

CASE 3245: Application of WORLD-
WIDE PETR. CORP. for creation of
oil pool & amendment of R-2095.

CASE No.

32243

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.



Consolidated Oil & Gas, Inc.

Executive Offices

4150 EAST MEXICO AVENUE
DENVER, COLORADO 80222
PHONE: 737-5441

September 5, 1967

Mr. Daniel S. Nutter
Chief Engineer
State of New Mexico
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

File 3245
Cons

Dear Mr. Nutter:

Worldwide Petroleum Corporation's
Seven Lakes Project
McKinley County, New Mexico
Order No. R-2095

A final engineering evaluation has been made of the proposed waterflood project in the Seven Lakes Pool. We have concluded that this project should be abandoned.

We have filed appropriate papers with your Aztec office requesting authority to plug and abandon the wells in this field. This work will be commenced as soon as possible. At the present time, several of the wells are under water in the lake bed. We are also negotiating with the surface owner and with the Indian Agency on the disposal of the water supply wells.

We thank you for the patience and understanding shown by your office.

Yours very truly,

CONSOLIDATED OIL & GAS, INC.

Wayne Rogers
Wayne Rogers
Production Manager

WR/jau

67 SEP 7 AM 8

WORLDWIDE PETROLEUM CORPORATION

4150 East Mexico Avenue
Denver, Colorado 80222
Telephone 757-5441

June 12, 1967

Mr. Daniel S. Nutter, Chief Engineer
Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Dear Sir:

Commission Order No. R-2916
Seven Lakes Pool
McKinley County, New Mexico

We have been almost as embarrassed as you have been concerned about the lack of progress on this proposed water flood project. Unfortunately, we had to face many obstacles. If your office will bear with us, we should have our plans finalized by September 1, 1967. At the present time we are negotiating with the Santa Fe Railroad. If at that time you believe it is necessary to have a "show cause" hearing before the Commission, we will promptly file application.

Yours very truly,

WORLDWIDE PETROLEUM CORP.

Wayne Rogers
Wayne Rogers
Vice President

WR/hk

WORLDWIDE PETROLEUM CORPORATION

4150 East Mexico Avenue
Denver, Colorado 80222
Telephone 757-5441

September 26, 1966

Mr. Emery C. Arnold
State of New Mexico
Oil Conservation Commission
1000 Rio Brazos Road
Aztec, New Mexico

Dear Mr. Arnold:

File
Box 8046

Proposed Waterflood Project
Seven Lakes Field
McKinley County, New Mexico

Please accept my apologies for not keeping you up-to-date on our plans for the Seven Lakes project. Unfortunately, we could not move any faster with the Santa Fe Railroad on finalizing our plans for work we hoped to do this summer. A meeting was held with Santa Fe Railroad representatives on September 15. We do not plan additional drilling until next summer. In the meantime, more engineering and geological studies will be completed, and you will be advised.

Very truly yours,

WORLDWIDE PETROLEUM
CORPORATION

Wayne Rogers
Wayne Rogers
Vice President

WR:li

206 OCT 3 AM 10 10

MAIN



CASE 3245

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

June 2, 1967

C

Consolidated Oil & Gas, Inc.,
Writer Building - 4150 E. Mexico Avenue
Denver, Colorado 80222

O

Attention: Mr. Wayne Rogers

Gentlemen:

P

Reference is made to Commission Order No. R-2095, dated October 18, 1961, and amending Order No. R-2916, dated June 1, 1965, both concerning a proposed waterflood project in the Seven Lakes Pool, McKinley County, New Mexico.

Y

It is noted that approximately two years have elapsed since the latter order was entered, and as far as we can tell, no progress has been made toward instituting the project.

Inasmuch as we have had an inquiry from the landowner concerning the status of these wells, we will appreciate being advised of progress made to date and of your future plans in this area. It may be that a hearing to show cause why the wells should not be plugged would be in order.

Very truly yours,

DANIEL S. MUTTER
Chief Engineer

DSM/ir

cc: Mr. Fred Standley
Standley, Kegel & Campos
Santa Fe, New Mexico

Mr. Emery C. Arnold
New Mexico Oil Conservation Commission
Aztec, New Mexico

*Rev:
This should
be in letter that is
forwarded with flood
order.*



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

May 12, 1965

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, N. M.

Mr. A. L. Porter, Jr
Secretary-Director
Oil Conservation Commission
Santa Fe, New Mexico

Dear Mr. Porter:

Reference is made to the application of Worldwide Petroleum Corporation which was the subject of Case 3245 on this date. Following the hearing, I conferred with Jason Kellahin, attorney for the applicant and Mr. Wayne Rogers, Vice-President and Production Manager of the Corporation, with regard to a certain question which I asked at the Examiner's Hearing. With their full knowledge, I would like to request that the Order pertaining to this application include one paragraph as follows:

"Worldwide Petroleum Corporation shall immediately notify the Oil Conservation Commission and the State Engineer when water production begins from the oil wells as a result of the water flooding."

Yours truly,

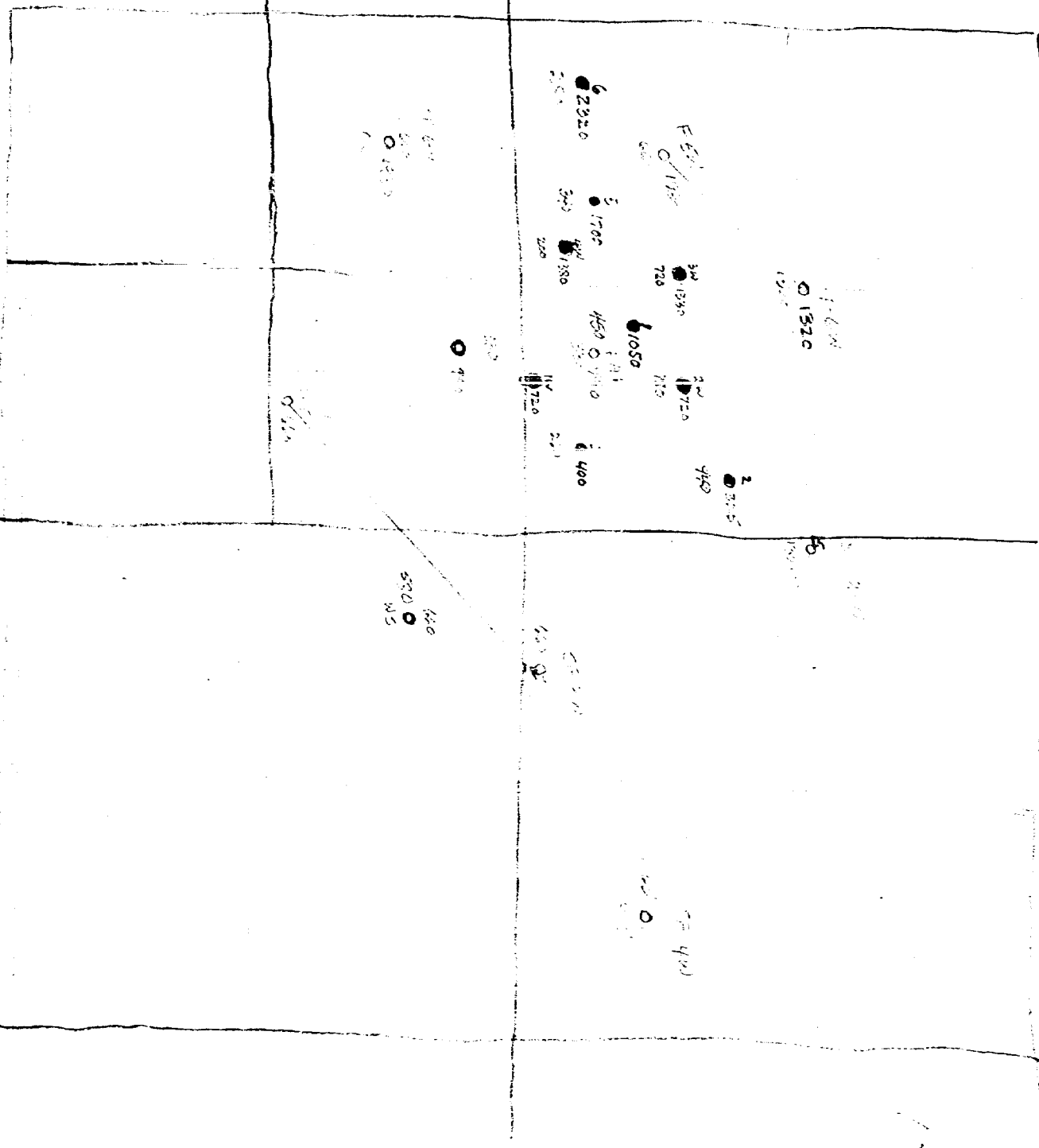
FEI/ma
cc-Jason Kellahin (2 copies)

S. E. Reynolds
State Engineer

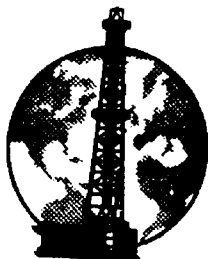
By:

Frank E. Irby
Frank E. Irby
Chief
Water Rights Div.

3348



[Faint handwritten notes, possibly bleed-through from the reverse side.]



WORLDWIDE PETROLEUM CORPORATION

406 MUTUAL SAVINGS BLDG.

815 THROCKMORTON STREET

PHONE ED 6-2365

FORT WORTH, TEXAS

April 21, 1965

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

Re: Seven Lakes Area
Sections 17, 18, 19 & 20
T18N, R10W, McKinley County,
New Mexico

Dear Mr. Nutter:

We would like to request a hearing before the New Mexico Oil Conservation Commission for the following purposes:

- (1) Creation of a pool designation for the above captioned area.
- (2) Enlargement of the waterflood area covered by order No. 2095 to include the SE/4 Section 18, SW/4 Section 17, N/2 of Section 19; and NW/4 Section 20, all in T18N, R10W. Development to be on a 10-acre, five spot pattern, subject to amendment by administrative approval.
- (3) Authority to inject water in eight new wells that we recently drilled that are not covered by order No. 2095.

We await your advice as to when a hearing can be held for the above purposes so that we can proceed with an orderly development of these properties.

