

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

September 24, 1957

IN THE MATTER OF
CASE NO. 1318

TRANSCRIPT OF PROCEEDINGS

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE - SANTA FE
3-6691 2-2211

Mr. Lyon.

MR. NUTTER: Are there any other witnesses in this case?

MR. KELLAHIN: No.

(Witness sworn.)

VICTOR T. LYON

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

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

Q By whom are you employed, Mr. Lyon?

A Continental Oil Company.

Q In what position? A District Engineer.

Q In what district?

A Eunice District, Eunice, New Mexico.

Q Is the subject matter of the present application located within the Eunice District? A Yes, sir.

Q Mr. Lyon, have you testified before the Oil Conservation Commission as an engineer and had your qualifications as an expert been accepted by this Commission? A I have.

MR. KELLAHIN: Are the witnesses' qualifications acceptable?

MR. NUTTER: They are.

MR. KELLAHIN: We have a number of exhibits which we would like to have marked at the present time?

Q (By Mr. Kellahin) Mr. Lyon, are you familiar with the application before the Commission in the present case?

A Yes, sir.

Q And what occasioned this application?

A The application was occasioned when Continental Oil Company was unable to make a South Eunice oil producer out of Well No. 3 drilled on the Meyer B-23 lease, in Section 23, Township 22 South, Range 36 East.

Q Now, was there already existing on the acreage involved a gas well?

A Yes, sir.

Q What was it completed in?

A Our Meyer B-23 Well No. 1 was completed as a Jalmat Gas Pool Well, and was assigned a 320-acre gas proration unit consisting of the North Half of aforementioned Section 23.

Q And then how was the Meyer B-23 Well No. 3 completed?

A Well No. 3 was drilled into the Queen formation anticipating a South Eunice completion. However, core analysis indicated that the South Eunice section was unproductive, and permission was requested of our management and subsequently granted to complete the well as a Jalmat Gas Well.

Q Now, referring to what has been marked for identification as Exhibit No. 1, would you state what that is?

A Exhibit No. 1 is a structural contour plat of the Jalmat Gas Pool in the vicinity of our Meyer B-23 lease. The contours reflect the top of the Yates formation. Our lease, the Meyer

B-23 lease is outlined in red and the two wells under consideration in this hearing are circled in red. Those are wells No. 1 and 3.

Q Would you give the location of the two wells, please?

A Well No. 1 is located 990 feet from the north and 650 feet from the West line of Section 23; Well No. 3 is located 1980 feet from the North line, 660 feet from the West line of that section.

MR. COOLEY: Would you correct the location of that well No. 1, please, Mr. Lyon?

Q I think you gave that wrong, Mr. Lyon? Repeat that.

A Well No. 1 is located 990 feet from the North and 1650 feet from the West line of Section 23.

Q Well No. 3, would you give that again, please, sir?

A Well No. 3 is located 1980 feet from the North, 660 feet from the West line of the section.

Q Now, in projecting a well in this particular field, is there any reference made to the contours of the Yates, what is the practice?

A Well, it is the practice in our company, and I believe in most companies, to interpret structural positions of the shallow formations on the basis of the top of the Yates formation.

Q Now, was there an attempt made to complete that well in the Queen formation in the South Eunice Pool? A No, sir.

Q For what reason?

A Well, the entire South Eunice interval which was expected

to be productive was cored, and the core analysis was received, and I would like to read a part into the record, why we did not attempt a completion there "Seven Rivers formation analyzed from 3575 to 3854 feet is interpreted to be water productive; however, no appreciable quantity of fluid production is expected due to the low permeability and low porosity.

Queen formation analyzed from 3868 to 3869 feet exhibited oil productive characteristics; however, due to the limited section, this one foot of the formation is of no commercial importance. The samples indicated by an asterisk in the probable production column of the Completion Coregraph are considered to represent water productive formation; however, no appreciable quantity of fluid production is expected due to the low permeability and low porosity. The remainder of the Queen sand analyzed between 3854 and 3885 feet exhibited permeability of less than 0.1 millidarcy, and is nonproductive."

It was because of this extremely unfavorable core analysis that we elected to attempt no completion in the South Eunice Pool. We did set pipe, five and a half inch casing at a total depth, but our perforations were at 3524 to 3538, and 3484 to 3496 which are above the interval that was cored. These zones tested gas at the rate of 1,863,000 cubic feet per day.

