

CASE 3100: Application of LEONARD
NICHOLS for waterflood extension,
Lea County, New Mexico.

5035

CASE NO.

3100

Application,

TRANSCRIPTS,

SMALL Exhibits

ETC.

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

September 9, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Leonard Nichols for a
Unit Agreement, Lea County, New Mexico

Application of Leonard Nichols for a
Waterflood Extension, Lea County, New
Mexico.

Case No. 3099 &
3100

BEFORE:

Mr. Nutter
Mr. Durrett

TRANSCRIPT OF HEARING

MR. NUTTER: The Hearing will come to order. We will
call the first case, Case No. 3099.

MR. DURRETT: Application of Leonard Nichols for a
Unit Agreement, Lea County, New Mexico. Case No. 3100,
application of Leonard Nichols for a Waterflood Extension,
Lea County, New Mexico.

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FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691

MR. NUTTER: Are they consolidated cases?

MR. DURRETT: If the Examiner please, we received a telegram from Mr. Fred Watson from the law firm of Watson and Watson, representing the Applicant requesting these cases be continued until the next Examiner Hearing.

MR. NUTTER: These cases will be continued until the next Examiner Hearing.

We will call Case No. 3101.

* * *

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I, CHARLES WALKER, 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 7 day of October, 1964.

Charles Floyd Walker
NOTARY PUBLIC

My Commission Expires:
March 25, 1968

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3099-3100 heard by me on 9/9, 1964.

James, Examiner
New Mexico Oil Conservation Commission

NEW MEXICO OIL CONSERVATION COMMISSION
EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE SEPTEMBER 9, 1964 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Richard P. Morris	Seth, Montgomery, Jedediah P. Andrews	Santa Fe
John D. Russell	John L. Cox	Roswell, N.M.
Robert W. Wrenn	Sunset International Petr	Midland
Rex Clark	" " " "	Midland
Marshall Smith	R. W. Byram	Santa Fe
John Yurionka	John L. Cox	Dallas
Jason Kullahy	Kullahy & Fox	Santa Fe
Ralph L. Gray	Hill & Meeker	Antonia

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 30, 1964

EXAMINER HEARING

IN THE MATTER OF: Application of Leonard)
Nichols for a waterflood extension, Lea)
County, New Mexico. Applicant in the above-)
styled cause, seeks approval of the)
extension of the waterflood project which he)
operates in Sections 2, 3, 10 and 11,)
Township 17 South, Range 32 East, Maljamar)
Pool, Lea County, New Mexico, by the)
addition of 6 water injection wells in)
Sections 4 and 9, same township. The)
original flood was authorized as the Boller-)
Nichols Waterflood Project, Roberts Pool, by)
Order No. R-1538.)

Case No. 3100

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: We will call Case 3100.

MR. DURRETT: Application of Leonard Nichols for a waterflood extension, Lea County, New Mexico.

MR. WATSON: Representing the Applicant Leonard Nichols, Fred Watson of Watson and Watson, Artesia, New Mexico; and Mr. Harold C. Porter of Artesia, New Mexico.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 10 marked for identification.)

MR. WATSON: Gentlemen, this is a hearing for an extension of a waterflood project by Leonard Nichols in Sections 4 and 9, in Township 17 South, Range 32 East, by the conversion of six wells to water injection.

Mr. Harold C. Porter is a witness for the Applicant and I believe Mr. Porter has testified several times before this Commission, and I request a ruling as to whether his qualifications are acceptable.

MR. UTZ: He's a qualified witness.

MR. WATSON: In the first place, in anticipation of this hearing and the fact that Mr. Frank Irby was going to be out of town, we sent the exhibits to him, and we have a letter which should be a part of the record at this time, dated September 23rd from Mr. Irby, stating that the Engineers Office offers no objection to the granting of the application.

MR. UTZ: We have a copy of that letter in the file.

MR. WATSON: At this time we haven't indicated Case 3099 concerning a unit, and at this time I would like to offer into evidence as Applicant's Exhibit A, a letter addressed to the Oil Conservation Commission from James T. Jennings, and Emmett D. White of Roswell, New Mexico, the owners of the Number 1 Federal Francis Well, located in the southwest-southeast quarter of Section 4, Township 17 South, Range 32 East; in which letter the writers concur in Mr. Nichols application for a waterflood extension, and further state that when a satisfactory unit agreement or cooperative waterflood line agreement has been worked out, they will join with Mr. Nichols in the project. Heretofore they were going to form a unit, but this is to show their concurrence in the application.

MR. UTZ: What was the location of that well again?

MR. WATSON: In the southwest of the southeast of Section 4, Township 17 South, Range 32 East, which is a Federal Lease owned by Jennings and White, the writers of the letter, 40 acres.

(Whereupon, Applicant's Exhibit A was marked for identification.)

HAROLD C. PORTER, called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WATSON:

Q Mr. Porter, you have before you what has been marked Applicant's Exhibit 1 in Case 3100. Would you describe that, please?

A Exhibit 1 is an area map showing the sections which we are applying for for waterflood; also showing operators of leases for an area of over a two-mile extension, or distance in either direction.

Q In other words, this depicts the area within at least two miles?

A Yes.

Q Referring to what has been marked Applicant's Exhibit 2 in Case 3100, would you describe that please, what it depicts?

A Exhibit 2 is a plat of a portion of the Maljamar Field which shows the present injection wells in the Leonard Nichols waterflood, and also shows the wells being applied for as an extension, shown by the dotted lines. Injection wells are circled. This is a normal expansion of the existing pattern in the area and with reference to the well in the northeast-northeast of Section 9, I talked to Mr. Nichols superintendent yesterday, and that well has been drilled, casing has been set and they are completing it today as a producer; so that should be shown as a producer. It's shown as a location on this plat.

With reference to the Jennings and White well which can be seen there in the southwest-southeast of Section 4, you'll notice that it is completely surrounded by injection wells. What Jennings and White and Leonard Nichols propose to do is to have a pooling arrangement of the working interest ownership to the extent that the working interest ownership in all these wells become common; therefore protecting the correlative rights of Leonard Nichols with respect to that one producer.

Q Is all the acreage, with exception of the southeast-southeast Section 4, 17, 32, all of the acreage is Federal acreage, isn't it?

A That is correct. The southeast-southeast shown as the Leonard Nichols A. C. Taylor Fee Lease; in that lease also is the area shown south in Section 1, it's in one common lease. Therefore, the Federal Leases and the one fee lease will be balanced out as far as injection is concerned.

Q This proposed expansion is fully compatible with the pattern which now exists?

A That is correct, yes.

MR. UTZ: Do you have an exhibit that shows the old flood and the expansion?

A Yes, sir, this exhibit shows it. To the east you see the wells which are connected by a solid line.

MR. UTZ: Yes.

A That is the existing pattern, those are the existing water injection wells.

MR. UTZ: The ones connected with the dashed lines are the expansion?

A Are the new ones being applied for.

MR. UTZ: I see.

Q (By Mr. Watson) Referring to Exhibit 3; this exhibit depicts what, Mr. Porter?

A This shows the area which is Federal land and in which the ownership will be made common by a fact of the unit, not the unit agreement, but the working interest pooling agreement which is being drawn right now, as I understand it by the attorneys and to which the working interest ownership has agreed in substance to. Therefore, for all practical purposes this can be considered as one lease.

