

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 19, 1956

_____)
IN THE MATTER OF:)
)
)
)
CASE NO. 1038)
)
_____)

TRANSCRIPT OF PROCEEDINGS

NEW MEXICO OIL CONSERVATION COMMISSION
 MABRY HALL - STATE CAPITOL
 SANTA FE, NEW MEXICO

REGISTER

HEARING DATE March 19, 1956

TIME: 10:00 a.m.

| NAME: | REPRESENTING: | LOCATION |
|--------------------|---------------|---------------|
| G. W. Eaton Jr. | Stanolind | Roswell, N.M. |
| J. W. Meek | Stanolind | Roswell N.M. |
| O. Seth | Seth & Wolff | Santa Fe |
| R. E. Fox | N. B. Hunt | Dacons Tex |
| G. S. KOTHE | N. B. Hunt | Dallas, Tex. |
| E. C. Maxwell | Katz Couac | Denver Colo. |
| Gen. [unclear] | OCC | San Antonio |
| F. Norman Woodruff | EPNG GO. | EL PASO, TEX. |

BEFORE THE
OIL CONSERVATION COMMISSION
March 19, 1956
Santa Fe, New Mexico

In the matter of the application of N. B. Hunt)
for an order authorizing the dual completion of)
a well in the Tubb Gas Pool and the Blinebry Gas)
Pool in compliance with Rule 112 (a) and for an)
order granting an exception to Rules 2 and 5 (a))
of the Special Rules and Regulations for the)
Blinebry Gas Pool as set forth in Order R-610)
in the approval of an unorthodox location and)
establishment of a 240 acre non-standard gas)
proration unit.)

Applicant, in the above-styled cause, seeks an)
order authorizing their Mittie N. weatherly Well)
No. E-1 now producing in the Tubb Gas Pool to be)
dually completed in the Blinebry Gas Pool. Ap-)
plicant further seeks approval of an unorthodox)
location in the Blinebry Gas Pool of said Mittie)
N. Weatherly Well No. E-1 located 2,090 feet from)
the North line and 1980 feet from the East line)
of Section 21, Township 21 South, Range 37 East.)
Applicant further seeks an order granting a non-)
standard gas proration unit of 240 acres compris-)
ing the W/2 NE/4 and the NW/4 of Section 21,)
Township 21 South, Range 37 East, Blinebry Gas)
Pool, Lea County, New Mexico, to be dedicated)
to said well.)

Case No. 1038

BEFORE:

Warren W. Mankin, Examiner

TRANSCRIPT OF HEARING

EXAMINER MANKIN: The hearing will come to order. The first case on the docket today is Case 1038, the application of N. B. Hunt for an order authorizing the dual completion of a well in the Tubb Gas Pool and the Blinebry Gas Pool and for a non-standard unit for the Blinebry Gas Pool. Are there appearances in this particular case?

MR. FOX: My name is Robert E. Fox, Attorney at Law, Box 1713, Santa Fe, New Mexico. I am appearing on behalf of the applicant, N. B. Hunt. We have one witness to present to the Commission.

GORDON ROHE

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

DIRECT EXAMINATION

By: MR. FOX:

Q. State your name and address please.

A. Gordon Rohe, Dallas, Texas.

Q. How do you spell your last name?

A. Rohe, R O H E.

Q. By whom are you employed, Mr. Rohe?

A. By N. B. Hunt.

Q. Are you - - - where is the principal office of the - - - of Mr. Hunt's?

A. Mercantile Bank Building, Dallas, Texas.

Q. Are you generally familiar with the application in Case No. 1038?

A. Yes, I am.

Q. Did you write the application?

A. Yes, I did.

MR. GURLEY: Just a minute, do you wish to qualify him as an expert witness?

MR. FOX: I am going to - - - this man along that line has previously testified before the Commission and - - - as an expert engineer - - and I would ask whether the Commission will accept this man as an expert based upon his previous appearance?

