068 barrels. The daily average during August 1980 was 109 barrels per day with average pressure of 700 psig.

Cumulative oil production from the date of unitization to September 1, 1980 was 347,389 barrels. Oil production for August 1980 averaged 41 barrels per day.

Development Plans for 1981

We plan to continue injection of produced water into the San Andres formation throughout 1981. We have no plans to drill any additional wells.

Very truly yours,

J. L. Tweed  
District Engineer

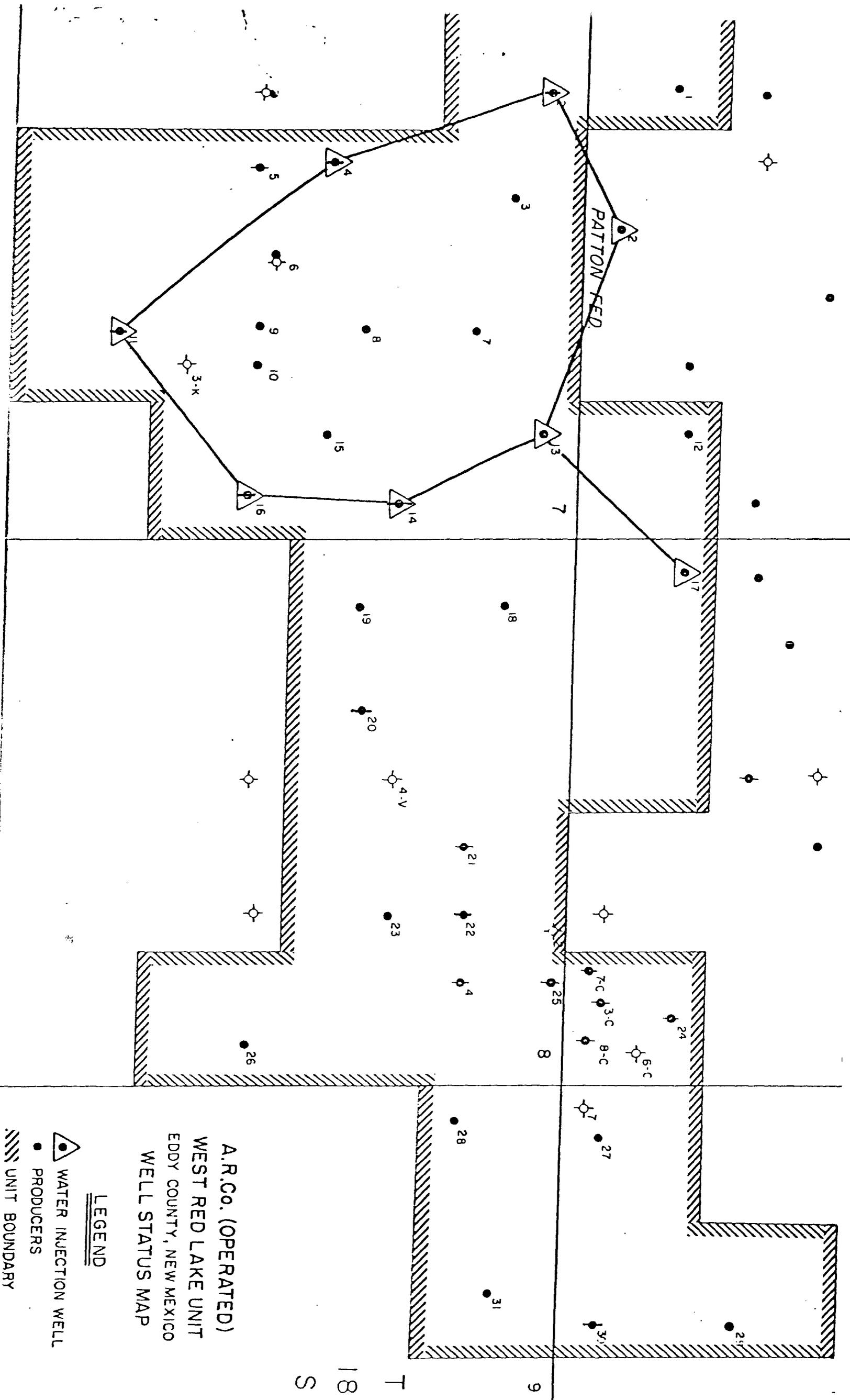
RLS:jaf

Approved 2117 19 81

  
Director  
Oil Conservation Division  
Energy and Minerals Department

RECEIVED  
NOV 06 1980  
OIL CONSERVATION DIVISION  
SANTA FE

THIS APPROVAL GRANTED SUBJECT TO LIKE APPROVAL  
BEING GRANTED BY THE UNITED STATES GEOLOGICAL  
SURVEY AND BY THE COMMISSIONER OF PUBLIC LANDS  
OF THE STATE OF NEW MEXICO.



A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

- WATER INJECTION WELL
- PRODUCERS
- UNIT BOUNDARY

9  
 T  
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OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

February 17, 1981

Harvey E. Yates Company  
P. O. Box 1933  
Roswell, New Mexico 88201

Attention: Robert H. Strand

Re: Case No. 6814  
Betanbough Unit  
1981 Plan of Development  
and Operation

Gentlemen:

We hereby approve the 1981 Plan of Development and Operation for the Betanbough Unit, Lea County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands.

One approved copy of the Plan of Development is returned herewith.

Yours very truly,

JOE D. RAMEY  
Director

JDR/EP/fd  
enc.

cc: U.S.G.S. - Albuquerque  
Commissioner of Public Lands

C

O

P

Y

**HEYCO**

PETROLEUM PRODUCERS



**HARVEY E. YATES COMPANY**

RECEIVED  
FEB 04 1981  
OIL CONSERVATION DIVISION  
SANTA FE

P. O. BOX 1933

SUITE 300, SECURITY NATIONAL BANK BUILDING

505/623-6601

February 2, 1981

ROSWELL, NEW MEXICO 88201

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

Attention: Mr. Ray Graham

~~6787~~ 6814

OK  
E/P  
2/6/81

Re: Betenbough Unit  
No. 27753  
Lea County, New Mexico  
1981 Plan of Development  
and Operation

Gentlemen:

In conformance with Section 9 of the Betenbough Unit Agreement, Harvey E. Yates Company, as Unit Operator, hereby submits the following plan of development and operation for the balance of the 1981 calendar year.

The Betenbough Unit #1 Well, which is the initial well drilled under the terms of the unit agreement, was commenced on March 6, 1980. The well was completed in the Atoka formation with an estimated flow rate of 832 MCF of gas per day. The well has been on production for 211 days and is presently producing at a rate of 365 MCF of gas per day.

We do not, at the present time, have sufficient data to determine a specific plan for drilling of additional wells on the unit. However, if production from the initial well remains stable, we would anticipate drilling at least one unit well during 1981, probably during the fourth quarter.

Based on the information derived from the initial well, we may wish, at a later date, to supplement this plan of development.

Enclosed is an exhibit showing the location of the Betenbough Unit #1 discovery well.

We will appreciate receiving approval of this plan of development as soon as possible.

Approved 2/17 19 81

Director  
Oil Conservation Division  
Energy and Minerals Department

Sincerely,

HARVEY E. YATES COMPANY

By:   
Robert H. Strand, Attorney

RHS/cj  
Enclosure

THIS APPROVAL GRANTED SUBJECT TO LIKE APPROVAL BEING GRANTED BY THE UNITED STATES GEOLOGICAL SURVEY AND BY THE COMMISSIONER OF PUBLIC LANDS OF THE STATE OF NEW MEXICO.

cc: New Mexico Oil  
Conservation Division





# United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Box 26124  
Albuquerque, New Mexico 87125

APR 02 1980

3802

Arco Oil and Gas Company  
Attention: J. L. Tweed  
P. O. Box 1610  
Midland, Texas 79702

Gentlemen:

Three approved copies of your 1980 plan of development for the West Red Lake unit area, Eddy County, New Mexico, are enclosed. Such plan, proposing no additional drilling and to continue to inject produced water into the San Andres formation, was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

Sincerely yours,

(ORIG. SGD.) JACK WILLOCK

FOR Gene F. Daniel  
Acting Deputy Conservation Manager  
Oil and Gas

Enclosures 3

cc:  
NMOC, Santa Fe



ONE HUNDRED YEARS OF EARTH SCIENCE IN THE PUBLIC SERVICE

OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

January 11, 1979

Atlantic Richfield Company  
Post Office Box 1610  
Midland, Texas 79702

Attention: J. L. Tweed

Re: Case No. 3802  
West Red Lake Unit  
1979 Plan of Development

Gentlemen:

We hereby approve the 1979 Plan of Development for the West Red Lake Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands.

