

CASE 4209: Application of HARVEY  
E. YATES CO. FOR SEVERAL PRESSURE  
MAINTENANCE PROJECTS, EDDY COUNTY.

Case Number.

4209

---

Application

Transcripts.

Small Exhibits

ETC.



MR. UTZ: Case 4209.

MR. HATCH: Case 4209. Application of Harvey E. Yates Company of Artesia for several pressure maintenance projects, Eddy County, New Mexico.

And, again, what part can we leave off here? I have Harvey E. Yates Company of Artesia.

MR. LOSEE: Not of Artesia --

MR. HATCH: Just "Harvey E. Yates"?

MR. LOSEE: Yes, sir. "Harvey E. Yates Company". You don't say "oil company", do you?

MR. UTZ: We say whatever you say --

MR. LOSEE: All right.

A. J. Losee, appearing for the Applicant. I have one witness, Mr. Mahfood, who was sworn in the previous case.

MR. UTZ: Let the record show that Mr. Mahfood has been sworn in the previous case. Appearances? You may proceed.

EDDIE MAHFOOD

the witness, called by Mr. Losee, having first been duly sworn upon his oath, testified as follows:

DIRECT EXAMINATION

BY MR. LOSEE:

Q. You are Mr. Eddie Mahfood of Artesia, New Mexico, a consulting petroleum engineer?

A. Correct.

Q. And your qualifications have been previously accepted by the Examiner?

A. Yes, sir.

MR. LOSEE: Are the witness's qualifications acceptable?

MR. UTZ: Yes, sir.

Q. (By Mr. Losee) Please refer to what has been marked as Exhibit Number One, Mr. Mahfood, and explain what is portrayed on that?

A. Exhibit One is a lease map of the proposed waterflood area. The yellow outline is the outline of the Harvey Yates operated properties, which will be waterflooded -- I'm sorry -- which will receive benefit from this waterflood.

Q. What lease; there are two leases involved here in this area, are they not? One of them is the Lillie Yates --

A. That's right. The Lillie M. Yates -- the

Lillie M. Yates and Harvey Yates lease -- now there are some other leases, which will receive some benefit, we hope. And that's Bob Johnson lease, in which there are two wells -- Numbers One and Three.

Q. Now, Mr. Mahfood, is the Bob Johnson lease up there in Section 5 in the southwest quarter of the northwest quarter --

A. That is correct.

Q. And the Lillie M. Yates is in the southwest quarter of the southeast quarter of Section 6?

A. That's right also.

MR. HATCH: Just a minute, let me get this; I'm a little bit slow -- that first lease is the Bob Johnson, the southwest of the northeast?

MR. LOSEE: Yes, sir -- of the northwest.

MR. HATCH: Of Section 5?

MR. LOSEE: On Section 5, yes, sir.

And then, six, the Lillie M. Yates is a forty-acre lease, as I understand it, in the southwest of the southeast.

THE WITNESS: Also -- there is no forty-acre lease there -- in Section 7, of the northwest of the northeast.

Q. (By Mr. Losee) Whose lease is that?

A. That is also the Lillie M. Yates.

Q. I see. The Lillie Yates is the eighty acres --

A. Eighty acres; correct.

MR.. HATCH: That is southeast of the southwest of Six?

MR. LOSEE: Yes.

MR. HATCH: And the southwest --

THE WITNESS: No, the northwest of seven.

MR. HATCH: Of seven?

THE WITNESS: Yes, sir.

MR. LOSEE: And the remainder of the acreage outlined in yellow, is the Harvey Yates -- the Page and Yates lease.

THE WITNESS: Correction -- there is the Yates Federal in the southeast quarter of the southwest of Section 6.

MR. LOSEE: All right. That is the Yates Federal?

THE WITNESS: Yes, sir, the Yates Federal. Also, this note, too, Number Two well in Section 7.

MR. LOSEE: All right. Did you get the other two leases?

MR. HATCH: Well, let him go ahead --

MR. UTZ: What is this H. E. Y. at the top there?

THE WITNESS: Harvey Yates -- Federal.

MR. LOSEE: Federal.

MR. UTZ: Oh, I see.

THE WITNESS: It's a Federal lease -- all of these are Federal leases.

MR. UTZ: All right.

Q. (By Mr. Losee) Now, does this map show the producing and injection wells?

A. Yes.

Q. And the abandoned wells?

A. Yes, sir. The triangles indicate the proposed water injection wells. The full circles indicate the current wells, and the broken circles indicate temporarily abandoned wells.

These temporarily abandoned wells will be put back on production and will provide a source of the water that will be used for the water injection.

Q. What zones are presently or have produced in this area?

A. The Seven Rivers and the Queen only.



Q. Which you propose to flood in this application?

A. That is correct.

Q. Give a brief history of this pool, please?

A. This pool was -- this study area was discovered in the Wright Yates Federal Number Two, which is the Unit C of Section 7.

That well blew out while they were penetrating the Seven Rivers formation, and after it was contained, they drilled on down into the Queen.

Q. That was in what year?

A. This was in 1949; July of 1949.

Q. Please refer to what has been marked as Exhibit Two and explain what is portrayed by this?

A. Exhibit Two is a well completion data for this area. It contains all the wells completed in the Seven Rivers Yates and the Seven Rivers-Queen -- I'm sorry -- the Seven Rivers-Queen. And in addition, there are a few additional wells included.

Q. Outside of the project area?

A. Outside of the project area, yes, sir.

Q. But they are noted on the data sheet?

A. Yes, sir.

Q. What is the accumulative production from the

project area?

A. Through May of '69, the accumulative production is two hundred seventy-nine thousand eight hundred and nine barrels of oil. Current production is one hundred sixty-five barrels of oil per month for the six wells, which amounts to at least one barrel of oil per day per well.

Q. Are there any wells making over a barrel a day in that?

A. Well, no well is making more than two barrels a day.

Q. In your opinion, have the wells in this project area reached an advance or stripper state of completion?

A. Yes, sir. In my opinion, they are in the stripper stage.

Q. Do you have an opinion as to the ratio of secondary oil that will be recovered in comparison to primary oil?

A. Yes, sir. Primary oil was just eleven percent of the original oil in place. And therefore, I would suspect it would be much greater than one to one.

Q. Please refer to what has been marked as Exhibit Three and explain what is shown by this log?

A. Exhibit Three is an acoustic log of the Harvey

Yates Page Federal Number Eight. It is the only electric log of any well in this study area.

In red, is the oil pays. In blue are areas that produce water -- zones that produce water.

The Seven Rivers formation and the Queen are both identified.

Q. Please refer to Exhibit Four and explain what is shown by this diagrammatic sketch?

A. Exhibit Four is a diagrammatic sketch of the Lillie Yates-Harvey Yates Number Two, proposed for injection.

You will notice there is just one string of casing, and this is true for all of the wells in this area.

It is proposed to fill the annulus space between the casing and the hole to the surface with ready mixed cement.

It is proposed to run tubing on a tension packer and to fill this casing annulus with fresh water, inhibited fresh water.

It is proposed to leave the open hole section as is, until such time that a substantial amount of this Seven Rivers oil is recovered and provide that no excessive loss of water is experienced above the Queen formation -- the strata above the Queen formation.

Q. And also, how long do you think it will take to recover a substantial portion of the Seven Rivers oil?

A. I estimate one to two years. At that time the Queen formation should be pressured up and we propose then to go in and set liners, to exclude the Seven Rivers -- exclude the, all the open hole section to the top of the Queen.

Q. And would you cement --

A. And it will be cemented. By delaying running of these liners here, we hope to protect the Queen from being damaged when we set those liners.

We also hope to recover a substantial amount of oil from the Seven Rivers which would otherwise be lost.

Q. Now, is your Exhibit Four-A the portrayal of the same well with the liners run in it?

A. That's correct.

Q. Please refer to what has been marked as Exhibit Five and explain what is shown by this?

A. Exhibit Five is a diagrammatic sketch of the injection, Page and Yates Number Six.

Here again, we see one string of casing, estimated to be cemented to the surface -- at least, the

operator tells me it is. We propose to set a packer and run tubing -- a tension packer to about three hundred and ninety feet, to leave the open hole section as is until such time as it becomes necessary to -- until such time as is opportune to set liner.

And as previously stated, the time will be one to two years.

Q. When the Seven Rivers oil is recovered --

A. Substantially, yes -- and the Queen's pressure is down.

Q. Refer to your Exhibit Number Six, being the sketch of the Page and Yates Number Seven --

A. Yes, sir. This Exhibit Six is the diagrammatic sketch of the Page and Yates Number Seven.

We propose to fill the casing annulus to the surface with ready mixed cement. This is the surface casing -- the annulus between the casing and the open hole.

Then, the annulus between the tubing and the casing, we propose to fill this with fresh water mud.

You note that no water or flood entry was recorded in this well. It is believed that the open hole section is just hard rock and no fluid will be lost. However, with this fresh water mud, it would give us a mud cake in this

open hole section, here, in case it should develop a leak in the tubing at some later date. In which case, we will detect the leak before any loss can occur to the formation.

Q. What would you do to remedy the leak?

A. We would flood the hole and use it for the packer -- for the tubing, and replace the tubing.

An advantage to this method would be if it became feasible to deepen this well at some later date, we could easily go back in there and deepen the well, like the second Queen, or even deeper. The Grayburg, or some other formation.

Q. Refer to your diagrammatic sketch of the Page and Yates Number Eight and explain what is shown?

A. Page and Yates Number Eight is the only well that has a set path all the way through the Queen formation -- packed with cement all the way to the surface -- the casing was cemented all the way to the surface.

This well is located behind the oil water contact, and after being fracked, it never produced anything but water.

It is proposed to convert this well to -- for injection, and to move the oil from the oil water contact -- to the oil saturated zones.

