BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 23, 1961

EXAMINER HEARING

IN THE MATTER OF: Application of Continental Oil Company for an exception to Rule 26 (a) of Order No. R-1670. Applicant, in the above-styled cause, seeks an exception to Rule 26 (a) of Order No. R-1670 for the reclassification to a Tubb gas well of its State 10 Well No. 3-D, located 990 feet from the North line and 840 feet from the West line of Section 10, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico.	CASE 2188

BEFORE:
Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 2188.

MR. PAYNE: Case 2188: Application of Continental Oil Company for an exception to Rule 26 (a) of Order R-1670.

MR. KELLAHIN: Jason of Kellahin & Fox, Santa Fe, New Mexico, representing the Applicant. I will have one witness.

(Witness sworn.)

VICTOR E. LYON,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Victor E. Lyon.

Q By whom are you employed and in what position?

A Continental Oil Company as District Engineer in Eunice, New Mexico.

Q Have you previously testified before the Oil Conservation Commission as a Petroleum Engineer?

A Yes.

MR. KELLAHIN: Witness' qualifications are acceptable?

MR. UTZ: Yes.

Q (By Mr. Kellahin) Mr. Lyon, you are familiar with the application of Continental Oil Company in Case 2188?

A Yes sir.

Q Would you state briefly what is proposed in this application?

A This is Continental Oil's application for an exception to Rule 26 (a) for the special rule and regulations for the Tubb gas Pool for the reclassification of its State 10 Well No. 3-D as a Tubb gas well.

Q What is the location of this well?

A It is located 990 feet from the North line and 840 feet from the West line of Section 10, Township 21 South, Range 37 East.

(Marked Applicant's Exhibit Numbers 1, 2 and 3 for identification.)

Q Referring to what has been made Exhibit Number 1, would you discuss that Exhibit?

A Exhibit Number 1 is a location and ownership plat showing the State 10 lease on the surrounding area. It shows the State 10 lease outlined in red, and it shows the proration unit which had been assigned to the well which is outlined in green.

Q Is that a gas proration unit?

A Yes sir.

Q The area outlined in green?

A Yes sir, a standard gas proration unit.

Q You say the lease is outlined in red?

A Yes sir.

Q Has the acerage outlined in green been unitized for gas production from this well?

A Yes, it has.

Q Referring to what has been made as Exhibit Number 2, would you discuss that?

A It is a schematic diagram of the present application of this well. When it was originally dual-completed in 1955, it was completed in such a manner that the Drinkard oil production which produced through the two and three-eights inch tube, and the Tubb gas production was produced through the tubing casing annulus. In 1957, it became apparent that the well was loading up with fluid. Therefore, we pulled the rods and pump out of the tubing for the production of the Drinkard and set a tubing valve and opened the sleeve valve to permit the Tubb gas production to be produced through the tubing. It was produced in this manner for several

months. It became apparent that the tubing would enable the well to produce more efficiently. Therefore, in 1959, the well was killed, and one-inch tubing was installed as a syphon ~~strain~~ string. Then the well was swabbed off through the two-inch tubing, and an attempt was made to produce the well through the one-inch tubing. However, an accumulation of water in the well reservoir caused the one-inch tubing to load up completely so that it had insufficient pressure to produce. We continued production through the two-inch tubing for several additional months. After several months, we attempted again to produce the well through the one-inch tubing, and we were successful in doing so.

It was then decided to return the Drinkard forms to production, so we entered the well and attempted to close the sleeve valve; however, the seals on the sleeve valve failed, and it was necessary, after we had removed the tubing plug, to run a knot and Kobe Packer assembly. After we had installed this equipment, we ran a Packer leakage test which was successful, which indicated we had no communication between zones. We then installed a pump with mechanical holddown, and we are presently producing the Drinkard production through the two and three-eights-inch tubing and the one-inch tubing.

MR. UTZ: Were they both flowing?

MR. LYON: No sir, the Drinkard was not.

Q (By Mr. Kellahin) Referring to what has been made as Exhibit Number 3, would you discuss that Exhibit?

A Exhibit Number 3 is a tabulation of well tests, data of which we have secured on 24 hour basis. At the last official gas survey, the well tested with the gas-oil ration of 20,000 cubic feet per barrel, and the limited gas-oil ration was such that the well's allowable was reduced to 6 barrels a day. At this rate of production, we are unable to keep the well unloaded. The gravity of the oil was such that we felt we needed test information too on which to base our recommendations to the Commission. We therefore requested permission to secure a testing allowable, and during the days listed on Exhibit Number 3, we tested the well, measured the oil, water, and gas and the gravity of the fluids collected on the Separator as Exhibit Number 3 indicates.

The gas-oil ration adds to 7,902 to 18,431. The liquid ranges from 39.8 to 42.9.

Q There has been a tendency of the apparent gravity for the liquid to increase?

