

CASE 3943: Appli. of CONTINENTAL  
OIL COMPANY FOR A DUAL COMPLETION,  
LEA COUNTY, NEW MEXICO.

---

Case Number

3943

Application

Transcripts.

Small Exhibits

ETC.

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

November 12, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Continental  
Oil Company for a dual  
completion, Lea County,  
New Mexico.

Case No. 3943

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: We'll call Case 3943.

MR. HATCH: Case 3943, application of Continental Oil Company for a dual completion, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin of Kellahin and Fox, Santa Fe, appearing for the applicant. We have one witness I'd like to have sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits Numbers 1 through 6, inclusive, were marked for identification.)

V. T. LYON

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A V. T. Lyon, L-y-o-n.

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

A I'm employed by Continental Oil Company as Conservation Coordinator in the Hobbs Division Office in Hobbs, New Mexico.

Q Have you testified before the Oil Conservation Commission and made your qualifications a matter of record?

A Yes, I have.

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

MR. NUTTER: Yes, they are.

Q Mr. Lyon, are you familiar with the application of Continental Oil Company in Case 3943?

A Yes, sir.

Q What is proposed by Continental Oil Company in this case?

A Case No. 3943 is the application of Continental Oil Company for authority to affect a dual completion in its Lynn A-28 Well No. 5 in such a manner as to produce gas in the Yates Formation through the casing-tubing annulus and to inject produced water through the tubing into the Seven Rivers Formation in the gross interval, 3340 to -74. Actually, what we're proposing is to continue the present dual completion which was authorized by Order No. R-242, except that the lower zone will be abandoned as a producing zone and will be used to inject produced water instead.

Q Is it presently completed as a dual completion?

A Yes, sir.

Q Referring to what has been marked as Exhibit Number 1,

would you identify that exhibit, please?

A Exhibit Number 1 is a location and ownership plat showing the Lynn A Lease outlined in red and described as the northwest quarter of Section 27, the northeast quarter, the southeast quarter of the northwest quarter, and the east half of the southwest quarter of Section 28. This is in Township 23 South, Range 36 East, Lea County, New Mexico. It also shows the proposed dual completion and injection well, Well No. 5, located 660 feet from the north line and 660 feet from the east line of Section 28.

The plat also shows the location and ownership of wells within a radius of two miles surrounding the well, and showing by a letter symbol the formations from which these wells produced or have produced.

Q Does the plat contain a key showing formations by letter designation?

A Yes, sir. That legend is in the lower right-hand corner.

Q Now, as I understand, this dual completion was made pursuant to Order R-242. Referring to what has been marked as Exhibit Number 2, would you discuss that exhibit?

A Exhibit Number 2 is a schematic diagram showing the tubular goods which have been installed in the well. It shows

ten and three-quarter-inch casing set at 369 feet and cemented to surface with 250 sacks. Seven-inch casing was set at 2926 and cemented to surface with 525 sacks. Originally, this well was completed as a Yates gas well producing from the open-hole section. Later, after Order No. R-242 was entered, the well was deepened and a liner was installed from 2895 to 3374, and cemented with 250 sacks.

The liner was then perforated in the interval shown by the blocks on the right-hand side of the liner schematic, and Baker Model D4 packer was set at 3300 feet and then the tubing was installed which consists of 2878 feet of three and a half-inch OD and it switched down to two and seven-eighths-inch tubing, down to the packer, and then about 40 feet of two and three-eighths-inch tail pipe.

Q Is that the present status of the well?

A Yes, sir.

Q Is the well being produced from both zones at the present time?

A Yes, sir.

Q Now, referring to what has been marked as Exhibit Number 3, would you identify that exhibit?

A Exhibit Number 3 is another schematic diagram of this well which was actually prepared shortly after the well was

completed; that is, after the dual completion was effected, and it shows additional detail in regard to the equipment at and around the packer. I might point out that the tubing sizes that are shown on here are given by the nominal sizes which is the approximate inside diameter, rather than the outside diameter, which is shown on Exhibit Number 2.

Also, you will note that in the section to the right, it shows the tubing to be producing oil which is its present situation as we propose in this application. We will inject water down that tubing into the formation.

Q Now, referring to what has been marked as Exhibit Number 4, would you identify that exhibit?

A Exhibit Number 4 is a Form C-108 showing the pertinent information in regard to the injection of water. It shows the tubular goods, the same as we have shown on Exhibits 2 and 3. It shows that we will inject into the Seven Rivers Formation, and the depths, 3340 to 3356 and 3366 to -74. It also shows the Jalmat gas perforations above the packer as they're shown on those other exhibits, also.

The deepest fresh water that we know of in this area is at 250 feet. The next lower producing interval is the Langley-Mattix Pool which is not productive at this location. It is productive approximately three-quarter miles to the northeast



and the east. We estimate the top of the Langley-Mattix Zone which begins 100 feet above the top of the Queen at 3590 feet.

We propose to inject between 750 and 3,000 barrels a day through a closed system and we anticipate that it will take the water on gravity.

Q What's the source of this water?

A The source of the water is produced water on the Lynn A Lease and probably from some of the leases operated by other operators in this area.