Two approved copies of the Plan of Development are returned herewith.

Yours very truly,

JOE D. RAMEY  
Director

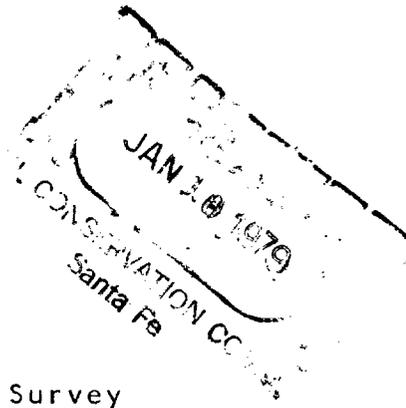
JDR/LT/fd  
enc.

cc: U.S.G.S. - Roswell  
Commissioner of Public Lands

C  
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Richfield Company

North American Producing Division  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0100



January 05, 1979

Director (6)  
United States Geological Survey  
P.O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

*No. 3802  
Approve*

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plan of Development for 1979.

Gentlemen:

Past Operations

This unit was effective on August 1, 1978, with Atlantic Richfield Company as unit operator. Water injection into well Nos. 4, 13, 14, and 16, began on 1/1/69. Petroleum Corporation of Texas (offsetting our unit to the north) started injection into well No. 2, Patton Federal in February 1969. The peripheral pattern was completed in April 1970 with water injection into unit well Nos. 2, 11, and 17. All injection wells were initially completed in the Premier zone (upper zone) and the San Andres (lower zone). Each zone was regulated and metered separately.

Water injection into the Premier (upper) zone has caused early breakthrough in the producers. Apparently the water is channeling through this zone without forming the desired oil bank. By February 1972, all Premier injection was shut off except in Well No. 17, which has the Premier and San Andres commingled.

Director, U. S. G. S.  
et al  
January 05, 1979  
Page 2

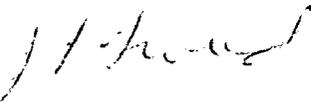
Cumulative water injection to November 1, 1978, was 3,323,751 barrels. The daily average injection rate during October 1978 was 79 barrels per day, with an average pressure of 400 psig.

Cumulative oil production since unitization to November 1, 1978 was 306,977 barrels. Oil production for October 1978, averaged 62 barrels per day.

Development Plans for 1979

We plan to continue to inject production water in the San Andres formation throughout 1979. There are no plans to drill any additional wells.

Very truly yours,

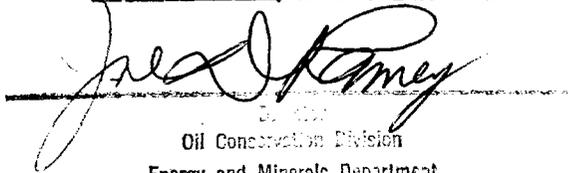


J. L. Tweed

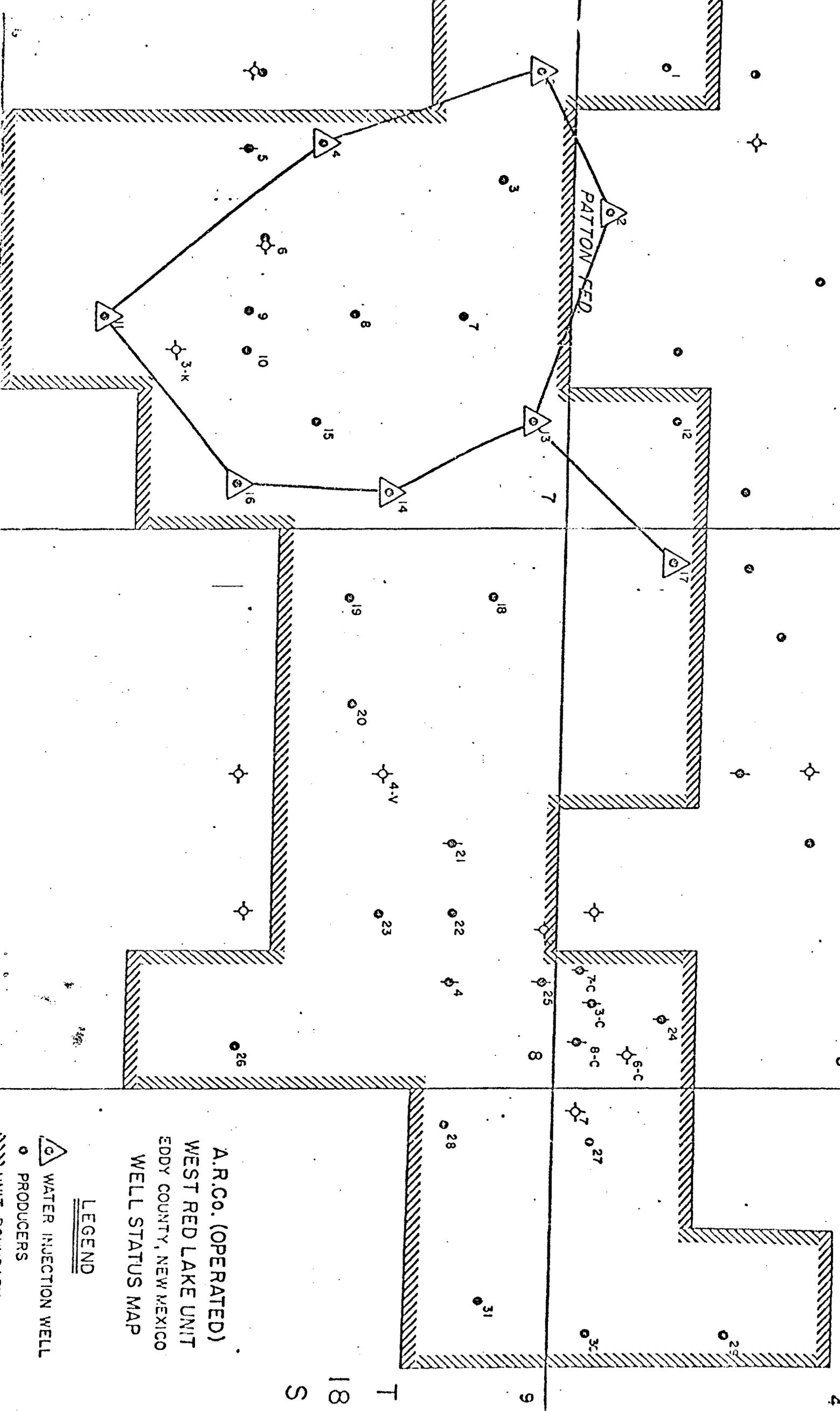
JLT:MG:ad

Approved

11 11 19 79



Oil Conservation Division  
Energy and Minerals Department



A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

- △ WATER INJECTION WELL
- PRODUCERS
- ▨ UNIT BOUNDARY



# United States Department of the Interior

GEOLOGICAL SURVEY  
Drawer 1857  
Roswell, New Mexico 88201

5503

December 20, 1974

Atlantic Richfield Company  
Attention: Mr. George V. Ricks  
P.O. Box 1710  
Hobbs, New Mexico 88240

Gentlemen:

Four approved copies of your 1975 plan of development for the West Red Lake unit area, Eddy County, New Mexico, are enclosed. Such plan, proposing to continue operations under the current peripheral waterflood pattern in the San Andres, was approved on this date subject to like approval by the appropriate official of the State of New Mexico.

Sincerely yours,

CARL C. TRAYWICK  
Acting Area Oil and Gas Supervisor

cc:

✓ NMOCC, Santa Fe (ltr only)  
Artesia (w/cy plan)

JAGillham:ds

RECEIVED  
DEC 26 1974  
U. S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE NEW MEXICO 87501

3802

January 8, 1975

C

Atlantic Richfield Company  
P. O. Box 1710  
Hobbs, New Mexico 88240

Attention: Mr. George V. Ricks

Re: 1975 Plan of Development,  
West Red Lake Unit,  
Hobbs, New Mexico 88240

O

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for 1975 for the West Red Lake 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.

