BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 4, 1962

EXAMINER HEARING

IN THE MATTER OF: Application of Leonard Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Federal Ginsberg Well No. 8, located in Unit M of Section 31, Township 25 South, Range 38 East, Lea County, New Mexico, as a dual completion (conventional) in the Langlie-Mattix and Justis-Blinebry Pools, with the production of oil from both zones to be through parallel strings of 2 3/8-inch tubing, separation of the zones to be by a liner re-entry shoe seal assembly.	Case 2471

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: The hearing will come to order, please. The next case will be 2471.

MR. MORRIS: Application of Leonard Oil Company for a dual completion, Lea County, New Mexico.

MR. CAMPBELL: Mr. Examiner, my name is Jack M. Campbell, Campbell and Russell, Roswell, New Mexico, appearing on behalf of the applicant. We have one witness, Mr. Hix.

MR. MORRIS: Mr. Hix, would you stand and be sworn?

(Witness sworn.)

FOWLER HIX

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

DIRECT EXAMINATION

BY MR. CAMPBELL:

Q Will you state your name, please?

A Fowler Hix.

Q By whom are you employed, Mr. Hix?

A Leonard Oil Company.

Q What capacity? A General Manager.

Q Do you have a professional degree?

A Yes.

Q In what? A Geology.

Q Have you testified previously before this Commission in your professional capacity and as General Manager of Leonard Oil Company?

A Yes.

Q Are you acquainted with the application of Leonard Oil Company in this case, Mr. Hix?

A Yes.

(Whereupon, Applicant's Exhibit No. 1 was marked for identification.)

Q I hand you what has been identified as Applicant's Exhibit No. 1 in this case and ask you to state what it is, please.

A Exhibit No. 1 is a plat of a portion of Southeast Lea County, with Section 31, Township 25 South, Range 38 East, outlined in red, which is the Leonard Oil Company Lease, Federal Ginsberg Lease, and the No. 8 well in the Southwest Southwest Quarter of 31 circled in red and the No. 8 well is the well which we're asking for permission to dually complete.

Q Will you state to the Examiner the reason why you are unable to seek approval of this dual completion by administrative route?

A First, it is the first dual completion of the Langlie-Mattix Pool and the Justis-Blinebry Pool in the area, and the packer is slightly different from packers which have been approved before.

Q Will you state for the record the producing zones from which you propose to produce this well?

A The producing zone in the Langlie-Mattix Pool is the Penrose, and the producing zone in the Justis-Blinebry Pool is the Blinebry formation.

(Whereupon, Applicant's Exhibit No. 2 was marked for identification.)

Q I hand you what has been identified as Applicant's No. 2

and ask you please to state what that is.

A Using Exhibit 2, I would like to give a brief --

Q Will you state what Exhibit 2 is first, please?

A Exhibit 2 is a diagrammatic sketch of the mechanical installation of the proposed dual completion.

Q Mr. Hix, using Exhibit 2 where necessary, will you first give the Examiner a brief explanation of the completion history of the well that's involved in this case?

A The well involved is our Ginsberg Federal No. 8 which was originally drilled in 1956 to a total depth of 3335, at which point 7" casing was set as shown in the diagram. The plug back total depth was 3320, and it was completed through perforations 3260 to 68 and 3276 to 90, using 10,000 gallon oil and 10,000 pound of sand completed for 525 barrels of oil per day.

In 1959, after the well had dropped below top allowable we came back and set a bridge plug at 3256, perforated 3250 to 52, 3234 to 38, 3214 to 20 and treated those perforations with 22,000 gallon of oil and 100,000 pound of sand with no appreciable increase in production.

From 1959 to November, 1961, this well was produced from the Penrose formation in the Langlie-Mattix Pool. November of '61, the above-mentioned perforations were all squeezed with 100 sacks of cement; approximately 70 sacks were put in the formation and

the excess reversed out, squeezed to 4,000 pounds. Then we drilled a 6 1/4 hole to 5800 feet, at which point we set a 4 1/2" liner and used 429 sacks of cement, and the cement was circulated back to the top of the liner.

On the top of this liner, which is at 3311, we used a TIW type S liner packer. This packer was set at 3319, and on top of the packer we used a re-entry shoe. The re-entry shoe, first the purpose of the re-entry shoe was that we knew we would have to frack the Blinebry to have been stimulated in order to get commercial production. We wanted something on top of this liner that we could tie back into with 4 1/2" tubing and frack down the tubing and not put the frack pressure on the perforations which we'd squeezed off in the Penrose zone.

After setting this liner, to go on with the history of the well, we drilled out beneath this liner with a 3 7/8" hole to 5920 and tested the Tubb zone. The Tubb was water-bearing, so we plugged back to 5418, we used 25 sacks of cement on the bottom and then 20 sacks at the top to plug back to 5418. Then we perforated the Blinebry 5122 to 30, 5148 to 57, 5176 to 79, 5266 to 72, 5304 to 10, ran 4 1/2" tubing with the re-entry shoe on the bottom of the 4 1/2" tubing to treat the Blinebry. After treating the Blinebry and the treating pressure, the maximum treating pressure was approximately 3,000 pounds, we killed the Blinebry

with mud, removed the 4 1/2 tubing from the hole, then adapted this re-entry shoe to 2 3/8 tubing, ran it back in the hole, as shown on the diagram, with 2 3/8 tubing to the Blinebry, landed at 5100 with a 1 1/2 by 2 3/8" landing nipple on the bottom. Seating nipple at 5,070 and the re-entry shoe seated with the receptacle at 3311. This is 2 3/8 EUE tubing from 5100 to the surface.