Q Now, you have made previous applications for salt water disposal on this lease, have you not, Mr. Lyon?

A Yes, sir.

Q Will you explain the necessity for this present application, then?

A The first application that we filed was to use Lynn A-27 No. 1 which is in Unit "D" of Section 27. Upon looking at this well a little more closely, we decided that it was undesirable because of the large cost involved in preparing the well, because of the small downhole diameter which would be available after we had deepened and set the four-inch liner, and because of the low permeability which has been demonstrated in this well.

The second application was for Lynn A-28 No. 6, which

is in Unit "H" of Section 28. Prior to injecting water into this well, we knocked out a bridge plug which had isolated some of the perforated zones; production-tested the zone and found that we had at or near top allowable oil production.

We have looked at a large number of wells in this area to find a suitable injection well, and, unfortunately, there were many wells that were drilled that encountered good permeability, but these wells, when they were abandoned, had their casing shot off, and whether we could get into the wells at all was of considerable question, and it was probable that the cost to prepare them for injection would be prohibitive.

Q Now, is there any possibility of a waterflood project in the vicinity of this well?

A Yes, sir. We had contacted the operators in an area approximately one mile east of this well and have initiated unitization proceedings with the idea of waterflooding in this area. It's my opinion that this unit will be formed and that injection will be commenced within approximately two years.

Consequently, our use of the Lynn A-28 No. 5 should be for not more than two years, except for emergency situations.

Q Now, referring to what has been marked as Exhibit Number 5, would you identify that exhibit?

A Exhibit Number 5 is a copy of a portion of the

radioactivity log on the Lynn A-28 No. 5. It shows the top of the Yates Formation at approximately 3052, top of the Seven Rivers at approximately 3286, the perforations shown by the blocks on the lefthand side of the center section of the log, and the packer set at 3300.

Q Now, do you have an analysis of the water to be disposed of?

A Yes, sir. Exhibit Number 6 is a copy of the analysis of water collected from the tank battery which serves the wells on this lease. It shows that the chloride content is 12,500 parts per million, which would not be potable.

Q Now, referring back to your Exhibits 2 and 3, Mr. Lyon, as I understand, you propose to inject your salt water down the tubing, which is two and a half-inch tubing. Is that tubing protected in any way?

A No, sir.

Q In your opinion, will this water as shown by the analysis on Exhibit Number 6 cause any corrosion problems?

A It is a slightly corrosive liquid and I might point out that the Jalmat gas interval in the Yates is of very low pressure, and there is a strong water drive in the Seven Rivers. To pull the tubing, to coat it or to run in coated tubing, would probably drown the Yates gas. Rather than do this,

we propose to pull the rods and pump and begin injecting into the tubing as it stands now, but we will inhibit the water to protect the tubing against corrosion.

Q And it will be a closed system, is this correct?

A Yes, sir.

Q In your opinion, will the approval of this application result in the prevention of waste?

A Yes, it will, in that produced water which is presently being disposed of in surface pits will be disposed of underground.

Q Do you feel that the tubular goods will be adequately protected by your inhibiting the injected water?

A Yes, we feel that this will probably be better protection than there would be if the well continued to pump because of the action of the rods upon the tubing. We feel that the inhibition will be satisfactory to protect the tubing from corrosion attack.

Q You do not anticipate that this well will be used for a long period of time for injection purposes?

A No, sir, except in emergency situations which would be of relatively short interval. We do not expect to need the well for injection after about two years.

Q Were Exhibits 1 through 6 prepared by you or under

your supervision?

A Yes, they were.

MR. KELLAHIN: At this time, I offer in evidence Exhibits 1 through 6, inclusive.

MR. NUTTER: Continental's Exhibits 1 through 6 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Numbers 1 through 6 were admitted in evidence.)

MR. KELLAHIN: That's all I have on direct examination, Mr. Nutter.

MR. NUTTER: Are there any questions of Mr. Lyon?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Lyon, what is the present status as far as production is concerned in the oil zone here?

A The well produces about ten barrels of oil per day and I believe about 350 barrels of water.

Q Now, according to the plat here, you've got this well on production on oil, the No. 6, immediately south is an oil well, the No. 2 to the southeast is an oil well?

A Yes.

Q What about the No. 1 directly east? Is it abandoned or temporarily abandoned?

A No. 1 is shut in. It's the one that we have existing approval to use for water injection, but in order to do this, it would be necessary to deepen the well and set a liner and the cost to do this on a temporary basis is extremely high.

Q But you don't expect it to produce oil any more, though?

A We believe that there are zones in there which have some promise. We have gone into No. 2 and opened some additional zones in there and have increased our oil production.

Q What is the oil production from the No. 2 and the No. 6, also the water, please?

A I don't have that with me, I'm sorry.

Q Are they making considerable volumes of water now?

A Yes. I believe No. 6 is making about 500 barrels of water per day and about 50 barrels of oil.

Q And you said that you anticipated disposing of from 750 to 1000, didn't you?

A Yes.

Q So that would be coming from these two wells, the No. 2 and 6?

A Right. I believe the figure that I gave on the maximum was 3000.

Q Three thousand. That wouldn't be from this lease. That would be in the event some of the other operators in the area contributed water to the well?

A That's right.