P

Two approved copies of the plan are returned herewith.

Y

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

North American Producing Division  
Permian District—West Area  
Post Office Box 1710  
Hobbs, New Mexico 88240  
Telephone 505 393-7163

George V. Ricks, Superintendent  
Production & Drilling



December 5, 1974

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Commission (3)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Mr. W. P. Brandon  
P. O. Box 13  
Cranberry, Pennsylvania 16319

Mr. Richard J. Hoyer  
104 East Third  
Monahans, Texas 79756

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plan of Development for 1975

Gentlemen:

PAST OPERATIONS:

This unit was effective on August 1, 1968, with Atlantic Richfield Company as unit operator. Water injection into Well Nos. 4, 13, 14, and 16, began on 1/1/69. Petroleum Corporation of Texas (offsetting our unit to the north) started injection into Well No. 2, Patton Federal in February 1969. The peripheral pattern was completed in April 1970 with water injection into Unit Well Nos. 2, 11, and 17. All injection wells were initially completed in the Premier (upper zone) and the San Andres (lower zone). Each zone was regulated and metered separately.

December 5, 1974  
Page 2

Water injection into the Premier (upper) zone has caused early breakthrough in the producers. Apparently the water is channeling through this zone without forming the desired oil bank. By February 1972, all Premier injection was shut off except in Well No. 17, which has the Premier and San Andres commingled.

DEVELOPMENT PLANS FOR 1975:

The plan is to continue operations under the present peripheral flood pattern in the San Andres. Evaluation of flood performance will be made during 1975. Action will be taken if indicated by study.

Cumulative water injection to November 1, 1974, was 2,757,415 barrels. The daily average injection rate during October 1974, was 891 barrels per day, with an average pressure of 896 psig.

Cumulative oil production since unitization to November 1, 1974, was 197,833 barrels. Oil production for October 1974, averaged 71 barrels per day.

Yours very truly,

  
George V. Ricks

WTP/agp

Approved *January 8 1975*



Secretary-Director

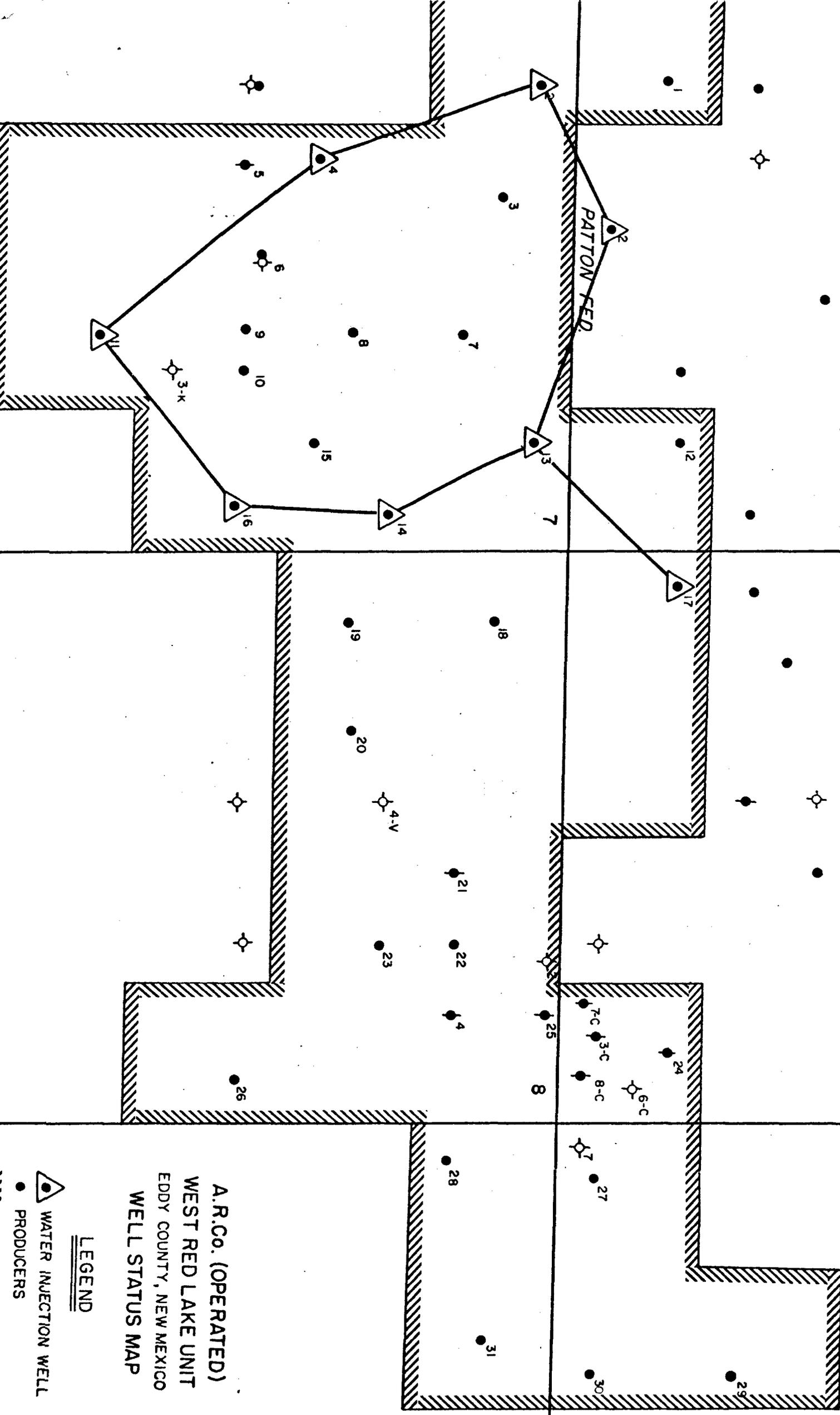
NEW MEXICO OIL CONSERVATION COMMISSION

PET. CORP. OF TEXAS

6 R-27-E

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4



A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

-  WATER INJECTION WELL
-  PRODUCERS
-  UNIT BOUNDARY

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United States Department of the Interior

3802

GEOLOGICAL SURVEY

Drawer 1857  
Roswell, New Mexico 88201

January 24, 1974

Atlantic Richfield Company  
Attention: Mr. George V. Ricks  
P.O. Box 1710  
Hobbs, New Mexico 88240

Gentlemen:

Four approved copies of your 1974 plan of development and operation for the West Red Lake unit area, Eddy County, New Mexico, proposing continuation of operations under the present peripheral waterflood pattern, are enclosed. Such plan was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

Sincerely yours,

CARL C. TRAYWICK  
Acting Area Oil and Gas Supervisor

cc:  
NMOCC, Santa Fe (ltr only)  
Artesia (w/cy plan)

JAGillham:ds

**OIL CONSERVATION COMMISSION**

**P. O. BOX 2088**

**SANTA FE, NEW MEXICO 87501**

January 8, 1974

3802

**Atlantic Richfield Company  
P. O. Box 1710  
Hobbs, New Mexico 88240**

**Attention: Mr. George V. Ricks**

**Re: 1974 Plan of Development,  
West Red Lake Unit, Eddy  
County, New Mexico**

**Gentlemen:**

**This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1974 Plan of Development dated December 16, 1973, for the West Red Lake 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,**

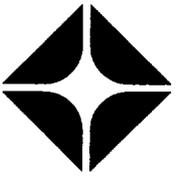
**A. L. PORTER, Jr.  
Secretary-Director**

**ALP/JEK/og**

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

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O  
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North American Producing Division  
Permian District—West Area  
Post Office Box 1710  
Hobbs, New Mexico 88240  
Telephone 505 393-7163



George V. Ricks, Superintendent  
Production & Drilling  
December 16, 1973

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Commission (3)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Mr. W. P. Brandon  
P. O. Box 13  
Cranberry, Pennsylvania 16319

Mr. Richard J. Hoyer  
104 East Third  
Monahans, Texas 79756

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plan of Development for 1974

Gentlemen:

PAST OPERATIONS:

This unit was effective on August 1, 1968, with Atlantic Richfield Company as unit operator. Water injection into Well Nos. 4, 13, 14, and 16 began on 1/1/69. Petroleum Corporation of Texas (offsetting our unit to the north) started injection into Well No. 2, Patton Federal in February 1969. The peripheral pattern was completed in April 1970 with water injection into Unit Well Nos. 2, 11, and 17. All injection wells were initially completed in the Premier (upper zone) and the San Andres (lower zone). Each zone was regulated and metered separately.

