BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
8 June 1977

IN THE MATTER OF:

Application of Continental Oil Company for downhole commingling, Rio Arriba County, New Mexico.

CASE 5957

And

Application of Continental Oil Company for downhole commingling, Rio Arriba County, New Mexico.

CASE 5958

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For New Mexico Oil Conservation Commission: Lynn Teschendorf, Esq.
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For the Applicant: Tom Kellahin, Esq.
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I N D E X

VICTOR T. LYON

E X H I B I T S

MR. NUTTER: We'll call Case Number 5957. Do you want to consolidate 57 and 58?

MR. KELLAHIN: Yes.

MR. NUTTER: We'll also call Case Number 5958.

MS. TESCHENDORF: 5957. Application of Continental Oil Company for downhole commingling, Rio Arriba County, New Mexico.

Case 5958. Application of Continental Oil Company for downhole commingling, Rio Arriba County, New Mexico.

MR. NUTTER: For purposes of taking the record, we've consolidated Cases 5957 and 5958.

MR. KELLAHIN: Tom Kellahin of Kellahin & Fox, appearing on behalf of Continental Oil. Let the record reflect that I have the same witness as in the previous case. He has been placed under oath and has qualified as an expert witness.

MR. NUTTER: The record will so reflect.

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Lyon, would you refer to Exhibit Number One, identify it, and tell us what Continental is seeking to accomplish?

A. Well, Case Number 5957 is the application of Continental for permission to commingle in the wellbore production

from the Otero-Chacra and South Blanco-Pictured Cliffs formations in four wells on its AXI Apache "J" lease in Sections 5, 6, 7, and 8 of Township 25 North, Range 5 West, Rio Arriba County, New Mexico.

Case 5958 is the application of Continental for permission to commingle in the wellbore production from the Gonzales-Mesaverde and the Otero-Chacra pools in eight of its wells on the same lease.

Exhibit Number One is a plat showing the AXI Apache "J" lease outlined in red and it consists of Section 5, 6, 7, and 8 in Township 25 North, Range 5 West, Rio Arriba County, New Mexico.

The exhibit also shows the wells on the lease and by the colored circles the wells which we are seeking permission to commingle in the wellbore. Wells which are circled in blue are dual completions in the Pictured Cliffs and Chacra formations. These are Wells Numbers 11, in Unit A of Section 6; 9, in Unit O of Section 6; 10 in Unit A of Section 5; and 12 in Unit K of Section 5.

The wells circled in green are dual completions in the Mesaverde and Chacra and these are Wells Numbers 20 and 21, in Unit C and I of Section 5; Wells Numbers 19 and 22, in Units D and L of Section 6; Well Number 25, in Unit A of Section 7; and Wells Numbers 23, 18, and 24, in Units D, A, and T, respectively, in Section 8.

Q. Would you refer to Exhibit Number Two and identify it?

A. Exhibit Number Two is a tabulation showing production from each of the wells on the lease for the month of April, 1977.

The first column on the left shows the well number. The second column shows the dual completion order, and the third column shows the production from the South Blanco-Pictured Cliffs, and alongside on the righthand of that column there are some "X's" in parentheses and this shows that those wells are exempt marginal; the other wells are marginal. The next column shows the production from the Gonzales-Mesaverde and then the fifth column shows the production from the Otero-Chacra, and then to the right of that column, on the extreme righthand side of the exhibit, the figure in parentheses shows the percent that the Chacra production represents of the total gas production from the wells considering both zones, and I used the February figure because I feel that it is probably more representative than the April figure. We are beginning to experience higher line pressures in that area because of lower demand and the lower pressured zones are encountering some handicapping in producing.

Q. Would you refer to Exhibit Three and identify it?

A. Exhibit Number Three is a tabulation of the pres-

sure information on the same format that was used on Exhibit Two.

Well Number, the pressure, this is the last shut-in pressure taken from the last deliverability test, for the Pictured Cliffs, the Mesaverde, and the Chacra. As you can see, there are not any extremely large differentials. The largest differential in pressure, and this is surface pressure, is on Well Number 24, which shows 976 pounds in the Mesaverde as compared to 258 pounds in the Chacra, and the Mesaverde has been shut in, in this well, for some time, therefore it probably is unusually high on a comparison with the other wells.

Q. In your opinion, Mr. Lyon, is the pressure differential significantly low enough that there will not be migration between the zones or other wells producing?

A. Yes. I think that's true.

Q. Would you identify Exhibit Number Four?

A. Exhibit Number Four is a decline curve of the Chacra in the AXI Apache "J" Number 18. It covers the period from 1972 through February of 1977.

Q. Exhibit Number Five?

A. Exhibit Number Five is a decline curve for the Mesaverde in the AXI Apache "J" Number 18, covering the same period.

Q. Exhibit Number Six?

A. Exhibit Number Six is a decline curve for the Chacra in Well Number 24, covering the same period that I have shown on the other two exhibits.

Q. Number Seven?

A. Exhibit Number Seven is a decline curve on the Mesaverde for Well Number 24, and as it shows, it was shut in in November of 1973.

Q. Exhibit Number Eight?

A. Exhibit Number Eight is a decline curve on the Pictured Cliffs of Well Number 9. It shows the production is rather erratic.

Q. Exhibit Number Nine?

A. Exhibit Number Nine is a decline curve on the Chacra of Well Number 9.

Q. Mr. Lyon, have you made any calculations to determine what the remaining reserves are to be allocated to the Chacra?

A. Well, for Well Number 9 it's estimated that the Chacra has remaining reserves of 76 million cubic feet, which we anticipate will be produced in, approximately, in an 11-year period.