MR. WATSON: If the Examiner please, Exhibit 3 shows, contains in a legend the unit boundary. It shows a dotted line. This was prepared when we contemplated a formal unit for the applicant, but of course that is no longer applicable as reflecting a formal unit agreement.

MR. UTZ: How about the new well, will that be included in that?

A No, sir, it will not. The ownership in the new producer, and also in the injection wells in the southeast-south-

east of Section 4 will belong to Leonard Nichols, as it does now, and will be kept out of this pooling agreement.

Q Referring to what has been marked Applicant's Exhibit 4 in Case 3100, would you describe that, please?

A Exhibit 4 is a gamma ray neutron log on Leonard Nichols Isles Number 13 in the northwest-southeast of Section 4, and is being presented as a typical injection well completion. In this well I have marked the Lovington zone as being the bottom perforations in the well; the Premier zone, which occurs from 4,000 to approximately 4,050 feet, and the Metex zone which occurs from 3,930 to 3,990, roughly.

The Premier and the Metex zones are the principal producing zones in this area and are the ones being flooded in the existing waterflood. Our plan is to plug off the Lovington zone which is very spotty and has very little continuity in the area, and to set a packer between Metex and Premier injecting down two-inch tubing into the Premier zone and down the annulus between the tubing and the casing into the Metex zone.

Q Mr. Porter, is this the scheme of injection which was submitted to Mr. Frank Irby?

A Yes. I have another exhibit which shows a schematic drawing of an injection well completion, also.

Q Please refer to Exhibit 5 and describe that exhibit, please.

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PAGE 8

A Exhibit 5 is a compilation of the well completion data for both the Leonard Nichols wells and the Jennings and White well. Those wells were drilled in 1960, '61, '62. The common method of well completion was to drill to approximately 500 feet and set 8 and 5/8ths casing, cementing back to the surface, and then 7 and 7/8ths hole was drilled completely through the pay zones and 5 and 1/2 inch pipe was cemented with amounts ranging from 450 to 350 sacks.

I've calculated the top of the cement column, using standard tables. No core was taken and the only logs run were gamma ray neutron on the porous zones were picked from these logs and perforated. Standard treatment was to treat with approximately 30,000 gallons of refined oil, 30,000 pounds of sand. This exhibit also shows the I. Ps, and the cumulative production through the first of 1964.

MR. UTZ: Does this exhibit also list the injection wells, or just the producing wells?

A It includes both the injection wells, the proposed injection wells and the proposed producers. However, I do not have them marked out. I can name them, however, and we can mark them on the exhibit.

MR. UTZ: I think it would be a good idea to do that.

A The first one mentioned at the top of the page, Taylor B-1 will be injection well; Isles Number 13, Isles Number 15;



Isles Number 16, Isles Number 20 and Isles Number 21.

MR. UTZ: All right, thank you.

Q (By Mr. Watson) Now then, Mr. Porter, referring to Applicant's Exhibit Number 6, is that the schematic diagram of the proposed injection well completions?

A Yes, sir, it is. It is pretty much a duplication of Exhibit Number 4, but it shows approximately the top of the cement column outside the 5 1/2 inch. It also shows the 8 5/8 casing and the cement to the surface outside the 8 5/8's; the two inch tubing with the packer set between the Metex and the Premier zones with injection down the tubing casing annulus, into the Metex, down the tubing into the Premier. We have found in this area the Metex will take water in preference to the Premier, and that an injection well such as this will give us a real good injection rate into each zone.

MR. UTZ: That is the reason for the separate injection?

A Yes, sir, that is the reason.

Q (By Mr. Watson) You used different pressures on the injection zones then?

A Yes, sir, that is true. The Premier takes more pressure to achieve an injection rate than Metex does.

Q Now then, Exhibit 6 was submitted with what has been marked as Exhibit 7 to Mr. Frank Irby, is that correct?

A Yes, I sent Mr. Irby a complete set of exhibits.

Q Along with Exhibit 7, being a letter to Mr. Irby dated

September 18, 1964?

A That is correct. The significant thing in the letter is that we've agreed that we will inject only fresh water down the annulus, and Mr. Irby has agreed that this is satisfactory. We have a letter from him which is --

MR. WATSON: Marked Exhibit 8. We have included this as an exhibit and I believe it's part of the record, also, already.

MR. UTZ: That will be all right.

Q (By Mr. Watson) Exhibit 8 is the letter received from Mr. Irby in response to your furnishing him with the exhibits and the letter?

A That is correct.

Q Exhibit Number 9 is what?

A Exhibit Number 9 shows the oil production data from the Grayburg zones only. There are two wells in this area. On Exhibit 2 they are Wells Number -- Isles Number 22 and Isles Number 24, completed in the Lovington zones only; so I have eliminated the production from the Lovington zone in an effort to arrive at the production from the Grayburg zone. This shows the, I don't remember the number of wells, the barrels of production from the Grayburg zone, and the average production in barrels per well per day.

The purpose of this exhibit is to show that production did

start out at a high rate and now has declined to a low rate, and that these wells are producing on the order of six and a half barrels per well per day, which I believe is in the order of what is normally known as a stripper well, and therefore should be in the category for a waterflood permit, as opposed to a pressure maintenance.

Q These wells then are approaching the economic limit and flooding would be feasible, is this correct?

A Yes, they are. They're down to six and a half barrels a day, and are classified as stripper wells and are approaching the economic limit. This area I would like to point out, was drilled much later than the area to the east. Those wells were drilled in the '39 and '40s, and these wells produce from the same reservoir and the same geologic zones, and it's quite likely that much of the pressure has been bled off from the production to the east.

The recoveries from these wells have not been as good as the wells to the east. The total oil that has been produced from these wells from the Grayburg zones is 208,207 through July of '64, for an average of 21,820 barrels per well. The average to the east is in excess of 30,000 barrels per well recovery by primary methods.

Q Now then, Exhibit Number 10 is a request letter drawn by you as agent for Leonard Nichols, dated September 29th, 1964,

a request for an approval of the expansion made to the United States Geological Survey Field Office, Hobbs, New Mexico, is that correct?

A That is correct. I sent them the data that I'm submitting here in the form of exhibits, asking the United States Geological Survey to approve this application. I have talked to them verbally and they have said it looks like it's all right.

Q And they did indicate that they would approve this by letter, or give administrative approval on this?

A Yes. I would like to also, if I may, read into the record another letter from the Caprock Water Company, dated August 25, 1964, to Mr. Leonard Nichols. It reads: "Thank you for your letter of August 20, 1964 requesting water for your waterflood project in Section 4, Township 17 South, Range 32 East. We have water available in your area and are willing to furnish the necessary amounts to you at your plant site. If we may be of further assistance, please advise. Signed: Caprock Water Company, Roy Elliott".

Also, Mr. Nichols has been offered water from the Yucca Water Company, which has a pipeline nearby, so there is water available for the project. Mr. Nichols has water rights in the area. However, he is using very near his capacity, or his water limit in his existing flood, therefore, it will be necessary for him to seek outside water for this project.