Water injection into the Premier (upper) zone has caused early breakthrough in the producers. Apparently the water is channeling through this zone without forming the desired oil bank. By February 1972, all Premier injection was shut off except in Well No. 17, which has the Premier and San Andres commingled.

December 16, 1973

Page 2

DEVELOPMENT PLANS FOR 1974:

The plan is to continue operations under the present peripheral flood pattern in the San Andres.

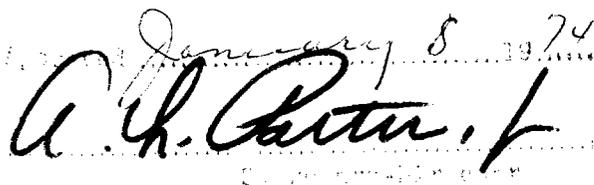
Cumulative water injection to November 1, 1973, was 2,500,934 barrels. The daily average injection rate during October 1973, was 1113 barrels per day, with an average pressure of 909 psig.

Cumulative oil production since unitization to November 1, 1973, was 170,862 barrels. Oil production for October 1973, averaged 83 barrels per day.

Yours very truly,

  
George V. Ricks

CRL/agp

January 8, 1974  
  
A. H. Carter

NEW MEXICO OIL CORPORATION

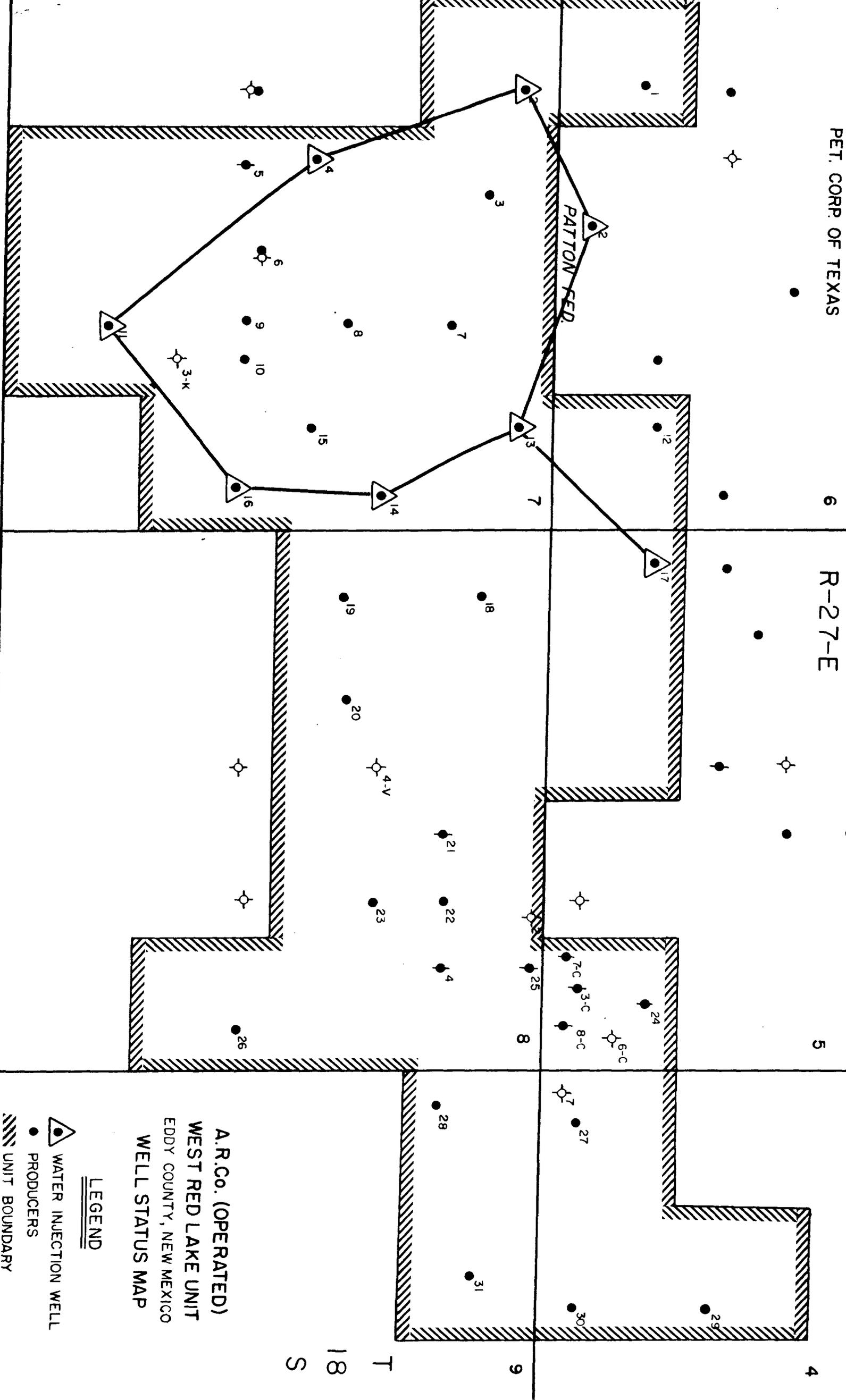
PET. CORP. OF TEXAS

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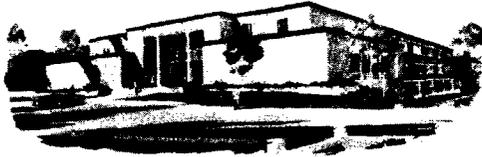
A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

- ▲ WATER INJECTION WELL
- PRODUCERS
- ▨ UNIT BOUNDARY

State of New Mexico

TELEPHONE  
505-827-2748



Commissioner of Public Lands

November 16, 1972

3802

ALEX J. ARMIJO  
COMMISSIONER

P. O. BOX 1148  
SANTA FE, NEW MEXICO

Atlantic Richfield Company  
P. O. Box 1973  
Roswell, New Mexico 88201

Re: West Red Lake Unit  
1973 PLAN OF DEVELOPMENT  
Eddy County, New Mexico

ATTENTION: Mr. George V. Ricks

Gentlemen:

We have received three copies of your Plan of Development for the Year 1973, for the West Red Lake Unit, Eddy County, New Mexico. This Unit does not contain any State of New Mexico lands, therefore, we are retaining one copy for record purposes only and returning two copies to you.

Very truly yours,

RAY D. GRAHAM, Director  
Oil and Gas Department

AJA/RDC/s  
encs.  
cc:

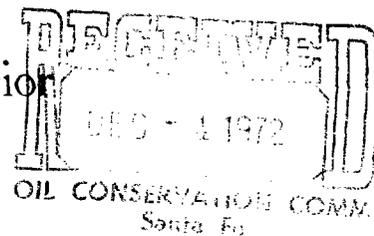
USGS-Roswell, New Mexico  
OCC- Santa Fe, New Mexico



United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857  
Roswell, New Mexico 88201



November 30, 1972

3802

Atlantic Richfield Company  
P. O. Box 1978  
Roswell, New Mexico 88201

Attention: Mr. George V. Ricks

Gentlemen:

On this date, your 1973 plan of development and operation for the West Red Lake unit area, Eddy County, New Mexico, wherein you propose to continue operations under the present peripheral water-flood pattern, was approved. Such approval is subject to like approval by the New Mexico Oil Conservation Commission.

Three 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 plan)  
Artesia (w/cy plan)  
NMOCC, Santa Fe (ltr. only)

JAG:llham:lh

**OIL CONSERVATION COMMISSION**

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

November 27, 1972

3802

Atlantic Richfield Company  
P. O. Box 1978  
Roswell, New Mexico

Attention: Mr. George V. Ricks

Re: 1973 Plan of Development  
West Red Lake Unit, Eddy  
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Report of Past Operations and Plan of Development for 1973 for the West Red Lake 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

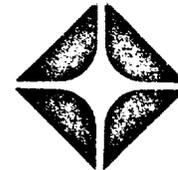
ALP/JEK/og

cc: United States Geological Survey  
Roswell, New Mexico

Commissioner of Public Lands  
Santa Fe, New Mexico

North American Producing Division  
Permian District—West Area  
Post Office Box 1978  
Roswell, New Mexico 88201  
Telephone 505 622 4041

George V. Ricks, Superintendent  
Production & Drilling



November 15, 1972

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Commission (3)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (3)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Mr. W. P. Brandon  
P. O. Box 13  
Cranberry, Pennsylvania 16319

Mr. Richard J. Hoyer  
104 East Third  
Monahans, Texas 79756

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plan of Development for 1973

Gentlemen:

PAST OPERATIONS:

Water injection into the Premier (Upper) zone has caused early breakthrough in the producers. Apparently the water is channeling through this zone without forming the desired oil bank. By February, 1972, all Premier injection was shut off except in Well No. 17 which has the Premier and San Andres commingled.