A It fluctuates widely. The information which was used for the preparation of the application was based on the three most recent ones then available from runs from the tank or the pipeline. We have one for the liquid production which was running 45 degrees gravity.

Q You are familiar with the provisions of the Commission's Order R-1670, are you not?

A Yes sir.

Q What is the basis for the classification of an oil well

or gas well under that order?

A The gas well is a well with liquid hydrocarbons which have a gravity of not less than 45 degrees in API.

Q Then at the present time, with the gravity of 42.9, this could not without an exception be classified as a gas well, is that correct?

A That is right.

Q Has the well gone from a gas well classification to an oil well classification?

A Yes, it has.

Q Is this a situation which is common in this particular area?

A It is not wide spread, but it occurrs fairly commonly throughout.

Q Has the Commission granted an exception similar to the one you are seeking here within the area of this well?

A It is my understanding that an exception was granted for their State No. 11 which is located on the lease directly south of our State 10.

Q If the application is not granted, in your opinion, will that result in waste from the reservoir?

A Yes, it will require either -- if we abandon the Drinkard so that we can produce through the two-inch tubes or tubing or the loading up of the Tubb Zone -- it will no longer produce.

Q Would that constitute a loss of gas at that reservoir?

A And liquids, yes sir.

Q What kind of line pressure will you be producing into, Mr. Lyon?

A There is a 250 pound connection available.

Q Do you believe that the well will produce satisfactorily against a 250 pound line pressure?

A Yes, I do.

Q Will the well make its allowable on the 260-acre unit?

A During the test, which we have just conducted, the well produced at a rate of 890 MCF per day which is above the daily allowable for the Tubb Pool.

Q In the event the Commission grants that application, what volumes of liquids do you anticipate will be produced?

A Based on the information here, I would estimate the liquid production to be 30 to 35 barrels per day.

Q Were Exhibits 1, 2 and 3 prepared by you or under your supervision?

A Yes sir.

MR. KELLAHIN: At this time, I would like to offer in evidence Exhibits 1, 2 and 3.

MR. UTZ: Without objection, Exhibits 1, 2 and 3 will be entered into the record.

MR. KELLAHIN: That is all the questions I have.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Lyon, the problem you have now with this well is that it's producing as an oil well, right?

A Yes sir.

Q And it's not able to produce its allowable?

A It can produce its allowable, but at the restrictions listed on the allowable by the limited gas-oil ratio, the allowable is insufficient to allow the well to unload the fluids.

Q So in effect, if this is granted, you will be able to produce a gas allowable as well as a considerable amount of liquids?

A I don't believe that is uncommon in that type.

Q On this test, are producing anywhere from 50 to 123 barrels of oil in a 24 hour period?

A Yes.

Q And anywhere from 900 to around 972 MCF with gas?

A Correct.

Q As a gas well, in the Tubb Pool, how much gas will you be allowed to produce?

A As I recall the allowable for the Tubb averages, in the range of 500-600 MCF per day for a 160-acre unit.

Q So that your statement of a moment ago that you believe the oil incidental of this gas will be around 35 barrels?

A Yes sir, you will note that the test on February 10 for the oil produced was a 123 barrels of oil after the well had been shut in for generally two weeks.

Q So the net affect of this request is that you will be

able to produce more gas and slightly less oil?

A Then it is as an oil well.

Q Yes, as an oil well?

A Yes sir, that is right.

MR. UTZ: Any more questions of the witness?

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr. Lyon, do you think the gravity figure which we use as a definition, the dividing line between oil and gas wells in the Tubb, is too high, generally; in other words, do you think 45 degrees API is too high to use as a dividing line

A Well, I am not certain in a reservoir of this type; that is, the best way to divide it, the gravities of liquid produced in this Pool vary very widely.

Q Do you consider this to be an associated reservoir?

A Well, to be frank, I am not sure what is going on in this reservoir. It's the most unusual reservoir -- most wells produce liquid, and the ratios vary very widely, and the liquid gravity varies very widely. There have been some wells where it was observed that gas-oil fluctuation on the producing rate of the well, but I don't believe this consistently true.

Q Did I understand you to say that at one time you produced the Tubb through the two and three-eights inch tubing?

A Yes sir.

Q Did you have this problem of loading up at that time?

A No, I had no difficulty in producing through the two and three-eighths.

Q So that it's probably loading up because you have to produce it through this one-inch tubing?

A That is true.

Q What does the Drinkard make?

A The last test I recall, the Drinkard was making about 17 barrels of oil and 35 barrels of water, but that is not a recent test.

Q So the Drinkard Zone is relatively near depletion, you might say?

A Yes sir, it is.

Q At that time, you could produce the Tubb through the two and three-eighths again?

A That is correct.

Q You had no problem?

A That is right.

Q What's the allowable situation, Mr. Lyon, when you change classifications in the Tubb inasmuch as the change in classification probably won't occur when the well is in balance, at least if it's a gas well?