Very truly yours,

WORLDWIDE PETROLEUM CORPORATION

DOCKET MAILED

Date

4-28-65

George Platt
George Platt

GP:uw



WORLDWIDE PETROLEUM CORPORATION

406 MUTUAL SAVINGS BLDG.

815 THROCKMORTON STREET

PHONE ED 6-2365

FORT WORTH, TEXAS

March 10, 1965

Case 3245

Mr. Dan S. Nutter, Chief Engineer
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Re: Farris No. 6-W
Seven Lakes Field
McKinley County, New Mexico

Dear Mr. Nutter:

Pursuant to your telephone conversation with Mr. Platt today enclosed is amended Form C-101 - Application for Permit to Drill, together with Form C-102 on our Farris No. 6-W location.

We would appreciate receiving your approval of this location, as well as the ones previously submitted on January 22, 1965, at your earliest convenience.

Very truly yours,

WORLDWIDE PETROLEUM CORPORATION

Martha Withers

(Mrs.) Martha Withers
Secretary to George Platt

Encls.

cc: Mr. Emery C. Arnold w/attach.
1000 Rio Brazos Road
Aztec, New Mexico



WORLDWIDE PETROLEUM CORPORATION

406 MUTUAL SAVINGS BLDG

815 THROCKMORTON STREET

PHONE ED 6-2365

FORT WORTH, TEXAS

March 30, 1965

Case 3245

Mr. Dan S. Nutter, Chief Engineer
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Re: Seven Lakes Waterflood
McKinley County, New Mexico

Dear Mr. Nutter:

We still have not received approval of our Applications for Permit to Drill (Form C-101) covering ten wells in the subject field. We would appreciate receiving your approval of these wells, as well as written approval to extend the waterflood, as discussed between you and Mr. Platt by telephone on March 10, 1965. Your verbal approval was given at that time, however we should like to have written confirmation for our files.

Your prompt reply to this request will be appreciated.

Very truly yours,

WORLDWIDE PETROLEUM CORPORATION

Martha Withers
(Mrs.) Martha Withers
Secretary to George Platt

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

June 1, 1965

C
O
P
Y
Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-2916, entered in Case No. 3245, approving the Worldwide Petroleum Corporation Seven Lakes Waterflood Project Expansion.

Injection is to be through the currently authorized twelve injection wells and such wells as may in the future be authorized for injection purposes. Injection wells shall be equipped with 2 7/8" casing set through the pay and perforated. Cement shall be circulated. Production wells shall be equipped with cemented casing and with tubing. Worldwide Petroleum Corporation shall immediately notify the Oil Conservation Commission and the State Engineer Office when water production begins from the oil wells as a result of the waterflooding.

Allowable for this project shall be computed in accordance with Rule 701-E-3 of the Oil Conservation Commission Rules and Regulations.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify the Santa Fe office and the Aztec office of the Commission by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

Page -2-

Mr. Jason Kellahin

P. O. Box 1769

Santa Fe, New Mexico

June 1, 1965

C

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

O

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

Very truly yours,

P

A. L. PORTER, Jr.
Secretary-Director

Y

ALP/DSH/ir

cc: Mr. Frank Irby
State Engineer Office
Santa Fe, New Mexico

Oil Conservation Commission
Aztec, New Mexico

AMENDED

3245

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101
Revised 1-1-65

5A. Indicate Type of Lease	
STATE <input type="checkbox"/>	SEE <input checked="" type="checkbox"/>
5. State Oil & Gas Lease No.	

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work				7. Unit Agreement Name	
b. Type of Well DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Water Injection <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>				8. Farm or Lease Name Farris	
2. Name of Operator Worldwide Petroleum Corporation				9. Well No. 6-W	
3. Address of Operator 406 Mutual Savings Bldg., Fort Worth, Texas 76102				10. Field and Pool, or Wildcat Seven Lakes	
4. Location of Well UNIT LETTER _____ LOCATED 1325 FEET FROM THE South LINE AND 1320 FEET FROM THE East LINE OF SEC. 18 TWP. 18N RGE. 10W NMPM				12. County McKinley	
19. Proposed Depth 500'		19A. Formation Menefee Sand		20. Rotary or C.T. Rotary	
21. Elevations (Show whether DF, RT, etc.) 6532' G.L.		21A. Kind & Status Plug. Bond \$10,000 blanket		22. Approx. Date Work will start Immediately	

23.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
5 1/8"	2 7/8" EUE		500'	40	Surface

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed *Martha Mithun* Title Assistant Secretary Date March 10, 1965
 (This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____
 CONDITIONS OF APPROVAL, IF ANY:

AMENDED

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

SECTION A.

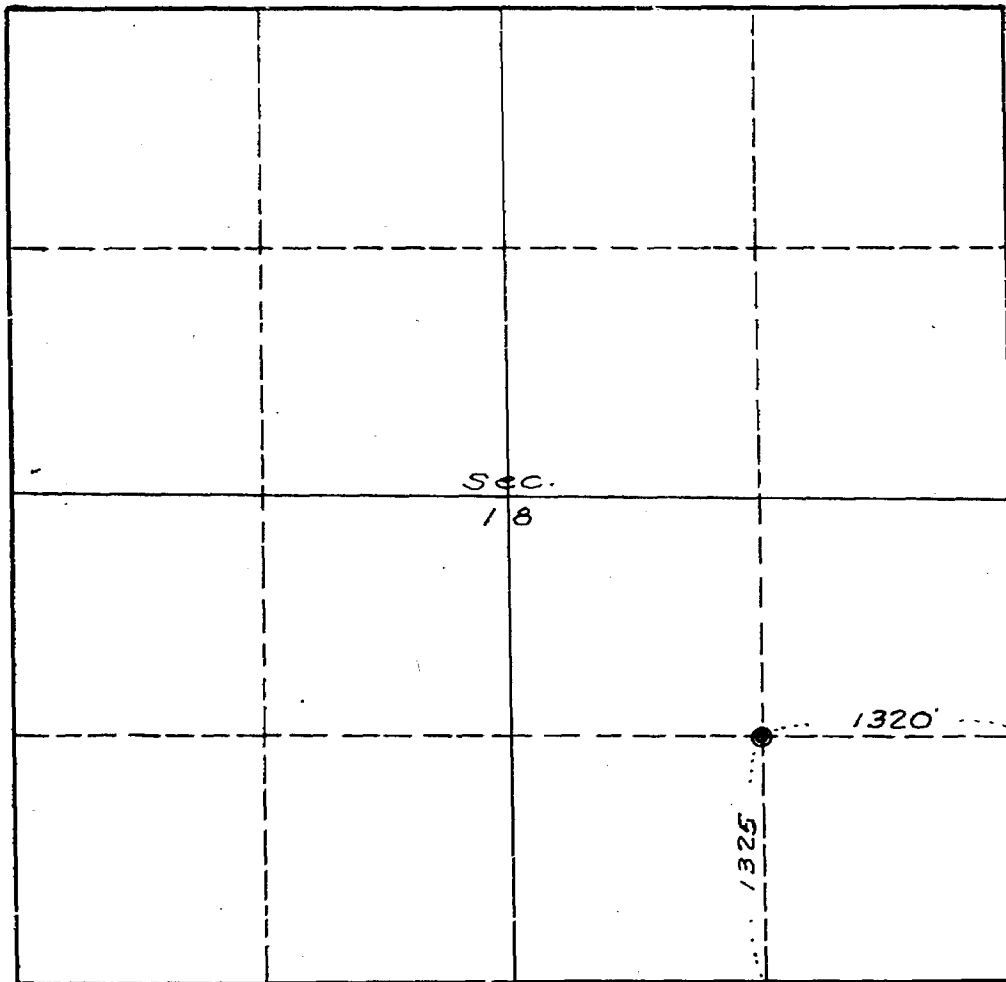
DATE 12

OPERATOR Worldwide Petroleum Corporation LEASE Ferris
WELL NO. 6 - W UNIT LETTER SECTION 18 TOWNSHIP 18 North RANGE 10 West NMPM
LOCATED 1325 FEET FROM South LINE 1320 FEET FROM East LINE
COUNTY McKinley G. L. ELEVATION 6532 DEDICATED ACREAGE ACRES
NAME OF PRODUCING FORMATION POOL

1. IS THE OPERATOR THE ONLY OWNER* IN THE DEDICATED ACREAGE OUTLINED ON THE PLAT BELOW? YES NO
2. IF THE ANSWER TO QUESTION ONE IS "NO," HAVE THE INTERESTS OF ALL THE OWNERS BEEN CONSOLIDATED BY COMMUNITIZATION AGREEMENT OR OTHERWISE? YES NO IF ANSWER IS "YES," TYPE OF CONSOLIDATION

3. IF THE ANSWER TO QUESTION TWO IS "NO," LIST ALL THE OWNERS AND THEIR RESPECTIVE INTERESTS BELOW:
- | OWNER | LAND DESCRIPTION |
|-------|------------------|
| | |
| | |
| | |
| | |

SECTION B.



THIS IS TO CERTIFY THAT THE INFORMATION IN SECTION A ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WORLDWIDE PETROLEUM CORP.

(OPERATOR)

(REPRESENTATIVE)
406 Mutual Savings Bldg.
Fort Worth, Texas 76102

(ADDRESS)
THIS IS TO CERTIFY THAT THE WELL LOCATION SHOWN ON THE PLAT IN SECTION A WAS PLOTTED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE SURVEYED Jan. 2, 1965

FOUR STATES
ENGINEERING CO.

SARASOTA, NEW MEXICO

Emmett A. Cohn-Shank
REGISTERED ENGINEER OR
LAND SURVEYOR

CERTIFICATE NO. 3602

Application of Walter Lynde Petzalegum
for creation of an oil and
Corporation for an amendment
to Order No. E-2095, McKinley
County New Mexico.

Applicant, in the above-captioned cause,
 seeks an order amending Order
 No. 2095, which authorized a water
 flood project in the Seven Lakes
~~Pool~~ ^{Area}, McKinley County, New Mexico.
 Applicant seeks the designation of
 the SW 1/4 of Section 17, SE 1/4 of Sec 18,
 N 1/2 of Section 20, and the NW 1/4
 of Section ~~21~~ ²⁰, all in Township 18
 North, Range 10 West, to be the
 water flood project area. Applicant
 further seeks authority to ~~complete~~
 inject water into the in the Seven Lakes Pool
~~formation~~ through ⁸ wells drilled ^{at various}
~~orthogonal and unorthodox locations~~ within
 said project area, and to drill and
~~put~~ for water injection purposes
 and ~~as producers~~ ^{as producers} numerous other
 wells ~~in~~ ⁱⁿ said ~~for~~ project area. Develop-
 ment of the project area would be
 on a ^{standard} 10-acre 5-spot water injection
 pattern subject to amendment as need
 may arise upon administrative approval
 by the Secretary Director of the
 Commission.