Q Were there some additional perforations made?

A Yes, sir, after we had found that the only productive zones were gas productive, we requested of our management and

subsequently received approval to perforate additional sections, which are 3312 to 3320, 3334 to 3376, 3381 to 3400, 3414 to 3420, 3428 to 3448, and 3454 to 3468.

Q How was the well completed, Mr. Lyon?

A The well was sand fractured, and open flow potential tested two million seven hundred fifty thousand cubic feet per day and had a deliverability against one hundred fifty pounds pressure of two million five hundred seventy thousand cubic feet per day and against six hundred pounds pressure of one million five hundred thirty-five thousand cubic feet per day.

Q Now, referring to Exhibit No. 2, would you state what that is?

A Exhibit No. 2 is a structural plat covering the same area as shown on Exhibit No. 1, but the contours are based on the top of the Queen formation. The Queen formation was chosen because it governs the limit of the South Eunice Oil Pool, we have circled in red on this Exhibit the wells which are completed in the South Eunice Oil Pool, and circled in green are the wells which are completed as Jalmat Oil wells.

Q Now, on the basis of this information, does that reflect, Mr. Lyon, that the location of the Meyer B-23 Well No. 3 has reasonably been anticipated to be oil productive?

A I believe that it does. The Queen formation was found to be unusually low in the No. 3 Well due to a slight thickening of the formation, so that the sink hole in which well No. 3 is

located is slightly deeper than it is found in the Yates. You can see by the South Eunice Oil Well completion that this is a unual step out well. We had completely developed our Meyer B-22 lease to the South and West and this No. 3 Meyer B-23 Well was our next logical location in developing the South Eunice Pool.

Q Now, have you prepared an Exhibit which shows the results of your deliverability test and other information?

A Yes, sir. Exhibit No. 3 is the Commission's Form C-122 with attached graphs showing the four minute back pressure test taken on this well.

Q Now, referring to what has been marked as Exhibit No. 4, what is that exhibit?

A Exhibit No. 4 is an acreage allocation plat showing the well which have been completed as Jalmat Gas Wells and these wells are circled in green. Outlined in green are the appropriation units which are assigned to these wells. Also shown on Exhibit No. 4 are the proposed gas proration units which are requested in this application, and circled in red are the wells to which these units are requested to be assigned.

Q And what are the proposed units, what is the description of those proposed units?

A The unit for well No. 1 is requested to be the North Half of the North Half Section 23. The unit for No. 3 is requested to be the South Half of the North Half of Section 23.

Q Now, referring to Exhibit No. 5, what is that?

A Exhibit No. 5 is a copy of the radioactivity log which was run on the Meyer B-23 No. 1. This well was completed in open hole, and the open hole interval is indicated to be that between the total depth and the casing symbol sign, which is at approximately 3140.

Q Now, referring to Exhibit No. 6, what is that?

A Exhibit No. 6 is a copy of the radioactivity log run on Well No. 3. This exhibit also shows the section which is cored and the section which were perforated.

Q Now, have you made an investigation to determine if this Commission had approved similarly shaped units? A Yes, sir.

Q Have you made a list of those as Exhibit No. 7?

A I have.

Q Will you briefly describe that exhibit?

A Exhibit No. 7 is a very incomplete list of long 160-acre non-standard proration unit which have been approved by NSP Orders. These -- by long units I mean units which are approximately one mile long and one quarter of a mile wide.

Q Has Continental Oil Company ever had such a unit approved heretofore? A Several.

Q Now, referring to Exhibit No. 8, what is that?

A Exhibit No. 8 is a list of wells wherein an alternative course of action was taken. Reviewing our situation here briefly, we have now two gas wells on what has been approved as a single gas proration unit. This has happened several times in the past,

and in several cases the operators have elected to just assign the additional well to that unit. Exhibit No. 8 is a list of those cases that I am aware of, there may be more. Order No. R-796 resulted from the application of the Ohio Oil Company wherein a 320-acre unit was set up in the Tubb Gas Pool for Well No. 9, and the operator subsequently completed Well No. 11 in the same quarter section as well No. 9, and the unit was jointly assigned to these two wells.

Q Would such an alternative be acceptable to Continental Oil Company in this case?

