BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO
Santa Fe, New Mexico

March 19, 1958

TRANSCRIPT OF HEARING

Case 1400

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

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO
Santa Fe, New Mexico

March 19, 1958

IN THE MATTER OF:	
Application of Gulf Oil Corporation for a dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Naomi Keenum Well No. 2 located 660 feet from the South line and 1980 feet from the East line of Section 14, Township 21 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Terry-Blinebry Oil Pool and to permit the production of gas from the Tubb Gas Pool through parallel strings of tubing.	Case 1400

BEFORE: Mr. Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: The next case on the docket will be Case No. 1400.

MR. PAYNE: Application of Gulf Oil Corporation for a dual completion.

MR. KASTLER: If the Commission please, my name is Bill Kastler, representing Gulf Oil Company. Our two witnesses for both Case 1400 and 1401 are Gerald J. Savage and Charles E. Mace. I wonder if they could be sworn in both cases at this time.

MR. NUTTER: They may.

MR. KASTLER: Mr. Savage, will you please take the stand?

(Witnesses sworn.)

GERALD J. SAVAGE

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

DIRECT EXAMINATION

By MR. KASTLER:

Q Will you state your full name, your position and where you are employed?

A I am Gerald J. Savage. I am employed as production geologist by the Gulf Oil Corporation in Roswell, New Mexico.

Q Have you previously appeared before the New Mexico Oil Corporation Commission and qualified as an expert witness?

A Yes, sir, I have.

MR. KASTLER: Mr. Nutter, are the witness's qualifications acceptable?

MR. NUTTER: They are.

Q Mr. Savage, have you any familiarity with the geological picture in the area around the Naomi Keenum No. 2 Well?

A Yes, I am generally familiar with the geology in that area.

Q Have you prepared a location plat for an exhibit here as Exhibit No. 1?

A Yes, sir, I have labeled this Exhibit No. 1 in 1400.

Q Will you please explain what is shown on Exhibit No. 1 and how it is designated?

A On Exhibit 1 is shown the pertinent Gulf lease, the

the West Half of the South Quarter of Section 14, Township 21 South, Range 37 East. It is outlined in yellow and the pertinent Gulf 1, the NK No. 2 circled and marked in red.

Q Does this plat also show the surrounding and offset operators?

A Yes, it does.

Q Have they been notified of this application?

A Yes, sir, they have been notified of the application for dual completion.

Q Would you state what other wells are shown on Gulf's NK Lease?

A On Gulf NK Lease is shown the No. 1 NK, a direct North offset to the No. 2 and it is a Blinebry producer.

Q Now, will you please give the history of NK No. 2?

A The well was originally completed in the Drinkard in March of 1953. However, this production declined to a non-commercial rate and this pay was abandoned in October 1957. The well was then plugged back and completed as a gas well in the Tubb Gas Pool. It is planned to complete the Blinebry oil pay in the same zone as our NK No. 1.

Q Have you prepared or caused to be prepared as Exhibit No. 2 in this case a well log?

A Yes, I have, and I have labeled it Exhibit No. 2.

Q Does this log show the formations penetrated by NK No. 2, and does it also show the intervals perforated?

A Yes, it does. It shows the formations penetrated, and it shows the proposed perforations in the Blinebry zone, a depth of 5,698 feet to 5,800 feet. It also shows the perforated interval in the Tubb zone which flowed on fifteen minute Oil Conservation Commission test on December 10th, 1957 through two and seven-inch tubing and four inch orfice at the rate of six million cubic feet of gas per day with a 700 pound back pressure. The estimated open flow volume of this well is eight million cubic feet of gas per day.

Q Does it appear that the Blinebry will be oil productive rather than gas productive?

A It is my opinion that the Blinebry zone in the NK No. 2 will be oil productive inasmuch as it is at the same structural level approximately as our No. 1, and it is planned to perforate and treat that same zone.

MR. KASTLER: Mr. Nutter, these are the only questions I have in this case for this witness. I would like to move at this time to admit Exhibits 1 and 2 into evidence.

MR. NUTTER: Is there objection to Gulf's Exhibits No. 1 and 2 in Case 1400? If not, they will be received.

CROSS EXAMINATION

By MR. NUTTER:

Q Mr. Savage, is the interval for completion for both of these zones within the vertical limit of the Blinebry Pool and the Tubb

Pool? A Yes, sir, they are.

Q Is the well located within the horizontal limits of each pool?

A To my knowledge they are.