November 15, 1972

Page 2

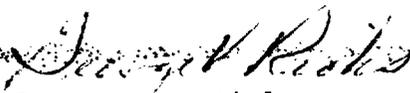
DEVELOPMENT PLANS FOR 1973:

The plan is to continue operations under the present peripheral flood pattern in the San Andres.

Cumulative water injection to October 1, 1972 was 2,152,047 barrels. The daily average injection rate during September, 1972 was 1,290 barrels per day with an average pressure of 942 psig.

Cumulative oil production since unitization to October 1, 1972 was 138,832 barrels. Oil production for September, 1972 averaged 78 barrels per day.

Yours very truly,

  
George V. Ricks

WTP/GVR/mea

Approved

*November 2, 1972*

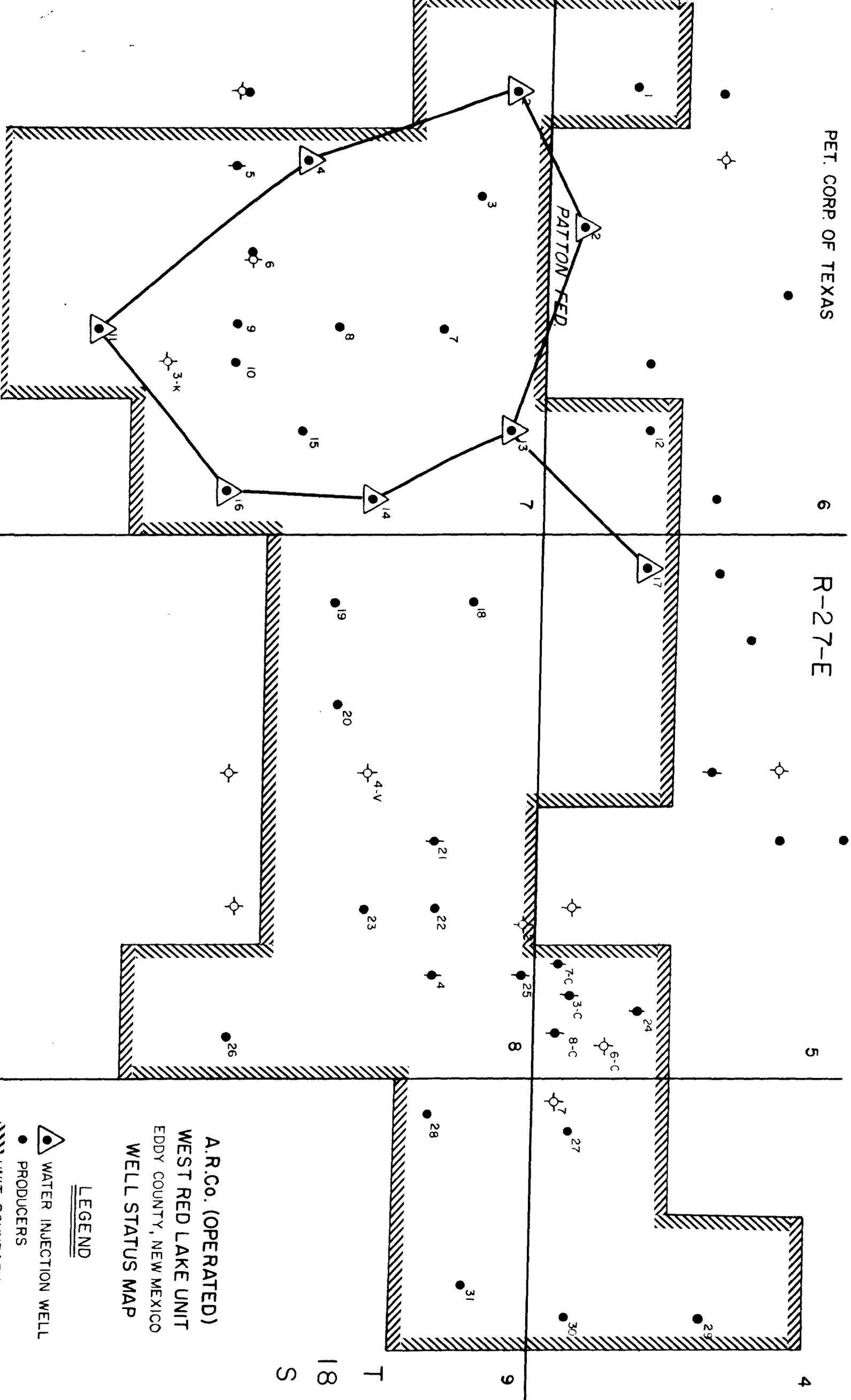


Secretary-Director

NEW MEXICO OIL CONSERVATION COMMISSION

PET. CORP. OF TEXAS

R-27-E



A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

-  WATER INJECTION WELL
-  PRODUCERS
-  UNIT BOUNDARY

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**RECEIVED**

**JAN 11 1972**

**OIL CONSERVATION COMM  
SANTA FE**

**January 10, 1972**

3802

**Atlantic Richfield Company  
P. O. Box 1978  
Roswell, New Mexico 88201**

**Re: West Red Lake Unit  
1972 Plan of Development  
Eddy County, New Mexico**

**ATTENTION: Mr. A. D. Kloxin**

**Gentlemen:**

**We have received three copies of your Plan of Development for the West Red Lake Unit, Eddy County, New Mexico. This Unit does not contain any State of New Mexico lands, therefore, we are retaining one copy for record purposes only and returning two copies to you.**

**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**

**OIL CONSERVATION COMMISSION**

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

January 10, 1972

3802

**Atlantic Richfield Company  
P. O. Box 1978  
Roswell, New Mexico 88201**

**Attention: Mr. A. D. Kloxin**

**Re: 1972 Plan of Development  
and Operation, West Red  
Lake 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 and Operations for the year 1972 for the West Red Lake 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**

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IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR

RECEIVED

1032 1971

GEOLOGICAL SURVEY  
Drawer 1857  
Roswell, New Mexico 88201

OIL CONSERVATION COMM.  
SANTA FE

December 21, 1971

Atlantic Richfield Company  
P.O. Box 1978  
Roswell, New Mexico 88201

Attention: Mr. A. D. Kloxin

Gentlemen:

Your 1972 plan of development and operation, proposing to continue operations under the present peripheral waterflood pattern, for the West Red Lake unit area, Eddy County, New Mexico, has been approved on this date, subject to like approval by the New Mexico Oil Conservation Commission.

Three approved copies of the plan are enclosed.

Sincerely yours,

(ORIG. 90)

CARL C. TRAYWICK  
Acting Oil and Gas Supervisor

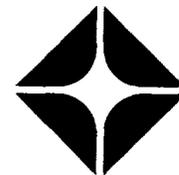
cc:

Washington (w/cy of plan)

Artesia (w/cy of plan)

✓ NMOCC, Santa Fe (ltr. only)

North American Producing Division  
Permian District - West Area  
Post Office Box 1978  
Roswell, New Mexico 88201  
Telephone 505 622 4041



A. D. Kloxin, Superintendent  
Production & Drilling

November 19, 1971

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Mr. W. P. Brandon  
Cranberry  
Pennsylvania 16319

Oil Conservation Commission (3)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Mr. Richard J. Hoyer  
104 East Third  
Monahans, Texas 79756

Commissioner of Public Lands (3)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plan of Development for 1972.