A Well, actually it would be more favorable to Continental than the manner in which we have proceeded.

Q Now, would failure to use the Meyer B-23 Well No. 3, as a gas well result in waste? A Yes, it would.

Q For what reason?

A We have spent in excess of \$70,000.00 attempting to complete an oil well and we were unsuccessful due to conditions beyond our control, and there remains gas productive formations favorable to this well. Failure to utilize this well for the recovery of gas would, in my mind, result in economic waste.

Q Are you familiar with the provision of Rule 5A of Order No. R-520, Mr. Lyon? A Yes, sir.

Q Do the proposed units conform reasonably to that unit?

A Yes, sir.

Q Do they consist entirely of contiguous quarter-quarter

sections?

A They do.

Q Do they lie wholly within a governmental section?

A They do.

Q May the entire area dedicated to each of the wells be reasonably presumed to be productive of gas? A Yes, sir.

Q Does the unit exceed 5,280 feet in length or width?

A No.

Q Has notice been given of this application to operators whom notice is due under the provisions of the order? A It has.

Q This application was originally filed as an application for administrative approval, is that not true?

A That is correct.

Q Now, in the event the Commission saw fit to approve this application for two non-standard units, would that impair the correlative rights of others offsetting this acreage?

A I don't believe it would.

Q Would production be the same from the acreage involved as though there were still one well on the acreage?

A Continental Oil Company will receive no more allowable from these two wells than it presently does from Well No. 1.

Q What is the closest distance of these two wells from the nearest well producing from the same pool?

A The nearest well is in the Sun Record unit, I believe it is No. 1, located in the Northeast Quarter of the Northeast Quarter of Section 22. The approximate distance of our No. 3 Well from

the Sun Record Well is 1867 feet; the distance No. 1 is from that well is 2,350 feet.

Q In your opinion, Mr. Lyon, is the spacing of wells in this pool critical? A I don't believe it is.

Q Would any appreciable drainage, in your opinion, result from an uneven spacing? A No, none.

Q On what do you base that conclusion?

A Well, I made an investigation of the most serious case that I know of wherein a well was, you might say, crowded by wells with larger units. This particular well that I investigated had a 160-acre allowable and was offset by a well at a distance of 2,380 feet which had a 320-acre allowable; another well at a distance of 2,513 feet with a 240-acre allowable, and another well at a distance of 1,818 feet with a 320-acre allowable, and another well at a distance of 3,131 feet with a 320-acre allowable. The trend of shut-in pressure during the last two years was observed, and the production during the same period was calculated, and it was found that the well produced more gas per pound drop in shut-in pressure than the acreage of the wells surrounding it, and was exceeded in production produced per pound reduction and shut-in pressure by only one well in the area, and based on this study, it is my opinion that the spacing of the wells is not critical, that the thing that is critical is the fact that allowable is based 100 percent on acreage.

Q What is the well on which you are referring, Mr. Lyon?

A That was the Amerada State Q No. 1. It's in the Eumont Pool in Section 16, 20 South, 37 East, I believe.

Q Now, Mr. Lyon, if you were going to drill for gas on this particular unit, would you have picked the location that was picked for the Meyer B-23 Well No. 3? A No, sir.

Q What location would you pick?

A I would have picked the location in the Northeast Quarter of Section 23, probably in the Southwest Quarter of the Northeast Quarter.

Q What is the present production status of well No. 1?

A Well No. 1 is overproduced to a slight degree, as are all of the wells shown on our exhibits. The Meyer B-23 No. 1, as of August 1st, was over produced 19,607 MCF.

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

MR. NUTTER: Does anyone have any questions of the witness? Mr. Ballow?

CROSS EXAMINATION

BY MR. BALLOW:

Q Mr. Lyon, Continental did not apply for a permit in the Jalmat Pool for its Meyer B-23 Well No. 3, did it?

A Our notice of intention to drill originally stated that the well was drilled with the objective as the South Eunice Pool.

Q And you could not have received a permit for the Jalmat Pool at that location with the well already on the Quarter Section could you? A I believe we could.

Q Do the Rules in New Mexico permit the reduction in the size of proration units, gas proration units?

A I am sure they do, we have done it several times.

Q Without a hearing? A Yes, sir.

MR. BALLOW: Do they permit that, Mr. Nutter, reduction of size of gas proration units once they have been established?