Q. Here again, will you fill the casing with inhibited fresh water?

A. Yes, sir.

Q. And put a gauge on the surface?

A. Yes, sir.

Q. Please refer to what has been marked as Exhibit Eight --

A. Exhibit Eight is a water analysis taken on August 13, 1969 -- from pipe lines conveying produced water on the Page and Yates lease.

Q. Is produced water the proposed source of water for this injection program?

A. That is correct.

Q. Do you feel that there is an adequate supply on the lease or leases?

A. I feel that after we have returned these shut in wells to production, we will have available some -- approximately five hundred barrels of water per day.

On a full flood, we could probably use a thousand barrels a day, and for that reason this might be qualified as a pilot flood.

Q. Well, if your five hundred barrels or your available water doesn't seem sufficient, there are other

sources in the area; aren't there?

A. Other sources will be negotiated for.

Q. At what rates and at what pressure do you propose to inject water?

A. It is estimated that these wells will take approximately one hundred and twenty barrels a day per well at four hundred pounds well head pressure.

Q. Do you have an opinion as to whether the proposed injection well completions will protect any fresh water that might be present in the area?

A. Yes, sir. I think all surface casing is sufficient, indeed, to protect fresh water in the area.

Q. Were Exhibits One through Eight prepared by you?

A. That is correct.

MR. LOSEE: We move the introduction of Exhibits One through Eight.

MR. UTZ: Without objection, Exhibits One through Eight will be entered into the record in this case.

(Whereupon, Applicant's Exhibits One through Eight, Inclusive, were duly admitted.)

MR. LOSEE: No further questions.



CROSS EXAMINATION

BY MR. UTZ:

Q. Do you consider this water as being fresh water, non-corrosive?

A. Non-corrosive, I would say -- I would say non-corrosive, but it's not fresh -- it's brackish, sir.

Q. You don't intend to plastic-line or coat the interior tubing?

A. Sir, you notice this water analysis shows the water to be pretty much saturated with bicarbonates. We propose to control scale deposits and corrosion with inhibitors.

Q. You will inhibit the water?

A. That is correct, yes, sir.

Q. What was the formation you were going to inject into on that previous case?

A. The Seven Rivers, also.

Q. The Seven Rivers only?

A. Yes, sir.

MR. UTZ: Any other questions?

MR. HATCH: Why don't you have him just mark those -- those different leases -- I got lost --

MR. UTZ: Any further questions?

The witness may be excused and the case will  
be taken under advisement.

The hearing is adjourned.

(Whereupon, the hearing was adjourned this date  
at 2:10 o'clock, P. M.)

I N D E XPage

The Witness - EDDIE MAHFOOD

Direct Examination by Mr. Losee

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Cross Examination by Mr. Utz

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E X H I B I T SAdmitted

Applicant's Exhibits One through Eight

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dearnley-meier reporting service

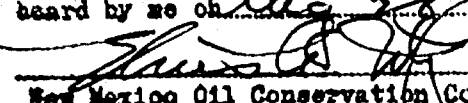
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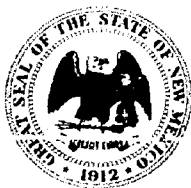
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STATE OF NEW MEXICO )  
COUNTY OF BERNALILLO ) ss

I, CA FENLEY, Court Reporter 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.

  
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4209 heard by me on Aug. 28, 1969.  
 Examiner  
New Mexico Oil Conservation Commission



# OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87501

September 17, 1969

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

**LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER**

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

Mr. A. J. Losee  
Attorney at Law  
Post Office Box 239  
Artesia, New Mexico 88210

Re: Case No. 4209  
Order No. R-3842

Applicant:  
**Harvey E. Yates Company**

Dear Sir:

Enclosed herewith is a copy of the above-referenced Commission order recently entered in the subject case. Letter pertaining to conditions of approval and maximum allowable to follow.

Very truly yours,

Very truly yours,  
A. L. Carter, Jr.

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC           x            
 Artesia OCC           x            
 Aztec OCC                             
 State Engineer           x          

Other

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

October 29, 1969

Mr. A. J. Losee  
Attorney at Law  
Post Office Box 239  
Artesia, New Mexico 88210

Dear Sir:

Reference is made to Commission Order No. R-3842, recently entered in Case No. 4209, approving the Harvey Yates Page-Yates McMillan Waterflood Project and the Lillie Yates Lillie McMillan Waterflood Project.

Injection in the Page-Yates project is to be through the three authorized water injection wells and injection in the Lillie project through the one authorized injection well. Injection in each well shall be through tubing set in a packer. Packers shall be located as follows:

Page-Yates Well No. 6 - 390 feet; Well No. 7 - open-hole packer at approximately 680 feet; Well No. 8 - 775 feet; Lillie Yates Well No. 2 - 420 feet. The casing-tubing annulus of all but the Page-Yates No. 7 shall be loaded with inhibited fresh water and equipped with a pressure gauge at the surface. The annulus of the Page-Yates No. 7 shall be loaded with fresh water mud.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which the Page-Yates project will be eligible to receive under the provisions of Rule 701-E-3 is 308 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less and the maximum allowable for the Lillie Yates projects is 112 barrels per day.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

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

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

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Mr. A. J. Losee  
Attorney at Law  
Artesia, New Mexico

October 29, 1969

C both of the aforementioned Commission offices 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 wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

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

O  
P  
Y  
Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/DSN/lr

cc: Oil Conservation Commission  
Hobbs and Artesia

U. S. Geological Survey  
Drawer U  
Artesia, New Mexico

Mr. D. E. Gray  
State Engineer Office  
Santa Fe, New Mexico

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. 4209  
Order No. R-3842

APPLICATION OF HARVEY E. YATES COMPANY  
OF ARTESIA FOR SEVERAL PRESSURE MAINTENANCE  
PROJECTS, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 27, 1969,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 17th day of September, 1969, 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, Harvey E. Yates Company of Artesia,  
filed an application seeking authority to institute two pressure  
maintenance projects in the McMillan (Seven Rivers-Queen) Pool,  
Eddy County, New Mexico, by the injection of water into the Seven  
Rivers and Queen formations through the following-described wells  
in Township 20 South, Range 27 East, NMPM, Eddy County, New Mexico:

Page & Yates Well No. 8 - Unit M - Section 5  
Page & Yates Well No. 6 - Unit P - Section 6  
Page & Yates Well No. 7 - Unit J - Section 6  
Lillie Yates Well No. 2 - Unit B - Section 7

(3) That at the hearing the applicant sought and was granted  
permission to amend the application in such a manner as to have the  
subject projects classified as waterflood projects.



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CASE No. 4209  
Order No. R-3842

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

(5) That the proposed waterflood projects are in the interest of conservation and should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the application to institute two waterflood projects should be approved and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Harvey E. Yates Company of Artesia, is hereby authorized to institute two waterflood projects in the McMillan (Seven Rivers-Queen) Pool, Eddy County, New Mexico, by the injection of water into the Seven Rivers and Queen formations through the following-described wells in Township 20 South, Range 27 East, NMPM, Eddy County, New Mexico:

**Harvey Yates Page-Yates McMillan Waterflood Project**

Page & Yates Well No. 8, located in Unit M of Section 5, injection to be accomplished through tubing installed in a packer set at approximately 775 feet, with injection into the perforated interval from approximately 791 feet to 892 feet;

Page & Yates Well No. 6, located in Unit P of Section 6, injection to be accomplished through tubing installed in a packer set at approximately 390 feet, with injection into the perforated and open-hole interval from approximately 554 feet to 784 feet; and

Page & Yates Well No. 7, located in Unit J of Section 6, injection to be accomplished through tubing installed in a packer set at approximately 680 feet, with injection into the open-hole interval from approximately 685 feet to 775 feet;

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CASE No. 4209  
Order No. R-3842

Lillie Yates Lillie McMillan Waterflood Project

Lillie Yates Well No. 2, located in Unit B of Section 7, injection to be accomplished through tubing installed in a packer set at approximately 420 feet, with injection into the perforated and open-hole interval from approximately 490 feet to 767 feet;

PROVIDED HOWEVER, that in said Wells Nos. 8 and 6, the casing-tubing annulus shall be filled with an inert fluid; that in said Well No. 7, the annulus shall be filled with mud; and that a pressure gauge shall be attached to the annulus in each of the wells in order to determine leakage in the tubing, casing, or packer.

(2) That the subject waterflood projects shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

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


(4) 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

  
DAVID F. CARGO, Chairman

  
ALEX J. ARMIJO, Member

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

  
esr/

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. 3931  
Order No. R-3578

APPLICATION OF PAN AMERICAN PETROLEUM  
CORPORATION FOR SALT WATER DISPOSAL,  
ROOSEVELT COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 12, 1968,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 19th day of November, 1968, 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, Pan American Petroleum Corporation,  
is the owner and operator of the State "DF" Well No. 1, located  
in Unit I of Section 25, and the Farrell Federal Well No. 10,  
located in Unit F of Section 28, both in Township 7 South, Range  
33 East, NMPM, Chaveroo-San Andres Pool, Roosevelt County, New  
Mexico.

(3) That the applicant proposes to utilize said wells to  
inject produced salt water into the San Andres formation, with  
injection into the intervals as follows:

The perforated interval from approximately  
4402 feet to 4422 feet in its State "DF"  
Well No. 1; and

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CASE No. 3931  
Order No. R-3578

The perforated interval from approximately 4239 feet to 4389 feet in its Farrell Federal Well No. 10.

(4) That the subject wells should be classified as pressure maintenance project injection wells.

