BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
HOBBS, NEW MEXICO

CASE NO. 1152

TRANSCRIPT o f PROCEEDINGS

SEPTEMBER 26, 1956.

DEARNLEY-MEIER AND ASSOCIATES
COURT REPORTERS
605 SIMMS BUILDING
TELEPHONE 3-6691
ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
HOBBS, NEW MEXICO
SEPTEMBER 26, 1956

IN THE MATTER OF:

CASE 1152: Application of Continental Oil Company for an order authorizing a gas-gas dual completion in the Tubb and Blinebry formations of undesignated gas pools in the SE/4 of Section 28, Township 20 South, Range 38 East, Lea County, New Mexico, in exception to Rule 112-A of the New Mexico Oil Conservation Commission Rules and Regulations, and further, authorizing the commingling of the liquids produced from the two zones in exception to Rule 303 of the New Mexico Oil Conservation Commission Rules and Regulations. Applicant, in the above-styled cause, proposes to dually complete in the Tubb and Blinebry formations its Warren Unit Well No. 8 located 1980 feet from the South and East lines of Section 28, Township 20 South, Range 38 East, Lea County, New Mexico, by means of parallel strings of tubing and to store the liquids produced therefrom in common tankage.

BEFORE:

Daniel S. Nutter, Examiner.

TRANSCRIPT o f PROCEEDINGS

MR. NUTTER: The next case on the Docket is Case No. 1152.

MR. COOLEY: Application of Continental Oil Company for an order authorizing a gas-gas dual completion in the Tubb and Blinebry formations of undesignated gas pools in the SE/4 of Section 28, Township 20 South, Range 38, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason W. Kellahin, representing Continental Oil Company. I would like to call Mr. Weideman.

MR. COOLEY: Before the witness starts, let me state for the record, and further, authorizing the commingling of the liquids produced from the two zones in exception to Rule 303 of the New Mexico Oil Conservation Commission Rules and Regulations.

(Witness sworn)

JOHN A. WEIDEMAN

the witness, called on behalf of the Applicant, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q State your name, please. A John A. Weideman.

Q Have you ever testified before the Commission before?

A No.

Q What education or qualification do you have as an engineer, Mr. Weideman?

A I graduated from the university of Oklahoma in June, 1947, with a Bachelor of Science Degree in Petroleum Engineering.

Q What employment have you had since that date?

A Since that time, I worked with various oil companies and in various capacities as a petroleum engineer.

Q Would you state what companies and the approximate dates?

A Well, that is kind of an involved listing. Most recent is employment as a production engineer with Continental Oil Company, and that has been since December 15th, 1954.

Q And prior to that were you engaged as a petroleum engineer?

A Yes, I was.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. NUTTER: Yes, sir.

Q Mr. Weideman, are you familiar with the application in case 1152?

A I am.

Q And briefly what does that seek?

A It seeks to gain permission from the Commission to effect a gas-gas dual completion in our Warren Unit No. 8 Well, in undesignated gas pools. This well being located 1980 from the South and East lines of Section 28, Township 20 South, Range 38 East, N.M.P.M., Lea County, New Mexico, and further, to seek permission to commingle the liquids produced from these two completions in a common tankage.

Q Then is the area which you have described within the horizontal limits, within the defined limits of any pool?

A No, they are not.

Q Do you know whether the Commission has permitted gas-gas dual completions in the Tubb and Blinebry zones by other orders?

A Yes, it is my understanding that they have been granted in the Tubb and Blinebry Pools lying south of the one unit here.

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

A Exhibit No. 1 is a structure contour map drawn on top of the Tubb Formation or the Tubb Marker, as it is referred to by some geologists; we cannot make it our terminology. These are superim-

posed on a land map including all of Section 28 and directly offsetting sections. This structure contour map illustrates a localized structural high penetrated by the Warren Unit No. 8.

Q Now, the map shows the Southeast Quarter of Section 28 as being outlined in red?

A Yes. The area outlined in red is a proposed gas proration unit.