We propose to inject fresh water initially and we will always inject fresh water down the annulus. When we have sufficient volumes of produced water, we will then gather this water and reinject it down the tubing. We anticipate that our injection rates will be on the order of 400 barrels per day per well; and that our injection pressures will be on the order of 2,500 pounds at the surface.

The reason that we want to put all these wells on at the same time is that we're going to have to build a new plant for this area. We have two plants for the present area which are pumping at their limit. Also, we have to obtain a separate water source and guarantee a certain amount of water according to whatever contract is worked out. Therefore, we would request that we be able to begin injection in all six of these wells when and if this application is granted.

Q Mr. Porter, were all of these exhibits prepared by you or under your direct supervision?

A Yes, they were.

Q Or received by you, in the case of the letter from Mr. Irby?

A Yes, they were.

Q From your study of this proposed expansion program, do you feel that the pattern, the proposed pattern will give an effective sweep for waterflood purposes?

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A Yes, we do. This is being real effective to the east and is a standard five-spot pattern.

Q It does conform in every respect to the pattern already established?

A That's true.

Q Do you believe that the proposed pattern will protect correlative rights as to the leases affected?

A Yes, it will. We have contacted the people to the north which was Santiago Oil and Gas. I understand they have changed their name or merged with someone; they have expressed an interest in converting their wells and Mr. Nichols has made them an offer to provide pressured water for them. To the west of this area, Continental Oil Company has production. However, their production is nearly all from the Lovington. I have not made a careful study of their wells, but having talked to some of their engineers, they tell me the upper zones from the Premier and Metex are nearly all pumped out over there.

MR. WATSON: The Applicant moves the introduction of Exhibits 1 through 10, and also Applicant's A, which is the letter from Jennings and White concurring in the application.

MR. UTZ: Without objection, Exhibit A and Exhibits 1 through 10 will be admitted into evidence in this case.

(Whereupon, Applicant's Exhibits 1 through 10 and Applicant's Exhibit A were admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q What is the Commission designation of this pool?

A It's the Maljamar; it was formerly the Roberts, but the Roberts has been incorporated into the Maljamar for nearly two years, I believe.

Q Is this the Maljamar-Grayburg, is all this Grayburg?

A Maljamar-Grayburg-San Andres, Lea County. There's some in Eddy County too.

Q Metex and Premier zones, both zones are within the vertical limits of the Grayburg-San Andres Pool?

A Yes.

Q The name of this flood is Boller-Nichols?

A Yes, sir.

Q How about the two, what is that, two, two and a half, two and three-eighths inch tubing that you are going to use to inject water down your injection logs, is that two or two and three-eighths?

A It's two and three-eighths O. D., two nominal.

Q Will that be coated internally?

A We anticipate to coat it when and if we do inject salt water. What we would propose to do is to take selective wells and put all the salt water down the selective wells so that we could keep from having to coat all the tubing. The fresh

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water out there is relatively non-corrosive, and hasn't given any problem in bare pipe.

Q In the event you inject corrosive water down the tubing you will have plastic coated or either coated --

A Yes, plastic coated or cement lined, or perhaps something else that will provide as good a protection, but it will be protected in some manner.

Q And you'll definitely inject fresh water down the casing tubing annulus?

A Yes, we have agreed to do that with Mr. Irby.

MR. UTZ: Are there other questions of the witness?

The witness may be excused.

(Witness excused.)

MR. UTZ: Any other statements in this case?

MR. WATSON: The Applicant rests.

MR. UTZ: The case will be taken under advisement.

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

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission Examiner at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 6th day of October, 1964.

Ada Dearnley
Notary Public - Court Reporter

My Commission Expires:
June 19, 1967

I do hereby certify that the foregoing is a complete record of the proceedings in the examination of Case No. 3100.
Signed on *Sept 30* 1964.
Ada Dearnley
Notary Public - Court Reporter



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. PEYNOLDS
STATE ENGINEER

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

Mr. A. L. Porter, Jr.
Secretary, Division
Oil Conservation Committee
Santa Fe, New Mexico

Dear Mr. Porter:

It is noted on the Oil Conservation Committee Case No. 24-64 that Case 2100 is to be heard on this date. I have patiently awaited the arrival of the copy of the application which rules and regulations require be sent to this office and none has arrived. I have no information on which to base judgment as to whether fresh waters which may exist in the area of this proposed waterflood would be contaminated. Therefore, this office objects to the granting of this application until such time as I have had an opportunity to review the application and determine what the position of the State Engineer should be in this matter.

Yours truly,

S. E. Reynolds
State Engineer

SEE/aa
cc-F. H. Hennighausen

By *Frank E. Irby*
Frank E. Irby
Chief
Water Rights Division

DOCKET MAILED

Date *11/11/64*

P. O. Box 1180
Roswell, New Mexico
September 29, 1964

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

Attention: Pete Porter, Executive Secretary

RE: LEONARD NICHOLS APPLICATION
NO. 3100

Gentlemen:

The undersigned, James T. Jennings and Emmett D. White, being the owners of the No. 1 Federal Frances located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 4, Township 17 South, Range 32 East, hereby concur in the application of Leonard Nichols for a waterflood extension of the existing waterflood project operated by Leonard Nichols in Sections 2, 3, 10 and 11, Township 17 South, Range 32 East, by the addition of six water injection wells to be located in Sections 4 and 9, which waterflood was originally authorized as the Boller-Nichols Waterflood Project, Roberts Pool, by Order No. R-1538.

When a satisfactory Unit Agreement or Cooperative Waterflood Agreement has been worked out, the undersigned will join Leonard Nichols in said project.

The undersigned hereby endorse the application of Leonard Nichols and request that the same be approved by the Commission.