MR. NUTTER: There have been several cases of rededication of acreage, haven't there?

MR. COOLEY: They have been so interpreted.

A Our Lockhart B-31 lease has two wells, and one had a 160-acre unit and the other an 80-acre unit, and we swapped the acreage around to where one -- It was reversed, the one which had had the 80-acre unit now has 160.

MR. NUTTER: Was that done with a hearing or administrative?

A It was done administrative, I believe.

Q (By Mr. Ballow) Has there ever been a gas well located in the Southeast Quarter of that section?

A No, sir, not to my knowledge.

Q As engineer, which well, which of the two wells, the Meyer B-23 Well No. 1 or Well No. 3, would be the best located to drain the North Half of that section?

A Well, I believe the No. 1 would be possibly better located; however, I think either well would drain it.

Q Although there has never been a well located in the Northeast Quarter of the section? A That's correct.

Q I believe you stated that if this application is not granted, that waste would be committed? A Yes, sir.

Q The waste that would be committed would be the waste of Continental's monies because they drilled a well that they couldn't produce, is that right?

A Primarily, at least at the present, that is what the waste would be. It is possibly that if the pressure declines, it may be necessary to assign an additional well to this 320-acres in order to protect our correlative rights and prevent waste of that nature.

Q That's assuming that the entire 320-acres is productive?

A Yes, sir, I think that is a reasonable assumption.

Q Are there any wells in this field located east of your Meyer B-23 well?

A Not directly due east. There is a well to the southeast; several wells to the southeast.

Q None to the Northeast? A Not directly, no.

Q Did you make any attempt to complete the Seven Rivers or Queen formation well in this Meyer B-23 Well No. 3?

A No, sir, and I don't believe that the Sun Oil Company would either, if they had the core analysis that we have.

Q You don't know whether it would produce or not, you just took the core analysis? You set pipe through the formation, did you not?

A Yes, sir. There was perhaps some consideration given to attempting a completion. The Shell Oil Company has been attempting

to make a completion in the well directly South of this. On Exhibit No. 2 that well is marked SI or shut-in, for further study. They have spent, I don't know how much money, in several months attempting to get a completion out of that well, but to date, they have been unsuccessful.

Q Did that control Continental's thinking in any way?

A No, sir. However, I am glad we didn't try to attempt the completion.

Q Did you have a permit to complete the well in the Jalmat Pool at the time you made your completion?

A I don't know.

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

MR. NUTTER: Does anyone else have any questions of the witness, Mr. Kellahin?

MR. KELLAHIN: I would like to offer at this time Exhibits 1 through 8 inclusive.

MR. NUTTER: Without objection, Continental's Exhibits 1 through 8 in Case No. 1318 will be received. Mr. Utz.

QUESTIONS BY MR. UTZ:

Q Mr. Lyon, are the perforations opened in your Meyer B-23 No. 1 and 3 within the vertical limits of the Jalmat Gas Pool as defined by the Commission?

A Yes, sir, however, the No. 1 is completed open hole, and the interval opened is within the Jalmat.

Q Now, your reason, as I understand it, for locating the

No. 3, 660, 1980 was to try to make an oil well in the South Eunice Pool, is that right? A Yes, sir.

Q What would be the reason it was located structurally low, would it not? A That's correct.

Q I believe you stated that if you had been trying to make a gas well you would have located it in the Northeast Quarter?

A Yes, sir.

Q But there are no wells offsetting this to the east which would tend to counter-drain that, that you know of?

A That's correct.

MR. UTZ: That is all I have.

MR. NUTTER: Anyone else have a question of the witness?

Mr. Cooley.

QUESTIONS BY MR. COOLEY:

Q Mr. Lyon, I would like to dwell a little more on the point dwelled on by Mr. Ballow concerning the waste that could be caused if this application is denied. The entire North Half of Section 23 has to date, and still is dedicated to the No. 1 well, is it not? A That's correct.

Q Is it your professional opinion that that well will more adequately drain the North Half of Section 23?

A It will, so long as its capacity to produce per acre allocated to it is equal to those of the offset wells.

Q Will you explain that answer please?