Gentlemen:

PAST OPERATIONS

The West Red Lake Unit became effective August 1, 1968, with Atlantic Richfield as unit operator. Water injection into wells No. 4, 13, 14, and 16 was commenced 1-1-69. Petroleum Corporation of Texas offsetting our unit to the north, started injection into Well No. 2, Patton Federal in February, 1969. On April 6, 1970, Atlantic Richfield completed the peripheral flood pattern by starting water injection into converted Well No. 2, 11, and 17. All injection wells in the unit are opened in the Premier (upper zone) and the San Andres (lower zone). Each zone is regulated and metered separately except Well No. 17. In February, 1970, pumping Well No. 7, increased from 7 BOPD and 1 BWPD to 7 BOPD and 233 BWPD in March. Packer tests on Well No. 7 indicated water had broken through the Premier zone. Injection into the Premier zone was stopped in Well No. 13. The produced water in Well No. 7 dropped back to 1 BWPD within a month. Producing Well No. 12 was pumping 5 BOPD and 86 BWPD in December, 1970, dropped back to 5 BOPD and 11 BWPD in January, 1971. We do not intend to start injection back in the Premier zone of Well No. 13.

Plans of Development and Operation  
West Red Lake Unit  
November 19, 1971  
Page 2

Cumulative water injection to October 1, 1971, was 1,570,858 barrels. The daily average injection rate during September, 1971, was 1,898 barrels at an average pressure of 781 psig.

Cumulative oil production since unitization to October 1, 1971, was 107,681 barrels. Oil production from the unit averaged 79 barrels per day for September, 1971.

DEVELOPMENT PLANS FOR 1972

Plans are to continue operations under the present peripheral flood pattern.

Yours very truly,

ATLANTIC RICHFIELD COMPANY



A. D. Kloxin

Approved *Jenny O* 1972  
*[Signature]*  
Secretary-Director

NEW MEXICO OIL CONSERVATION COMMISSION

THIS APPROVAL GRANTED SUBJECT TO LIKE APPROVAL  
BEING GRANTED BY THE UNITED STATES GEOLOGICAL  
SURVEY AND BY THE COMMISSIONER OF PUBLIC LANDS  
OF THE STATE OF NEW MEXICO.

PET. CORP. OF TEXAS

R-27-E

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PATTON FED.

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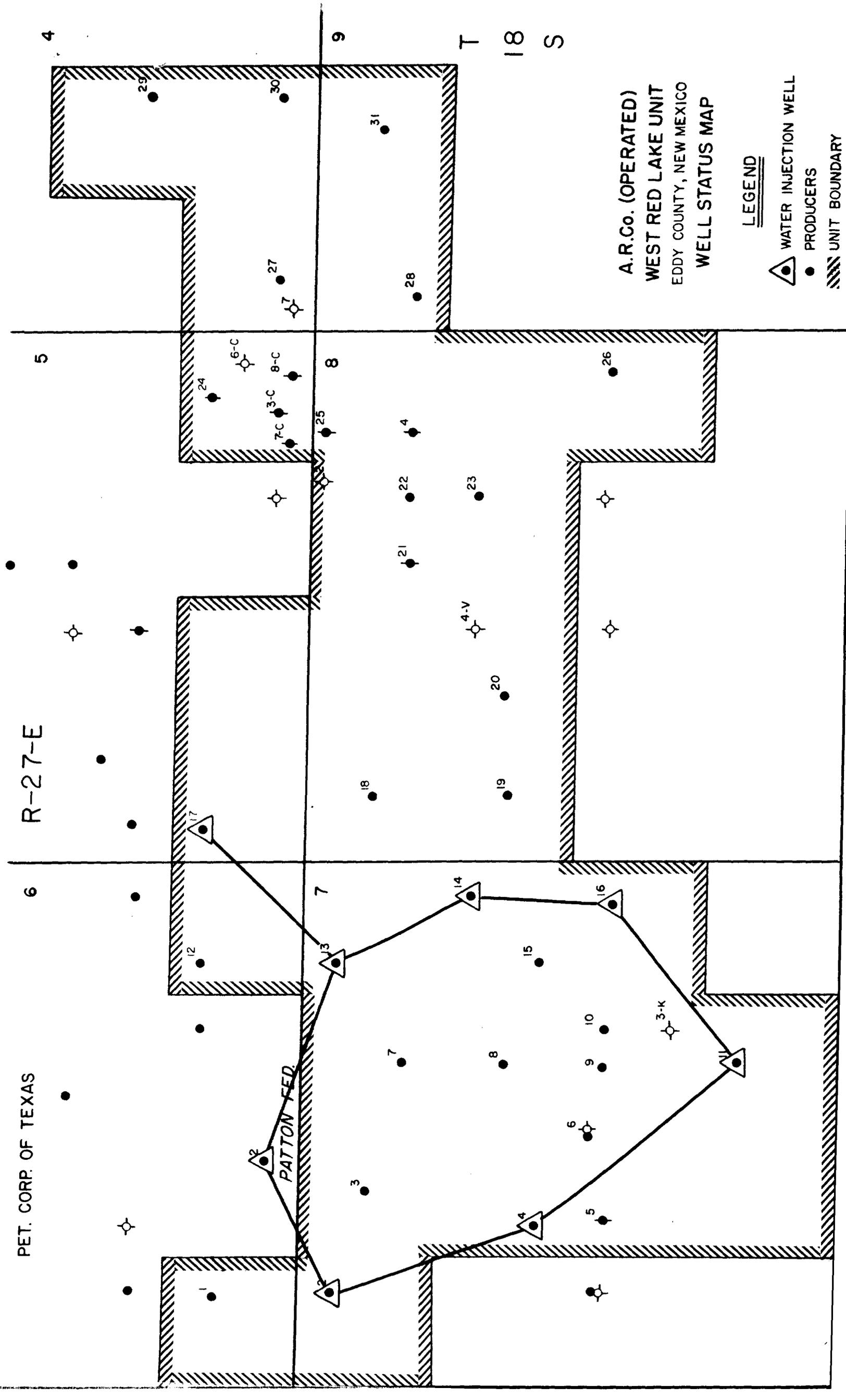
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A.R.Co. (OPERATED)  
WEST RED LAKE UNIT  
EDDY COUNTY, NEW MEXICO  
WELL STATUS MAP

LEGEND

-  WATER INJECTION WELL
-  PRODUCERS
-  UNIT BOUNDARY



North American Producing Division  
 New Mexico-Arizona District  
 Post Office Box 1978  
 Roswell, New Mexico 88201  
 Telephone 505 622 4041

W. P. Tomlinson  
 District Engineer

MAY 5 AM 8 12 '70



May 1, 1970

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

3802

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

Re: West Red Lake Unit  
 Order No. R-3469

Gentlemen:

Atlantic Richfield Company started injecting water into three additional wells in the West Red Lake Unit on April 20, 1970. Two of the wells are dual completed with injection down the annulus into the Premier zone of the Grayburg formation and down the tubing into the San Andres formation. The other well is a single completion with injection down the tubing into the Premier and San Andres formations.

The following table lists the injection wells along with the packer setting depth, depth of casing shoe, Premier perforated interval and San Andres perforated interval.

WELL NAME	PACKER SETTING DEPTH	DEPTH		
		OF CASING SHOE	PREMIER PERFORATED INTERVAL	SAN ANDRES PERFORATED INTERVAL
WRLU No. 2	1,078'	1,800'	1036-44'	1616-1705'
WRLU No. 11	1,090'	1,775'	1038-47'	1642-1737'
WRLU No. 17	1,113'	1,856'	1182-92'	1618-1844'

If any additional information is required please advise.

Yours very truly,

*J. L. Tweed*  
 J. L. Tweed

JLT:jcb

cc: United States Geological Survey  
 Artesia, New Mexico

New Mexico Oil Conservation Commission  
 Artesia, New Mexico



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Drawer 1857  
Roswell, New Mexico 88201

3804

September 13, 1968

Atlantic Richfield Company  
P. O. Box 1978  
Roswell, New Mexico 88201

Attention: Mr. Don Goodwin

Gentlemen:

Your letters of September 9, 1968, transmit the following described papers relating to the West Red Lake unit agreement, No. 14-08-0001-8970, Eddy County, New Mexico:

1. An original and three reproduced copies of a ratification and joinder to the West Red Lake unit agreement executed in behalf of the Higgins Trust, Inc., as the owner of certain overriding royalty interests in Federal land unit tract Nos. 1, 4, 4-A, 5, 6, 6-A, 8, 9, and 9-A.
2. An original and three reproduced copies of a ratification and joinder to the West Red Lake unit agreement executed in behalf of Charlotte Havens Pier and the Estate of W. L. Pier as the owner of certain overriding royalty interests in Federal land unit tract Nos. 5, 6, 8, 9, and 9-A.
3. Letter dated September 9, 1968, from Atlantic Richfield Company, working interest owner in Federal land unit tract Nos. 1, 4, 6-A, 8, 9, and 9-A, consenting to the acceptance of the above-described ratifications and joinders.
4. Letter dated September 9, 1968, from Hondo Oil and Gas Company, working interest owner in Federal land unit tract Nos. 4-A, 5, and 6, consenting to the acceptance of the above-described ratifications and joinders.