Q Of?

A 160 acres; Southeast Quarter of said Section 28.

Q Is the well shown on that plat?

A The well is circled in red, and it was indicated as a gas-gas dual.

Q Are there any other wells producing from the Tubb Formation in that immediate vicinity?

A No, there are not. The nearest, to the best of my knowledge, the nearest Tubb gas well is approximately three miles south-southwest, that being the Stanolind Southland Royalty A No. 4, that is in Unit "P" of Section 4, 21 South, 37 East.

Q Now, referring to what has been marked for identification as Exhibit No. 2, state what that shows.

A Exhibit No. 2 is identicial with No. 1, except the contours are drawn on top of the Blinebry Marker, and here again the proration unit proposed for the Blinebry Gas completion is outlined in red and is identical with the unit proposed for the Tubb completion. Here again the proposed dual completion is encircled in red;

here again it demonstrates the localized high that the No. 8 penetrates.

Q Does that structure compare with the structure you found in the Tubb formation, Mr. Weideman?

A Yes, it's comparable, the contours close a little differently, as you will notice by the Exhibits. But the fact that Warren Unit No. 8, located approximately on the crest of this localized high is illustrated on both maps.

Q Now, referring to what has been marked for identification as Exhibit No. 3, what is that?

A It is a Lane Wells Radioactive Log of the subject well, and it shows the perforated intervals in the well as they now exist and also gives the well depths and sub-sea depths of pertinent formation tops and markers, also indicates the proposed packer set to be used for the dual completion and production packer.

Q Now, in connection with that exhibit, what is the history of that well, Mr. Weideman?

A This well was originally completed in the Drinkard Formation, and when, after production depletion had reached the point where production rates were very closely approaching an economic limit, the well was plugged back and the well bore was used to test the Blinebry and Tubb Formations penetrated in it. You might classify it as a semi-exploratory well.

Q What were the results of those tests?

A Well, we perforated, first of all, and individually treated

and tested two intervals in the Tubb Formation; the intervals are from 6525 to 6590, and 6360 to 6490, and after fracture and acid treatment of these intervals, the well produced collectively from these perforations and flowed on a final test, flowed forty-four barrels of sixty point one degree corrected gravity distillate and gas at a rate of 22,150 MCF per day in two hours through a three quarter inch choke. The well --

Q That would be classified, then, as a gas well under the Rules?

A Yes, it was. I will continue, further, with the test results. The flow-in tubing pressure was 1125 pounds, the close-in pressure was 2100 pounds, and the gas fluid ratio was 41,951, which, in the terminology of the nearby Tubb Pool, it would be definitely classified as a gas well, and also it is a rather unusual high productivity for a Tubb gas well.

Q What did your test in the Blinebry show? How were they conducted?

A After setting bridge plug to isolate the perforations opened to the Tubb, we perforated and individually acidized and fractured several intervals in the Blinebry Formation; these are from 6160 to 6210, 6055 to 6120, 5950 to 6005, 5875 to 5910, 5775 to 5825. These perforated intervals were all treated collectively after individual stimulation, and a series of production tests were conducted, and, on the final test, the oil flowed seventy-eight barrels of fifty point one degrees corrected gravity distillate, and 4,684 MCF of gas in twenty-four hours through a three quarters inch choke.

The well head flowing tube pressure 320 pounds, and packer was installed; the gas fluid ratio, 60,051; and the closed in tube pressure, 1,880 puunds; based on the performance of this test and the well head stabilized closed in pressure, the estimated deliverability at 600 pounds, would be 3,000 MCF per day. Here again the test results indicated that on the basis of classifications used in the nearby Blinebry Gas Pool that this would be classified as a gas well.

Q Now, in connection with gravity of the oil recovered from the Blinebry Oil Formation, was there some possibility that there was some oil recovered with that?

A Yes, there was. There is a distinct possibility that part of that is load oil, because in all of the tests, of the individual tests of the perforated intervals, we failed to recover the oil load. In each case, the rate of recovery dropped to a very low figure, and with a high gas-oil ratio, so testing was discontinued, so there is a very good chance that this is cut with load oil.