(5) That the subject pressure maintenance projects are in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(6) That the subject application should be approved and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pan American Petroleum Corporation is hereby authorized to institute two pressure maintenance projects in the Chaveroo-San Andres Pool, Roosevelt County, New Mexico, by the injection of water into the San Andres formation through the following-described wells in Township 7 South, Range 33 East, NMPM, Roosevelt County, New Mexico:

Pan American State "DF" Pressure Maintenance Project

State "DF" Well No. 1, located in Unit I of Section 25 — injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 4370 feet, with injection into the perforated interval from approximately 4402 feet to 4422 feet; and

Pan American Farrell Pressure Maintenance Project

Farrell Federal Well No. 10, located in Unit F of Section 28 — injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 4200 feet, with injection into the perforated interval from approximately 4239 feet to 4389 feet;

PROVIDED HOWEVER, that in each well the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus in order to determine leakage in the tubing, casing, or packer.

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CASE No. 3931

Order No. R-3578

(3) That the subject pressure maintenance projects shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(4) That monthly progress reports of the pressure maintenance projects herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 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.

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

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

S E A L

esr/



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

P. O. Drawer U  
Artesia, New Mexico 88210

SEP 9 AM 10

IN REPLY REFER TO:

September 8, 1969

Mr. Eddie M. Mahfood  
702 West Quay  
Artesia, New Mexico 88210

Dear Sir:

Your letter of September 3, 1969 requests approval for Harvey E. Yates to operate a waterflood of the Seven Rivers-Queen formations on that portion of oil and gas lease Las Cruces 063567 described as follows:

T. 20 S., R. 27 E., N.M.P.M., Eddy County, New Mexico

sec. 5 : SW $\frac{1}{4}$ NW $\frac{1}{4}$ , W $\frac{1}{2}$ SW $\frac{1}{4}$   
sec. 6 : SE $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$   
sec. 7 : NE $\frac{1}{4}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ NE $\frac{1}{4}$   
sec. 8 : NW $\frac{1}{4}$ NW $\frac{1}{4}$

You propose to convert to water injection the following wells:

<u>Well Number &amp; Lease</u>	<u>Location</u>
8-Page & Yates	SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5
6-Page & Yates	SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6
7-Page & Yates	NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6
2-Harvey Yates	NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7

The plan for operating the above described waterflood project as proposed in the application is satisfactory to this office, and hereby approved subject to like approval by the New Mexico Oil Conservation Commission and the following:

1. This project will be operated in compliance with the New Mexico Oil Conservation Commission regulations governing waterflood operations.

2. Duplicate copies of a monthly progress report (N.M.O.C.C. form C-120 acceptable) are to be submitted to this office showing the volume of water injected and average pressures for the injection wells, and production for the producing wells in the project area.
3. This approval does not preclude the necessity for further approval when the project is expanded to include other wells and leases or the necessity to submit the usual notices and reports on wells involved.

Sincerely yours,

(Orig. Sgd.) JAMES A. KNAUF

James A. Knauf  
District Engineer

cc:  
N.M.O.C.C., Santa Fe ✓  
Roswell  
File  
Accounts

Case 4209  
Filed 8-27-69  
Rec. 9-10-69

Grant Harvey E. Yates  
2. waterfloods for the follow-  
ing leases.

1. Harvey E. Yates - Page flood w/  
3 injection wells

— Page #6 - P-6-20-27, Phs 725'  
— #7 J - 6-20-27, Phs 740'  
— #8 M - 6-20-27, Phs 680'  
— #8 M - 6-20-27, Phs 700'  
— #8 M - 6-20-27, Phs 775'  
— #8 M - 6-20-27, Phs 800'

2. Harvey E. Yates - Tillis Yates flood  
1 injection well.

— Tillis Yates #2, Phs 6425'  
— Tillis Yates #2, Phs 695'

— Tubing on both wells 2".

Thos. J. [Signature]



Harvey E. Yates & Martin Yates  
August 9, 1968  
Re: Preliminary Waterflood Report

-Page 6-

TABLE I

WELL COMPLETION DATA

Johnson #1 c.3/51 2310/N 330/W E-5-20-27	El.3391 TD- 881	8 5/8 @ 455' w/ 25sx Shot 780-815, 175qts IP- 3 BOPD pump, 30° API	FW @ 47', 350-55' SW @ 417-35' S/O 584-85, 781-95
Johnson #3 c.2/54 2310/N 630/W E-5-20-27	El.3382 TD-860	8 5/8 @ 246', mud 5 1/2 @ 855' w/ 25sx SF 820-61, IP-? SF 428-40, IP- 20 BOPD SF 746-55, did not recover all oil, PB-860 Pulled 619' of 5 1/2" csg	S/O 328-31, 428-40, 746-55, 820-61
r.4/55 DD-897 r.1/59 PB-661			
Yates Fed#1 c.1/49 330/S 2310/W N-6-20-27	El.3361 TD-997 PB-540	8 5/8 @ 254' Shot 535-40, 684-98	Wtr 200-06, 765-70, S/O 686, 925-33 D&A 5/49
Yates Fed#2 c.7/49 330/N 2310/W C-7-20-27	El.3364 TD-653	7" @ 550' Nat. 50 BOPD, 150 BW	SW @ 572; Qn @ 652 SD-545 blew oil/wtr TA-10/50
Yates Fed#3 c.11/49 330/S 1650/W N-6-20-27	El.3339 TD-929 PB-535	6 5/8 @ 525' w/ 50sx IP-17 BOPD, 30° API	SW @ 824-31, 918-29 S/O 460-85, 522-32, S/O 621-42, 650-72, S/O 769-76
L. Yates#1 c.12/49 330/N 2310/E B-7-20-27	El.3361 TD-703	7" @ 275' w/ 50sx 5" @ 515' w/ pkr Shot 680-703, IP:36 BOPD, 40 B/PD No results reported	SW 310-15, 500-15, 680-85 S/O 685-703
r.1/55 DD-715			
L. Yates#2 c.11/51 330/N 1650/E B-7-20-27	El.3367 TD-735	7" @ 435' w/ 20sx Shot 712-35, IP: 50 BOPD, 30° API Shot 735-67, 100qts	Wtr 200-15, 325-55, S/O 712-35, 735-67
r. 2/55 DD-767			
L. Yates#4 c.12/50 330/S 1650/E O-6-20-27	El.3367 TD-744	7" @ 471' w/ 20sx Shot 696-744, 120qts; IP-50 BOPD Wtr incr, PB-749; lease prod incr	Wtr 160-65, 420-30, 749-55 S/O 698-728, 732-44
r.2/55 DD-755			
L. Yates#1-Y c.8/50 350/S 2251/E O-6-20-27	El.3360 TD-715	7" @ 433' w/ 20sx Shot 685-715, 110qts IP- 50BOPD, 36°API	Wtr 165-70, 350-65 S/O 405-10, 480-90 S/O 540-50, 686-715
Page #1 c.5/50 330/N 990/E A-7-20-27	El.3368 TD-732	5 1/2" @ 701' w/75sx Shot 715-30, 60qts IP-100 BOPD, 32°API Prod incr fr 25 BOPD to 60 BOPD	Wtr 347-66 S/O 714-30, 737-49
r.11/50 DD-749			
Page #2 c.8/50 330/S 990/E P-6-20-27	El.3371 TD-750 PB-745	5 1/2" @ 497' w/40sx Shot 705-750, 120qts IP-100 BOPD	Wtr 350-55, 745-47 S/O 500-05, 705-35, 40-50
r.7/65 DD-750			

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

EXHIBIT NO. 2

CASE NO. 4209

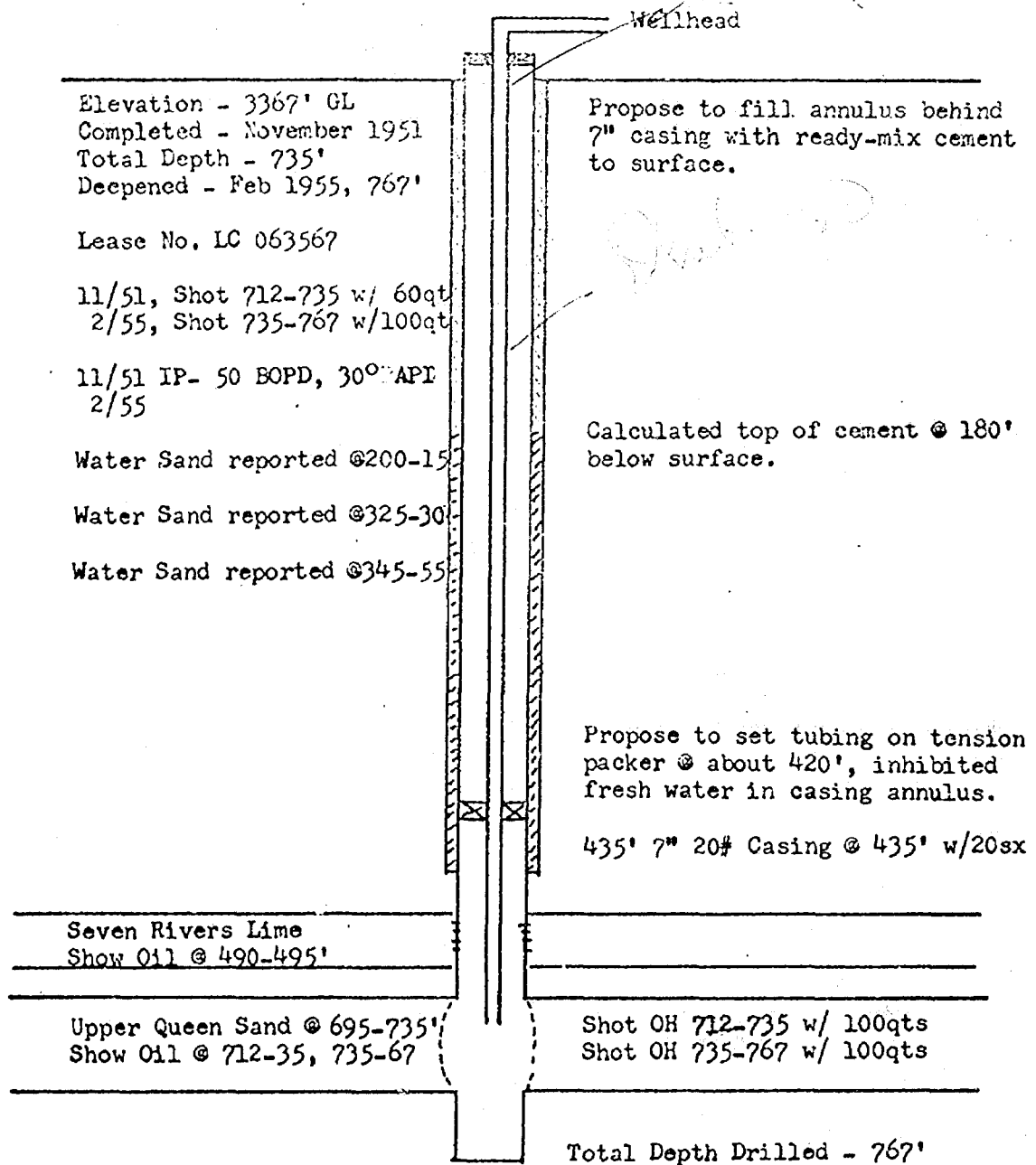
Harvey E. Yates & Martin Yates  
August 9, 1968  
Re: Preliminary Report on Waterflood