A I don't believe I understood?

Q Well, the well changes from a gas well, and it wasn't in balance as to gas production, what happens when you change classification?

A You have to do it in a completely different system.

Q So any overproduction or underproduction is wiped off the books?

A That is correct, I may be in error.

Q It's carried in the books in the event it comes back, back as a gas well, it's charged?

A I believe so; it's a gas well at the time, period.

Q So this has been a gas well?

A That is correct.

Q So, if it's classified again as a gas well, any overproduction that it was classified, the classification on a gas well will be reinstated?

A Well, overproduction, but I don't believe underproduction.

Q I see.

A We have a supplement here; I don't know whether I can read this. This was in September of '59: Net allowable, 431.52, so it was underproduced at that time.

Q As I understand, your application is based on the fact that trying to produce the Tubb through the one-inch tubing is causing the well to load up; consequently, you are not making the amount of gas or liquid that you could make if you were producing through a large tube?

A That is correct.

Q Now, at what point do you ordinarily abandon a Drinkard taking into consideration both oil and water production?

A Well, we also have some gas production which is produced with the oil. Drinkard wells in the area are generally nearing depletion stage. We are producing a good many Drinkard wells which are producing more than two or three barrels per day.

Q If we reclassify this well as a gas well, the Tubb, would you be willing to have it reclassified back as an oil well at such time as you abandon the Drinkard Zone and use the well through the two and three-eighths inch tubing?

A Yes sir, if the Commission sees fit to do that.

Q That would reduce your problem in the interim period to grant your application here?

A Correct.

Q It would tend to eliminate your problem if at some future date you could produce the Tubb through a two and three-eighths inch tubing?

A Yes.

RE-CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Lyon, your production string is seven inch?

A yes.

Q Can't you run a larger size tubing than the one inch with your two and three-eighths?

A Yes sir, it can be done. It costs a considerable amount of money.

Q So really, your only problem is that you have one inch

tubing trying to produce your water and low gravity liquids with the gas, and at the rates you have to produce, the tubing isn't quite big enough?

A I am sorry, I lost you.

Q You say, actually, your problem is that you have one inch tubing trying to produce low gravity oil and water at reduced rates, and the cause of your liquid problem is that the tubing isn't big enough to produce at those decreased rates?

A That is true. Of course, when we installed this tubing, we had no idea this would be classified as an oil well.

RE-CROSS EXAMINATION

BY MR. PAYNE:

Q It would have been efficient had it been a regular gas producer. If it wasn't producing all these liquids, one inch would be large enough?

A The difficulty is that the limited gas-oil ratio is set far above the limit on any other gas pool in this area.

Q Well, is that a gas pool?

A Yes, I think it is.

Q You think the gas is more important than the oil in this reservoir?

A Yes, it's the major material present.

Q In terms of volume, or reservoir voidage, or money?

A In --

Q In terms of what, all three?

A All of them, but I do think that this is not an individual problem. This will be coming up in more wells more frequently.

Q What is that going to do to your offset? Is this going to hurt their rights in any way?

A I don't think so; we will not be producing any more gas than anyone else; we will not be producing any more oil than the oil wells are permitted to produce. I don't see how it would be hurting anybody.

Q You say that to the best of your recollection, there has been an exception of this kind granted to the Humble Well south of your well, here?

A That is my recollection; I recall the application being filed, and I believe I recall seeing the order. I can't give you the Order Number.

MR. PAYNE: All right, sir, thank you.

RE-REDIRECT EXAMINATION

BY MR. UTZ:

Q Mr. Lyon, when you analyze this well from the SUR standpoint of considering the gravity, do you think that a well should be classified as a gas well if the GOR's are in practical range? This itself isn't normally done; normally, GOR's are much higher?

A That is true, but also you are limiting gas-oil ratio which in pools of this type are higher. We could, especially, if the ratio were 8000 to 1 rather than 2000 to 1.

Q Do you have any idea what your slush ratio is in this pool?

A If you took ten samples, I expect you would get ten different slush ratios. If you took several samples in isolated zones, well, they'd be different.

Q But your answer is that they'd all be more than 2000 to 1?

A I really couldn't say.

MR. UTZ: Any other questions?

MR. PAYNE: Does Continental have any oil wells in this pool that are not penalized?

MR. LYON: Yes.

MR. PAYNE: So there are some producing with a gas-oil ratio?

MR. LYON: We have one that is pumping.

MR. PAYNE: Thank you.

MR. UTZ: Any other questions? The witness may be excused.

(Witness excused.)

MR. UTZ: Any other statements in this case? The case will be taken under advisement. We will have a ten minute recess.

STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, LA VERNE E. JAMES, 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 13th day of March, 1961.

La Verne E. James
Notary Public - Court Reporter

My commission expires:

January 6, 1965.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2188, heard by me on Oct. 23, 1961.

Examiner
New Mexico Oil Conservation Commission