Q. And as to the Pictured Cliffs formation?

A. Pictured Cliffs has an estimated 45 million cubic feet reserves, to be produced in a 9-year period.

Q. Do you have a recommendation to the Examiner and

the Commission with regard to how to allocate production between the commingled zones?

A. Well, as to Well Number 9, we estimate that the Chacra will produce about 20 mcf per day when the downhole commingling is affected, and we expect the Pictured Cliffs will continue to produce about the 35 mcf per day, which it is presently producing, so we would suggest that 35% of the production be allocated to the Pictured Cliffs; 65% to Chacra.

The Exhibit Two shows the current contribution of the Chacra to the two zones and we would expect that the same ratio would probably apply in the future.

Now, as to Well Number 24, we could make some estimate of the percentage based on the period of time that the Mesaverde produced in Number 24. I would suggest that we -- after the dual completion, or after the downhole commingling is affected, that we test the well for a month or maybe two months and then allocate the additional production to the Mesaverde and then apply that percentage for future production.

Q. What is your proposed plan for commingling each of these wells?

A. Well, the wells are completed in -- are dually completed in a conventional manner, and we will merely go in and kill the wells and remove the packers and run the tubing back in without the packer and place them on production on a

commingled basis.

Q. In your opinion, Mr. Lyon, will approval of this application be in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, I believe it will, and I might point out, sir, we had originally planned to ask for downhole commingling in the three wells plus one other well, on which I have exhibits. I believe that these exhibits are representative of the wells that we are dealing with here, and rather than come up here several times for hearings, I thought that it would be appropriate to ask for approval to downhole commingle all of these wells at this time. If the Commission desires, we can furnish comparable exhibits for the other wells that we do not have exhibits for today.

MR. NUTTER: You're talking about the decline curves, I presume?

A. Yes. And/or we could provide in the order for administrative procedures to handle these other wells, but just in the interest of time and saving of effort on both our part and the Commission's part, we'd like to have approval either to downhole commingle these wells at this time, and we would do the work whenever it becomes desireable from a producing viewpoint, or in the alternative, have administrative procedure where we could affect those on a well-by-well basis.

Q. Is the ownership between the two producing horizons common in each of the wells?

A. Yes, it is.

MR. KELLAHIN: We move the introduction of Exhibits One through Nine.

MR. NUTTER: Continental Exhibits One through Nine will be admitted in evidence.

MR. KELLAHIN: That concludes our case.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Lyon, I was having a hard time following your testimony with regard to that Number 9 on that production.

A. Yes.

Q. Now, I got the reserves that you mentioned for each of the zones. Now, what is the average daily rate of production for each of the zones?

A. Well, for Number 9, if you'll refer to Exhibit Two, during April it produced 1005 mcf.

Q. From the Chacra?

A. Yes. Which is in the order of 35 mcf per day. The Pictured Cliffs is not producing.

Q. And why?

A. Well, it just -- I'm not sure just what the mechanical problem is in there. I think that the well is probably

loaded up with fluids.

Q. Now, do we have an exhibit for that well, a decline curve?

A. Yes. That is Exhibit Eight. It shows the last production to be in July, I believe, of 1966.

Q. And that's Pictured Cliffs?

A. Yes, sir.

Q. So it was very erratic when it was producing and it's been shut in, then, for ten years or more.

A. Well, that's right. I hadn't noticed the difference in the years, but you're right, it has been.

Q. Since 1966. Well, I think maybe what we ought to do is go the same route on it that we go on Number 24, is take tests on completion of the work.

A. Well, that's entirely satisfactory.

Q. Now, these percentages, these figures out here at the right on Exhibit Number Two in parentheses are the percentage from the Chacra in each case, is that correct?

A. Yes, that's since the Chacra is common in all of these wells, I just gave a representation of the percent that the Chacra produced in the two completions in each well.

Q. Do you anticipate any difference in productivity from the Chacra upon the commingling of Chacra with the Mesaverde or South Blanca, whichever the case might be?

A. I really don't anticipate any.

Q. Your Chacra has higher pressures than the Pictured Cliffs but it has lower pressures than the Mesaverde.

A. Yes.

Q. So I don't know, Mr. Lyon, it would appear that possibly these pressures from the Mesaverde may retard flow from the Chacra, actually, because they are considerably in excess. You take Well Number 24 there, the Mesaverde has 976 pounds shut-in pressure as opposed to only 258 for the Chacra.

A. Yes, that's true, but Well Number 24 had a shut-in period of some about three and a half years, as compared to a week for the others.

Q. Well, in both zones?

A. No. No, just in the Mesaverde, so that 976 pounds is probably not representative of the pressures that are shown for the other completions.

Q. I see.

A. Because of the extended build-up time.

Q. Well, still we have a differential, though, of 3-to-1 on the others with -- take Number 25, you have a pressure of almost 700 pounds on the Mesaverde as opposed to 259.

A. That's right.

Q. So you've still got a 3-to-1 ratio.

A. Yeah, that's true; that's true, although the wells are all non-prorated. There may be some --

Q South Blanco wells are not non-prorated, are they?

A Well, but they're marginal wells.

Q That was going to be my next question.

A Yes, they're marginal; none of them are non-marginal wells.

Q They all are classified as marginal?

A Yes.

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

He may be excused. Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 5957 or 5958?

We'll take the case under advisement.

(Hearing concluded.)

REPORTER'S CERTIFICATE

I, SALLY WALTON BOYD, a Certified Shorthand Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Sally Walton Boyd, C. S. R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5957-5958 heard by me on 6/8, 1977.

New Mexico Oil Conservation Commission, Examiner