-Page 7-

Page #3	c. 11/50	El. 3373	7" @ 435' 20sx	Wtr: 275', 763-75
1650/S 330/E		TD-775	Shot 548-655, 202qts	S/O: 555-67, 735-75
I-6-20-27		PB-763	Shot 735-63, 180qts	IP-60 BOPD, 33° API
Page #4	c. 2/51	El. 3377	7" @ 503' 25sx	Wtr: 145, 332-40, 778-805
330/N 330/W		TD-901	Shot 840-900, 150qts	S/O 573-88, 811-22, 876-93
D-8-20-27			IP-60 BOPD, 33° API	Top Qn @ 790'
Page #5	c. 7/59	El. 3388	7" @ 426' 50sx	Wtr: 170, 778
2970/N 330/W		TD-885	Shot 595-693, 243qts	S/O: 595-614, 775-848
I-5-20-27			Shot 775-885, 175qts	S/O 862-70
			IP-15 BOPD, 6 BWPD, 32° API	
Page #6	c. 7/51	El. 3371	7" @ 422' 50sx	Wtr: not recorded
990/S 330/E		TD-784	Shot 735-78, 240qts	S/O: 554-65, 762-84
P-6-20-27		PB-778	IP-20 BOPD, 340 BWPD, 32° API	
Page #7	c. 10/52	El. 3346	7" @ 320' 20sx	Wtr: not recorded
1650/S 1650/E		TD-685	Tr 690-705, 1500g.	S/O: 690-705, 721-736
J-6-20-27			Tr 721-736, 1500g.	IP- 1.5 BOPD, TA 10/52
Page #8	c. 7/59	El. 3376	4 1/2" @ 977 125sx	Wtr: 300-16, 762-77
330/S 330/W		TD-987	Pf 791-842	S/O: 791-824, 830-42
M-5-20-27			SOF 19280# 65000g	Pumped IO & Wtr, TA
FWY-Yates #1	c. 8/35	El. 3355	6 5/8 @ 1143	FW & Suf wtr @ several pts
1980/N 660/E		TD-2026		to TD. S/O: 356-59, 590-95,
H-6-20-27				809-26, 890-94, 906-11, D&A
HEY-Yates #1	c. 7/48	El. 3345	8" @ 180'	FW & Suf wtr @ several pts
2310/N 990/E		TD-1003		to TD. S/O 344-49, D&A
H-6-20-27				
Hondo Singer #2A	c. 8/64	El. 3340		Hole full of wtr @ 1600'
K-7-20-27		TD-1601		D&A
Hondo Singer #1A		El. 3331		Rapid wtr entry, increasing
660/S 660/E		TD-11100		with depth to 1600'
P-7-20-27				

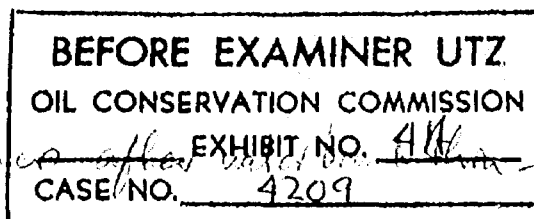
DIAGRAMMATIC SKETCH OF INJECTION WELL

LILLIE YATES - HARVEY YATES NO.2  
330 FNL 1650 FEL, Sec 7, T-20-S R-27-E  
McMillan (S.R., 3rd) Pool, Eddy County



BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 4  
CASE NO. 4209

LILLIE YATES - HARVEY YATES NO. 2  
330 FNL 1650 FEL, Sec 7, T-20-S, R-27-E  
McMillan (S.R., Qn) Pool, Eddy County