~~App~~ seeks the creation of the Severn Lakes
Oil Pool for production of oil from the
formation in Township 18 North
Range 10 West McKinley County, New Mexico.
~~applicast~~ further ~~not~~

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

1000 RIO BRAZOS RD.
AZTEC

February 17, 1965

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

Case 3245

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

Dear Dan:

Following is a list of the locations which the Worldwide Petroleum Corporation has filed in the Seven Lakes Field:

Santa Fe #1-W	19-18N-10W	65/N;1980/W
Santa Fe #5-W	19-18N-10W	1315/N;660/E
Santa Fe #6-W	19-18N-10W	660/N;1980/E
Santa Fe #2-W	17-18N-10W	1325/S;5/W
Santa Fe #3-W	17-18N-10W	5/S;660/W
Santa Fe #4-W	17-18N-10W	655/S;1965/W
Ferris "A" #1-	18-18N-10W	330/S;990/E
Ferris #5-W	18-18N-10W	660/S;1980/E
Ferris #6-W	18-18N-10W	1320/S;1320/E

*9. Inj. wells
closed to
flow
permitted*

Please let us know when these notices should be approved.

I am writing the operator to day and informing them that the locations cannot be approved until such time as the Commission office in Santa Fe has either written ~~an~~ an administrative order approving the additional injection wells or in the alternative a hearing has been set to consider the matter.

Yours truly,

Emery C. Arnold
Emery C. Arnold
Supervisor, Dist. #3

ECA/bj

3245

Heard 5-12-65

Rec. 5-12-65

1. Grant Worldwide's request as follows:

(a) Establish an oil pool to be known as the Seven Lakes - Menifee oil Pool. & consisting of
18 N - 18 W.

Sec. 18 - S $\frac{1}{4}$

- 18 - SE $\frac{1}{4}$

- 19. - N $\frac{1}{2}$

- 20 - NW $\frac{1}{4}$

(b) Grant permission to waterflood the above pool & approve the 9 injection wells listed in Worldwide letter of 2-17-65.

(c) Set up administrative procedure for approving additional injection wells before response is obtained.

Trust to the
Order R-2895 approves 4 wells in area at present

(d) water supply will be from a well in NW $\frac{1}{4}$ sec. 20 & completed in Hospah zone of Mesquite.

Docket No. 13-65

DOCKET: EXAMINER HEARINGS - WEDNESDAY - MAY 12, 1965

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDINGS - SANTA FE, NEW MEXICO

The following cases will be heard before Elvin A. Vitz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 2691 (Reopened):

In the matter of Case No. 2691 being reopened pursuant to the provisions of Order No. R-2373-A, which order continued 640-acre gas proration units for the Lusk-Morrow Gas Pool, Lea County, New Mexico, for one year. All interested parties may appear and show cause why said pool should not be developed on 160-acre proration units.

CASE 3016 (Reopened):

In the matter of Case No. 3016 being reopened pursuant to the provisions of Order No. R-2697, which order established 80-acre spacing units for the Vacuum-Upper Pennsylvanian Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 3245: Application of Worldwide Petroleum Corporation for creation of an oil pool and for an amendment to Order No. R-2095, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the creation of the Seven Lakes Oil Pool for production of oil from the Menefee formation in Township 18 North, Range 10 West, McKinley County, New Mexico. Applicant further seeks an order amending Order No. R-2095, which authorized a waterflood project in the Seven Lakes area, McKinley County, New Mexico. Applicant seeks the designation of the SW/4 of Section 17, SE/4 of Section 18, N/2 of Section 19, and the NW/4 of Section 20, all in Township 18 North, Range 10 West, to be the waterflood project area. Applicant further seeks authority to inject water in the Seven Lakes Pool through 8 wells drilled at various orthodox and unorthodox locations within said project area, and to drill for water injection purposes and as producers numerous other wells in said project area. Development of the project area would be on a standard 10-acre 5-spot water injection pattern subject to amendment as need may arise upon administrative approval by the Secretary-Director of the Commission.

May 12, 1965 Examiner Hearing

- CASE 3246: Application of Paul DeCleva for an amendment to Order No. R-2691, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an amendment to Order No. R-2691, which order prescribes pool rules for the Mesa Queen Pool, Lea County, New Mexico. Applicant, among other things, requests that said rules be amended to include the definition of gas wells and oil wells in said pool, the assignment of 40 acres to oil wells, and the assignment of 160 acres to gas wells.
- CASE 3247: Application of Paul DeCleva for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit for his Tidewater State Well No. 1 located in Unit D of Section 17, Township 16 South, Range 32 East, Mesa Queen Pool, Lea County, New Mexico, said unit to comprise the W/2 NW/4, NE/4 NW/4, and NW/4 NE/4 of said Section 17.
- CASE 3248: Application of Texaco Inc. for commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Drinkard production from Tract 1 of its W. L. Nix Lease comprising the W/2 SE/4 and E/2 SW/4 of Section 17, and from Tract 2 of said lease comprising the W/2 NE/4 and E/2 NW/4 of Section 20, all in Township 22 South, Range 38 East, Lea County, New Mexico, allocating the production to each tract on the basis of periodic well tests. Applicant further seeks administrative procedure to extend the above-described commingled method to other zones that may prove productive from said lease.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3245
Order No. R-2916
NOMENCLATURE

APPLICATION OF WORLDWIDE PETROLEUM
CORPORATION FOR CREATION OF AN OIL
POOL AND FOR AN AMENDMENT TO ORDER
NO. R-2095, MCKINLEY COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 12, 1965, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 1st day of June, 1965, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Worldwide Petroleum Corporation, seeks creation of the Seven Lakes Oil Pool for production of oil from the Menefee formation in Township 18 North, Range 10 West, NMPM, McKinley County, New Mexico.

(3) That the Menefee formation underlying the SW/4 of Section 17, the SE/4 of Section 18, the N/2 of Section 19, and the NW/4 of Section 20, Township 18 North, Range 10 West, constitutes a common source of supply which should be designated the Seven Lakes Oil Pool.

(4) That the applicant also seeks amendment of Order No. R-2095 to designate the SW/4 of Section 17, the SE/4 of Section

-2-

CASE No. 3245

Order No. R-2016

18, the N/2 of Section 19, and the NW/4 of Section 20, Township 18 North, Range 10 West, NMPM, McKinley County, New Mexico, as the project area for the waterflood authorized by said order.

(5) That the applicant also seeks amendment of Order No. R-2095 to authorize eight additional injection wells and the establishment of an administrative procedure whereby the Secretary-Director of the Commission is authorized to approve additional water injection wells.

(6) That the wells in the proposed project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(7) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

IT IS THEREFORE ORDERED:

(1) That a new pool in McKinley County, New Mexico, classified as an oil pool for Menefee production, is hereby created and designated the Seven Lakes Oil Pool with vertical limits comprising the Menefee formation and horizontal limits comprising the SW/4 of Section 17, the SE/4 of Section 18, the N/2 of Section 19, and the NW/4 of Section 20, Township 18 North, Range 10 West, NMPM, McKinley County, New Mexico.

(2) That Order No. R-2095 is hereby amended to designate the SW/4 of Section 17, the SE/4 of Section 18, the N/2 of Section 19, and the NW/4 of section 20, Township 18 North, Range 10 West, NMPM, McKinley County, New Mexico, as the project area for the waterflood project authorized by said order.

(3) That Order No. R-2095 is hereby amended to authorize the following-described additional injection wells:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 18 NORTH, RANGE 10 WEST, NMPM

Section 17

Santa Fe Well No. 2-W, located 1325 feet from the
South line and 5 feet from the West line

Santa Fe Well No. 3-W, located 5 feet from the
South line and 660 feet from the West line

Santa Fe Well No. 4-W, located 655 feet from the
South line and 1965 feet from the West line

-3-

CASE No. 3245

Order No. R-2910

Section 18

Farris Well No. 5-W, located 660 feet from the
South line and 1980 feet from the East line

Farris Well No. 6-W, located 1320 feet from the
South line and 1320 feet from the East line

Section 19

Santa Fe Well No. 1-W, located 65 feet from the
North line and 1980 feet from the West line

Santa Fe Well No. 5-W, located 1315 feet from the
North line and 660 feet from the East line

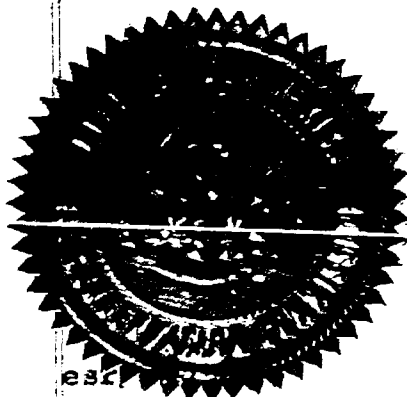
Santa Fe Well No. 6-W, located 660 feet from the
North line and 1980 feet from the East line

(4) That the subject waterflood project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided, however, that the Secretary-Director of the Commission may approve such other additional injection wells at such locations as may be necessary to complete an efficient water injection pattern.

(5) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(6) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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

OIL CONSERVATION COMMISSION
1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO

February 17, 1965

Worldwide Petroleum Corporation
406 Mutual Savings Building
Fort Worth, Texas

Attn: Martha C. Withers

Dear Madam:

We have your letter of February 11, 1965 along with forms C-104 changing ownership of the presently existing wells in the Seven Lakes Field from Mesa Retailers, Inc. to Worldwide Petroleum Corporation. As your bond is in order we are approving these forms as of this date. However I have reviewed order #2095, which was the order written approving a water flood project in this field, and find that the order specifically authorizes the drilling of only four (4) injection wells in the field. The authorized wells have already been drilled and in fact are included among those upon which you have just filed form C-104. I have discussed this matter with Mr. Dan Nutter, our Chief Engineer in Santa Fe and he was not certain whether the locations could be approved administratively or whether a hearing would be required. I am sending him a list of the locations today in order that this may be determined.

I am sure that Mr. Nutter will notify you as soon as the Commission has made a decision. No operation should be conducted in connection with these wells until the above matters have been resolved.