MR. MANKIN: Might I ask first, just to clarify myself as Examiner, Mr. Rhoe, you qualified as a Petroleum Engineer previously, did you not?

MR. ROHE: Thats correct.

MR. MANKIN: Qualifications accepted.

Q. Mr. Rohe, there has been marked and placed before you applicant's exhibits Nos. 1, 2, 3, and 4 for use in conjunction with your testimony here. I will ask you, are you familiar with the ownership, the leases and the acreage in question in this particular application?

A. Yes, I am. The lease in question is the Mittie N. Weatherly lease, which consists of the W/2 of the NE/4 and the NW/4 of Section 21, 21 South, 37 East, in Lea County and it is composed of 240 acres more or less.

Q. Can you state what the facts are in regard to the offsetting acreage?

A. The offsetting acreage to the east, the 80-acre lease known as the Elliott lease, is Sunray Mid-Continent's lease and it may be pointed out that in this particular case that there is separate fee owners on the governmental 160-acre tracts in the NE/4 of Section 21.

Q. Now what is the fact in regard to the wells in the tract in question as well as the offsetting acreage?

A. The pointing question there is the Mittie N. Weatherly lease has a Tubb gas sand producer and has the 240-acre lease in question dedicated to this Tubb gas sand well and also has a Eumont Gas Pool, Penrose-Skelly formation gas producer with the same 240-acre lease dedicated to this Eumont Gas well.

Q. Now this well in question in this application is, I believe you said, Mittie N. Weatherly Well No. 1-E and that well is completed into the Tubb formation?

A. That is correct. This well No. 1-E was drilled as a Tubb sand gas well. I believe it was completed in February of '49 and it was drilled as a twin well to the Weatherly No. 7, which was drilled to the Drinkard formation.

-3-(a)

Q. Now are the ownerships as stated by you shown on applicant's Exhibit No. 1?

A. To the best of my knowledge they are, yes.

Q. And are these wells and their locations shown on Exhibit No. 1?

A. Thats correct.

Q. Now is the well in question, the Weatherly No. 1-E, an unorthodox location for a Tubb Well?

A. The Weatherly No. 1-E is not an orthodox location. It is 110 feet south of the orthodox location which was caused by the fact that Well No. 7 drilled to the Drinkard Pool was drilled in what would normally be the orthodox location.

Q. Now, the well in question, I believe you stated, is set up to carry so far as the Tubb formation is concerned the same 240 acres which is involved in the application now before the Commission, is that correct?

A. That is correct.

Q. Now have you brought with you a cross-section map, Mr. Rohe?

A. Yes, we have a cross-section map extending from the west end of the lease in question to the east on over into the adjoining section, indicating the structure position of the lease as a whole.

Q. Is that marked applicant's Exhibit No. 2?

A. Thats correct.

Q. Will you explain what is shown on this exhibit, please?

A. The log of the wells indicated on Exhibit No. 2 are spaced across the cross-section, in a relative horizontal position, and set up on a sub-sea datum, the top one being a minus 2,000 feet and the cross-section is through to Blinebry producing gas wells from the east across the Weatherly 1-E and on over to the

Weatherly No. 2 which is the northwestern most well on the lease in question. From a study of the cross-section it can be shown that the entire Weatherly lease is structurally high to other known Blinebry gas producers in the area.

Q. Now there is diagram which appears on the lower right hand corner of this exhibit, will you explain that please.

A. This diagram is more or less a locator showing the wells which are included in this cross-section and their relative position to each other.

Q. Now do you have with you a dual completion diagram involving the well in question?

A. Yes, Sir, we do. That is the diagram that is marked as Exhibit No. 4.

Q. And will you explain that please?

A. On this diagram we are showing the mechanical means by which we planned to dually complete this well, if the permission is granted. We intend to kill the well and place a production packer between the two zones, then complete the Blinebry sand zone in such a manner that the Blinebry gas will be produced through the tubing-casing annulus and the Tubb sand gas be produced through the tubing alone. At the completion of this work we intend to run standard packer leakage tests to determine that there is absolutely no communication between the two formations.