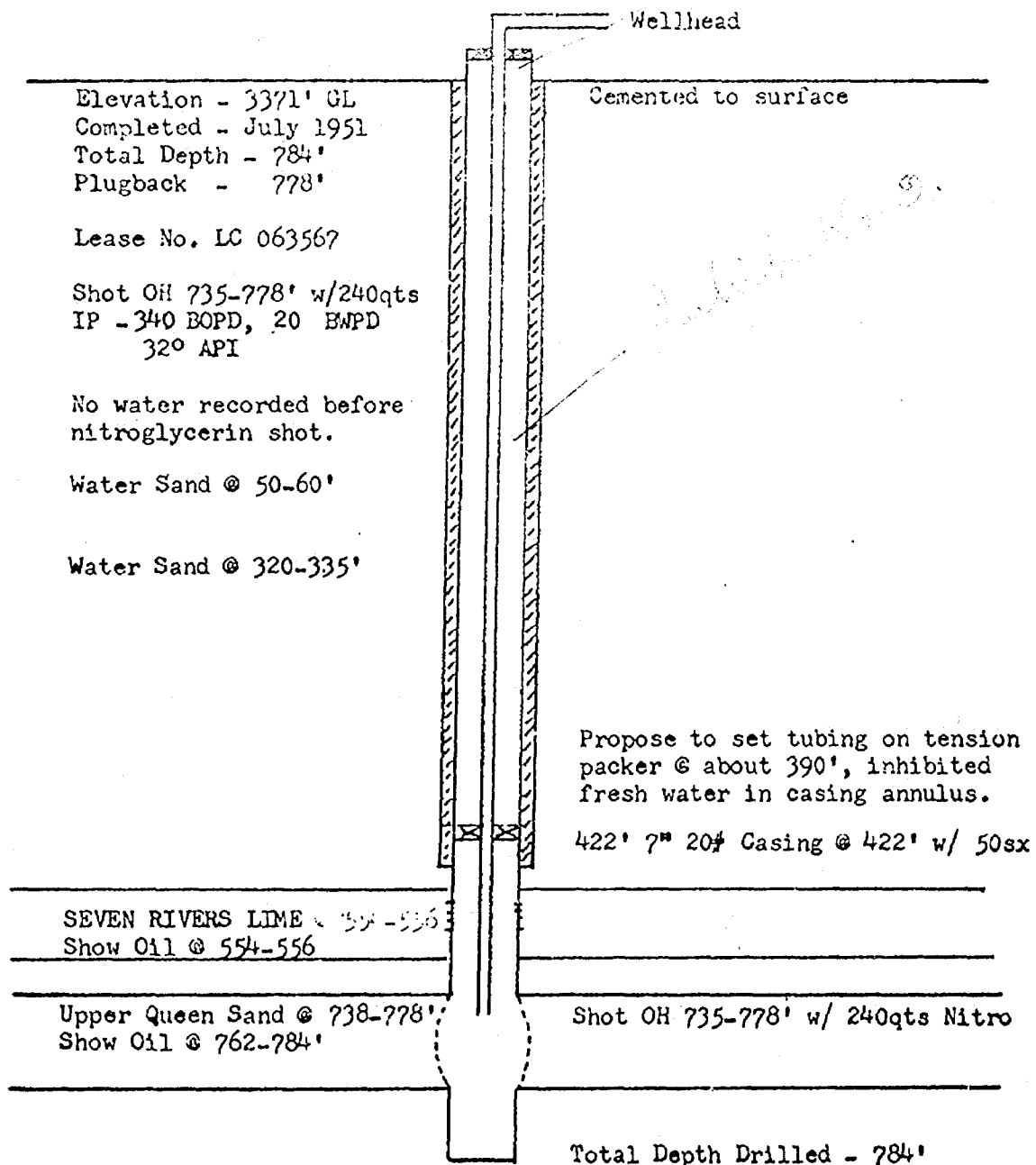


To blank of Seven Pages after ~~EXHIBIT NO. 416~~ - est. 12 mos.  
CASE NO. 4308

4A

DIAGRAMMATIC SKETCH OF INJECTION WELL

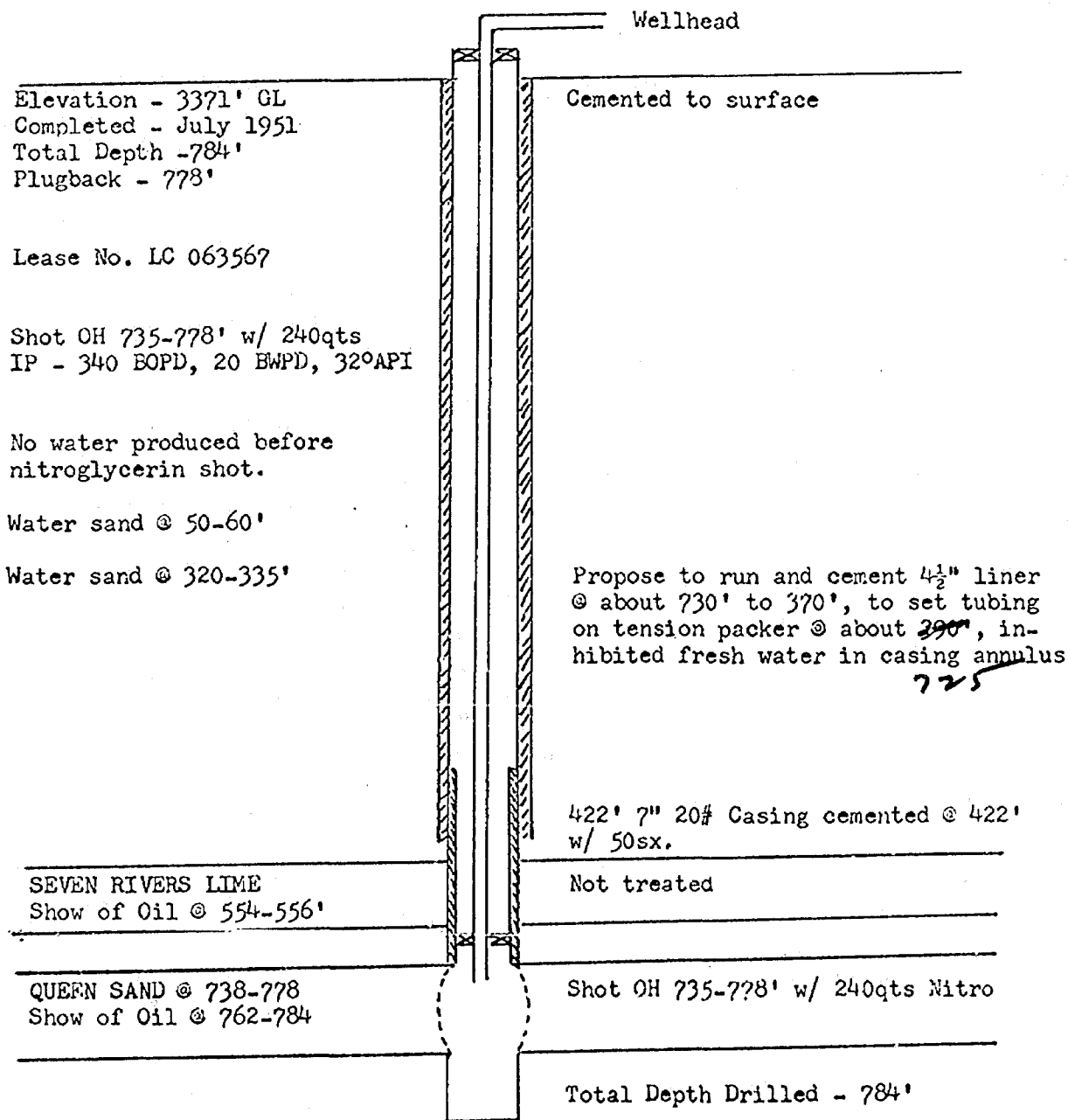
HARVEY E. YATES - PAGE & YATES NO. 6  
990 FSL 330 FEL, Sec 6, T-20-S, R-27-E  
McMillan (S.R., Qn) Pool, Eddy County



BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 5  
CASE NO. 4209

DIAGRAMMATIC SKETCH OF INJECTION WELL

HARVEY E. YATES - PAGE & YATES NO. 6  
990 FSL 330 FEL, Sec 6, T-20-S, R-27-E  
McMillan(S.R., Qn) Pool, Eddy County