If you have any further questions regarding this matter please contact us.

Yours truly,

Emery C. Arnold
Supervisor, District #3

ECA/bj
cc: Dan Nutter/SF

3/10/65
Called Dan Nutter on 3/10/65 and discussed the matter. He said that the order was not in order and that a hearing would be required. He also said that the order was not in order and that a hearing would be required.

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PAGE 1

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 12, 1965

EXAMINER HEARING

IN THE MATTER OF:

Application of Worldwide Petroleum
Corporation for creation of an oil
pool and for an amendment to Order
No. R-2095, McKinley County, New
Mexico.

Case No. 3245

BEFORE:

ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING

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PAGE 2

MR. UTZ: The Hearing will come to order, please.
The next Case will be 3245.

MR. DURRETT: Application of Worldwide Petroleum Corporation for creation of an oil pool and for an amendment to Order No. R-2095, McKinley County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, appearing for the Applicant. We have one witness I would like to have sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 5 marked for identification.)

MR. KELLAHIN: If the Examiner please, Case 3245 involves an area which has heretofore been approved for a waterflood project by this Commission in its Order No. R-2095. This order approved the four injection wells and at this time, we are seeking modification of that and approval of some wells which have already been drilled by the predecessor of the present applicant.

W A Y N E R O G E R S, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Wayne Rogers.

Q By whom are you employed and in what position, Mr. Rogers?

A I am vice president and production manager of Worldwide Petroleum.

Q Have you testified before the Oil Conservation Commission of New Mexico as a petroleum engineer and made your qualifications a matter of record?

A Yes, sir, I have.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q (By Mr. Kellahin) Are you familiar with the application of Worldwide Petroleum Corporation in Case Number 3245?

A Yes, sir.

Q Would you state briefly what's proposed in this case?

A We seek the creation of the Seven Lakes Oil Pool in McKinley County, New Mexico. We also seek an order amending Order Number R-2095 that was approved by the Commission on October 18, 1961. We also seek the designation of a given area which will be known as the initial project area. This area will comprise the southwest quarter of Section 17, the southeast quarter of Section 18, the north half of Section 19, and the northwest quarter of Section 20, all in Township 18 North, Range 10 West, McKinley County, New Mexico.

We will also seek authority to inject water into the Seven Lakes Pool through eight wells which have already been drilled and through other wells throughout the project area. We will also seek approval to drill certain producing wells throughout the area.

Q Now, you described the area of the initial project area, is this the same area that you want designated as an oil pool?

A Yes, sir, it is.

Q What formations are you talking about?

A We're speaking about the Menefee in the Mesa Verde formation.

Q At approximately what depth is this found?

A We have two zones that we are interested in developing into the waterflood project.

Q Without regard to the waterflood project for a moment, just refer to the creation of a new oil pool; approximately what horizons would be included in this pool?

A From approximately 300 feet to, say, 410 feet.

Q Would that cover the entire Menefee formation of the Mesa Verde?

A There may be other sand-stringers. I do not know the answer to that.

Q Insofar as this particular area is concerned,

would it include all of the producing horizons?

A Yes, sir.

Q Now, referring to what has been marked as Exhibit Number 1, would you identify that exhibit and discuss the information shown on it?

A Exhibit Number 1 is a plat of the area in this application that also includes some areas outside of the project. This area is outlined on the map presented to the Commission in heavy red coloring. The plat indicates all of the wells to the best of our knowledge that have been drilled within the project area since oil was found in this area in 1910 to 1911. It also shows the injection and producing wells, rather, I should say wells that were drilled for production purposes that were approved in the Order R-2095.

It also shows the one water supply well in the northwest quarter of Section 20, Township 18 North, Range 10 West that would be used in this project. It shows the owners, leasees and lessors within the project showing that we have the Ferris lease, which to the best of my knowledge is a fee lease covering the southeast quarter of Section 18; The Santa Fe Pacific Railroad leases, covering the southwest quarter of Section 17 and the north half of Section 19; and Navajo lease covering the northwest quarter of Section 20.

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Q Now, there appears to be one well drilled in the southeast quarter of Section 17 not included in your area, is that correct?

A Yes, sir. That is correct.

Q What is the status of that well?

A This well is not producing. It was completed by the previous owner of Worldwide Petroleum and from all information, it maybe difficult to make a producing well out of it. It would be a stripper well at its best if it were put on production now, later waterflood response may indicate that we may need to expand the area to include this well.

Q At the present time in your present plans, would that well be appearing with the waterflood project, in your opinion?

A No, sir, it would not be.

Q That's the reason it was not included, is that right?

A Yes, sir.

Q Do you have anything else to add in connection with Exhibit 1?

A No.

Q Does the exhibit show the dry holes that have been drilled in the area also?

A Yes, sir, the Exhibit 1 does.

Q Turning your attention then to what has been marked as Exhibit Number 2, would you identify that exhibit and discuss the information shown on it?

A Exhibit Number 2 is an electrical log of the Ferris Number 1 A well. This well is located 330 feet from the south line and 990 feet from the east line of Section 18, Township 18 North, 10 West. This well was chosen for no other purpose than to show the Menefee sands that we are proposing to waterflood. The main body on this log is included from 308 feet to 343 feet approximately, per Schlumberger electrical log measurement. A second zone is found from 398 feet to 404 feet per electrical log measurement.

We anticipate that both zones may not appear throughout the project area, therefore, in the development of the ten acre five spot waterflood pattern that we propose, we will want Commission approval to complete in one zone or both zones that we're speaking of here from this log.

Q You propose to flood both zones if they're present in the well bore?

A Yes, sir.

Q Would it be economical in your opinion, to flood either one of these zones separately?

A No, sir, it would not be.

Q Are they, in your opinion, the same common source of supply?

A From a period as to when the oil was trapped in the Menefee, I would say they probably are the same common source of supply even though they have the separation that we look at here.

Q Now, the lower zone on the log, you have in Exhibit 2 shows it to be a very small zone. Is this true throughout or do you know?

A No, sir, there are other logs indicating a thicker zone in this lower zone that we're referring to. Likewise, there are other logs showing thinner zones in the upper zone in the wells.

Q Do you have anything further to add to Exhibit 2?

A No, sir.

Q Turning now to Exhibit Number 3; would you discuss that exhibit, please?

A Exhibit 3 is a schematic drawing of what I'm referring to as a typical producing well. This particular one is a schematic drawing of Ferris Number 1 A well previously described in my testimony. We propose to drill the injection and producing wells to approximately 500 feet total depth, run electrical logs of the well, then to

set four inch pipe approximately on bottom and cement with the two plug method, and circulate cement from the bottom of the hole to the top. By circulating cement throughout the hole behind the casing we will have all zones shut off and isolated with cement.

This drawing also indicates that we propose to use two inch tubing in the producing well as our pumping string. We indicate the upper zone in the Ferris 1 A from 308 feet to 343 feet gross interval. We propose to perforate selectively throughout the 308 to 343 feet. This doesn't mean that we would perforate each and every foot, by selectively perforating we would leave out any shale breaks and perforate the sand only.

The lower zone is shown from 400 to 403 feet and we would propose to perforate from 400 to 403 feet in this well.

Q You would perforate of course, as indicated by your log?

A Yes, sir.

Q Turning to Exhibit Number 4, would you identify that Exhibit and discuss it, please?

A Exhibit Number 4 is another schematic drawing of a typical water injection well. This particular one is a drawing of the Ferris 5 W, which is located approximately

660 feet from the south line and 1980 feet from the east line of Section 18. We propose to drill future injection wells comparable to this one by drilling approximately five and one-eighth inch diameter holes set in another two inch or two and one-half inch tubing as the pipe in the well and, again, using a plug method of cement, circulate cement from the bottom of the hole behind the casing up to the surface. This would again isolate any fresh water sands or any other zones behind the pipe.

We would leave a cement plug in the bottom of the tubing in the injection wells to prevent any migration of fluids below. Similarly, we would do this with the producing wells by leaving a plug in the bottom of the casing.

This indicates that the Ferris 5 W found the upper zone from 310 to 332 feet and again, we would propose to selectively perforate from approximately 312 to 328 feet per electrical log measurement. The lower zone was found from approximately 410 to 418 feet and we would selectively perforate this zone for water injection and also, for production.

I don't mean that we would use this well for production but producing wells perforated in this zone.

Q This is one of the proposed injection wells, is that correct?

A Yes, sir.

Q With the casing program, do you know of any water zones that lie above the area involved here?

A It is my understanding from reading reports that have been written over the past years on this area, that there is a shallow water zone up above but by cementing from top to bottom well, this would be covered.

Q In your opinion, would it be adequately protected from contamination either through the injection well or producing wells?

A Yes, sir, it would be protected.

Q Directing your attention then to what has been marked as Exhibit number 5, would you discuss that Exhibit?

A Exhibit Number 5 is the pertinent data sheet for the proposed waterflood project Seven Lakes Pool. It is a summary sheet there and I can briefly go down through, showing that production was found in this area in 1910, the type of reservoir trap that we're talking of here is a combination structural and stratigraphic, primarily stratigraphic because there's very little structural relief indicating two pay zones, indicating the name of the zone that we're speaking of, the Menefee and the Mesa Verde and the initial participating area that we are requesting is comprised of 800 acres, the indicated producing mechanism

is solution gas, however, there is very little if any bottom hole pressure, consequently the wells can not be economically completed from a primary standpoint.

The gravity of the oil has been reported to be 32 degree API, -- I'm skipping some of these because I don't think they're too pertinent -- the average porosity 28 per cent, the average water saturation from cores that have been taken throughout the field, 45 per cent, the permeability range is from a low of 45 millidarcies up to as much as 1193 millidarcies with an average of approximately 300.

The estimated average pay thickness, 19 feet overall, the initial waterflood pattern as mentioned earlier, would be a 10 acre five spot pattern. We have one water supply well which was mentioned earlier, this water supply well was drilled according to the information that I have looked at, in August of 1959, the well was a dry hole at a total depth of 2857 feet. The well was plugged back and a string of four and a half inch casing was set at 945 feet, which is at the top of the water sand, water sand being from 945 feet to approximately a thousand fifty feet. The water supply zone is the Hospah.

It has been reported in reports that I have studied to be an artesian water flow. The estimated initial water

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injection rate that we're looking at and I should say this is probably a maximum rate, initial is 4,000 barrels of water per day.