Q Now, based on the information which you have and the contour maps and the radioactive log, in your opinion is all of the acreage proposed to be dedicated to the Warren Unit Well No. 8 reasonably presumed to be productive of gas?

A Yes, it is, in both the Tubb and Blinebry Formations. The segment of the formations underlying the Southeast Quarter of Section 28 can reasonably be presumed to be productive of gas.

Q Would a well located as this is located, produce the gas

from that proposed unit?

A The characteristics of the pay seem to be very similar to the pay sections found in the neighboring Blinebry and Tubb Gas Pools, and we feel that, or believe that a well at the location of the Warren Unit No. 8 would effectively drain those formation segments.

Q Now, referring to what has been marked as Exhibit No. 5, state what that shows.

A Exhibit 4. This is a diagramatic sketch of the mechanical well cone; on the left-hand side is the condition of the well before the recent testing of the Blinebry and Tubb Formations, and, on the right-hand side, is the proposed condition of the well in effecting the requested dual completion. This well, it fundamentally consists of a one-packer installation with two parallel strings of tubing and demonstrates complete segregation of the produced hydrocarbons within the well bore. We feel that this installation is mechanically practicable and feasible; with the two strings of tubing, maximum utilization of maximum energy in lifting the produced liquids should be utilized. This installation will also make both zones readily accessible for taking of individual bottom-hole pressure.

Q Would it enable you to make such other tests or remedial work as may be required or are anticipated in this particular well?

A Yes, it will.

Q Now, in connection with the segregation of the two

producing horizions, what did you find as to bottom hole pressure?

A We did not, in the course of the work over, did not take a separate bottom hole pressure on the Tubb; however, we do have a surface close-in pressure from which we can closely estimate the bottom hole pressure of the Tubb. Now, the Blinebry Formation had a maximum stabilized bottom hold pressure of 2298, and with this estimating on the basis of this Tubb wellhead closed in pressure of 2100 pounds, we feel that there will be very little variance in the two on these zones; they are separated only by a short interval, and the indications are that the bottom hold pressures would be very comprable.

Q Is there any production from the zones in this immediate area?

A No, the nearest, from the Blinebry, is oil from the Terry-Blinebry Pool, and the nearest production from the Tubb would be from this previously mentioned Tubb gas well, Stanolind Southland Royalty "A" No. 4.

Q You have found approximately the virgin pressures in there, is that correct?

A Yes, the pressures indicated that the areas underlying the Southeast Quarter of Section 28 has been subjected to little if any drainage effect in the Blinebry and Tubb Formations. The New Mexico Oil and Gas Engineering Committee lists the initial reservoir pressure in the Terry-Blinebry, which, incidentally, is open to a little debate, at 2365, and the highest we ever recorded in

any of our Warren Unit Blinebry Wells was 2320, and these pressures were all of sub-sea data of minus 2400 feet. We think that is very closely approaching the original conditions.

Q Now, referring to Exhibit No. 5, state what that shows.

A This is a drawing furnished us by the McEvoy Company of Houston, and it is the proposed well head equipment for the subject dual completion, and it illustrates, again, complete segregation of the two fluents from the two strings of tubing.

Q Does that type of completion enable you to separately measure or meter the production from the two horizions?

A Yes, and for all practical purposes, as far as surface measurement it is like two single completions, both streams can be lead off separately and separately metered.

Q And will it enable you to make whatever tests are required by the Commission to show separation has been achieved and maintained?

A Yes, it will. Packer leakage tests, or whatever tests are required, can be accomplished by this mechanical setup.

Q Now, in regard to that portion of the application for commingling of fluids, Mr. Weideman, is there any order allowing that at the present time in other formations, and the Tubb and Blinebry?

A Yes. In the Tubb and Blinebry Gas Pools, Commission Order R-464 permits such Tubb and Blinebry production from gas wells produced in the Tubb or Blinebry Gas Pools.