A Well, all of the other wells in this area have a 160-acre

allowable, consequently, their allowables are only half of what our Meyer B-23 Well No. 1 Well has. As pressure declines, deliverability will also decline, and there will come a day, I am sure, when the No. 1 well will not be able to produce as much gas per acre as the offset wells. At that time, we would suffer drainage.

Q And those two wells that Continental has could make the allowable, or one could make the double allowable? A Yes, sir.

Q What is the acreage dedicated to the Sun Oil Company's No. 1 Well?

A The Sun Record unit well has the Northeast Quarter of Section 22.

Q You are likewise offset to the Northwest and North by a 160-acre unit? A Yes, sir.

Q And to the South and Southwest? A Yes, sir.

Q This would be a possible violation of correlative rights, but would not involve waste, is that correct?

A It would involve economic waste, I think.

Q How do you define economic waste, Mr. Lyon?

A The unnecessary expenditure of money, or money spent without an adequate return.

Q I don't believe that either of those definitions is encompassed by the State of New Mexico in the definition of waste.

A You mean economic waste is not in the definition of --

Q Not as you defined it, no, sir.

MR. KELLAHIN: If the Commission please, I think that is a

legal conclusion.

Q I want to know what the witness when he stated it would result in waste and --

A Well, let me approach it this way, if it were necessary for us to drill an additional well in order to protect our correlative rights, then there would be economic waste because we now have a well.

Q On your Exhibit 7 you set out several instances in which similar proration units have been approved by this Commission?

A Yes, sir.

Q Are any of those units -- Are any of the wells on those units as close to the offsetting property lines as is the No. 3 Well in this case?

A I am familiar with the location of only two of those wells, The N. B. Hunts No. 1 and N. B. Hunts No. 2, both are located 660 feet from the west line of that lease and I believe that they are only located 1320 feet apart. Their 1 is located 660 from the west, 660 from the south, the other is located 660 from the west and 1980 from the south.

MR. COOLEY: That is all.

QUESTIONS BY MR. NUTTER:

Q Whose acreage offsets them?

A I don't know. I can find that out for you.

Q Mr. Lyon, would Continental have contemplated another well and also projecting it to the Jalmat Gas Pool on this 320-acre

unit?

A Not immediately.

Q Then the fact remains, does it not, that they drilled a well to the South Eunice and got a dry hole?

A Yes, sir, that's right.

Q And to dedicate 160-acres to that dry hole is a salvage operation?

A That's correct.

MR. NUTTER: Does anyone have any questions of Mr. Lyon?

MR. KELLAHIN: That's all we have, Mr. Examiner.

MR. NUTTER: Does anyone have anything else they wish to offer in this case? Mr. Ballow.

MR. BALLOW: At the time I wrote my letter I didn't realize that the Commission permitted the reduction of size in proration units, but our position is simply that Continental Oil Company has enjoyed an allowable advantage for its Meyer B-23 Well No. 1 for all this time, when each of the wells surrounding it had 160-acre assigned to it. Now, pressure is declining in that area; they have drilled another well and want to assign half an allowable so that they can continue to maintain that advantage, and our objection is on the basis of locating the other well closer to us rather than on the other quarter section, which has no well on it.

MR. NUTTER: Thank you Mr. Ballow.

MR. BALLOW: Thank you.

MR. KELLAHIN: If the Commission please, in reply to the statement made by Mr. Ballow, I would like to point out that the spacing set out by the Conservation Commission is 640-acres,

and had Continental had one well on the 640-acres, I don't think you could refer to that as an allowable advantage. Certainly, if they got 320 they had no advantage because they had 320-acres, whereas the offsetting wells only had 160-acres and theoretically, under our producing rules, we are entitled to produce only half as much as the 320-acre unit. I would also like to point out that the Sun Record well's accumulated production is as great as that on the Meyer B-23 No. 1 well, so on that basis, I don't see there is any argument as to who has an advantage.

The other point I would like to make is that the one well on 320, or 2 wells on 320, or a 160-acre unit with a well on each, the allowable assigned by the Oil Conservation Commission is going to be the same, and it depends entirely upon the well to produce it, which they have a right to do. On that basis, we seek approval of two non-standard 160-acre units or as Mr. Lyon pointed out in his testimony, one unit with two wells would be equally acceptable.

MR. NUTTER: Thank you Mr. Kellahin. If there is nothing further in Case No. 1318, we will take that case under advisement, and continue with case No. 1319.