Q Now, if you treat this water, you'll undoubtedly inhibit the corrosive affect of it, but how will you know that you are cutting down on corrosion? Do you plan to run coupon tests?

A We can.

Q You wouldn't have any objection to the Commission Order approving this well to be completed in this manner, requiring that coupon tests be run and submitted to the Commission quarterly?

A That would be satisfactory.

MR. NUTTER: Are there any further questions of Mr. Lyon? He may be excused. Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: That's all, Mr. Nutter. Thank you.

MR. NUTTER: Does anyone have anything they wish to offer in Case No. 3943? We'll take the case under advisement.

I N D E X

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STATE OF NEW MEXICO       )  
                                   ) ss  
 COUNTY OF BERNALILLO    )

I, CHARLOTTE MACIAS, Court Reporter and 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.

*Charlotte Macias*  
 COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing of Case No. 3943 heard by me on 11/12/68.  
*James*  
 New Mexico Oil Conservation Commission

State of New Mexico  
Oil Conservation Commission



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

November 19, 1968

Re: Case No. 3943  
Order No. R-3579  
Applicant:  
  
**Continental Oil Company**

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

Hobbs OCC       x        
 Artesia OCC                     
 Aztec OCC                     
 Other

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. 3943  
Order No. R-3579

APPLICATION OF CONTINENTAL OIL  
COMPANY FOR A DUAL COMPLETION,  
LEA 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, Continental Oil Company, is the co-owner and operator of the Lynn A-28 Well No. 5, located in Unit A of Section 28, Township 23 South, Range 36 East, NMPM, Lea County, New Mexico.

(3) That by Order No. R-242, dated January 15, 1953, the subject well was authorized as a dual completion for the production of gas from the Yates formation and oil from the Seven Rivers formation; that the oil completion of the subject well has reached its economic limit of production.

(4) That the applicant now seeks authority to complete the subject well as a dual completion to produce gas from the Yates formation of the Jalmat Gas Pool through the casing-tubing

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CASE No. 3943

Order No. R-3579

annulus and to dispose of produced salt water into the Seven Rivers formation of the Jalmat Pool through tubing below a packer set at approximately 3300 feet, with injection into the perforated interval from approximately 3340 feet to 3374 feet.

(5) That the produced salt water should be continuously treated prior to injection to prevent tubing corrosion and coupon corrosion tests should be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission.

(6) That approval of the dual completion and salt water disposal as set out above will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

(7) That Order No. R-242 should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Continental Oil Company, is hereby authorized to complete its Lynn A-28 Well No. 5, located in Unit A of Section 28, Township 23 South, Range 36 East, NMPM, Lea County, New Mexico, as a dual completion to produce gas from the Yates formation of the Jalmat Gas Pool through the casing-tubing annulus and to dispose of produced salt water into the Seven Rivers formation of the Jalmat Pool through tubing below a packer set at approximately 3300 feet, with injection into the perforated interval from approximately 3340 feet to 3374 feet;

PROVIDED HOWEVER, that the produced salt water shall be continuously treated prior to injection to prevent tubing corrosion; that coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission;

PROVIDED FURTHER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(2) That Order No. R-242, dated January 15, 1953, is hereby superseded.

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CASE No. 3943


Order No. R-3579

(3) 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

ear/

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. 447  
ORDER No. R-242

THE APPLICATION OF CONTINENTAL OIL  
COMPANY FOR AN ORDER GRANTING  
PERMISSION TO DUALY COMPLETE AND  
PRODUCE ITS LYNN A-28, NO. 5 WELL,  
LOCATED IN THE NE/4 NE/4 SECTION 28,  
TOWNSHIP 23 SOUTH, RANGE 36 EAST,  
NMPM, LEA COUNTY, NEW MEXICO, IN  
THE COOPER-JAL POOL.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on December 16, 1952, at Santa Fe, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission".

NOW, on this 15th day of January, 1953, the Commission, a quorum being present, having considered the records and the testimony adduced, and being fully advised in the premises,

FINDS:

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

(2) That applicant's Lynn A-28, No. 5 Well, NE/4 NE/4, Section 28, Township 23 South, Range 36 East, NMPM, Lea County, New Mexico, was completed in March, 1942, as a gas well producing from the Yates formation, in the open-hole interval 2926-3276.

(3) That geological information indicates that there is a possibility of obtaining a commercial oil well in the Seven Rivers formation by deepening the Lynn A-28, No. 5 Well to an approximate depth of 3376 feet.

(4) That although recent experiments tend to show that mechanical packers and other devices are ordinarily available for successful dual/multiple completions of oil - gas wells, the Commission is unconvinced of the soundness as a waste-prevention practice, of such dual/multiple completions as a general practice in New Mexico without specific controls over each such project.

IT IS THEREFORE ORDERED:

That the applicant herein, Continental Oil Company, be, and it hereby is authorized to deepen its Lynn A-28, No. 5 Well, NE/4 NE/4, Section 28, Township 23 South, Range 36 East, NMPM, Lea County, New Mexico, to an approximate depth of 3376 feet and to dually complete and produce said well in such a manner that gas from the Yates formation may be produced through the annular space between the casing and the tubing, and oil from the Seven Rivers formation through the tubing by proper perforations and the installation of a proper packer.