Pursuant to Section 30 of the West Red Lake unit agreement, such ratifications and joinders are accepted effective October 1, 1968. Copies of the ratifications and joinders are being distributed to the appropriate Federal offices.

Sincerely yours,

cc:  
Washington (w/attachments)  
BLM, Santa Fe (w/attachments)  
Artesia (w/attachments) (ORIG. SIGNED) JOHN A. ANDERSON  
NMOCC, Santa Fe (ltr. only) ✓  
Accounts

JOHN A. ANDERSON  
Regional Oil and Gas Supervisor

100 Sep 16 1968

W. P. Tomlinson  
District Engineer

January 8, 1969

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

Attention: Mr. A. L. Porter

Re: West Red Lake Unit Order No. R-3469

Gentlemen:

Atlantic Richfield Company started injecting water into four wells in the West Red Lake Unit on January 7, 1969. All four wells are dual completed with injection down the annulus into the Premier zone of the Grayburg Formation and down the tubing into the San Andres Formation.

The following table lists the injection wells along with the packer setting depth, depth of casing shoe, Premier perforated interval and San Andres perforated interval.

Well Name	Packer Setting Depth	Depth of Casing Shoe	Premier Perforated Interval	San Andres Perforated Interval
W. Red Lake Unit No. 4	1080'	1774'	998'-1034'	1578'-1676'
W. Red Lake Unit No. 13	1221'	1823'	1129'-74'	1716'-60'
W. Red Lake Unit No. 14	1152'	1750'	1057'-96'	1664'-1720'
W. Red Lake Unit No. 16	1175'	1820'	1090'-1124'	1683'-1774'

We are also now reinjecting produced water. If any additional information is required, please advise.

Yours very truly,

W. P. Tomlinson

WPT:jcb

cc: United States Geological Survey, Artesia, New Mexico  
New Mexico Oil Conservation Commission, Artesia, New Mexico



RECEIVED  
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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Drawer 1857  
Roswell, New Mexico 88201

July 24, 1968

Atlantic Richfield Company  
P. O. Box 1978  
Roswell, New Mexico 88201

Attention: Mr. S. L. Smith

Gentlemen:

Your initial plan of development, dated July 16, 1968, for the West Red Lake unit area, Eddy County, New Mexico, proposing the initial conversion of four wells to water injection status and subsequently to convert seven other wells to injectors, has been approved on this date subject to like approval by the New Mexico Oil Conservation Commission.

One approved copy of the plan is enclosed.

Sincerely yours,

(ORIG. SGB) CARL C. TRAYWICK

CARL C. TRAYWICK  
Acting Oil and Gas Supervisor

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

68 JUL 25 PM 11 0



IN REPLY REFER TO:

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

3802  
August 15 1968

Atlantic Richfield Company  
P. O. Box 1978  
Roswell, New Mexico 88201

Attention: Mr. Dan Goodwin

Gentlemen:

Your letter of August 13, 1968, transmits the following described papers relating to the West Red Lake unit agreement No. 14-08-0031-0370, Eddy County, New Mexico:

1. An original and three reproduced copies of a ratification and joinder to the West Red Lake unit agreement executed by William Stirling, Jr. and Valerie H. Stirling as the owners of a 1.5625 percent basic royalty interest in fee land unit tract No. 15.
2. Letter dated August 13, 1968, from Hondo Oil and Gas Company, working interest owner in fee land unit tract No. 15, consenting to the acceptance of the above-described ratification and joinder.

Pursuant to Section 30 of the West Red Lake unit agreement, such ratification and joinder is accepted effective September 1, 1968. Our records show tract No. 15 was qualified for participation as of the effective date of the unit agreement. Copies of the ratification and joinder are being distributed to the appropriate Federal offices.

Sincerely yours,

CARL C. TRAYWICK

CARL C. TRAYWICK  
Acting Oil and Gas Supervisor

cc:  
Washington (w/attachments)  
BLM, Santa Fe (w/attachments)  
Artesia (w/attachments)  
EMOCC, Santa Fe (ltr. only) ✓  
Accounts

68 AUG 16 11 05

**ILLEGIBLE**



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Drewes 1057  
Roswell, New Mexico 88201

3802

August 15, 1968

Atlantic Richfield Company  
P. O. Box 1978  
Roswell, New Mexico 88201

Attention: Mr. Ben Goodwin

Gentlemen:

Your letter of August 14, 1968, transmits an original and three re-produced copies of a "Certificate of Effectiveness" for the West End Lake unit agreement, No. 14-03-0001-8970. Such instrument is filed pursuant to Section 22 of the West End Lake unit agreement to establish the effective date of the agreement as August 1, 1968.

The "Certificate of Effectiveness" is hereby accepted for the record and copies thereof are being distributed to the appropriate Federal offices.

Sincerely yours

*Carl C. Throckmole*

CARL C. THROCKMOL  
Acting Oil and Gas Supervisor

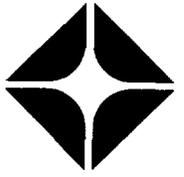
cc:  
Washington (w/attachment)  
BLM, Santa Fe (w/attachment)  
Artesia (w/attachment)  
NMOC, Santa Fe (ltr. only) ✓  
Accounts (ltr. only)

68 AUG 16 11:12 AM

ILLEGIBLE

AtlanticRichfieldCompany

North American Producing Division  
New Mexico-Arizona District  
Post Office Box 1978  
Roswell, New Mexico 88201  
Telephone 505 622 4041



Jack Biard  
District Landman

3802

August 14, 1968

Certificate of Effectiveness  
West Red Lake Unit  
Eddy County, New Mexico

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

Gentlemen:

Enclosed for your files is Certificate of Effectiveness for the West Red Lake Unit, Eddy County, New Mexico. We have furnished the United States Geological Survey a copy of this instrument and are today forwarding a copy to be recorded in the county records.

Yours very truly,

ATLANTIC RICHFIELD COMPANY

*( Dan Goodwin )*

Dan Goodwin  
Land Department

dln  
Encl.

1968 AUG 15 11:21 AM

CERTIFICATE OF EFFECTIVENESS  
WEST RED LAKE UNIT  
EDDY COUNTY, NEW MEXICO  
EFFECTIVE DATE: AUGUST 1, 1968

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WHEREAS, a Unit Agreement dated August 1, 1967, unitizing working and royalty interest in the West Red Lake Unit, was approved by the Oil Conservation Commission for the State of New Mexico by Order No. R-3453 dated July 12, 1968, and the United States Geological Survey by the Certification-Determination No. 14-08-0001-8970, dated July 24, 1968.

WHEREAS, said Unit Agreement provides further for the filing of at least one counterpart for record in the Office of the County Clerk of Eddy County, New Mexico, which said filing has been made in Book 62, Page 167, of the Miscellaneous Records of the County Court Clerk's Office, Eddy County, New Mexico; and

WHEREAS, said Unit Agreement further provides that Unit Operator shall, within thirty (30) days after the effective date, file for record a certificate to the effect that said agreement has become effective according to its terms and stating further the effective date; and

WHEREAS, all tracts in the original Unit Area are qualified for inclusion in the Unit as of the effective date.

NOW, THEREFORE, Atlantic Richfield Company, as Unit Operator, does hereby declare and certify that the effective date of said Unit is 7:00 o'clock a.m., M.S.T., August 1, 1968, and that descriptions of the said lands and formations as to which said Unit is effective are as follows:

NEW MEXICO PRINCIPAL MERIDIAN, NEW MEXICO

EDDY COUNTY, NEW MEXICO

Township 18 South, Range 27 East

Section 4:  $NE\frac{1}{4}SW\frac{1}{4}$ ,  $S\frac{1}{2}SW\frac{1}{4}$   
Section 5:  $SE\frac{1}{4}SE\frac{1}{4}$ ,  $S\frac{1}{2}SW\frac{1}{4}$   
Section 6:  $SE\frac{1}{4}SE\frac{1}{4}$ ,  $SW\frac{1}{4}SW\frac{1}{4}$   
Section 7:  $NE\frac{1}{4}$ ,  $E\frac{1}{2}NW\frac{1}{4}$ ,  $NW\frac{1}{4}NW\frac{1}{4}$ ,  $E\frac{1}{2}SW\frac{1}{4}$ ,  
 $W\frac{1}{2}SE\frac{1}{4}$ ,  $NE\frac{1}{4}SE\frac{1}{4}$   
Section 8:  $NE\frac{1}{4}$ ,  $NW\frac{1}{4}$ ,  $NE\frac{1}{4}SE\frac{1}{4}$   
Section 9:  $N\frac{1}{2}NW\frac{1}{4}$

and containing 1,236.85 acres, more or less.