Q Now, based on the graph which you have recited in this,

is there any difference in price of those two zones?

A No, the pipeline price for the two fluids is the same.

Q Is there any difference in the working interests, royalty interests or other interests involved in this case?

A All minerals underlying the Southeast Quarter, Section 28, have identical and common working and royalty interests.

Q And would the approval of the dual completion for this oil be in the interest of conservation and prevention of waste?

A Yes, it definitely would, the commingling represents the most practical and economical method of liquid storage and it would not create any inequity.

Q Now, about the dual completion, I mean, is that in the interest of conservation?

A Yes, sir. I think that represents the most practical and economical means of draining the aforementioned formational segments. Here again inequity should not result.

Q Do you have anything else you care to add?

A I think comparing the sub-sea levels of the Blinebry Marker and subject well with the same marker in a well to the south, producing from the Blinebry Gas Pool, it is readily evident that any commercial completion in this well, in the Blinebry Formation, would of necessity have to be a gas completion, and the Tubb completion will affect no known accumulation of Tubb oil reserves. To the best of my knowledge there is just one well in Lea County classified as an oil well producing from the Tubb Formation, and that well is

located considerably south of the subject well; that is the Humble Oil and Refining Company's State "V" No. 7 located in Unit "M," Section 10, Township 21 South, Range 37 East.

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

MR. NUTTER: Does anyone have a question of the witness?

BY MR. REEDER:

Q Mr. Weideman, I wasn't quite clear on that bottom hole or calculated bottom hole.

A Well, Charley, we had to estimate that from surface pressure, we don't know how much liquid was in the hole at the time the reading was made, therefore we can't come up with an accurate figure, but all indications are it will be close to the Blinebry.

Q 2209, something like that?

A I would estimate them within 100 pounds of each other.

Q Now, John, on this Blinebry well which -- wouldn't you expect some considerable fluid to be produced from that?

A Well, as a ratio, there is, of course, some considerable fluid being produced, but the ratio, you are referring to the Blinebry, the ratio there is 60,051, and I think that reflects an accurate figure. I believe, as in most Blinebry wells, although we have all potential productive zones at one, the upper perforated interval is contributing the bulk, and it is predominantly gas. We might be sweetening the pot a little from the lower ones, but they in themselves, I would seriously doubt would constitute a commercial well if zone one was not open.

Q The reason I asked, I notice that structurally it is about the same position as your Warren Units 14 and 15, which are Terry-Blinebry wells.

A On the Blinebry Marker?

Q Yes.

A We had to perforate a little higher, which definitely gets it high enough to be a gas well.

BY MR. NUTTER:

Q Weideman, is that it? A Yes.

Q Mr. Weideman, for one thing, I notice that you mentioned some intervals in the Blinebry which are not indicated on the Exhibit. Didn't you have a perforated interval starting at 57- something that you mentioned?

A Yes, sir, 5755. It's on my copy.

Q It isn't on mine.

A That is definitely, as Amerada would say, a clerical error. Yes, I beg your pardon. I will fill that in.

Q Well, if you can just substitute that other one.

A This has a little marking -- I'll indicate these on there.

Q That kind of threw me.

A That is the key one, too, that should be on there. I'll get a colored pencil and correct this.

Q Okay, swell. Mr. Weideman, what provision is made in this well, in the mechanical installation of it, to guarantee the separation of the two zones on the outside of the pipe?

A Of course, the cement top is up above the top of the -- well above the top of the Blinebry as illustrated here in -- I thought it was in one of those exhibits. However, the cement top is well above the Blinebry Formation, and, in addition, just to guarantee that in the event of a faulty cement job, that we would have segregation behind the pipe, we performed a block squeeze, we perforated 6247 to 6248 with twelve jet shots, and then we squeezed off these perforations with three sacks of cement, using a wire line squeeze cementing tool.

Q That would be just below where you plan to set your packer?

A Yes.

Q How long did you test the Blinebry, Mr. Weideman?