PROVIDED, HOWEVER, That subject well shall be completed and thereafter produced, in such a manner that there will be no commingling within the well bore, either within or outside the casing of gas, oil and gas, or oil produced from either or both of the separate strata, and,

PROVIDED FURTHER, That said subject well for dual completion and production shall be equipped in such a way that reservoir pressures may be determined separately for each of the two specified strata, and further, be equipped with all necessary connections required to permit recording meters to be installed and used, at any time, as may be required by the Commission or its representatives, in order that natural gas, oil, or oil and gas from each separate stratum may be accurately measured and the gas-oil ratio thereof determined, and,

PROVIDED FURTHER, That the operator applicant shall make any and all tests, including segregation tests, but not excluding other tests and/or determinations at any convenient time and in such manner as deemed necessary by the Commission; the original and all subsequent tests shall be witnessed by representatives of the Commission and by representatives of offset operators, if any there be, at their election, and the results of each test properly attested to by the applicant herein and all witnesses, and shall be filed with the Commission within ten (10) days after the completion of such test, and,

PROVIDED FURTHER, That upon the actual dual completion of such subject well, applicant shall submit to the Commission a diagrammatic sketch of the mechanical installation which was actually used to complete and produce the seal between the strata, and a special report of production, gas/oil ratio and reservoir pressure determination of each producing zone or stratum immediately following completion.

IT IS FURTHER ORDERED. That jurisdiction of this cause is hereby retained by the Commission for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of applicant to comply with any requirement of this order after proper notice and hearing, the Commission may terminate the authority hereby granted and require applicant or its successors and assigns to limit its activities to regular single-zone production in the interests of conservation.

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

GUY SHEPARD, Member

R. R. SPURPIER, Secretary

S E A L

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. 3372  
Order No. R-3531

APPLICATION OF UNION OIL COMPANY  
OF CALIFORNIA FOR A DUAL COMPLE-  
TION AND SALT WATER DISPOSAL,  
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 9, 1968,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this \_\_\_\_\_ day of October, 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, Union Oil Company of California,  
seeks authority to complete its Federal "A" Well No. 1, located  
in Unit P of Section 12, Township 15 South, Range 34 East, NMPM,  
Morton-Wolfcamp Pool, Lea County, New Mexico, as a dual completion  
to produce oil from the Morton-Wolfcamp Pool through 2-inch tubing  
and to dispose of produced salt water down the annulus between the  
5 1/2-inch production casing string and the 8 5/8-inch intermediate  
casing string into the San Andres, Glorieta, Yeso, and Tubb forma-  
tions in the open-hole interval from approximately 4620 feet to  
7350 feet.
- (3) That the produced salt water should be continuously  
treated prior to injection to prevent casing corrosion and coupon  
corrosion tests shall be conducted continuously on said well and  
the results thereof filed quarterly with the Commission until  
further notice from the Secretary-Director of the Commission.



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CASE No. 3872

Order No. R-3531

(4) That the casing-tubing annulus should be filled with an inert fluid and that a pressure gauge should be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

(5) That approval of the dual completion and salt water disposal as set out above will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Union Oil Company of California, is hereby authorized to complete its Federal "A" Well No. 1, located in Unit P of Section 12, Township 15 South, Range 34 East, NMPM, Morton-Wolfcamp Pool, Lea County, New Mexico, as a dual completion to produce oil from the Morton-Wolfcamp Pool through 2-inch tubing and to dispose of produced salt water down the annulus between the 5 1/2-inch production casing string and the 8 5/8-inch intermediate casing string into the San Andres, Glorieta, Yesso, and Tubb formations in the open-hole interval from approximately 4620 feet to 7350 feet;

PROVIDED HOWEVER, that the produced salt water shall be continuously treated prior to injection to prevent casing corrosion; that coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission; that the casing-tubing annulus shall be filled with an inert fluid and that a pressure gauge shall be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

PROVIDED FURTHER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(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

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

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

S E A L

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← CASE 3943:

Application of Continental Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Lynn A-28 Well No. 5, located in Unit A of Section 28, Township 23 South, Range 36 East, Lea County, New Mexico, in such a manner as to produce gas from the Yates formation of the Jalmat Gas Pool through the casing-tubing annulus and to dispose of produced salt water through tubing into the Seven Rivers formation of said pool in the interval from 3340 to 3374 feet.

CASE 3944:

Application of Sun Oil Company for a pressure maintenance project, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in its James McFarland Lease by the injection of water into the San Andres formation through its James McFarland Well No. 4 located in the NW/4 SW/4 of Section 20, Township 7 South, Range 33 East, Chaveroo-San Andres Pool, Roosevelt County, New Mexico. Applicant further seeks the promulgation of special rules to govern operation of said pressure maintenance project.

CASE 3945:

Application of Mobil Oil Corporation for lease commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Vacuum Grayburg-San Andres production from its State "G" lease comprising the W/2 NE/4 and SE/4 NE/4 of Section 24, Township 17 South, Range 34 East, Lea County, New Mexico, with Vacuum Grayburg-San Andres production from that portion of its Bridges State lease comprising the W/2 of said Section 24, allocating the production to each lease on the basis of monthly well tests.