Q. Now what in fact caused this application to be filed, Mr. Rohe?

A. This application was filed to protect N. B. Hunt's interests insofar as drainage in the Blinebry Gas Pool is concerned. It had been our intention to defer production from the Blinebry until such a time as the Tubb zone was depleted. But other Blinebry gas production in the area with Sunray Mid-Continent's application to dually complete their No. 1-A Elliott in the NE/4 NE/4 of Section 21 and later Continental's application to dually complete their No. 2-D Wantz in the NW/4 of the SW/4 has caused us to apply to dually complete this well so that we can protect our acreage against drainage.

Q. It is your understanding that Sunray has an application pending. I believe the Commission will take notice that it is set to be heard March 28, I believe at Hobbs, and I believe likewise that the records show that the application was filed prior to the application now under consideration. To your knowledge was any effort made by Sunray to tie up the M. B. Hunt Company in a unit agreement?

A. To my knowledge, the only direct contact concerning this was their notification to us as offset operator that they intended to apply for a dual completion.

Q. Now what is the fact in regard to production from the Blinebry formation to the west of the acreage in question, Mr. Rohe?

A. The Blinebry formation in the gas producers in most instances are north, east and south of the lease in question, with one exception being Gulf Oil Company's No. 10 McCormack which is in Section 32 of 21 South, 37 East.

Q. Now I believe that you stated that the Weatherly well, that is horizontally speaking, is in a higher position in producing than other wells for which you have data and have stated such to the Commission.

A. That is correct. The Weatherly lease as a whole is structurally high on the Blinebry formation and will be indicated by the log cross-section and by Exhibit No. 3.

Q. Now, under the proposed dual completion, under consideration here, in your opinion is there any danger of communication between the producing horizons?

A. None whatsoever.

Q. What is your opinion in respect to the water problem?

A. I don't believe there will be any water problem at all since this lease is particularly high on structure.

Q. Under the proposed application and the dual completion contained in the proposed area, will it be possible to do necessary workover and maintenance?

A. Yes, it will.

Q. I believe you have stated that the acreage is productive of, that is the acreage in question is productive in the Blinebry formation, in your opinion.

A. Yes. We feel relatively sure that the Blinebry will be productive of gas. We do not have any core analysis records of the Blinebry formation. However, the study of the electric logs and as compared with other Blinebry production in the area, it is fairly evident that the Blinebry will be productive.

Q. In your opinion will the well as proposed in this application efficiently and economically drain the 240 acres in question?

A. Yes. We believe that it will efficiently drain the 240 acres in question.

Q. And I believe that you have stated that there is a reasonable expectation of production from this acreage by the use of this well.

A. Yes, there is.

Q. I would like to offer applicant's Exhibits Nos. 1, 2, 3 and 4.

MR. MANKIN: First, I would like to see Exhibit No. 3, if I might, please. You intend to have Exhibit No. 3 photostated and return three copies to us?

MR. FOX: Yes, sir. We intend to take it to a photostat shop immediately after the hearing.

MR. MANKIN: Is there objection to the entering of Exhibits 1, 2, 3 and 4 in this case? If not, they will be so entered. Do you have anything else, Mr. Fox?

MR. FOX: I believe that is all I have, Mr. Mankin.

MR. MANKIN: I have one question, Mr. Rohe. I noticed on your Exhibit No. 1, that you indicated a radius of influence of 3735 feet. I believe you are possibly drawing that from the Order R-520, the Eumont cases, the Arrow, the Jalmat and so on in regard to a statement that was put out about a radius of influence by the staff for 640-acre spacing.

A. Yes, Sir.

MR. MANKIN: Do you feel that is applicable here for this radius of influence in trying to relate 640-acre spacing to the proved spacing for the Blinebry Gas Pool, which is 160-acre spacing?