A We ran a series of tests over a period of about ten days in which we found very little variance in the ratios or the gas production.

Q The gas-oil ratio remained constant?

A Yes, fairly. And this test result was the final test.

Q Were the identical intervals open throughout this period?

A Yes, they were all collected.

Q What was the gas-oil ratio at the beginning of the test period?

A I don't have the exact figure here with me, but they varied in the neighborhood of anywhere from forty to sixty thousand.

Q Was it going up or going down?

A Well, it gradually increased as the well cleaned up. I

feel that the last test represents the most accurate figure, and it may be that it will go even a little higher as we start to produce it.

Q What is the nearest well producing from the Tubb Formation?

A To the best of my knowledge, the nearest Tubb gas well is in the Tubb Gas Pool, Stanolind Royalty "A" No. 4, Unit "P," Section 4, 21 South, 37 East.

Q That would be approximately --

A That is approximately three miles south.

Q And now what is the nearest well producing from the Blinebry Formation?

A Well, if you will notice on Exhibit 2, Continental's Warren Unit Blinebry Wells 19 and 20 are producing from the Terry-Blinebry Oil Pool.

Q Now, the Blinebry Gas Pool is considerably south and west of this, isn't it?

A Yes. The nearest well producing from the Blinebry Gas Pool is the Farmariss Petroleum Corporation's Hill No. 1 Unit "J" of Section 4, Township 21 South, Range 37 East; that is approximately two and one/tenths miles to the south-southwest from the Warren Unit No. 8.

Q Do you think this is a discovery of a new pool in the Tubb?

A Well, I -- the continuity of the Tubb has not been tested very thoroughly between No. 8 and the existing limits of the present

Tubb Pool; I think that the whole area near there will be productive of gas, but not necessarily in commercial quantities, so I would think that this would have to be designated as a separate pool until we have more tests and exploratory information.

Q How about the Blinebry zone, do you think it is the discovery of a new Blinebry pool?

A Yes, since we have this intervening oil zone, I think it would have to be classified as a new pool.

Q In other words, these Terry-Blinebry Oil Wells are in a traugh between the two gas pools? A That's correct.

Q Mr. Weideman, in the event that the Commission did not see fit to grant the application in whole, that is for the dual completion and the commingling of the oils, or the fluids, would Continental be satisfied with a part of the application?

A Well, I don't know if I'm qualified to express their opinion on it. Just what our attitude would be on it, towards that. Do you have anything to say in that?

MR. KELLAHIN: The only thing I can say is Continental will abide by any order entered by the Commission.

MR. NUTTER: Fine.

A We will take all we can get.

MR. NUTTER: That question sometimes comes up. Does anyone have anything further, any further questions of Mr. Weideman?

MR. KELLAHIN: If the Examiner please, I would like to make the observation that both the dual completion is allowed in the

upper Blinebry and the commingling is allowed there; we have a comparable situation there, although it's outside the pool.

MR. NUTTER: These are new ones, let the record show.

MR. KELLAHIN: Yes, but we are dealing with the same fundamental operation.

THE WITNESS: The only reason we can't perform these under the existing orders is the fact that they are undesignated pools, so therefore we can't apply other pool rules to this situation.

MR. NUTTER: I believe you read those GOR's into the record, didn't you?

A Yes, sir.

MR. NUTTER: And the bottom hole pressures?

A Yes, sir.

MR. KELLAHIN: At this time I would like to offer Exhibits 1 through 5, and No. 3 being subject to amendment to show the marker which the Examiner referred to.

MR. NUTTER: Without objection, Exhibits 1 through 5 will be received in evidence. Does anyone have anything further in this case? If not, we will take the case under advisement.

-O- -o- -O- -o- -O-

STATE OF NEW MEXICO)
: SS
COUNTY OF BERNALILLO)

I, THURMAN J. MOODY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me and/or under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this, the 5th day of October, 1956, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Thurman J. Moody
Notary Public

My Commission Expires:

April 3, 1960.