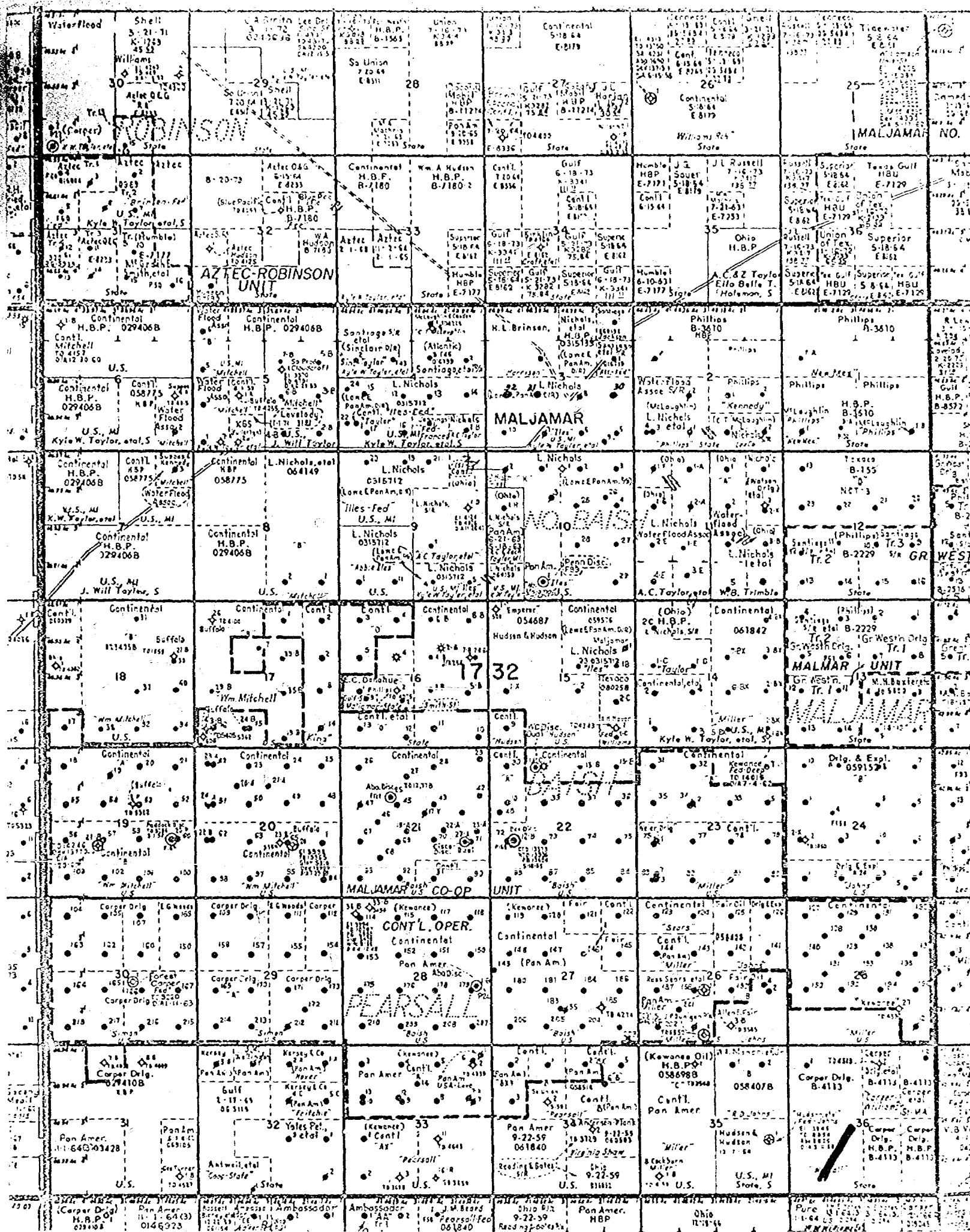
Yours very truly,

EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
EXHIBIT NO. <u>H</u>	
CASE NO. <u>3100</u>	

James T. Jennings

Emmett D. White

JTJ/mb



P. O. Box 1343,
Artesia, New Mexico.
29 September 1964

U.S.G.S.,
Hobbs, New Mexico.

Gentlemen:

Reference is made to Case No. 3100, the application of Leonard Nichols for an extension of a water flood in Lea County, New Mexico, to include six additional injection wells as follows:

Taylor B #1	8-4-17-32
Wells #13	1-4-17-32
Wells #15	1-4-17-32
Wells #16	2-4-17-32
Wells #20	8-9-17-32
Wells #21	8-9-17-32

I submit herewith exhibits showing the lands and the proposed injection pattern, along with well completion and production data and the proposed injection well completions.

Injection will be into the Metex and Premier Zones of the Grayburg Formation, as shown in the log of Wells #13. A packer will be set between these zones with injection down the annulus and tubing. The State Engineer has approved this method (a copy of his letter is attached) providing that only fresh water is injected down the annulus.

The plat shows the location of the injection wells and present ownership. A Pooling Agreement is being prepared to pool the working interest in the Leonard Nichols and the Jennings & White acreage to the end that the ownership of the working interest in these tracts will become the same.

We would appreciate your consideration of our plan and a letter of approval. Please call me at 746-9867, Artesia, New Mexico, if you have further questions concerning this Application.

Very truly yours,

LEONARD NICHOLS

BY

H. B. Porter,
Agent.

LEONARD EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
EXHIBIT NO.	10
CASE NO.	3100

10

LEONARD NICHOLS and JENNINGS & WHITE
OIL PRODUCTION DATA - GRAYBURG ZONE

	<u>No. Wells</u>	<u>Production, bbls.</u>	<u>Average, B/W/D</u>
1960	5	6569	14.6 (3 mos.)
1961	10	88703	24.3
1962	10	74331	20.3
1963	10	34005	9.3
<u>1964</u>			
J	10	2126	6.9
F	10	1888.	6.5
M	10	2072	6.7
A	10	2156	7.2
M	10	2240	7.2
J	10	2067	6.9
J	10	2050	6.6

Total Production thru July, 1964 218207 barrels.
Average recovery thru July, 1964 21820 bbl/well.

EXHIBIT NO. _____

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
Appl	EXHIBIT NO. <u>9</u>
CASE NO. <u>3100</u>	<u>1</u>

9

September 23, 1964

87501

C
O
P
Y

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

Dear Mr. Porter:

Reference is made to the application of Leonard Nichols which seeks authority to convert the following wells to injection wells:

Taylor "B" #1	P-4-17-32
Iles #13	J-4-17-32
" #15	L-4-17-32
" #16	N-4-17-32
" #20	D-9-17-32
" #21	B-9-17-32

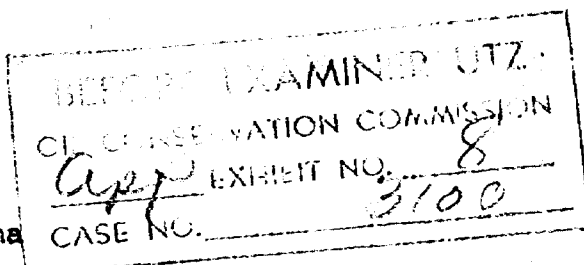
This office offers no objection to the granting of this application, provided injection is accomplished in the manner set forth in the letter of Mr. H. C. Porter dated Sept. 18, 1964 and shown on the diagrammatic sketch, copies of which are hereto attached.

FEI/ma
encl.

cc-Watson & Watson

H. C. Porter

F. H. Hennighausen



Yours truly,

S. E. Reynolds
State Engineer

By:

Frank E. Irby
Chief
Water Rights Div.

8

P. O. Box 1343
Artesia, New Mexico
September 18, 1964

Mr. Frank E. Irby, Chief
Water Rights Division
State Engineer's Office
Santa Fe, New Mexico

Re: Leonard Nichols Application
to expand the Maljamar Water
Flood, Lea County, New Mexico

Dear Mr. Irby:

An application has been filed with the Oil
Conservation Commission for an expansion of the Leonard
Nichols Water Flood to include six injection wells in
Sections 4 and 9, T17S, R32E, as follows:

Taylor "B" #1	P-4-17-32
Iles #13	J-4-17-32
" #15	L-4-17-32
" #16	N-4-17-32
" #20	D-9-17-32
" #21	B-9-17-32

Injection will be into the Metex and Premier zones
of the Grayburg formation, as shown in the log of Iles #13,
which is attached. A packer will be set between the Metex
and Premier zones (as shown in the schematic drawing) with
injection down the annulus and tubing. As we have agreed
in other wells, only fresh water will be injected down the
casing (annulus).

The wells have surface casing set at 350' and
cemented to the surface. The production string is set
through the pay zones and cemented with 350 sacks (or as
otherwise shown on the well data exhibit). There is suffi-
cient cement and casing to properly protect any fresh water
which may be present in the area.

The area is not within a water basin. A plat is
enclosed showing the location of these wells.