CONTINENTAL OIL COMPANY  
LYNN A-28 NO. 5

*well tract  
Lynn A-28 No. 5  
167' x 167'  
167' x 167'  
(see sketch)*

2878' of 3 1/2", 9.3#/ft.  
10V, and 426' of 2 7/8",  
6.5#/ft. 10V tbgs set @  
3300'

*now producing  
10 BOPD @  
3300 Bbl./ft.*

10 3/4", 32.75# csg. set  
@ 369'. Cmd w/250 sx to  
surface (circ.)

7", 22#/ft. csg set @  
2926'. Cmd w/525 sx to  
surface (circ.)

*will not  
expect to go  
gravity*

5" OD 17.9#/ft. Hydrill  
liner set @ 3374'. Cmd  
w/250 sx to 2895'

See Detail "A"

Baker Model "D-4" No. 7  
set @ 3300'

2895'  
2924'

Yates Intervals:

- 3054-3087'
- 3100-3130'
- 3146-3170'
- 3176-3193'
- 3200-3226'

*liner*

Seven Rivers Intervals:

- 3340-3356'
- 3366-3374'

3374'

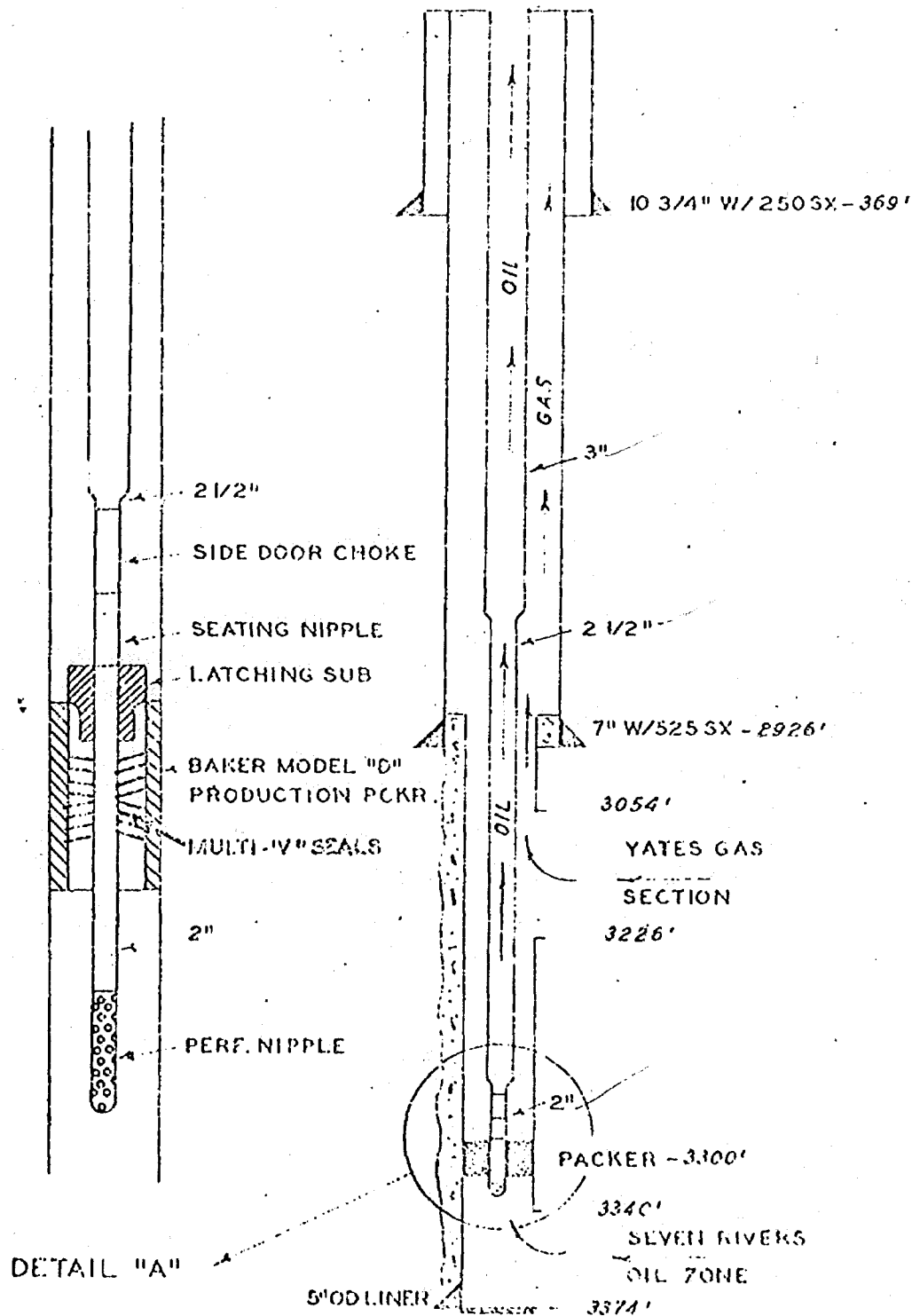
BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
*4/6* EXHIBIT NO. *2*  
CASE NO. *3783*