A. That was indicated on there only as a contrast. We do not have evidence to indicate that the Blinebry --- one well would adequately drain 640 acres in the Blinebry formation. And that was basically just as an example to indicate the magnitude of the thing.

MR. MANKIN: I have another question. As was indicated by your testimony, there is Blinebry gas wells to the north, east and south and slightly to the south southeast. There has been no Blinebry production, that is Blinebry gas production, to the west. Do you have knowledge of the status of possible Blinebry production in the deeper Drinkard wells to the west? As to what they might of shown as on logs or radioactivity logs or any other testing that might have been done to the west of this lease in question?

A. No, I don't have any other than --- the western most well that I have knowledge of, is, as mentioned earlier, is Gulf's No. 10 McCormack, which is only slightly west. The main point in question here is that the wells that are productive in the Blinebry to the north, the contouring interval will indicate that those wells would carry production on to the west of this area here. The top of the Blinebry formation comes from a point in the section above section 21 and swings on to the west of this lease in question.

MR. MANKIN: Another question. On your Exhibit No. 2, which is a cross-section, you indicated Blinebry -- Tubb or Blinebry -- was that correlated from the top of the Blinebry marker as carried by Order R-610 or Order 464 which related the Blinebry marker to the Humble well for which the marker was set up?

A. No, this was not picked directly on that. I am not acquainted with that. This is carried over from our geological staff, that they picked this as a Blinebry top, as a normally accepted Blinebry top and it does coincide with other surveys, I should say structural maps, presented by other companies.

MR. MANKIN: Then you are not familiar with the Order previously put out by this Commission on the 27th of May, 1954, indicating what the vertical limits of the Blinebry Gas Pool was and that it was related to Humble State "S" No. 20, Section 2, 22 South, 37 East?

A. I was familiar with the order, however, this cross-section was not drawn with that order as a direct guide to it.

MR. GURLEY: What did you figure the approximate cost of dually completing this well?

A. Approximately \$5,000.

MR. GURLEY: I know, but the cost of drilling the well was what?

A. I would estimate in the neighborhood of \$37,000.

MR. MANKIN: Mr. Nutter, did you have some questions?

MR. NUTTER: Yes, sir. Mr. Rohe, I wonder if you would tell me what formation your Mittie N. Weatherly No. 4 in the NW/4 NE/4 of Section 21 is completed in?

A. It is completed in the Drinkard Pool.

MR. NUTTER: Is the No. 3 likewise a Drinkard?

A. All of the wells except No. 1 and 1-E are completed in the Drinkard.

MR. NUTTER: Now No. 1 is that Eumont well you referred to --

A. Yes, sir, thats correct.

MR. NUTTER: And No. E-1 is presently completed in the Tubb?

A. Thats correct.

MR. NUTTER: And your application requests dual completion, an unorthodox location and a non-standard proration unit, completed in the Blinebry?

A. That is correct.

MR. NUTTER: This well that is presently completed in the Tubb, is it making gas?

A. Yes, it is.

MR. NUTTER: Is it making any oil with the gas?

A. A very small amount.

MR. NUTTER: Do you have the ---

A. I do not have those figures with me, No, I don't.

MR. NUTTER: What do you anticipate if you dually completed a well in the Blinebry - - - the dual completion of the E-1 in the Blinebry?

A. I am afraid I don't follow you. Do you mean by way of production?

MR. NUTTER: Yes, sir.

A. I must admit that our knowledge of the producing characteristics in this area is limited to a certain extent and not being familiar with the actual gas-oil ratios of the different formations in this area and since this well is so high on structure compared to some of the down-dip wells that it would only be a wild estimate right to start with and only testing would indicate what it is going to be.

MR. NUTTER: Do you feel however that your structural position as indicated by the cross-section, Exhibit No. 2, do you feel that you would get a gas well in the Blinebry?

A. Relatively certain of it, yes, sir.

MR. NUTTER: Mr. Rohe, where is the Drinkard formation in relation to the Tubb and Blinebry?