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
<i>appl</i>	EXHIBIT NO. <u>7</u>
CASE NO.	<u>3100</u>

7

Mr. Frank C. Juby

September 10, 1966

The top of the call in this area is approximately 100 ft.

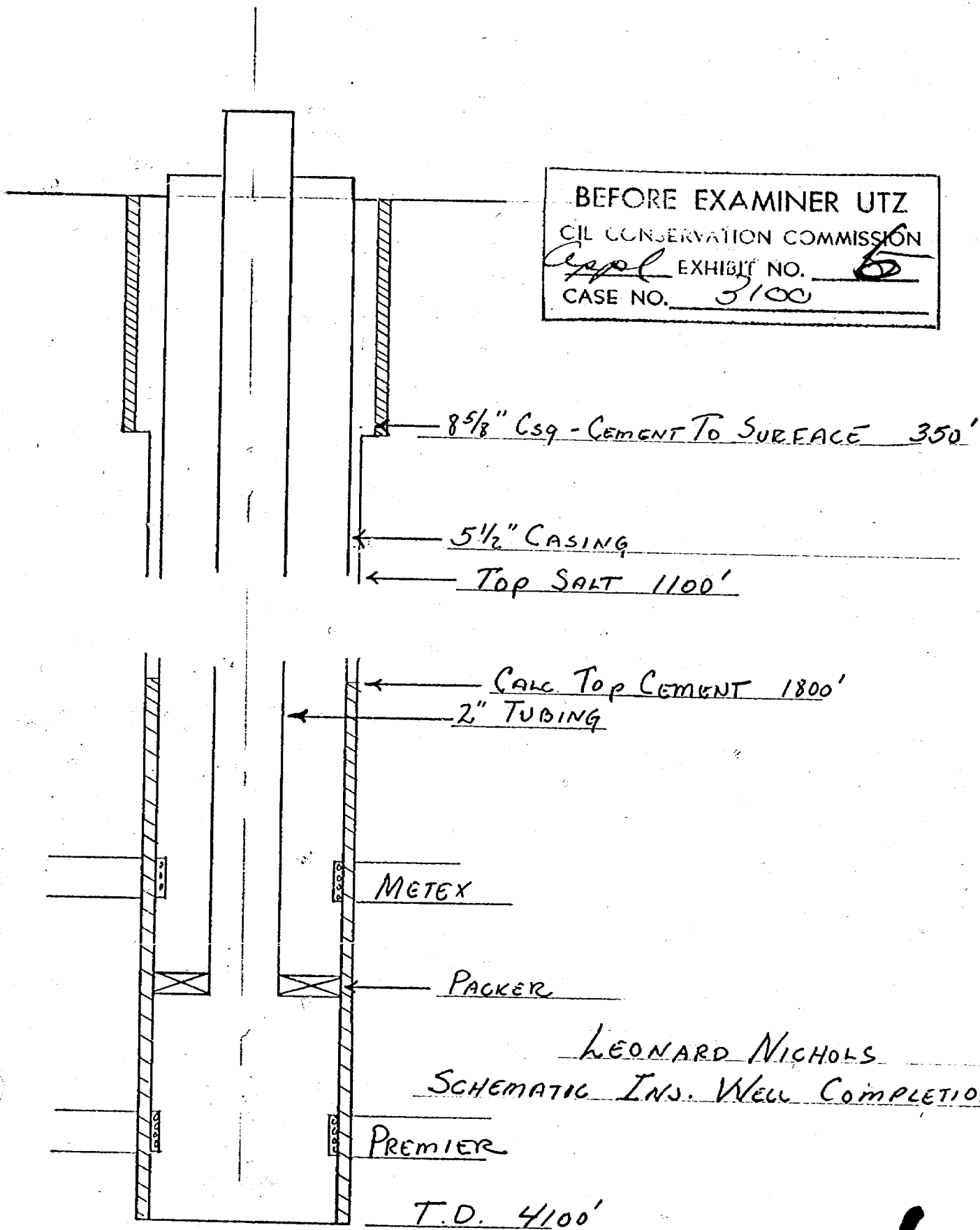
I will call on you to further discuss this application prior to the hearing. If there are any further questions, please call me at 746-2000, Astoria.

Very truly yours,

LEONARD NICHOLS

Hal C. Porter, Agent

HCP:jd
Enc.



BEFORE EXAMINER UTZ
CIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 6
CASE NO. 3100

← 8 5/8" CS9 - CEMENT TO SURFACE 350'

← 5 1/2" CASING

← TOP SALT 1100'

← CALC TOP CEMENT 1800'

← 2" TUBING

METEX

PACKER

LEONARD NICHOLS
SCHEMATIC INS. WELL COMPLETION

PREMIER

T.D. 4100'

Cima Capitan, Inc.

Artesia, New Mexico

6

LEONARD NICHOLS - NICHOLS UNIT

WELL DATA

Lease & Well Location Compl. Date Surface Casing

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Case Exhibit No. 5
P.C. Section 3188
Casing or Open Hole