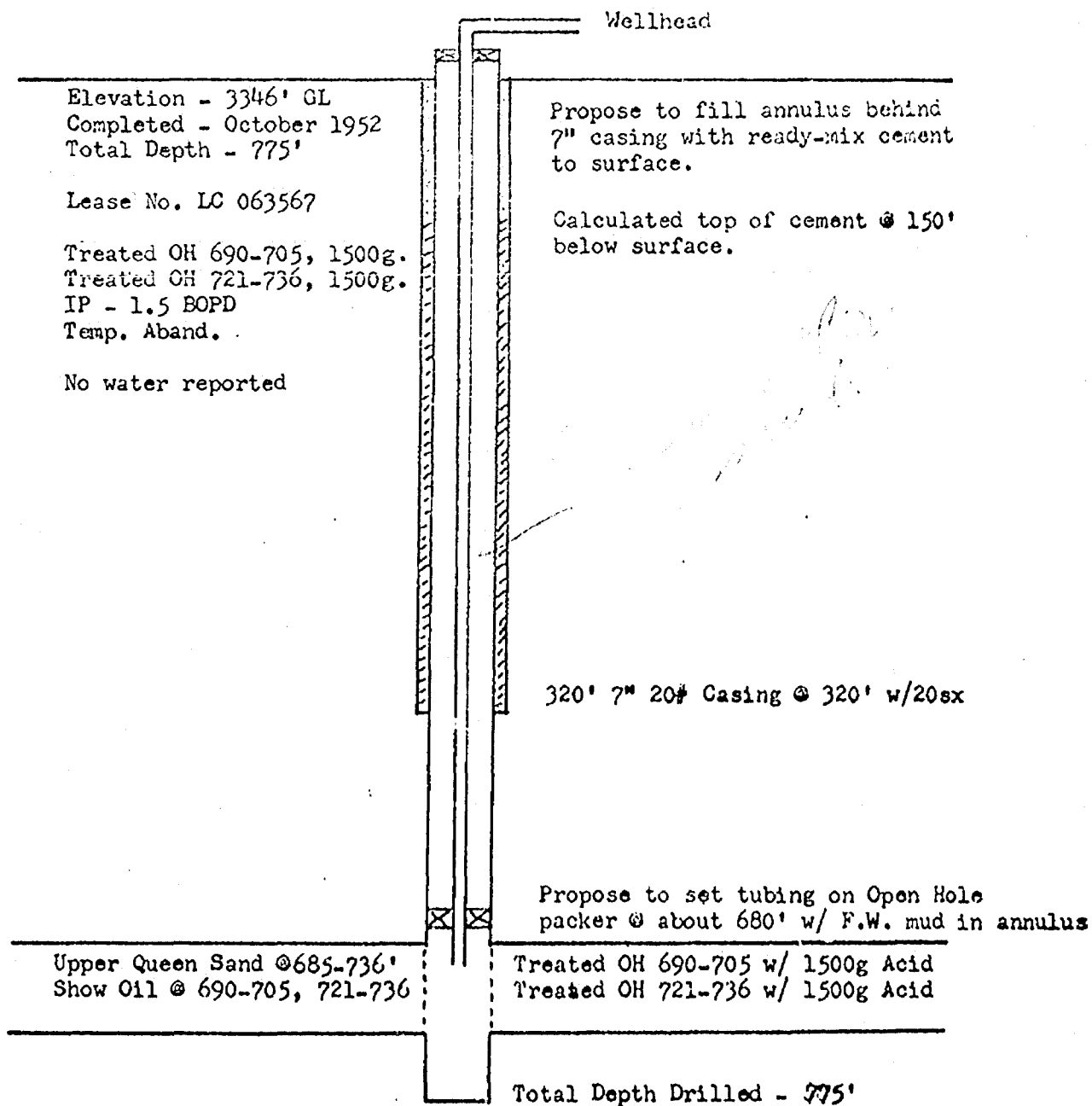


BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 54  
CASE NO. 9269

*To blank off Seven Rivers*

DIAGRAMMATIC SKETCH OF INJECTION WELL

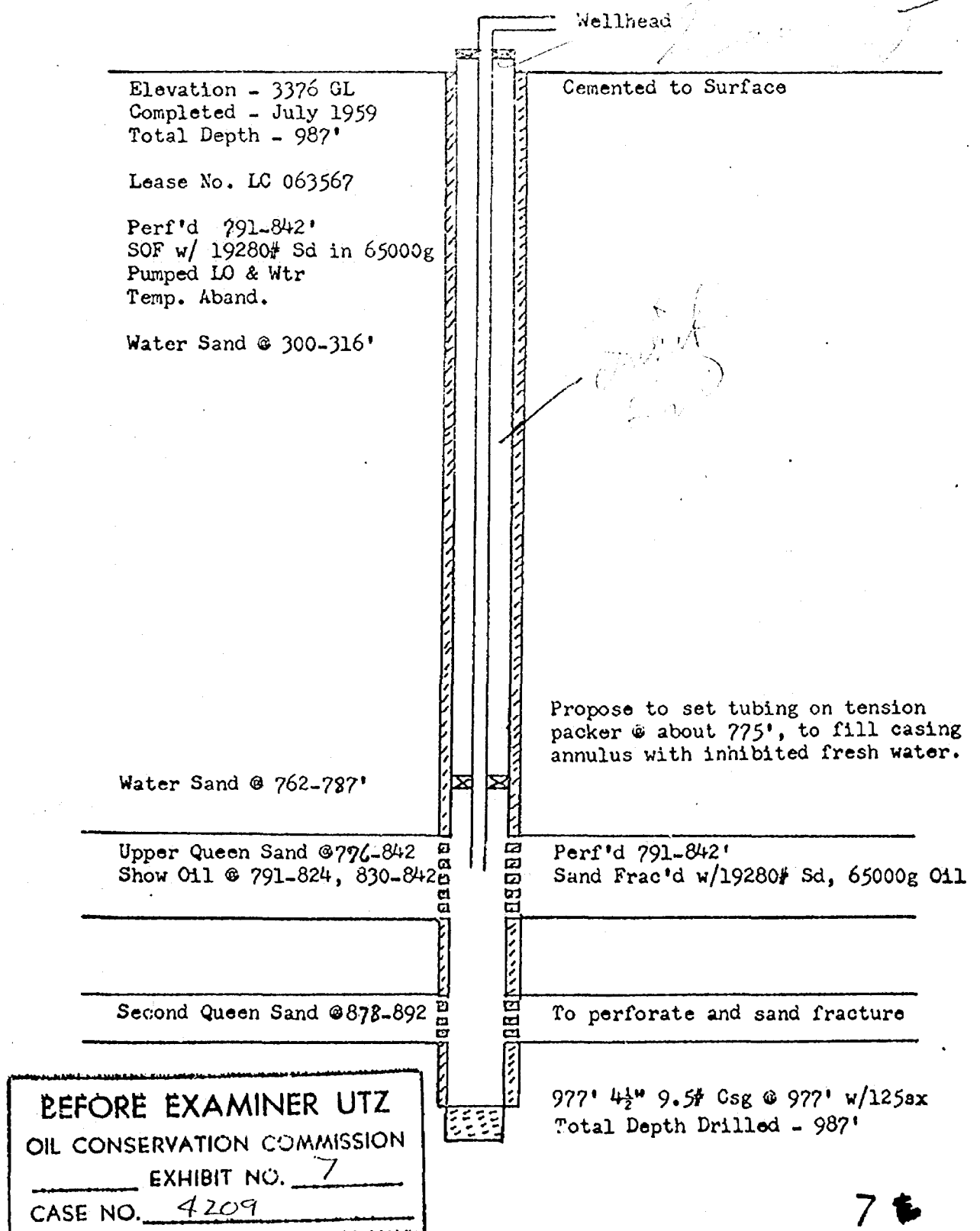
HARVEY E. YATES - PAGE & YATES No. 7  
1650 FSL 1650 FEL, Sec 6, T-20-S, R-27-E  
McMillan (S.R., Qn) Pool, Eddy County



BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 6  
CASE NO. 4209

DIAGRAMMATIC SKETCH OF INJECTION WELL

HARVEY E. YATES - PAGE & YATES No. 8  
330 FSL 330 FWL, Sec 5, T-20-S, R-27-E  
McMillan (S.R., Qn) Pool, Eddy County







# DOWELL DIVISION OF THE DOW CHEMICAL COMPANY

## WATER ANALYSIS

Date

8-13-69

Lab. Location

Hobbs, N.M.

Lab no. 5375

S. no.

Harvey Yates

Mail 4 Copies to: Eddie Mahfood  
P.O. Box 896  
Artesia, N.M. 88210

Source Flow Line		Total Solids		Pool Mc Millan	Formation Queen - 7 Rivers
		4660		Legal Description Page & Yates #1-2-4	BHT
				pH 7.0	Depth 500'
					Specific Gravity .998 @ 81 °F
Constituents		mg/L	meq/L	Constituents	mg/L
Sodium		1080	47	Chloride <del>X</del>	1775
Calcium		300	15	Bicarbonate	1373
Magnesium		132	11	Sulfate	Nil
Iron		0		Carbonate	

Stiff Diagram  
( meq/L )

	6	5	4	3	2	1	0	1	2	3	4	5	6	
Na/1000														Cl/1000
Ca/100														HCO <sub>3</sub> /10
Mg/100														SO <sub>4</sub> /10
Fe/10														CO <sub>3</sub> /10

Remarks:

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 8  
CASE NO. 4208

J.L. Sarff 8-13-69

Analysis Based On API Recommended Procedure

Harvey E. Yates

XXXXXX  
112 No. First  
ARTESIA, NEW MEXICO

July 16, 1969

Mr. A. L. Porter, Secretary-Director  
New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico, 87501

Re: Application to Inject Water into Queen Sands,  
McMillan Pool, Eddy County, New Mexico

Dear Mr. Porter:

Application is hereby submitted by Harvey E. Yates Company of Artesia for original authority to inject water into the Queen and Seven River formations for a re-pressuring program in the McMillan Pool, Eddy County, New Mexico, in a co-operative effort with Lillie Yates, also of Artesia.

Permission is sought to convert four wells to water injection located in Unit M of Section 5, Units I and J of Section 6, and Unit B of Section 7, T-20-S, R-27-E, and approximately 1½ miles South-east of Lake McMillan. The wells are:

Harvey E. Yates - Page & Yates #8	Unit M, 5-20-27
Harvey E. Yates - Page & Yates #6	Unit I, 6-20-27
Harvey E. Yates - Page & Yates #7	Unit J, 6-20-27
Lillie Yates - Lillie Yates #2	Unit B, 7-20-27

Cumulative production from the pool is 279,809 barrels oil thru May 1969, (initial production was from Yates Federal #2 in July 1949), and production has declined to 165 BOPM from six pumping wells. The other nine wells are presently shut-in, several on account of excessive water production.

The principal oil pay is the uppermost sand members of the Queen formation, stratified shore-line type stratigraphic traps nosing easterly with apparent water-oil contacts at +2537' and +2610' (sea-level elevations). There are no core data available for this pool, and Page & Yates No. 8 is the only well with an electric log. A core analysis from the S. P. Yates-Riggs No. 3, Unit K of Section 12, T-20-S, R-26-E, however, shows porosities of 12.4 - 24.2 percent (weighted average of 15.8 percent) and a permeability variation of 0.4 to 272 md, (49 percent having permeabilities of less than 5 md).

Original oil-in-place is estimated at 639 STBO/ac-ft and primary production at 72 STBO/ac-ft, or approximately 11.3 percent of oil-in-place.

It is anticipated that injectivity will be 120 BWPD per well at 400 psi well-head pressures. For the pilot operation injection fluid will be produced water. Other sources of make-up water will be negotiated for as the feasibility of the waterflood program is proven.

DOCKET NUMBER

Date 8-15-69

Mr. A. L. Porter, Secretary-Director

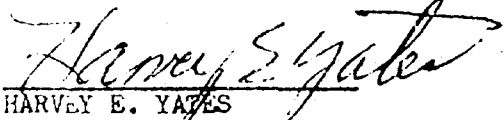
July 16, 1969

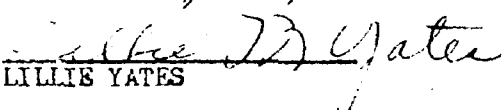
Re: Application to Inject Water, McMillan Pool, Eddy County

Page 2

A plat showing the location of the proposed injection wells and the location of all other wells within a two-mile radius, and indicating the lessees and producing formations is appended and marked Exhibit 1. Diagrammatic sketches of the proposed injection wells and all pertinent data are attached hereto. Copies of this application have been sent to the USGS (surface owners).

Respectfully submitted,

  
HARVEY E. YATES

  
LILLIE YATES

cc:

A. L. Porter, 3 copies

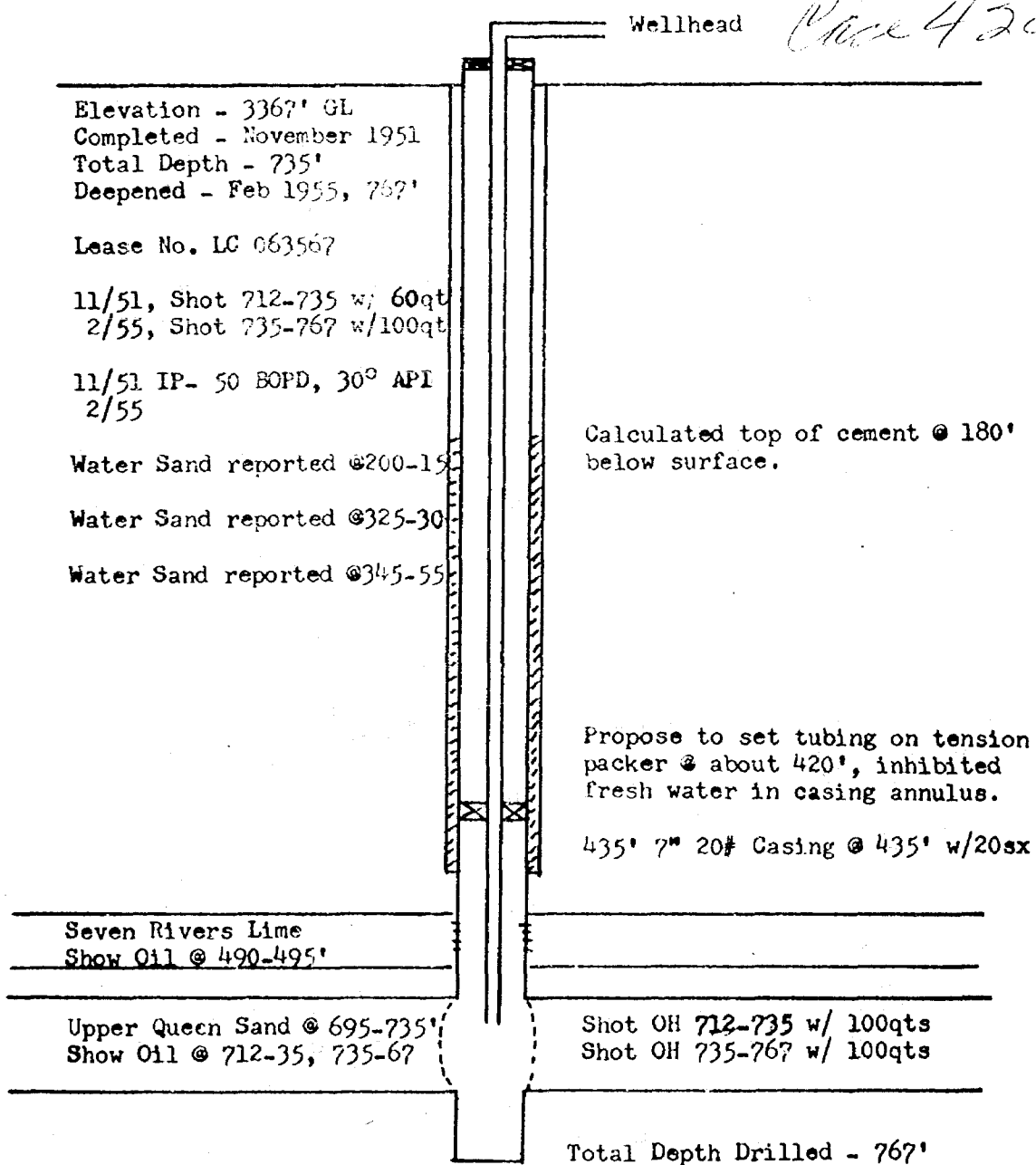
U. S. G. S., 4 copies

H.E.Y. file, 2 copies

L. Yates file 1 copy

DIAGRAMMATIC SKETCH OF INJECTION WELL

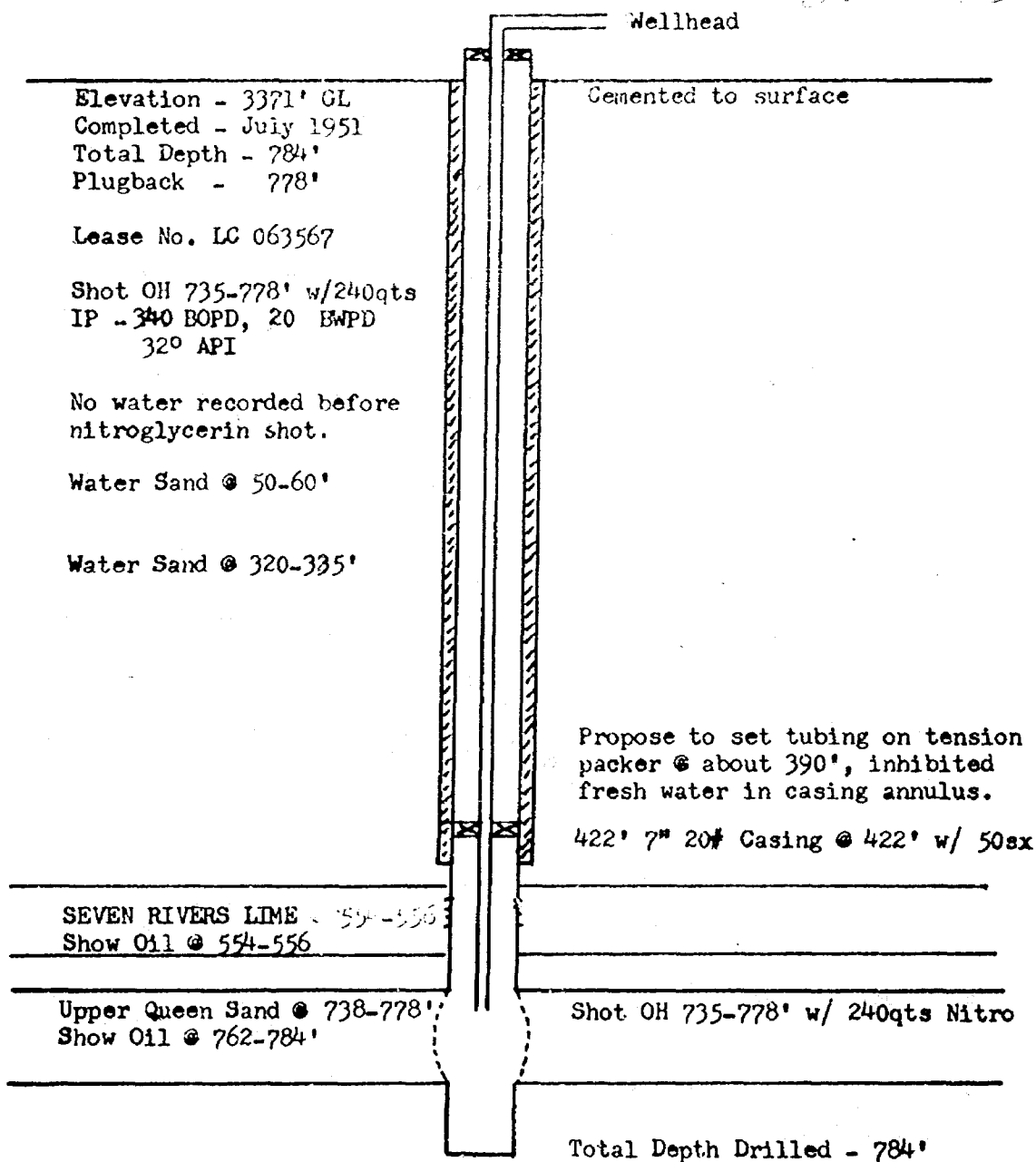
LILLIE YATES - HARVEY YATES NO.2  
330 FNL 1650 FEL, Sec 7, T-20-S R-27-E  
McMillan (S.R., Qn) Pool, Eddy County



DIAGRAMMATIC SKETCH OF INJECTION WELL

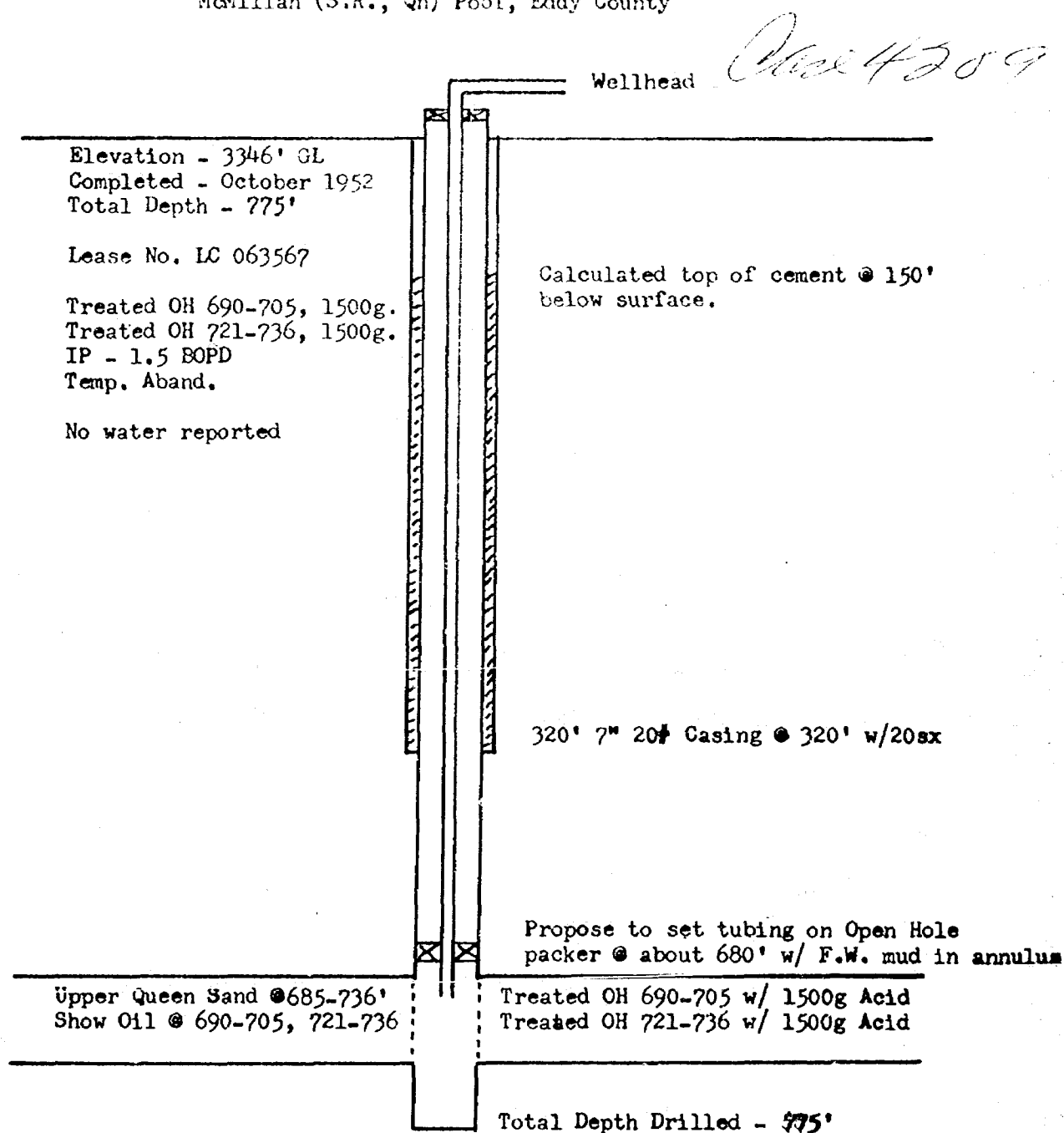
HARVEY E. YATES - PAGE & YATES NO. 6  
990 FSL 330 FEL, Sec 6, T-20-S, R-27-E  
McMillan (S.R., Qn) Pool, Eddy County