A. The Drinkard formation is in the lower Blinebry.

MR. NUTTER: In other words, all of these Drinkard wells also penetrate the Blinebry?

A. That is correct.

MR. NUTTER: And they likewise could be dualled into the Tubb probably-- or into the Blinebry?

A. It is possible, yes.

MR. NUTTER: There is one thing further I would like to ask you, Mr. Rohe. You are acquainted with Order R-610 promulgating rules and regulations relating to gas pool delineation, gas proration and other related matters affecting or concerning the Blinebry Gas Pool in Lea County, New Mexico?

A. Yes, sir.

MR. NUTTER: Are you acquainted with Finding No. 11 in that Order, which states that "One gas well in the Blinebry Gas Pool will effectively and efficiently drain an area of 160 acres. Due to the complex nature of the Blinebry gas and associated reservoirs gas proration units in excess of 160 acres should not be permitted pending further reservoir information."

A. Yes, sir, I am acquainted with that.

MR. NUTTER: Do you feel that you have sufficient reservoir information to justify a gas proration unit in excess of the recommended 160 acres?

A. We have basic reservoir information to indicate more or less than that. However, it was our feeling that that was an arbitrary, not necessarily an arbitrary but a unit set up until further reservoir information was brought about. However, since we have no Blinebry wells we do not have adequate information to back up our case. It would be only after we had a well in the Blinebry that we would be able to run tests that might prove or disprove its capability of draining a larger area than a 160 acre unit.

MR. NUTTER: Would N. B. Hunt be willing to dually complete a well on the basis of 160 acres? Would that be a paying proposition, do you think?

A. Yes, sir, I believe it would.

MR. NUTTER: I think other operators have found it economically ---

A. The only case being here, is that there would be 80 acres of the Weatherly lease which would not be protected from drainage in that particular instance there.

MR. NUTTER: Yes, sir, I realize that. Has Sunray Mid-Continent received authority to go ahead with the dualling of their Sunray 1-A?

A. That Case is on the Hobbs docket on the 28th of this month.

MR. NUTTER: That is the one that is scheduled for the 28th. And there have been no overtures expressed on either side of that line separating Sunray's and N. B. Hunt's lease to forming a communitized 160 acres to dual a well in that quarter section.

A. No, sir, there hasn't. We received a copy of Sunray's application, with no other communication with them and thereby assumed that they did not desire to form a unit in that particular quarter section. Understanding to a certain extent that because of the fact that there are different fee owners that it complicates the matter considerably there.

MR. NUTTER: This Weatherly lease is a fee lease?

A. That's correct.

MR. NUTTER: And the other is --- what is that Sunray --- is that a Federal lease or --

A. That should read Elliott lease. All of those wells are referred to as Elliott wells.

MR. NUTTER: How many acres are involved in Sunray's application?

A. 80 acres.

MR. NUTTER: Would it be more costly to dual a well -- one of these Drinkard wells into the Blinebry than it would be to dual the Tubb well with the Blinebry well?

A. At the present status it probably would not be anymore costly. However, in the future as the Drinkard wells reduce in pressure and capability of flowing and being faced with the possibility of having to pump those, a pumping well from below with a gas well above is a rather complicated mechanism and very expensive and sometimes so impractical that it is not worth while doing. When the well is down to the point where you have to pump it, and you have the annulus closed off and your feed into your pump is frequently blocked by excess gas in the pump making production very difficult and by all standards dualling a gas well with an oil well, especially when the oil well is the lower formation is very undesirable.

MR. NUTTER: In other words you would prefer to dual a gas well with another gas zone than an oil well with a gas zone?

A. That is definitely correct. If its on gas zones you have your artificial life mechanisms and basically your compressor can reduce your surface pressures. And this can be accomplished very easily with two gas zones. When you put an artificial lift on an oil zone, if you have a gas completion, well it sometimes becomes impractical to carry on down to the minimum limits.

MR. NUTTER: I believe that's all I have.