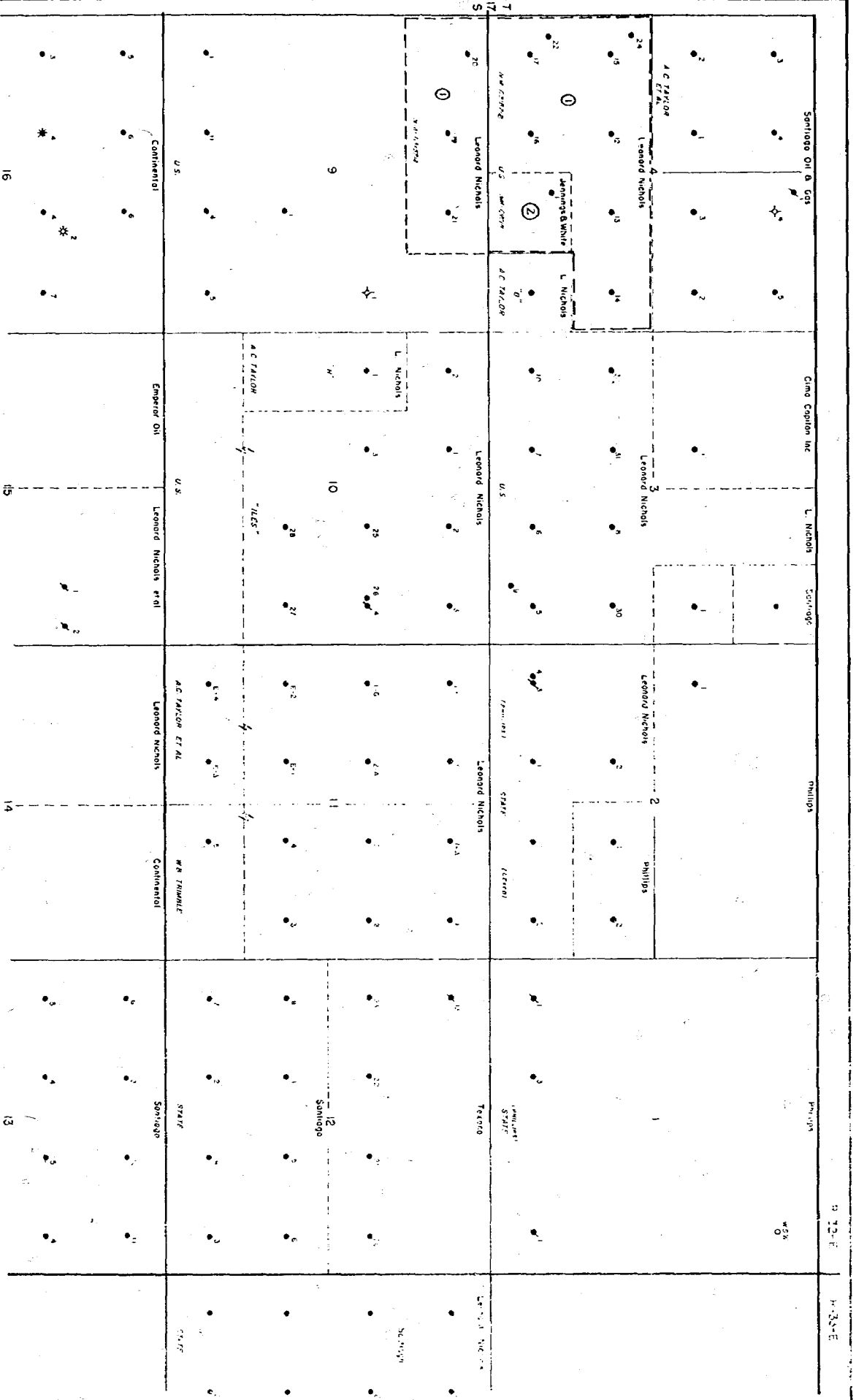
Lease & Well	Location	Compl. Date	Surface Casing	Cal. Top Cement	Treatment	T.D.	Elevation	I.P. B/D	Cum. Prod.
Taylor B #1	P-4-17-32	12-14-60	8-5/8 @ 308 w/200 sx	5-1/2 @ 4090 w/400 sx	23 MGRO & 31M# Sand	4090	4150	61	20 000
Iles #12	K-4-17-32	9-2-60	8-5/8 @ 313 w/200 sx	5-1/2 @ 4189 w/450 sx	30 MGRO & 70M# Sand	4189	4140	35	24 500
Iles #13	J-4-17-32	9-25-60	8-5/8 @ 308 w/200 sx	5-1/2 @ 4200 w/450 sx	30 MGRO & 60M# Sand	4209	4157	35	27 000
Iles #14	I-4-17-32	12-5-60	8-5/8 @ 302 w/200 sx	5-1/2 @ 4100 w/400 sx	20 MGRO & 40 M# Sand	4100	4171	115	27 000
Iles #15	L-4-17-32	11-11-60	8-5/8 @ 287 w/200 sx	5-1/2 @ 4010 w/400 sx	None	4010	4105	52	20 000
Iles #16	N-4-17-32	11-12-60	8-5/8 @ 293 w/200 sx	5-1/2 @ 4030 w/400 sx	None	4030	4101	90	27 000
Iles #17	M-4-17-32	11-19-60	8-5/8 @ 292 w/200 sx	5-1/2 @ 4015 w/400 sx	None	4015	4097	110	25 000
Iles #19	C-9-17-32	7-29-61	8-5/8 @ 293 w/200 sx	5-1/2 @ 4020 w/350 sx	30 MGRO & 30M# Sand	4020			15 000
Iles #20	D-9-17-32	8-8-61	8-5/8 @ 302 w/200 sx	5-1/2 @ 3990 w/350 sx	30 MGRO & 57M# Sand	3990	3984	128	9 000
Iles #21	B-9-17-32	12-8-61	8-5/8 @ 294 w/200 sx	5-1/2 @ 4060 w/350 sx	None	4060	4016	74	9 000

5

LEONARD NICHOLS - NICHOLS UNIT

WELL DATA

Lease & Well	Location	Compl. Date	Surface Casing	Production Casing	Perforation or Open Hole	Calc. Top Cement	Treatment	T.D.	Elevation	I.P. B/D	Cum. Prod.
Iles #22	M-4-17-32	3-13-62	8-5/8 @ 293 w/200 sx	5-1/2 @ 4118 w/350 sx	3828-34, 3917-29 4074-90	2618	25 MGRO & 50M# Sand	4118	4092	63	7000
Iles #24	L-4-17-32	3-26-62	8-5/8 @ 297 w/200 sx	5-1/2 @ 4024 w/350 sx	3848-58, 3906-10, 3916-20, 3930-34, 3970-80, 3947-57	2524	30 MGRO & 60M# Sand	4118	4115	86	6600
Jennings & Ware #1	0-4-17-32	12-9-60	8-5/8 @ 318 w/174 sx	5-1/2 @ 4038 w/400 sx	3898-3916, 3978-4002	2338	30 MGRO & 13M# Sand	4036	4140	125	26000



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
 EXHIBIT NO. 3
 CASE NO. 3100

PORTION, MALAJAMAR FIELD
 LEA COUNTY, NEW MEXICO
 SCALE: 1"=1000'

EXHIBIT "A"

Handwritten:
3099
3100

MAIL OFFICE 000

1964 AUG 20 PM 1 20

P. O. Drawer 1343
Artesia, New Mexico
August 20, 1964

New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Attn: Mr. Dan Nutter

Dear Mr. Nutter:

Confirming our telephone conversation of yesterday,
please place on the September 9, 1964 docket the following
applications:

1. Application of Leonard Nichols, Dallas, Texas, and
Jennings & White, Roswell, New Mexico, for approval of the West
Maljamar Unit Agreement. The unitized lands will be fee and
federal lands to wit: S/2 Section 4 and N/2 NW/4 and NW/4 NE/4
Section 9, T17S, R32E, Maljamar Pool, Lea County, New Mexico.
The unitized depths will be down to and including the Lovington
zone of the San Andres formation.

2. Application for an extension of the Boller-Nichols
Water Flood Project to include six additional water injection
wells on the above mentioned acreage under rule 701.

If there is any further information which you may
require prior to the hearing, please call me at SH6-9867, Artesia.

Very truly yours,

Handwritten signature: H. C. Porter

Handwritten: Agent for Leonard Nichols

cc: Neil Watson
Leonard Nichols
James Jennings
State Engineer
U.S.G.S.

DOCKET MAILED

Date 9-18-64

September 9, 1964

87501

C
O
P
Y

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

Dear Mr. Porter:

It is noted on the Oil Conservation Commission docket No. 24-64 that Case 3100 is to be heard on this date. I have patiently awaited the arrival of the copy of the application which rules and regulations require be sent to this office and none has arrived. I have no information on which to base judgment as to whether fresh waters which may exist in the area of this proposed waterflood would be contaminated. Therefore, this office objects to the granting of this application until such time as I have had an opportunity to review the application and determine what the position of the State Engineer should be in this matter.