Q The water source was the same source that was presented to the Commission in the previous case, is it not?

A Yes, sir.

Q You are not changing anything in that connection?

A No, sir.

Q In connection with this application, there were a number of wells listed for which you seek approval as to location and for other use as injection wells. Do you have a list of those wells?

A Yes, sir. I do.

Q And their locations?

A Yes, sir.

Q Are all of the wells that you have on your list proposed injection wells?

A No, sir.

Q Have they all been drilled?

A Yes, sir, they have been.

Q Were they drilled under your supervision?

A No, sir, they were not.

Q Is it your understanding that at the time they

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were drilled, notices of intention to drill were not available, were not filed?

A I think that is correct.

Q At this time, you seek approval of these locations, is that correct?

A Yes, sir.

Q Would you state to the Examiner the wells involved and whether they are injection or producing wells?

A The Santa Fe Railroad Number 1 W, located 65 feet north -- I'm sorry, correct that -- 65 feet from the north line and 1960 feet from the west line; Santa Fe Five W --

Q That's Section 19?

A Section 19.

MR. IRBY: May I interrupt?

MR. KELLAHIN: Yes, sir.

A Yes, sir.

MR. IRBY: Are you calling off the injection wells?

A Yes, sir.

MR. IRBY: Are these the ones that have already been drilled?

A Yes, sir. No water has been put in any of the wells that we are referring to here. All of these wells will

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will located in Range 10 West, Township 18 North, McKinley County, New Mexico.

The second well was Santa Fe 5 W, located 1513 feet from the north line and 1660 feet from the east line of Section 19. Injection well, Santa Fe number 6 W, located 660 feet from the north line, 1980 feet from the east line, Section 19. Injection well, Santa Fe number 2 W, located 1325 feet from the south line, and five feet from the west line of Section 17. Injection well, Santa Fe number 3 W, located 5 feet from the south line, 660 feet from the west line of Section 17. Injection well, Santa Fe number 4 W, located 655 feet from the south line and 1965 feet from the west line, Section 17. The Ferris number 5 W, an injection well, 660 feet from the south line, 1980 feet from the east line of Section 18. Injection well, Ferris number 6 W, located 1325 feet from the south line, and 1325 feet from the east line of Section 18.

One producing well that is well drilled for production purposes, Ferris number A 1, located 330 feet from the south line and 990 feet from the east line of Section 18.

MR. IRBY: Is that labeled 1-A on your exhibit?

A Yes, sir.

MR. IRBY: Thank you.

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A This well was drilled as a relatively close twin well to the Ferris number 1 because of the completion in the Ferris number 1, the Ferris number 1 probably will not be used as a producing well and the 1-A will be.

Q (By Mr. Kellahin) On your examination of this pool, in your opinion, is there any way to produce the oil that exists there economically other than by waterflood?

A No, sir.

Q And if you can not produce it by the waterflood, will oil that would otherwise be recovered by lost?

A Yes, sir.

Q What is your initial plan of development at this stage of the project?

A Initially we plan to develop the area in a ten acre five spot pattern. We propose to commence water injection into those wells approved in the earlier order this R-2095 and to expand by ten acre tracts throughout the project area, depending upon initial geological and engineering information gained by the drilling, the coring, the testing of the various wells.

As isolated as this area is, it is going to be necessary to be ready to drill quite a number of wells when we move in there initially, and of course, this must be done within the next 45 days on commencement. We will try to close

the ten five spot patterns on existing producing wells that we have which were not included in the earlier order. We foresee the immediate need of drilling as many as ten water injection wells and 19 additional producing wells. These, as I said a moment ago, would be expanding ten acre tracts from the area that is developed at the present time.

If you wish, I can give you the specific locations of the initial plan realizing that additional information may indicate that we need to come back and ask for administrative approval to alter the plan.

Q Do you ask that the order include a provision for administrative approval for altering the pattern on which these wells will be drilled?

A Yes.

Q Is that what you are saying?

A Yes.

MR. KELLAHIN: Would the Examiner like to hear as to the proposed wells or not?

MR. UTZ: It might be a good idea.

Q (By Mr. Kellahin) Go ahead and outline them.

MR. UTZ: This is a little different than our usual procedure.

A Other than those wells which have been drilled and have been described previously in the testimony, initial

plans probably would call for drilling producing wells in the following locations; northwest southeast southeast of Section 18; northeast southwest southeast, Section 18; northwest southwest southeast, of Section 18; and the following wells in Section 19, the northwest northwest northeast, the northeast northwest northeast, possibly the northwest northeast northeast, the northeast northeast northeast, the southeast northeast northeast, the southwest northeast northeast, the southeast northwest northeast, the southwest northwest northeast, the northeast southwest northeast, the northwest southeast northeast, and the northeast southeast northeast of Section 19.

Two locations in Section 17 could be the northwest southwest southwest, and the southwest southwest southwest. Three possible locations in Section 20 would be the northwest northwest northwest, the southwest northwest northwest, and the northwest southwest northwest.

If I haven't missed my count this should be 19 additional producers and injection wells starting from the area that has been developed already, we would close the five spot patterns by drilling injection wells at the following approximate locations.

MR. UTZ: Would you give the section number first, please, so we can follow you a little closer?

A Yes, sir. In Section 17, we will drill a well near the southwest corner of the northwest southwest southwest. In Section 18, we would probably drill no additional water injection wells in the initial plan. In Section 19, we would drill a water injection well near the northwest corner of the northeast northwest northeast. We would drill one near the northwest corner of the northwest northeast and one near the corner of the northeast northeast northeast.

An injection well would be drilled near the southeast corner of the northeast northeast northeast, near the northwest corner of the southeast northeast northeast, at a location near the corner of the southeast northwest northeast; near the corner of the northeast southwest northeast, near the corner of the northwest southeast northeast, and near the corner of the northeast southeast northeast. I believe this covers ten water injection wells, if I haven't missed one as I went down through the map.

By saying near the corner of course, I am referring to five or ten feet inside a given ten acre corner. We propose a cooperative flood initially whereby we would protect the correlative rights of the leasees by these line injection wells.

Q (By Mr. Kellahin) Does Worldwide own the entire working interest in the area involved?

SESSIONS

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A

Yes, sir, we do.

Q

Then the difference is in the basic royalty interest, is that correct?

A

Yes, sir.

Q

And that's what you mean by a cooperative flood, you will protect the leasehold interest by line injection, is this correct?

A

Right.

Q

Now, Rule 701, are you familiar with the provisions of that Rule?

A

Yes, sir.

Q

It has a provision in regard to the addition of injection wells by administrative approval after that well or an adjacent well has received a response. Will that fit the needs of this project?

A

I don't believe it will

Q

Then, would you ask the Commission for the reason for the addition of the injection wells without a response having been received, without an administrative procedure?

A

We are asking for the administrative approval route because the 100 per cent working interest owners within the initial project area-- We believe that we can protect all rights and as isolated as this area is and the length of time that it will take to have response on the ten



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acre patterns we will need to probably expand on to other ten acre tracts prior to receiving a waterflood response in oil production on any given tract that has been developed in the past.

We anticipate from past records that some 70 barrels of water per day may be the maximum that we can inject into an injection well staying within pressure limitations to keep from listing the ~~overburden~~ or fracturing the formation. We anticipate injecting at this 70 to possibly a 100 barrels of water per day.

I foresee a maximum pressure of say, 450 to 500 psig which we will attempt to stay below. We will stay below it to keep from fracturing the reservoir.

Q Do you anticipate there will be any possibility of a change in your pattern, as you have outlined it to the Commission?

A At this time, I don't foresee attempting to change the pattern, but future information may lead us to something better engineering-wise to where we would want to come back and ask for administrative approval.

Q Would you ask then, for an administrative procedure whereby the injection pattern could be changed upon approval of the Commission?

A Yes, sir. That is what we are seeking.

Q Were Exhibits 1 through 5 prepared by you or under your supervision?

A Prepared under my supervision.

MR. KELLAHIN: At this time, I would like to offer in evidence, Exhibits 1 through 5.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 5 were offered and admitted into evidence.)

MR. KELLAHIN: That's all I have on the direct Examination, Mr. Utz.

CROSS EXAMINATION

BY MR. UTZ:

Q Do I understand you to say that the entire producing area of both zones are in the Menefee section of the Mesa Verde?

A That is to the best of my opinion or knowledge, yes, sir.

Q And your suggestion for nomenclature for this pool would be Seven Lakes Menefee or Seven Lakes Mesa Verde?

A I would say Seven Lakes Menefee.

Q Nine injection wells which you listed here and which are shown on Exhibit number 1; are they all presently drilled?

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A No, sir. They are not drilled. Only the wells listed a moment ago when I described nine locations prior to describing the future injection wells and producing wells are drilled now.

Q The nine are drilled?

A Yes, sir.

Q The four wells that are included in the southeast quarter of Section 18, 2 W, 3 W, 1 W, and 4 W, what is the status of those wells? Are they drilled?

A Those wells were drilled under the Order R-2095, water was injected into the four wells for several months. It is my understanding again, in reading the records, that they injected 35 or 40,000 barrels of water into those four wells, total, but engineering study also indicates that they did not inject enough water to go ahead and get a response out of their five spot pattern producing well. They have been shut-in now for several months.

Q Do you intend to use those wells or not?

A At this time, I would say that we would attempt to use those wells, the reason I say attempt is because they are not drilled through this lower zone of the Menefee.

Q On the wells that are currently drilled, what is the casing situation, cementing the completion in regard to those, are they all circulated?

A It is my understanding, again from the records, that cement was circulated behind each and every one of the wells that have been drilled.

Q That includes those four that I just mentioned in Section 18?

A Yes, sir.

Q How old were those wells?

A I'm not absolutely positive. I'd hesitate to say because I would be guessing from something that I had read and don't really know right now. I think part of them were drilled several years ago and others were drilled within the last three or four or five years.

Q Do you know whether new casing or used casing was used?

A I do not know.

Q And you are not real sure what the condition of the casing is?

A Only that records indicate that cement was circulated from top to bottom and being in an encased cement sheath should be in good shape because the water injected is relatively fresh, and would not cause any corrosion. There's no reason to believe that the casing is not in good condition because of the physical conditions.

Q Were those wells that are drilled, were they

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completed by the previous owner of this waterflood or the applicant in Case 2095? Were they drilled previous to that?