CONTINENTAL OIL COMPANY

LYNN A-28 NO.5

EL: 3431'

METHOD OF DUAL COMPLETION



BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 3

CASE NO. 3943

EXHIBIT NO. 3

BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 4  
CASE NO. 2943

Form C-108  
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION  
APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR <b>Continental Oil Company</b>		ADDRESS <b>P. O. Box 460 Hobbs, New Mexico</b>	
LEASE NAME <b>Lynn A-28</b>	WELL NO. <b>5</b>	FIELD <b>Jalmat</b>	COUNTY <b>Lea</b>
LOCATION UNIT LETTER <b>4</b> WELL IS LOCATED <b>660</b> FEET FROM THE <b>N</b> LINE AND <b>660</b> FEET FROM THE <b>E</b> LINE, SECTION <b>28</b> TOWNSHIP <b>23S</b> RANGE <b>36E</b> NMPM.			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	10 3/8	369	250	surface	circ.
INTERMEDIATE	7	2926	525	surface	circ.
LONG STRING	5	2895-3374	250	2855	top of liner
TUBING	3" - 2 1/2	3300'	NAME, MODEL AND DEPTH OF TUBING PACKER <b>Baker Model D set at 3300'</b>		

NAME OF PROPOSED INJECTION FORMATION <b>Seven Rivers</b>		TOP OF FORMATION <b>3286</b>	BOTTOM OF FORMATION <b>est. 3690'</b>
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? <b>tubing</b>		PERFORATIONS OR OPEN HOLE? <b>perforations</b>	PROPOSED INTERVAL(S) OF INJECTION <b>3340-3356', 3366-74'</b>
IS THIS A NEW WELL DRILLED FOR DISPOSAL? <b>no</b>	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? <b>producing oil well</b>		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? <b>yes</b>
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH <b>3054-3087, 3100-3130, 3146-3170, 3176-93, 3200-26: dual completed as Jalmat Gas Well</b>			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA <b>250'</b>	DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA <b>none</b>		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA <b>est. 3590'</b>
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) <b>750</b>	MINIMUM <b>3000</b>	MAXIMUM <b>closed</b>	OPEN OR CLOSED TYPE SYSTEM <b>gravity</b>
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE... <b>yes</b>		WATER TO BE DISPOSED OF <b>yes</b>	NATURAL WATER IN DISPOSAL ZONE <b>yes</b>
ARE WATER ANALYSES ATTACHED? <b>no</b>			
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) <b>Charles Whitten, Est. Star Route, Jal, New Mexico</b>			
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL <b>Argus Production Company, 3313 Republic National Bank Bldg. Dallas, Texas</b>			
<b>Albert Gackle, Box 2038, Hobbs, New Mexico</b>			
<b>Texas Pacific, Box 1069, Hobbs, New Mexico</b>			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING? <b>no</b>			
SURFACE OWNER <b>no</b>			
EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL <b>no</b>			
THE NEW MEXICO STATE ENGINEER <b>no</b>			
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)? <b>yes</b>			
PLAN OF AREA <b>yes</b>			
ELECTRICAL LOG <b>no</b>			
DIAGRAMMATIC SKETCH OF WELL <b>no</b>			

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

Assistant Division Manager

(Signature)

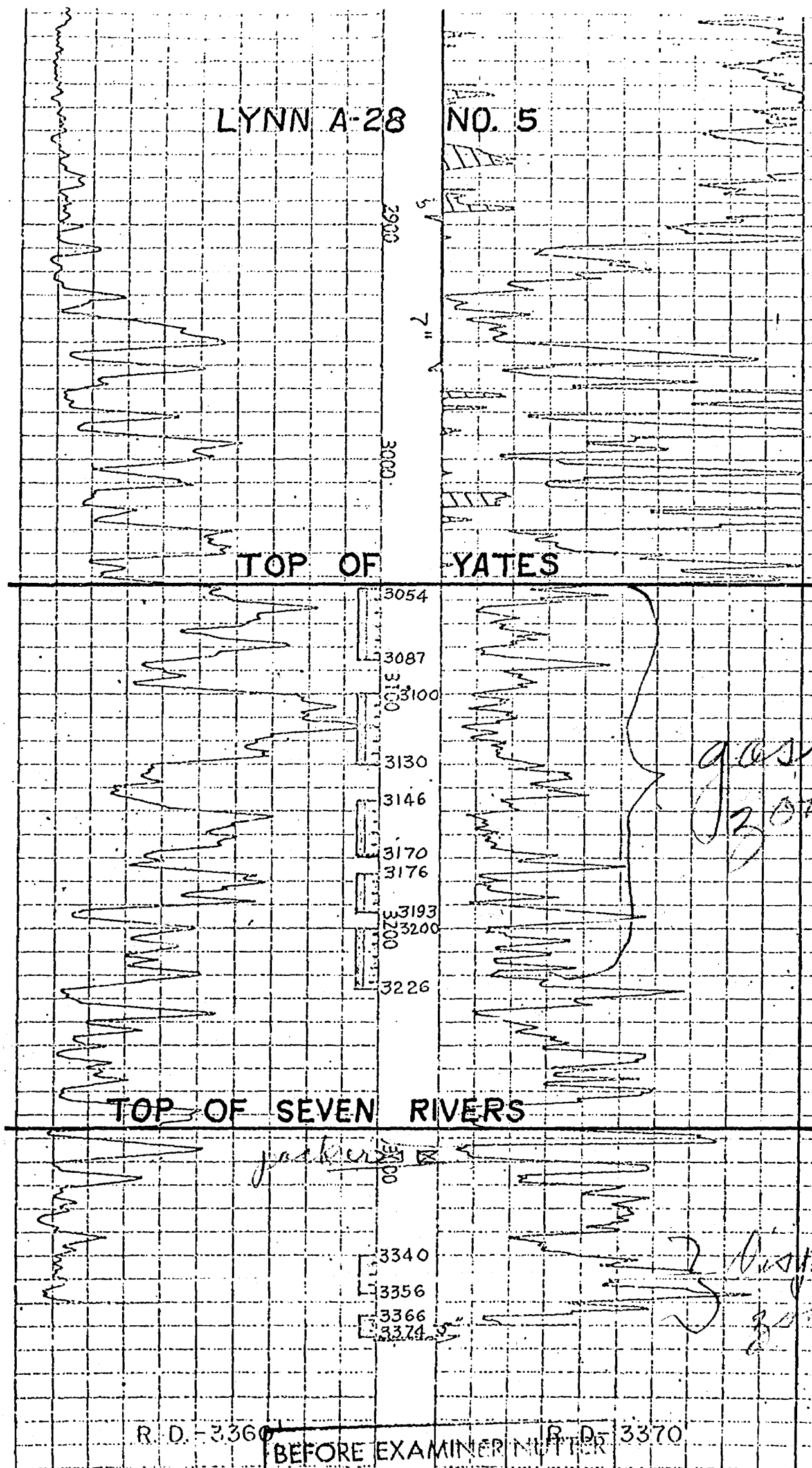
(Title)

(Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

EXHIBIT NO. 4

LYNN A-28 NO. 5



R. D. 3360

BEFORE EXAMINER NOTED

R. D. 3370

OIL CONSERVATION

EXHIBIT NO. 5

CASE NO. 3943

EXHIBIT NO. 5

TELEPHONE: HOBBS 393-6215



# UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil Company

Field Jalmit Yates Seven Rivers

Lease Lynn "A" #27

Sampling Date 7/9/68

Type of Sample \_\_\_\_\_

## WATER ANALYSIS

IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	44.91	900
Magnesium (Mg++)	92.11	1120
Sodium (Na+) (col.)	257.58	5922
Bicarbonate (HCO <sub>3</sub> )	21.80	1329
Carbonate (CO <sub>3</sub> -)	NOT	FOUND
Hydroxide (OH-)	NOT	FOUND
Sulphate (SO <sub>4</sub> -)	20.30	975
Chloride (Cl-)	352.50	12,500
7.1 pH @ 68° F		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO <sub>3</sub>	137.02	6851
Carbonate Hardness, as CaCO <sub>3</sub> (temporary)	21.80	1090
Non-Carbonate Hardness as CaCO <sub>3</sub> (permanent)	115.22	5761
Alkalinity as CaCO <sub>3</sub>	21.80	1090
Specific Gravity @ 68° F	1.010	

- \* mg/l = milligrams per liter
- \* me/l = milliequivalents per liter

BEFORE EXAMINER NUTTER  
OIL CONSERVATION DIVISION  
EXHIBIT NO. 6  
CASE NO. 3943

EXHIBIT NO. 6

*Makes Water Work*



# CONTINENTAL OIL COMPANY

P. O. Box 460

HOBBS, NEW MEXICO 88240

PRODUCTION DEPARTMENT  
HOBBS DIVISION  
L. P. THOMPSON  
Division Manager  
G. C. JAMIESON  
Assistant Division Manager

October 25, 1968

1001 NORTH TURNER  
TELEPHONE 393-4141

*Self hearing*  
*dual produced & water injection*  
Cbse 3943

New Mexico Oil Conservation Commission  
Post Office Box 2088  
Santa Fe, New Mexico

Attention of Mr. A. L. Porter, Jr., Secretary Director

Re: Proposed dual completion  
Lynn A-28 No. 5, Lea County,  
New Mexico

Gentlemen:

Forwarded herewith in triplicate is Continental Oil Company's Application for authority to produce gas from the Yates formation and inject produced water into the Seven Rivers formation in its Lynn A-28 Well No. 5, in Section 28, T-23S, R-36E, Lea County, New Mexico. Please set this matter for hearing on your November 12 docket.

Yours very truly,

LPT-BF  
Attachment  
CC: RLA JJB JWK

DOCKET MAILED

Date 11-1-68

P I O N E E R I N G I N P E T R O L E U M P R O G R E S S S I N C E 1 8 7 5



BEFORE THE OIL CONSERVATION COMMISSION  
OF THE  
STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF  
CONTINENTAL OIL COMPANY FOR AN ORDER  
AUTHORIZING THE DUAL COMPLETION OF  
ITS LYNN A-28 WELL NO 5, LOCATED IN  
THE NE/4 OF THE NE/4, SECTION 28,  
T-23S, R-36E, LEA COUNTY, NEW MEXICO  
IN SUCH A MANNER AS TO PRODUCE GAS  
FROM THE YATES FORMATION AND TO INJECT  
PRODUCED WATER INTO THE SEVEN RIVERS  
FORMATION.