The Unitized Formation is defined as that portion of the Grayburg and San Andres formations underlying the Unit Area which includes the continuous stratigraphic interval occurring between a point from the top of the Grayburg formation and a correlative point in the San Andres formation, said interval having been penetrated between 1,240 feet (the top of the Grayburg formation) and 2,240 feet beneath the derrick floor in the Hondo Oil & Gas Company Federal "EG" No. 1 Well (drilled as the Humble Oil & Refining Company's Abo Chalk Bluff Draw Unit No. 21 Well) located 1,650 feet from the south line and 2,310 feet from the west line of Section 4, Township 18 South, Range 27 East, Eddy County, New Mexico, as shown by the radioactivity log dated February 7, 1961.

IN WITNESS WHEREOF, this certificate is executed this 13<sup>th</sup> day of August, 1968, by the undersigned, as Unit Operator.

ATLANTIC RICHFIELD COMPANY

By *S. F. Smith*  
Attorney-in-Fact *SFS*

A C K N O W L E D G M E N T

STATE OF NEW MEXICO )  
                          ) ss.  
COUNTY OF CHAVES    )

The foregoing instrument was acknowledged before me this 13<sup>th</sup> day of August, 1968, by S. L. Smith as Attorney-in-Fact for Atlantic Richfield Company, a Pennsylvania corporation, on behalf of said corporation.

*Nancy L. McFee*  
Notary Public

My Commission Expires:  
July 14, 1971

ARCO Oil and Gas Company  
Permian District  
Post Office Box 1610  
Midland, Texas 79702  
Telephone 915 684 0100



November 16, 1984

#3802

Director (6)  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico 88201

Oil Conservation Division of  
The New Mexico Department of  
Energy and Minerals (3)  
Capitol Annex Building  
Santa Fe, New Mexico 87501

Commissioner of Public Lands (1)  
The State of New Mexico  
Capitol Annex Building  
Santa Fe, New Mexico 87501

File: West Red Lake Unit —  
Eddy County, New Mexico

Re: Report of Past Operations and  
Plans for Development for 1985

Gentlemen:

Past Operations

This Unit became effective on August 1, 1968, with Atlantic Richfield Company as Unit Operator. Water injection began on 1/1/69 into Well Nos. 4, 13, 14, and 16. Petroleum Corporation of Texas (offsetting our production to the north) started injection into Well No. 2 Patton Federal in February, 1969. The peripheral pattern was completed in April, 1970 with water injection into Unit Well Nos. 2, 11, and 17. All injection wells were initially completed in both the upper zone (Premier) and the lower zone (San Andres) and each zone was regulated and monitored separately.

Early water breakthrough occurred in the Premier zone due to channeling of the injected water. The desired oil bank was never formed in this zone, and therefore the water injection was discontinued in the Premier except for Well No. 17, which has the Premier and San Andres commingled. In 1977, injection was discontinued completely except for Well Nos. 13 and 17 which are disposing of produced water.

Page 2.

Cumulative water injected to September 30, 1984, was 3,441,223 barrels. The daily average during September, 1984 was 167 barrels per day with average pressure of 300 psig.

Cumulative oil production from the date of unitization to September 30, 1984 was 447,731 barrels. Oil production for September, 1984 averaged 93 barrels per day.

Development Plans for 1985

We plan to continue injection of produced water into the San Andres Formation throughout 1985. We plan to evaluate the drilling of one additional well, Well No. 34. If drilled, this well is expected to commence in the third quarter of 1985.

Very truly yours,



A. D. Green  
Operations Engineer

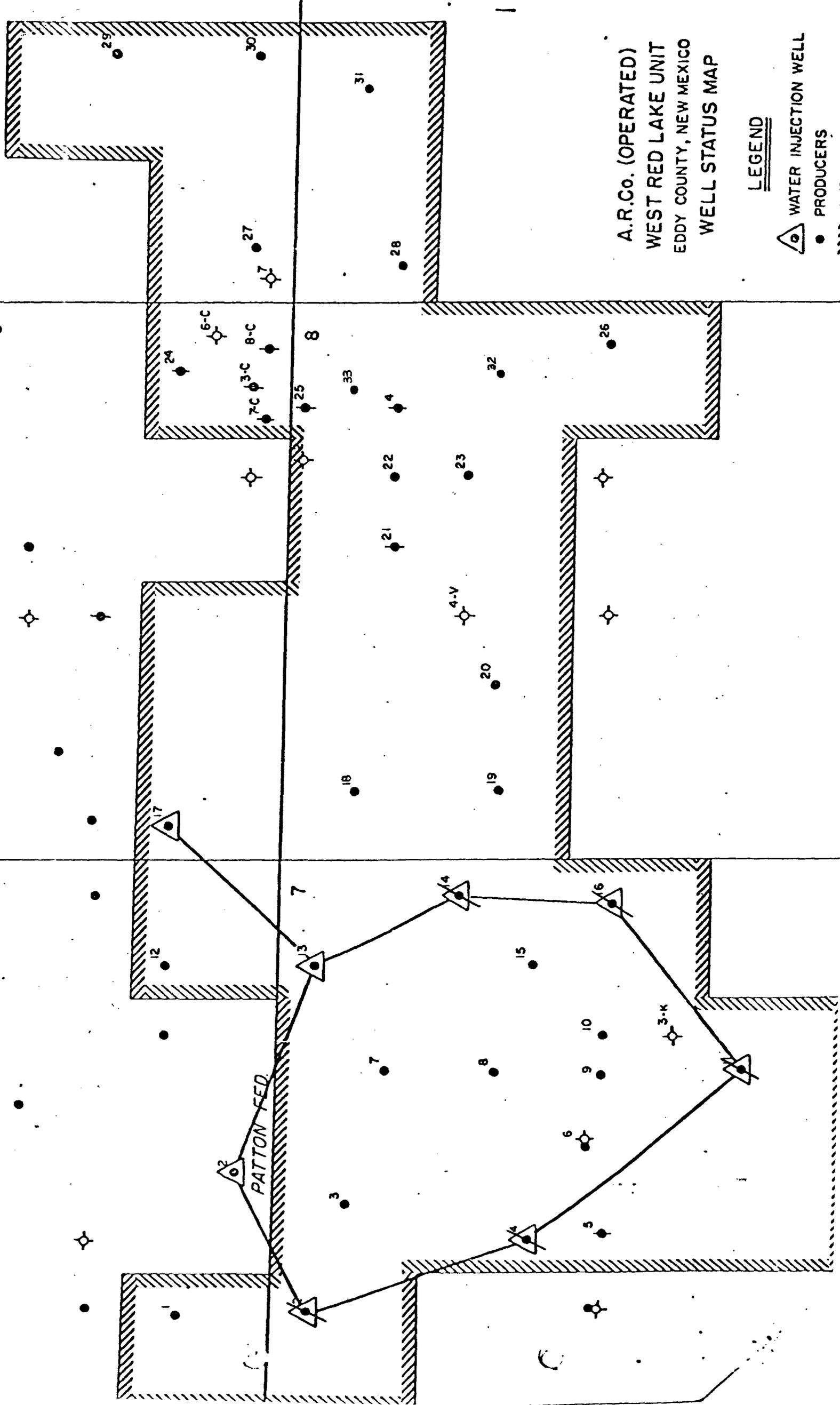
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WEST COUNTY OF TEXAS

6

R-27-E

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A.R.Co. (OPERATED)  
 WEST RED LAKE UNIT  
 EDDY COUNTY, NEW MEXICO  
 WELL STATUS MAP

LEGEND

- ▲ WATER INJECTION WELL
- PRODUCERS
- ▨ UNIT BOUNDARY