A All of these wells were completed either by Williamson or possibly before his time. They were not completed by the former Worldwide owners. I think in the transcript of R-2095 that was covered and this is what I am trying to remember. I know I read it in there and I just don't remember the figures exactly.

Q Are you proposing to test the casing in these wells to say, 500 pounds at the maximum injection pressure before injecting it?

A The wells that we will drill in the future, yes, sir, will be pressure tested prior to perforating.

Q I'm not so interested in those as we are in the old ones.

A If necessary, we can do this. This, you realize, is an additional expense to be able to set a plug in the bottom of the casing on those that are completed open hole or those that are perforated to do the pressure testing. We would do that if necessary. We again, believe that the casing would be in good condition with it cemented from top to bottom and putting fresh water in the wells.

Q Am I correct in my understanding that the area outlined on your Exhibit 1 is the project area as well as

the recommended pool limits for this pool?

A Yes, sir. That is correct believing that if we expand outside the area at a later date, that we can also have the pool limits expanded.

MR. UTZ: Any questions of the witness?

MR. IRBY: Yes, sir.

MR. UTZ: Mr. Irby.

MR. IRBY: Frank Irby, State Engineer's Office.

CROSS EXAMINATION

BY MR. IRBY:

Q Mr. Rogers, looking at your Exhibit Number 1, Section 20, the northeast quarter in the northwest corner of that quarter section, there's an injection well indicated according to your legend numbered 2 W; tell us about that well.

A This well was drilled by Worldwide Petroleum and from the information available we do not contemplate completing it as an injection well or putting any water into it at this time. If expansion of the flood inside the project area moves in that direction, it may be feasible to want to expand and include that acreage in the project later and utilize it as an injection well at that time.

Q How is this well constructed?

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A The water injection wells drilled by Worldwide Petroleum were completed by using two and seven-eighths inch tubing.

Q Are we talking about this well?

A Yes, sir.

Q All right.

A I am of the opinion that this well was completed the same as the other water injection wells drilled by Worldwide. I don't have the record of that well in front of me, but presumably it is completed with two and seven-eighths inch tubing cemented from top to bottom, meaning that cement was circulated to the surface and cement plug is left inside the tubing.

Q Then it's a closed hole for all practical purposes?

A Yes, sir.

Q It hasn't been perforated?

A To my knowledge, it has not been.

Q The four wells that the Examiner asked you about in Section 18 there, 1, 2, 3, 4 W?

A Yes, sir.

Q You have before you a map which I don't believe has been entered as an Exhibit from which you were calling off the 19 additional producers you anticipate drilling and the ten additional injectors you intend drilling, is this

correct?

A No, sir, not completely. I am using a work map which is comparable to Exhibit 1 officially presented to the Commission. My work map has my shorthand and notes on it.

Q Well, what I'm getting at is, Mr. Rogers, that these 29 locations do not show on Exhibit 1?

A That is correct. However, I'll be glad to take time to give them to you more specifically on your map, Mr. Irby, if you would like.

Q Well, a tabulation or an exhibit that shows them would be appreciated very much.

A All right, sir.

Q These four wells I just mentioned in Section 18, 1, 2, 3, and 4 W, are they now authorized injectors?

A That is correct.

Q And eight of the nine wells listed in Mr. Emory's letter of February 17, 1965, the one well being excluded Ferris A number 1 are proposed injectors?

A Yes, sir.

Q And have not been drilled?

A They have been drilled but they have not been completed for injectors.

Q What's the status of these wells now?

MR. KELLAHIN: May I explain that, please? Mr. Irby, what occurred here, the prior management of this company somehow or other went ahead and drilled these wells and when the interest was acquired by the present applicant, this was discovered and we are now here asking approval of these wells but they have all been drilled; I think there are nine injectors and one producer, is that right?

A In this, we are speaking of eight water injection wells and one producer.

MR. KELLAHIN: Eight injection and one producer and all of them have been drilled.

MR. IRBY: All of them have been drilled?

MR. KELLAHIN: Yes, sir.

MR. IRBY: So you will understand me, Mr. Kellahin, you say they have been drilled, they have not been completed. We know from the testimony that we have two oil pay zones down there and we have fresh water zone above them. Are these oil zones and the water zones commingling now?

A May I interject here?

MR. KELLAHIN: Yes.

A When I said they were not completed, the wells have been drilled and the injection wells have two and seven-eighths inch tubing cemented in place with cement

from top to bottom and a cement plug inside the tubing consequently, there's no way for you to have an intermingling of the fluids. When I said not completed, I mean they had not been perforated and put on to water injection. The same is true of the producing well drilled as a producing well. It has four inch pipe, set to bottom, cemented from top to bottom with a cement plug inside. It has not been perforated.

MR. UTZ: They're in the same condition as the 2 W in Section 20?

A Yes, sir.

Q (By Mr. Irby) And the proposed wells, the injection wells and the producing wells will be cemented top to bottom?

A Yes, sir.

Q Or bottom to top, excuse me. How do you propose to handle the produced water after you get these wells into production?

A Actually, we don't anticipate any produced water until we get water break-through from the injection wells and at that time we would either gather the water and re-inject it or ask for Commission and State approval to handle it some other way. We haven't formulated our plan that far in advance.

Q Will both the Commission and the State engineer be advised immediately when you start making water in these wells?

A Yes, sir. I think by various reports that we will have to file, yes, sir.

Q The reports that you are required to file do not include one to the State Engineer in this respect. I'm very much interested in the conservation of water and this means protection from possible contaminates and that's the reason I want to keep up with this.

If I can't have a copy of this report, and I don't mean this as a threat, then I am going to have to enter some sort of an objection.

A We will positively furnish you with any information that you so desire.

Q Thank you. What is the source formation of the water to be injected?

A The Hospah, found in this particular well from about 945 feet to approximately a thousand fifty feet.

Q Do you have an analysis of that, Mr. Rogers?

A Yes, sir, an analysis run by Core Laboratories of Dallas, Texas showed 3,222 milligrams per liter of total dissolved solids, showed chemically and each of these will be in milligrams per liter, 369 chlorides, 425 bicarbonates,

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1365.2 sulphates, 8.4 carbonate with a specific gravity of 1.003 at 75 degrees Fahrenheit.

MR. UTZ: Would you furnish the State Engineer with a copy of that analysis?

A Yes, sir, I will.

Q (By Mr. Irby) What is the life expectancy of the project, Mr. Rogers?

A At this time, Mr. Irby, it's difficult to say because we don't know how much of the entire 800 acres will be developed but it can be any place from five years to possibly twenty years, depending entirely upon the development and how much water we can inject into the ground and the eventual pattern that we end up on.

Q Would you hazard a guess in between that five and twenty?

A Yes, sir, twelve years.

Q Did I ask you about the casing program on these 29 new wells?

A Yes, sir.

Q I believe I did. You said you'd circulate cement on all of them?

A Yes, sir, we will.

MR. IRBY: That's all I have. Thank you.

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MR. UTZ: The casing on those wells will be new casing?

A It will either be new casing or casing that has been pressure tested to some acceptable figure, say, a thousand pounds. My reason for picking a thousand pounds is because we don't anticipate at any time being above five hundred pounds and that is the very maximum figure there.

MR. UTZ: Are there any other questions; if there are no other questions, the witness may be excused. Are there any statements in this case?

MR. IRBY: I would like to recommend to the Examiner and the Commission that before injection into the four existing wells in Section 18, commences, that pressure tests be made on each well in excess of the anticipated injection pressure.

MR. UTZ: How much in excess?

MR. IRBY: Twenty per cent.

MR. UTZ: I am confused to some extent now, the nine wells listed on Mr. Arnold's letter of February the 17th, 1965 and the four wells in the southeast quarter of Section 18, namely the 1, 2, 3, 4 W, are they all completed? I mean, drilled with casing and cement in the hole now?

A Yes, sir. You mean the four injection wells in Section 18?

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MR. UTZ: Yes, sir.

A Plus the others, yes, sir, they are all drilled.

MR. KELLAHIN: The four you mentioned were approved by the prior order and were drilled and then injection was made into them.

MR. UTZ: They are perforated then?

MR. KELLAHIN: Oh, yes.

A Yes. Either perforated or open hole completion.

MR. UTZ: Then, just the nine wells are actually cased without being perforated?

A That is my understanding, yes, sir.

MR. UTZ: And they're all cased to the bottom?

A Yes, sir.

MR. UTZ: Any other question, any other statements?

The case will be taken under advisement.

(Whereupon, Case Number 3245 was concluded.)



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PAGE 35

I N D E X

WITNESS	PAGE
WAYNE ROGERS	
Direct Examination by Mr. Kellahin	2
Cross Examination by Mr. Utz	22
Cross Examination by Mr. Irby	26

E X H I B I T S

<u>EXHIBIT</u>	<u>MARKED FOR IDENTIFICATION</u>	<u>OFFERED</u>	<u>ADMITTED</u>
App's. 1	2		
App's. 2	2	22	
App's. 3	2	22	22
App's. 4	2	22	22
App's. 5	2	22	22
		22	22

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STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 24th day of May, 1965.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:
June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing before the New Mexico Oil Conservation Commission of Case No 3245, heard by me on May 12, 1965.
Thurston
New Mexico Oil Conservation Commission Examiner

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 2377
Order No. R-2095

APPLICATION OF N. R. WILLIAMSON
FOR PERMISSION TO INSTITUTE A
WATERFLOOD PROJECT IN THE SEVEN
LAKES POOL, MCKINLEY COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 20, 1961, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 18th day of October, 1961, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, N. R. Williamson, seeks permission to institute a waterflood project in the Seven Lakes Pool in an area defined in pertinent part as the S/2 SE/4 of Section 18 and the NE/4 NE/4 of Section 19, all in Township 18 North, Range 10 West, NMPM, McKinley County, New Mexico, by the injection of water into the Ferris Well No. 2-W, located 780 feet from the South line and 720 feet from the East line, and into the following described wells which are to be drilled at unorthodox locations:

Ferris Well No. 1-W, located 5 feet
from the South line and 720
feet from the East line,

Ferris Well No. 3-W, located 700 feet
from the South line and 1330
feet from the East line, and

-3-

CASE No. 2377
Order No. R-2095

Ferris Well No. 3-W, located 700 feet
from the South line and 1330
feet from the East line, and

Ferris Well No. 4-W, located 200 feet
from the South line and 1380
feet from the East line,

all in said Section 18.