*Case 3943*

A P P L I C A T I O N

Comes now Continental Oil Company, and respectfully requests authority to effect a dual completion in its Lynn A-28 Well No. 5, located 660' FNL & 660' FEL of Section 28, T-23S, R-36E, Lea County, New Mexico, in such a manner as to produce Jalmat Gas from the Yates formation and to inject produced water into the Seven Rivers formation and in support thereof would show:

1. That Applicant is the operator and co-owner of the Lynn A Lease described as NW/4 Section 27, NE/4, SE/4 NW/4, and E/2 SW/4 Section 28, T-23S, R-36E, Lea County, New Mexico.
2. That Applicant drilled its Lynn A-28 Well No. 5, located 660' FNL & 660' FEL of Section 28, and completed same as a gas well producing from the Yates formation in March, 1942.
3. That under the provisions of Order No. R-242 dated January 15, 1953, Applicant deepened said well and dual completed it in such a manner as to produce gas from the Yates formation in the interval 3054-3225' and to produce oil from the Seven Rivers formation from 3340-3374'.
4. That the oil completion has reached the economic limit, and Applicant now desires to inject water into the Seven Rivers formation described above by injecting said water through 3 1/2" OD tubing below a packer set at 3293'.

5. That the granting of this application will prevent waste and will not impair correlative rights.

WHEREFORE, Applicant respectfully prays that this application be set for hearing before the Commission's duly appointed examiner and that upon hearing, an order be entered authorizing Applicant to effect a dual completion in its Lynn A-28 Well No. 5 as described hereinabove.

Respectfully submitted,

CONTINENTAL OIL COMPANY  
L. P. THOMPSON

DRAFT

GMH/esr  
*[Handwritten signature]*

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:

*[Handwritten signature]*  
CASE No. 3943

*[Handwritten signature]*  
Order No. R- 3579

APPLICATION OF CONTINENTAL OIL  
COMPANY FOR A DUAL COMPLETION,  
LEA 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 \_\_\_\_\_ 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, Continental Oil Company, is the  
co-owner and operator of the Lynn A-28 Well No. 5, located in  
Unit A of Section 28, Township 23 South, Range 36 East, NMPM,  
Lea County, New Mexico.

(3) That by Order No. R-242, dated January 15, 1953, the  
subject well was authorized as a dual completion for the produc-  
tion of gas from the Yates formation and oil from the Seven  
Rivers formation; that the oil completion of the subject well  
has reached its economic limit of production.

(4) That the applicant now seeks authority to complete  
the subject well as a dual completion to produce gas from the

Yates formation of the Jalmat Gas Pool through the casing-tubing annulus and to dispose of produced salt water into the Seven Rivers formation of the Jalmat ~~Gas Pool~~ <sup>Yates Gas Pool</sup> through        inch tubing below a packer set at approximately 3300 feet, with injection into the perforated interval from approximately 3340 feet to 3374 feet.

(5) That the produced salt water should be continuously treated prior to injection to prevent tubing corrosion and coupon corrosion tests should be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission.

(6) That the casing-tubing annulus should be filled with an inert fluid and that a pressure gauge should be attached to said annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

(7) That approval of the dual completion and salt water disposal as set out above will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

(8) That Order No. R-242 should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Continental Oil Company, is hereby authorized to complete its Lynn A-28 Well No. 5, located in Unit A of Section 28, Township 23 South, Range 36 East, NMPM, Lea County, New Mexico, as a dual completion to produce gas from the Yates formation of the Jalmat Gas Pool through the casing-tubing annulus and to dispose of produced salt water into the Seven Rivers formation of the Jalmat ~~Gas Pool~~ <sup>Yates Gas Pool</sup> through        inch tubing below a packer set at approximately 3300 feet, with injection into the perforated interval from approximately 3340 feet to 3374 feet;

PROVIDED HOWEVER, that the produced salt water shall be continuously treated prior to injection to prevent tubing corrosion; that coupon corrosion tests shall be conducted continuously on said well and the results thereof filed quarterly with the Commission until further notice from the Secretary-Director of the Commission; ~~that the casing tubing annulus shall be filled with an inert fluid and that a pressure gauge shall be attached to said annulus or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer;~~

PROVIDED FURTHER, that the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

✓ (2) That Order No. R-242, dated January 15, 1953, is hereby superseded.

(3) 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.

Application of Continental Oil Company  
for a dual completion, Lea County, N. Mex.

Applicant in the above styled case  
seeks authority to dual complete its  
Lynn A-28 well No 5, located in Unit  
A of Section 28, Township 23 South,  
Range 36 East, Lea County, New Mexico,  
in such a manner as to produce  
gas from the Galtzer formation of  
the Galmah Gas Pool <sup>through the casing string annulus</sup> and to dispose  
of produced salt water <sup>through tubing</sup> into the  
River River formation of said pool  
in the interval from 3340 to 3374  
feet.