*Case 4209*



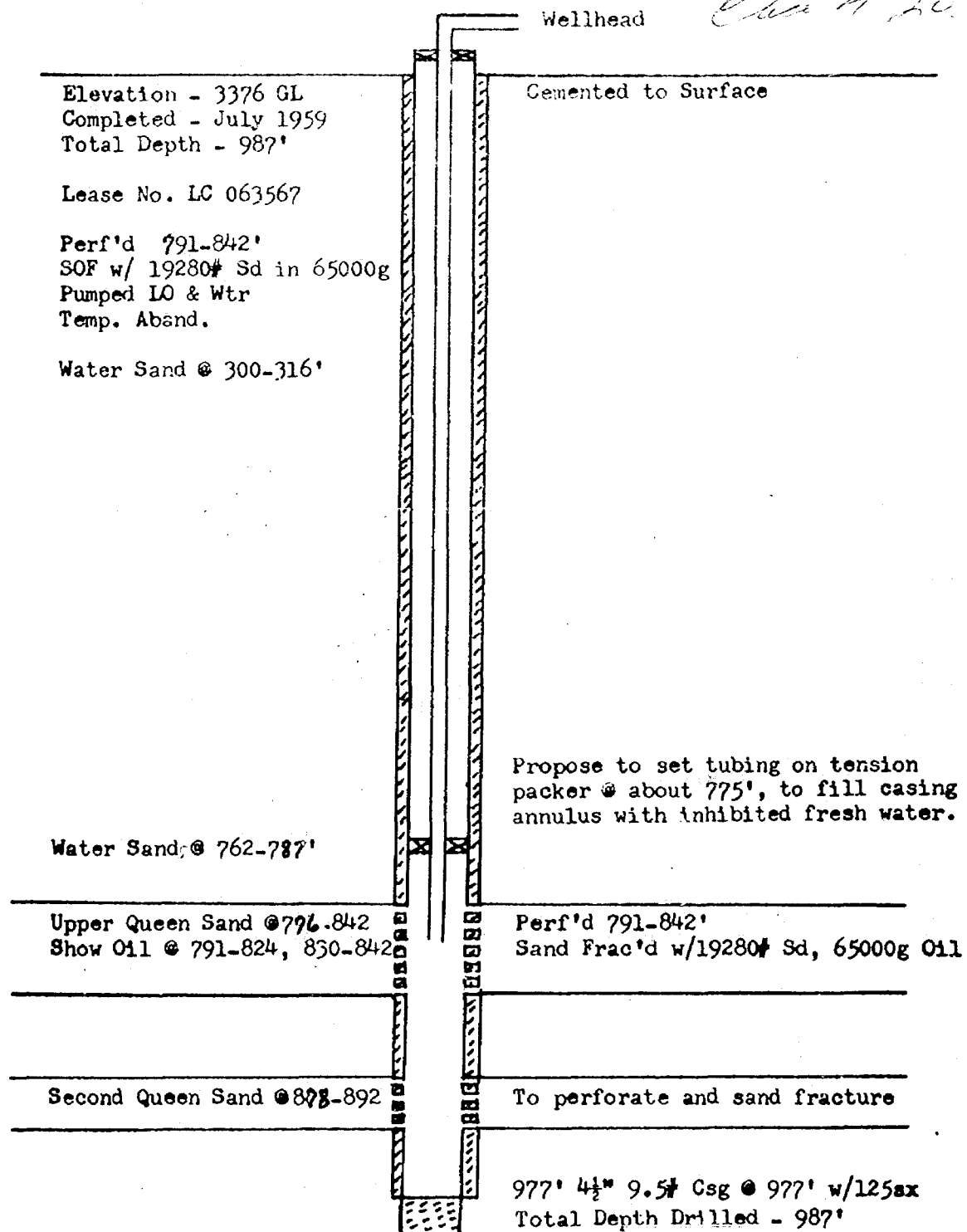
DIAGRAMMATIC SKETCH OF INJECTION WELL

HARVEY E. YATES - PAGE & YATES No. 7  
1650 FSL 1650 FEL, Sec 6, T-20-S, R-27-E  
McMillan (S.R., Qn) Pool, Eddy County



DIAGRAMMATIC SKETCH OF INJECTION WELL

HARVEY E. YATES - PAGE & YATES No. 8  
330 FSL 330 FWL, Sec 5, T-20-S, R-27-E  
McMillan (S.R., Qn) Pool, Eddy County



DRAFT

GMH/esr

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. 4209

Order No. R-3872

APPLICATION OF HARVEY E. YATES COMPANY  
OF ARTESIA FOR SEVERAL PRESSURE MAINTENANCE  
PROJECTS, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 27, 1969,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this \_\_\_\_\_ day of \_\_\_\_\_, 1969, 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, Harvey E. Yates Company of Artesia,  
*filed an application seeking two*  
~~seeks~~ authority to institute ~~several~~ pressure maintenance projects  
in the McMillan (Seven Rivers-Queen) Pool, Eddy County, New Mexico,  
by the injection of water into the Seven Rivers and Queen forma-  
tions through the following-described wells in Township 20 South,  
Range 27 East, NMPM, Eddy County, New Mexico:

Page & Yates Well No. 8 - Unit M - Section 5  
Page & Yates Well No. 6 - Unit ~~P~~I - Section 6  
Page & Yates Well No. 7 - Unit J - Section 6  
Lillie Yates Well No. 2 - Unit B - Section 7

(3) That the proposed ~~pressure maintenance~~ *waterflood* projects ~~are in~~ *all in*  
the interest of conservation and should result in ~~greater ultimate~~ *the*  
~~otherwise irretrievable oil~~ recovery of oil, thereby preventing waste.

(3) That at the hearing the applicant sought and was granted permission to  
broaden the application in Artesia manner as to have the subject projects  
classified as waterflood projects.  
(4) That the wells in the subject area are in an advanced state of depletion and should properly be classified  
as "stuffer" wells.



(3) That the application to institute 2 ~~pressure main~~ <sup>waterflood</sup> ~~tenance~~ projects should be approved and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Harvey E. Yates Company of Artesia, is hereby authorized to institute 2 ~~pressure maintenance~~ <sup>waterflood</sup> projects in the McMillan (Seven Rivers-Queen) Pool, Eddy County, New Mexico, by the injection of water into the Seven Rivers and Queen formations through the following-described wells in Township 20 South, Range 27 East, NMPM, Eddy County, New Mexico:

*Harvey Yates Page-Yates McMillan Waterflood Project*

Page & Yates Well No. 8, located in Unit M of Section 5, injection to be accomplished through \_\_\_\_\_ inch tubing installed in a packer set at approximately 775 feet, with injection into the perforated interval from approximately 791 feet to 892 feet;

\_\_\_\_\_   
 Page & Yates Well No. 6, located in Unit P of Section 6, injection to be accomplished through \_\_\_\_\_

inch tubing installed in a packer set at approximately <sup>390</sup>~~680~~ feet, with injection into the <sup>perforated and open hole</sup> ~~perforated~~ interval from approximately <sup>554</sup>~~680~~ feet to <sup>784</sup>~~790~~ feet; and

Page & Yates Well No. 7, located in Unit J of Section 6, injection to be accomplished through \_\_\_\_\_ inch tubing installed in a packer set at approximately 680 feet, with injection into the <sup>open-hole</sup> ~~perforated~~

interval from approximately 685 feet to 775 feet;

*Lillie*  
~~Lillie~~ *Yates* *Lillie* *McMillan* *Waterflood Project*

Lillie Yates Well No. 2, located in Unit B of Section 7, injection to be accomplished through \_\_\_\_\_ inch tubing installed in a packer set at approximately 420 feet, with injection into the perforated ~~and open hole~~  
interval from approximately 480 feet to 767 feet;

PROVIDED HOWEVER, ~~that in each well the tubing shall be~~  
~~in said wells Nos. 8 and 6~~  
~~lined~~; that, the casing-tubing annulus shall be filled ~~that in said well No. 7 the annulus shall be filled with mud;~~  
with an inert fluid; and that a pressure gauge shall be attached  
to the annulus ~~in each of the wells~~ in order to determine leakage in the tubing, casing, or packer.

subject  
(2) That the ~~pressure maintenance~~ *waterflood* projects shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the ~~pressure maintenance~~ *waterflood* projects herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) 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.

ROUGH DRAFT FOR WATERFLOOD LETTERS

Mr. A. J. Losee  
Attorney at Law  
Post Office Box 239  
Artesia, New Mexico 88210

Dear Sir:

*Reference is made to* Commission Order No. R-3842, *recently* entered in Case No. 4209, approving the *Harvey Yates Page-Yates McMillan* Waterflood Project and the *Lillie Yates Lillie McMillan* Waterflood Project.

*Injection into the Page-Yates project is to be through the three authorized water injection wells and injections in the Lillie project through the one authorized injection well. Injection in each well shall be through tubing set in a packer. Packers shall be located as follows: Page-Yates Well No. 6 - 390 feet; Well No. 7 - open hole packer at approximately 680 feet; Well No. 8 - 775 feet; Lillie Yates Well No. 2 - 420 feet.*

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which ~~this~~ *the Page-Yates* project will be eligible to receive under the provisions of Rule 701-E-3 is 308 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less *at the maximum allowance for the Lillie Yates Project is 112 barrels per day.*

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

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 both of the aforementioned Commission offices 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 wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

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,

A. L. PORTER, Jr.  
Secretary-Director

cc: OCC: Hobbs X  
Artesia X  
Aztec  
USGS Artesia

Mr. Frank Irby, State Engineer Office, Santa Fe, New Mexico  
Mr. D. Gray

*The casing tubing annulus of all but the Page-Yates No 7 shall be loaded with inhibited fresh water and equipped with a pressure gauge at the surface. The annulus of Page-Yates No. 7 shall be loaded with fresh water mud,*

CASE 4210: Application of MOBIL  
OIL CORP. FOR A SPECIAL GAS-OIL  
RATIO LIMITATION, CHAVES COUNTY.

100-1-1