(2) That the applicant is hereby authorized to locate the following-described producer wells at unorthodox locations in the project area:

Ferris Well No. 1, located 450 feet
from the South line and 1050
feet from the East line,

Ferris Well No. 2, located 940 feet
from the South line and 325
feet from the East line,

Ferris Well No. 3, located 260 feet
from the South line and 400
feet from the East line, and

Ferris Well No. 6, located 280 feet
from the South line and 2320
feet from the East line,

all in said section 18.

(3) That the operation of the waterflood herein authorized shall be governed by Rule 701 of the Commission Rules and Regulations, including those provisions regarding allocation of allowables.

PROVIDED HOWEVER, That the Secretary-Director of the Commission, upon the showing of good cause, shall be authorized to approve the expansion of the waterflood project in 160-acre increments.

(4) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rule 704 and Rule 1119 of the Commission Rules and Regulations.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

-4-

CASE No. 2377
Order No. R-2095

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

E. S. WALKER, Member

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

S E A L



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS
WATER ANALYSIS

Page 14 of 14
File SCAL-6563

Worldwide Petroleum
Company Corporation Well Name Sample No.
Formation Depth Sampled From Injection Water Well
Location Field Seven Lakes County McKinley State New Mexico
Date Sampled Date Analyzed 4-13-65 Engineer RAL

Total Dissolved Solids 3222 mg/L Calculated

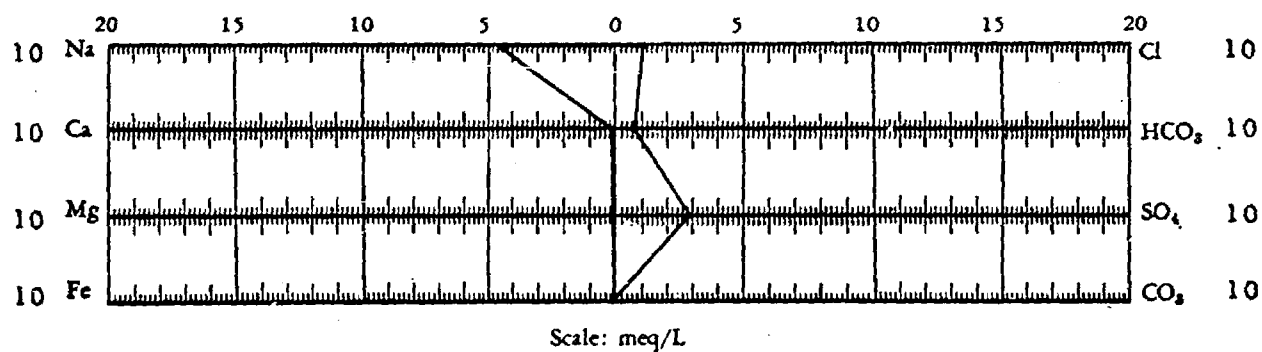
Sp. Gr. 1.003 @ 75 °F.

Resistivity 2.508 ohm-meters @ 75 °F. Measured

Hydrogen Sulfide Absent

pH 8.4

Constituents	meq/L	mg/L	Constituents	meq/L	mg/L
Sodium	45.23	1040	Chloride	10.4	369
Calcium	0.66	13.2	Bicarbonate	7.0	425
Magnesium	0.16	2.0	Sulfate	28.4	1365.2 (Grav.)
Iron	0.01	0.2	Carbonate	0.3	8.4
Barium	0.0	0.0 (Grav.)	Hydroxide	0.0	0.0



All analyses except iron determination performed on a filtered sample.

CASE NO. 3245

Application of Worldwide Petroleum Corporation
for Creation of an Oil Pool and for an
Amendment to Order No. R - 2095,
McKinley County, New Mexico

Hearing May 12, 1965

WORLDWIDE PETROLEUM CORPORATION
TYPICAL PRODUCING WELL

SEVEN LAKES FIELD
MCKINLEY CO. NEW MEXICO

FARRIS I-A

330 ft. FSL, 990 ft. FEL
SEC. 18-T18 N R 10 W

ELEV. 6542' GL.

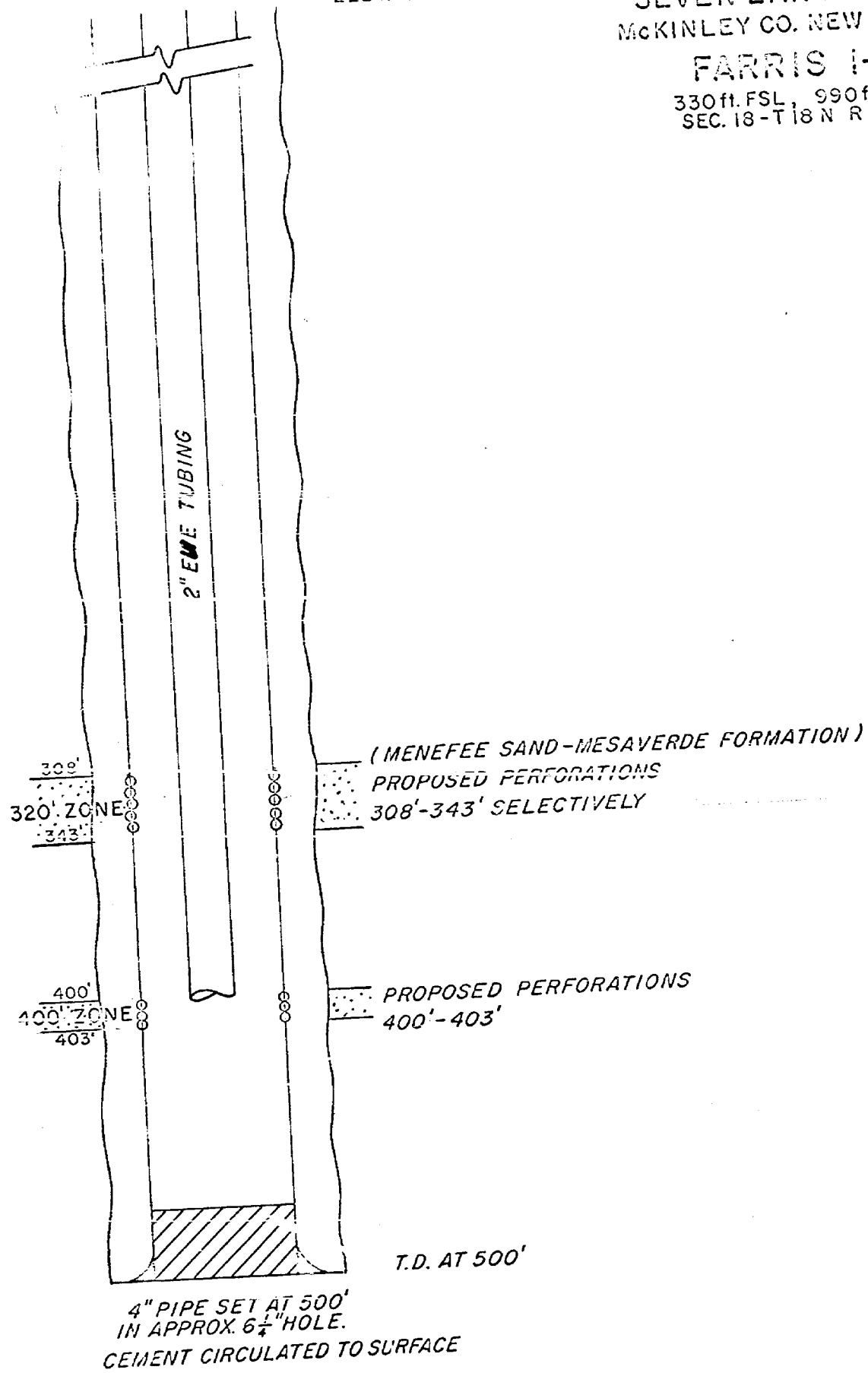


EXHIBIT 3

WORLDWIDE PETROLEUM CORPORATION
TYPICAL INJECTION WELL

SEVEN LAKES FIELD
McKINLEY CO. NEW MEXICO

FARRIS 5W

660 ft. FSL, 1980 ft. FEL
SEC. 18-T18 N R 10 W

ELEV. 6543' GL.