Yours truly,

S. E. Reynolds
State Engineer

By:

Frank E. Irby
Frank E. Irby
Chief
Water Rights Division

FEI/ma
cc-F. H. Hennighausen

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 30, 1964

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

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, alternate examiner:

- CASE 3099: (Continued from the September 9, 1964, examiner hearing). Application of Leonard Nichols for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of the West Maljamar Unit Area comprising 440 acres more or less, of Federal and fee lands in Sections 4 and 9, Township 17 South, Range 32 East, Lea County, New Mexico.
- CASE 3100: (Continued from the September 9, 1964, examiner hearing). Application of Leonard Nichols for a waterflood extension, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the extension of the waterflood project which he operates in Sections 2, 3, 10, and 11, Township 17 South, Range 32 East, Maljamar Pool, Lea County, New Mexico, by the addition of 6 water injection wells in Sections 4 and 9, same township. The original flood was authorized as the Boller-Nichols Waterflood Project, Roberts Pool, by Order No. R-1538.
- CASE 3107: Application of Texas Pacific Oil Company for temporary special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of temporary special pool rules including a provision for 80-acre spacing for the North Bagley Middle Pennsylvanian Pool in Township 11 South, Range 33 East, Lea County, New Mexico.
- CASE 3108: Application of Monsanto Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Dagger Draw Well No. 1, located in Unit O of Section 6, Township 20 South, Range 25 East, Eddy County, New Mexico, to produce gas from the Strawn and Morrow formations through the casing-tubing annulus and through tubing, respectively.
- CASE 3109: Application of Phillips Petroleum Company for a non-standard gas proration unit and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an 80-acre non-standard gas proration unit comprising the E/2 SW/4 of Section 35, Township 17 South, Range 34 East, Lea County, New Mexico, to be dedicated to its Hale Well No. 11 to be completed in an undesignated Yates gas pool at an unorthodox location 1980 feet from the South line and 2310 feet from the West line of said Section 35.
- CASE 3110: Application of George L. Buckles Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Langlie-Mattix Pool by the injection of water into the Queen formation through two wells at unorthodox locations on its Jamison Lease in Sections 21 and 22, Township 24 South, Range 37 East, Lea County, New Mexico.

September 30, 1964 examiner hearing

- CASE 3111: Application of Cities Service Oil Company for the expansion of a waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand the Drickey Queen Waterflood Project, Caprock Queen Pool, by the conversion to water injection of two wells in Units F and H of Section 22, Township 14 South, Range 31 East, Chaves County, New Mexico.
- CASE 3112: Application of Continental Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to install dual-flow downhole commingling equipment in its dually completed Jicarilla 28 Well No. 1, located in Unit J of Section 28, Township 25 North, Range 4 West, Rio Arriba County, New Mexico. Said well is a Gallup-Dakota oil-oil dual completion.
- CASE 3113: Application of BCO, Inc. for a unit agreement, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks approval of the Escrito Gallup Pool Unit Area comprising 3123.88 acres, more or less, of state and federal lands in Township 24 North, Ranges 7 and 8 West, San Juan and Rio Arriba Counties, New Mexico.
- CASE 3114: Application of BCO, Inc. for a waterflood project, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Escrito Gallup Oil Pool in its Escrito Unit Area by the injection of water into the Gallup formation through three wells located in Sections 17 and 18, Township 24 North, Range 7 West, and Section 12, Township 24 North, Range 8 West, San Juan and Rio Arriba Counties, New Mexico.



STATE OF NEW MEXICO
STATE ENGINEER OFFICE
SANTA FE

S. E. REYNOLDS
STATE ENGINEER

September 23, 1964

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

87501

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

Dear Mr. Porter:

Reference is made to the application of Leonard Nichols which seeks authority to convert the following wells to injection wells:

Taylor "B" #1	P-4-17-32
Iles #13	J-4-17-32
" #15	L-4-17-32
" #16	N-4-17-32
" #20	D-9-17-32
" #21	B-9-17-32

This office offers no objection to the granting of this application, provided injection is accomplished in the manner set forth in the letter of Mr. H. C. Porter dated Sept. 18, 1964 and shown on the diagrammatic sketch, copies of which are hereto attached.

Yours truly,

S. E. Reynolds
State Engineer

By: *Frank E. Irby*
Frank E. Irby
Chief
Water Rights Div.

FBI/ma
encl.
cc-Watson & Watson
H. C. Porter
F. H. Hennighausen

100-11-2-1-1-1

P.O. Box 1111
Albuquerque, New Mexico
September 16, 1964

Postmarked Sept 22, 1964 PM

Mr. Frank R. Irby, Chief
Water Rights Division
State Engineer's Office
Santa Fe, New Mexico

Re: Leonard Nichols Application
to expand the Maljamar Water
Flood, Lea County, New Mexico

Dear Mr. Irby:

An application has been filed with the Oil
Conservation Commission for an expansion of the Leonard
Nichols Water Flood to include six injection wells in
Sections 4 and 9, T17S, R32E, as follows:

Taylor "B" #1	P-4-17-32
Iles #13	J-4-17-32
" #15	L-4-17-32
" #16	K-4-17-32
" #20	D-9-17-32
" #21	B-9-17-32

Injection will be into the Metox and Premier zones
of the Grayburg Formation, as shown in the log of Iles #13,
which is attached. A packer will be set between the Metox
and Premier zones (as shown in the schematic drawing) with
injection down the annulus and tubing. As we have agreed,
in other wells, only fresh water will be injected down the
casing (annulus).

The wells have surface casing set at 350' and
cemented to the surface. The production string is set
through the pay zones and cemented with two sacks (or as
otherwise shown on the well data sheets). There is suffi-
cient cement and casing to properly protect any fresh water
which may be present in the area.

The area is not within a water basin. A plat is
enclosed showing the location of these wells.

Mr. Frank E. Ebb

September 18, 1954

The top of the salt in this area is approximately 1100'.