Then we ran the Penrose tubing to 3200 with an inch and a half landing nipple on the bottom and the PSI sliding sleeve at 3170. The seating nipple at 3168, the purpose of this landing nipple in the short string, in fact, the well will be produced by pumping, will be with a plug in place in this 1 1/2" landing nipple and the sliding sleeve open for perforations so that we'll have a conventional mud anchor below the seating nipple.

Q Mr. Hix, in what respects does this installation differ from ones which have heretofore been approved by the Commission as standard installation?

A I think in general the packer which is approved for duals is either a retrievable or a permanent type packer which is set and held in place by slips in the 4 1/2 tubing and not being seated in a receptacle.

Q Do you believe that this type of installation will provide complete separation of these two zones?

A Yes.

Q What leads you to that conclusion? Have you made tests which satisfy you that it will withstand any pressures that may exist in connection with the production of this well?

A This is the same shoe that was used during the frack treatment of the well, at which time there was probably more differential pressure across the shoe than there will be any time during production, and during that treatment we had pressure gauges on both the casing and the tubing, and the pressure on the casing never showed any pressure on it during the frack treatment.

Q You have stated that you believe there will be complete separation of these two zones. Do you believe, then, that this installation can be utilized in the production of these two zones without causing any commingling of the oil?

A Yes.

Q And without waste? A Yes.

Q Do you intend to produce these zones separately into separate tankage?

A Yes. They are produced into separate tankage.

Q And they're measured separately, of course?

A Measured separately.

MR. CAMPBELL: I would like to offer Applicant's Exhibits 1 and 2 in evidence in this case.

MR. NUTTER: Applicant's Exhibits 1 and 2 will be admitted in evidence.

MR. CAMPBELL: That's all the questions I have.

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

CROSS EXAMINATION

BY MR. NUTTER:

Q Now both of these are classified as oil wells, is that correct?

A Yes.

Q Now, the lowermost perforations in the Langlie-Mattix went down how far, the ones that were squeezed?

A The lowest perforations that were squeezed?

Q The lowermost original perforation.

A 3290.

Q So all of those lowermost perforations are still above the top of the 4 1/2" receptacle and the re-entry shoe, aren't they?

A Yes.

Q What does this re-entry shoe depend upon to obtain a seal in the receptacle? Does it depend on the weight of the tubing?

A Yes. The receptacle, the upper part of the receptacle is a machined, has a machined surface on it, and it's beveled in

the bottom. The re-entry shoe in the beveled portion on the bottom has a lead seal which seats on the beveled portion of the receptacle and along the side of the re-entry it has five ~~holding~~ o-rings.

Q So there's a combination of the lead seal and the ~~lead~~ ~~overall~~ drags?

A For a seal, ~~and~~ the tail pipe which is run below the re-entry shoe, weighs approximately 8,000 pounds, which is holding it down, and we have about 4,000 pounds of the tubing weight above the set.

Q So you have got your upper tubing in 4,000 pounds compression?

A Right in the long string.

Q Then there's a dead weight of 8,000 pounds below the re-entry shoe hanging on the re-entry shoe?

A In the tail pipe.

Q So you have a total of 12,000 pounds on that shoe?

A Right.

Q Will the tubing above the re-entry shoe be left in compression?

A Yes.

Q Do you have anything on the characteristics of the two zones, Mr. Hix, the potential as well as the GOR and gravities?

A I do on the lower zone. I don't have all that

information on the upper zone. The lower zone, the Blinebry zone flowed 61 barrels in 24 hours on a 9-64 choke with a GOR of 1300 to 1. The upper zone, we haven't tested it since the completion of the well.

Q Do you have the gravity on the lower?

A The gravity on the lower is approximately 37 degrees. The gravity on the upper zone, from past history before we squeezed the perforation, it's 38 to 40 degrees.

Q Is it a high ratio completion, Mr. Hix?

A Originally it was a low ratio when it was first completed. It is in the range of 15,000 to 1 prior to squeezing the perforations. Since perforating the second time this perforation 3214 to 3289, there is a total of 14 holes in that interval, and they were selectively perforated and we picked the tighter zones which we thought didn't get treatment in this original sand frack job.

Q And you don't have any test on it yet?

A No test yet.

Q So you don't have a GOR at the present time?

A No, it's shut-in.

MR. NUTTER: Are there any other questions of Mr. Hix? He may be excused.

(Witness excused.)

MR. CAMPBELL: That's all I have.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2471? We will take the case 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 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 5th day of January, 1962.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2471, heard by me on 1/4, 19 61.

Examiner
New Mexico Oil Conservation Commission