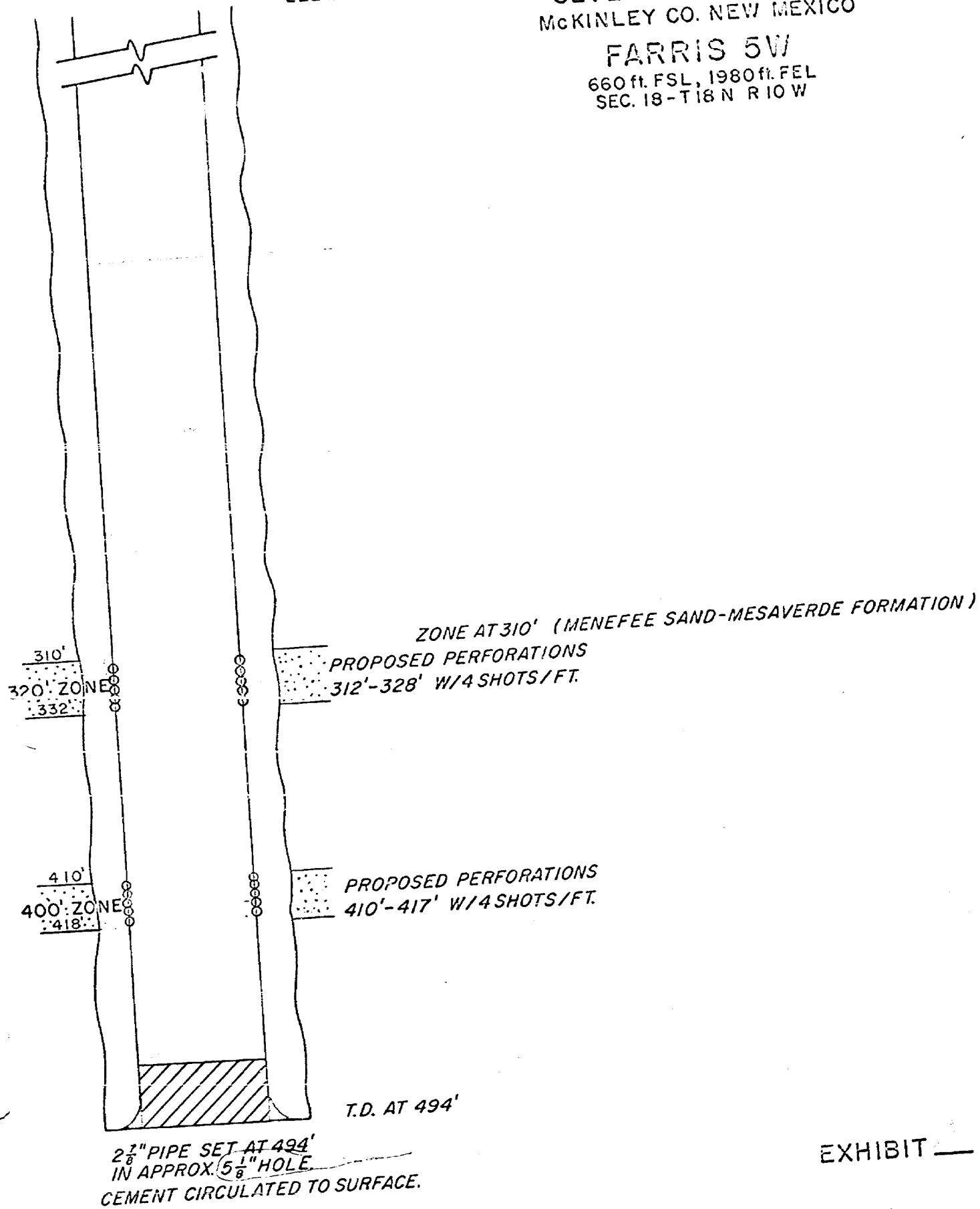


EXHIBIT —

WORLDWIDE PETROLEUM CORPORATION

SEVEN LAKES FIELD

Proposed Waterflood Project
McKinley County, New Mexico

PERTINENT DATA SHEET

I. GENERAL

Date of discovery, year	1910
Type of reservoir trap	Comb. structural-stratigraphic
Depth to top of first pay, ft.	320
Number of pay zones	Two
Name of producing zones	Menefee-Mesaverde
Initial participating area, acres	800

II. RESERVOIR DATA

Indicated producing mechanism	Solution gas
Original bottom hole pressure	Unknown
Original solution gas-oil ratio	Unknown
Gravity of oil, °API	32-
Apparent viscosity of oil, centipoises	8.7-
Estimated formation volume factor	1.03
Estimated average porosity, per cent	28
Estimated average water saturation, per cent	45
Permeability range, millidarcys	45-1193
Estimated average permeability, md.	300
Estimated average pay thickness, ft.	19
Estimated primary recovery to 5/1/64, bbls.	Unknown
Estimated remaining primary recovery at 5/1/64, bbls.	-0-

III. WATERFLOOD DATA

Initial waterflood pattern	Ten acre-five spot
Number of water supply wells	One
Name of water supply zone	Hospah
Depth of water supply zone, ft.	1050
Estimated initial water injection rate, BWPD	4000

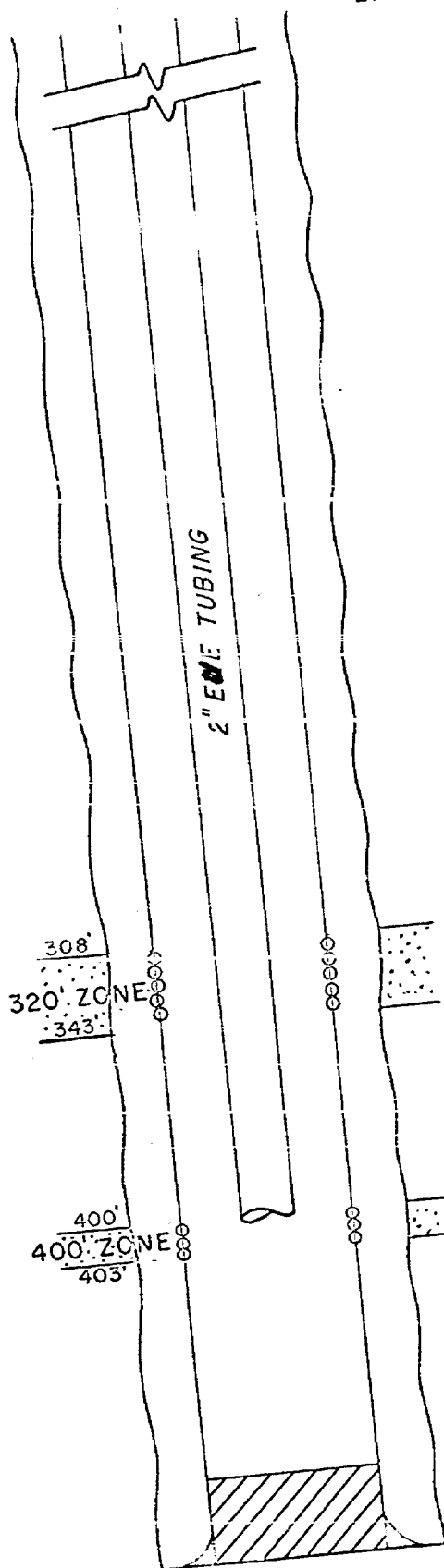
WORLDWIDE PETROLEUM CORPORATION
TYPICAL PRODUCING WELL

SEVEN LAKES FIELD
MCKINLEY CO. NEW MEXICO

FARRIS 1-A

330 ft. FSL 990 ft. FEL
SEC. 18-T18 N R 10 W

ELEV. 6542' GL.



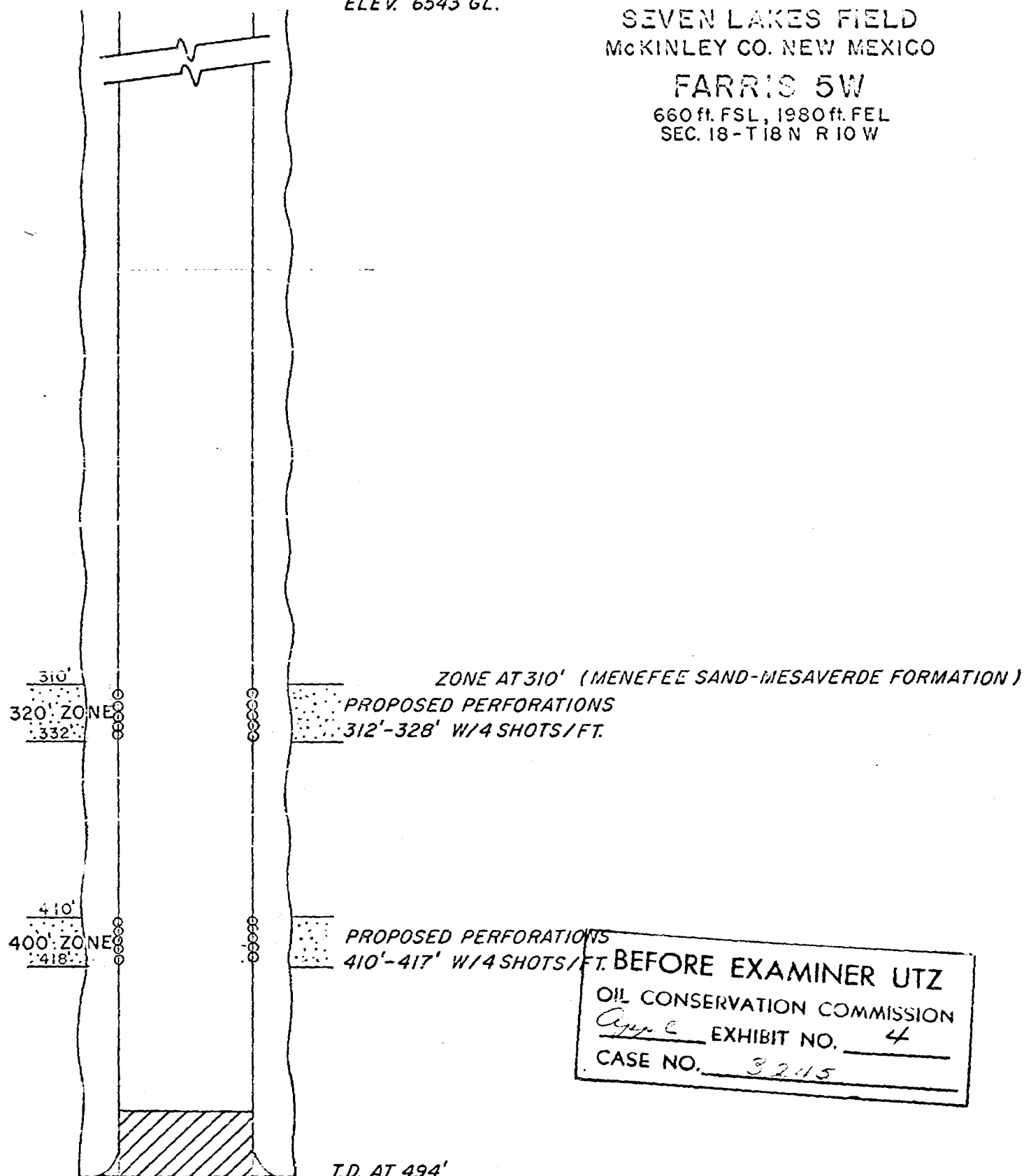
4" PIPE SET AT 500'
IN APPROX. 6 1/4" HOLE.
CEMENT CIRCULATED TO SURFACE

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
App. C. EXHIBIT NO. 3
CASE NO. 3045

EXHIBIT —

660 ft. FSL, 1980 ft. FEL
SEC. 18-T18N R10W

ELEV. 6543' GL.



2 7/8" PIPE SET AT 494'
IN APPROX. 5 1/2" HOLE.
CEMENT CIRCULATED TO SURFACE.

EXHIBIT _____

WORLDWIDE PETROLEUM CORPORATION

SEVEN LAKES FIELD

Proposed Waterflood Project
McKinley County, New Mexico

PERTINENT DATA SHEET

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Original solution gas-oil ratio	Unknown
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Estimated formation volume factor	1.03
Estimated average porosity, per cent	28
Estimated average water saturation, per cent	45
Permeability range, millidarcys	45-1193
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Number of water supply wells	One
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BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
<i>April</i> EXHIBIT NO. <u>5</u>
CASE NO. <u>3045</u>