MR. MANKIN: Mr. Rohe, returning to this question about dualling gas wells and oil wells, and gas and oil together, isn't it a great possibility that in this particular area, in the Blinebry, that even though it is high on structure that you are going to produce a certain amount of liquids?

A. I am afraid I do not have enough experience with the Blinebry to say they would. Our feeling on the matter in our Dallas office was that there would not be much possibility of there being excess liquids.

MR. MANKIN: Then you don't feel that there would be any great flowing problem of lifting the liquids with the Blinebry gas in this particular area as you have in a lot of the Blinebry areas where its very difficult to lift it through the annulus?

A. No, sir, we don't believe it would.

MR. MANKIN: You mentioned that this Elliott lease of Sunray's, is that a patented lease or a federal lease?

A. To my knowledge, it is a patented lease.

MR. MANKIN: Is there further question of the witness in this case?

MR. ROHE: I might point out one other thing. In the case that the Blinebry formation did exhibit high liquid characteristics, it would be much simpler to execute artificial lift means from the upper zones with a Tubb flowing gas zone below. A second string of tubing can be run in to accomplish the artificial lift from the upper zone where it is a little bit more difficult, requiring complicated mechanism in the other case.

MR. MANKIN: I take it from your answer at that particular time if you found a considerable amount of liquids rather than cross-over packer that you might at that time offer your plans to put - - - instead of the plans you have here for a single string of tubing - - - that you might at that time ask for an amendment to put in parallel strings of tubing.

A. The experience of our company in - - - at least recently has been that we are finding a lot less trouble with parallel strings of tubing than with the cross-over mechanisms. The cross-over mechanisms frequently can be sanded up and cause leakage problems that are a little bit hard to detect in their early stages and repair in the later stages and if actual remedial action can be accomplished with two strings of tubing without disturbing the second side in lots of the instances.

MR. MANKIN: So if you did find lots of liquids, you would likely ask at that time for an amendment to your dual here as requested for parallel strings if that situation should present itself.

A. Yes, sir, we sure would.

MR. NUTTER: At least, in any event, you would not attempt --- if you turned out with quite a bit of liquids in the Blinebry you wouldn't attempt to flow those liquids through the annulus.

A. Depending on the gas-liquid ratio in the light of the pressure of the Blinebry itself those liquids could be lifted through the annulus for quite awhile before the large annulus would have any effect on its lifting capabilities.

MR. NUTTER: Isn't it generally conceded to be more wasteful to flow liquids through the annulus than it is through the tubing however, wasteful of reservoir energy?

A. It would be. The restricting case would be there, the gas-liquid ratio as imposed by the Commission on Blinebry production in that manner.

MR. MANKIN: Mr. Rohe, would you be willing to have added to an order in this case on dual completion, requesting packer leakage tests at proper intervals.

A. Yes, sir.

MR. MANKIN: Any further questions of the witness? If there is nothing further the witness may be excused. I have a telegram received in reference to this case from Continental Oil Company. It is addressed to the New Mexico Oil Conservation Commission, Santa Fe, New Mexico. It is dated March 13, 1956. It reads as follows "With reference to Case No. 1038, the application of N. B. Hunt, Continental Oil Company has no objection to dual completion of the well but is opposed to the granting of proration units in the Blinebry and Tubb Pools in excess of 160 acres as previously stated in Cases Nos. 989 and 1025." Signed Continental Oil Company by R. L. Adams. Are there any further statements in this particular case?

MR. FOX: I have only one other statement to make, Mr. Mankin, and I wish to invite the Commission's attention to the fact that there is one other 240-acre well in the pool, being the Skelly Baker "B" 15 Well, located in Section 10, 22 South, 37 East, and approved by Order No. R-590-A. The case number I do not have with me. That is the extent of our case.

MR. MANKIN: Is there anything further in this case? If not, we will take the case under advisement.

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Nancy Chowning, do hereby certify that the foregoing and attached transcript of proceedings before the Oil Conservation Commission Examiner at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

Dated this 10th day of May, 1956.

Nancy Chowning