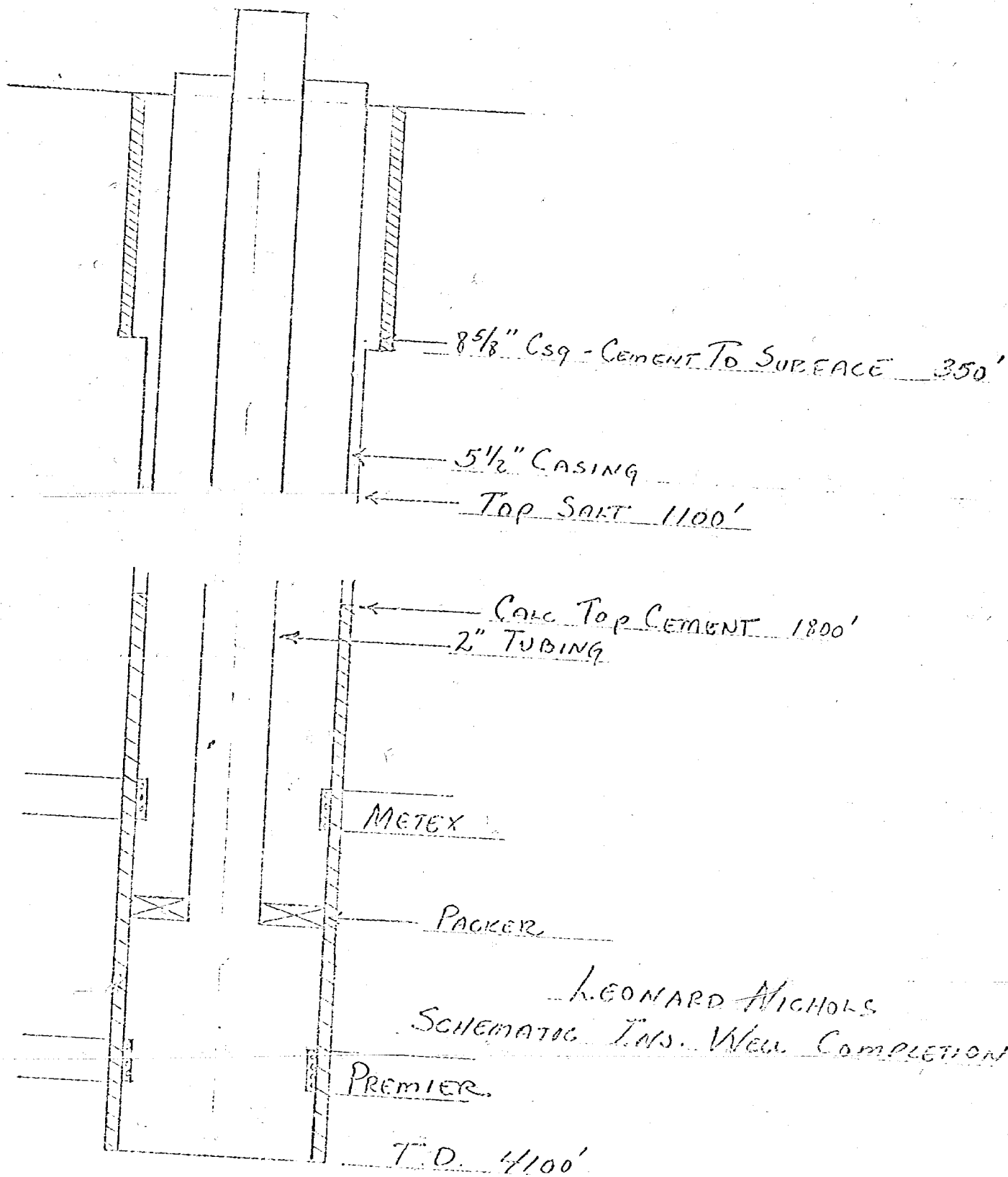
I will call on you to further discuss this application prior to the hearing. If there are any further questions, please call me at 780-9856, Artesia.

Very truly yours,

LEONARD NICHOLS

Hal C. Porter
Hal C. Porter, Agent

HCP:jd
Enc.



Cima Capital, Inc.

Artesia, New Mexico

Case 3100

Heard 9-30-64

Rec. 10-1-64

1. Grant Leonard Nichols an ^{expansion} ~~extension~~ of
these Maljamar Waterflood. & approve
6 additional injection wells as follows:

Nichols-Taylor 'B' #1	P-4-17-32
— — — — — #13	S-4-17-32
— — — — — #15	L-4-17-32
— — — — — #16	N-4-17-32
— — — — — #20	D-9-17-32
— — — — — #21	B-9-17-32

2. Tubing must be coated against
corrosion and Fresh water only to
be injected down the annulus.

— Grant L. Nichols

DRAFT

JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CF Subj. _____

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

CASE No. 3100

Order No. R-2727

APPLICATION OF LEONARD NICHOLS
FOR A WATERFLOOD EXTENSION, LEA
COUNTY, NEW MEXICO.

→ The Expansion of A Waterflood Project

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
September 30, 1964, at Santa Fe, New Mexico, before Examiner
Elvis A. Utz.

NOW, on this _____ day of October, 1964, 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, Leonard Nichols, seeks the ^{expansion} extension
of the ~~waterflood project~~ ^{Authorized by Order No R-1538} project, which he operates in Sections ~~2, 3, 10,~~ ^{2, 3, 10,}
~~and 11, Township 17 South, Range 32 East, Maljamar Pool, Lea County,~~
~~New Mexico,~~ by the addition of six water injection wells in Sec-
tions 4 and 9 of Township 17 South, Range 32 East, NMPM, Lea County,
New Mexico.

(3) That

(5) 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 ^{agreement of the waterflood project} the proposed expansion should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the applicant should be authorized to expand the existing waterflood project as proposed, and that said expansion should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

Leonard Nichols Matjamar Waterflood Project, formerly the
IT IS THEREFORE ORDERED:

(1) That the applicant, Leonard Nichols, is hereby authorized to expand the ^{Robert Nichols Roberts} waterflood Project, ^{authorized by Order No 10-1558} which he operates in Sections 2, 3, 10, and 11, Township 17 South, Range 32 East, NMPM, Matjamar Pool, Lea County, New Mexico, ^{converting to} by injection of water into ^{water injection} the formation through the following-described injection wells in ^{the County, New Mexico} Township 17 South, Range 32 East, NMPM,

WELL	UNIT	SECTION	TOWNSHIP	RANGE
Nichols-Taylor "B" #1	P	4	17 South	32 East
Nichols-Iles No. 13	J	4	17 South	32 East
Nichols-Iles No. 15	L	4	17 South	32 East
Nichols-Iles No. 16	N	4	17 South	32 East
Nichols-Iles No. 20	D	9	17 South	32 East
Nichols-Iles No. 21	B	9	17 South	32 East

PROVIDED HOWEVER:

(2) jurisdiction

Alone @ A. F.

GGOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

P. O. BOX 2088
SANTA FE

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

October 16, 1964

Mr. Fred Watson
Watson & Watson
Attorneys at Law
Carper Building
Artesia, New Mexico

Re: CASE NO. 3100
ORDER NO. R-2777
APPLICANT Leonard Nichols

Dear Sir:

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

Very truly yours,

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

ir/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

OTHER Mr. Frank Irby

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. 3100
Order No. R-2777

APPLICATION OF LEONARD NICHOLS
FOR THE EXPANSION OF A WATERFLOOD
PROJECT, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 30, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 14th day of October, 1964, 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, Leonard Nichols, seeks expansion of the waterflood project authorized by Order No. R-1538 which he operates in Sections 2, 3, 10, and 11, Township 17 South, Range 32 East, NMPM, Maljamar Pool, Lea County, New Mexico, by the addition of six water injection wells in Sections 4 and 9 of Township 17 South, Range 32 East, NMPM, Lea County, New Mexico.

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

(4) That approval of the subject application should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

-2-

CASE No. 3100
Order No. R-2777

IT IS THEREFORE ORDERED:

(1) That the applicant, Leonard Nichols, is hereby authorized to expand the Leonard Nichols Maljamar Waterflood Project, formerly the Boller-Nichols Roberts Waterflood Project authorized by Order No. R-1538 by converting to water injection the following described wells in Township 17 South, Range 32 East, NMPM, Lea County, New Mexico:

<u>WELL</u>	<u>UNIT</u>	<u>SECTION</u>
Nichols-Taylor "B" No. 1	P	4
Nichols-Iles No. 13	J	4
Nichols-Iles No. 15	L	4
Nichols-Iles No. 16	N	4
Nichols-Iles No. 20	D	9
Nichols-Iles No. 21	B	9

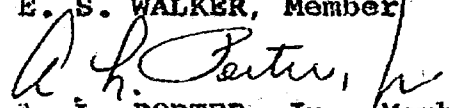
(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


JACK M. CAMPBELL, Chairman


E. S. WALKER, Member


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



esr/