MR. NUTTER: I believe that's all. Any further questions? If not, he may be excused.

(Witness excused.)

CHARLES E. MACE

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

DIRECT EXAMINATION

By MR. KASTLER:

Q Will you please for the record state your name, your position and how long you have been employed in that position by Gulf?

A My name is Charles E. Mace, petroleum engineer with Gulf Oil Corporation in Roswell, New Mexico. I have been employed since June of 1950, or for approximately eight years.

Q Have you previously appeared and testified before the New Mexico Oil Conservation Commission? A No, I have not.

Q Will you outline your educational background and your experience in New Mexico and West Texas?

A I have received a Bachelor Degree in Mining with a Petroleum Degree option from the Missouri School of Mines at Rolla June of 1950, and at that time I was employed by the Gulf Oil

Corporation, and for the last three years I have been concerned with production problems essentially with West Texas and New Mexico.

Q Have you been continually employed as an oil production engineer since your graduation? A Yes, sir.

MR. KASTLER: Mr. Nutter, is this witness satisfactorily qualified?

MR. NUTTER: Yes, he is.

Q Are you familiar with Gulf's application to dually complete its NK No. 2? A Yes, I am.

Q Are you familiar with the type of installation proposed for this dual completion? A Yes, I am.

Q Have you prepared or caused to be prepared a schematic diagram to illustrate this proposed completion?

A Yes.

Q Is this marked Exhibit No. 3?

A Yes, sir.

Q Will you please explain Exhibit No. 3?

A It shows a surface string of 12 - 3/4" OD casing at 212 feet, and the cement was circulated. There is an intermediate casing of 8 - 5/8" OD set at 2999, cemented with 1350 sacks, and the cement top is found at 588. The oil string is 5 - 1/2" OD set at 7193, cemented with 735 sacks, and the cement top at 2970' from the surface. The present plug back total depth, the well has been plugged back at the 6700'.

Now the well is currently perforated in the Tubb Gas Zone at 6110 to 6248. Now, pending permission of the Commission, we plan to perforate the Blinebry zone to approximately 5698 to 5800 and then we would install this tubing string, the dual tubing string, the two inch Hydril J-55, with the Baker model "A" packer parallel Anchor flow tube on the bottom of it, and prior to running this tubing we would run into the well bore two Baker packers as shown on the diagram, the upper packer would be at about 5,668 feet, the lower packer about 5,879 feet, and then we would run the two inch tubing with the Baker Model parallel flow tube on the bottom and seat it in the two packers. Then we would run one and a quarter inch non upset J-55 tubing and set it in the upper portion of the parallel Anchor flow tube. By this arrangement we would then flow the Tubb gas into the well bore below the lower packer as shown in green. It would come up into the parallel flow tube and switch into the one and a quarter inch tubing and come to the surface.

The Blinebry then would enter the well bore between the two packers, it would go into the parallel Anchor flow up and up into the two inch tubing and to the surface.

Q Could the Blinebry oil be pumped?

A It could be in this installation at a later date if so necessary.

Q Can adequate tests be performed to insure a completion separation of the respective zones and determine if any leakage

between them occurs?

A Yes, I believe they can.

Q Will Gulf comply with such further operating test reports and procedures required by the Commission if the application is approved?

A Yes.

Q Is this proposed method of completion feasible and practicable?

A Yes.

Q Has Gulf previously filed application for administrative approval of an 80 acre non-standard Tubb gas unit?

A Yes, by an Order No. SP-408, this non-standard gas proration unit was approved by the Commission January 12, 1958.

Q What pipeline connections are made or proposed?

A We plan to contract the Tubb gas to Permian Basin Pipeline.

Q It has already been contracted, is that not so?

A Yes.

Q Is this application in the interest of conservation of oil and gas?

A Yes.

Q In your opinion will it protect correlative rights if granted?

A Yes, sir.

MR. KASTLER: That's all the questions I have of this witness. At this time I would like to move the introduction of Exhibit No. 3.

MR. NUTTER: Is there objection to introduction of Exhibit 3? If not it will be received. Anyone have any questions of the

witness?

CROSS EXAMINATION

By MR. NUTTER:

Q Mr. Mace, how do you spell your name, please?

A M-a-c-e.

Q Mr. Mace, I didn't catch the location of the two packers. Would you give me those again?

A Yes, sir, the packers, the upper packer will be at approximately 5,668 feet and the lower packer at approximately 5,879 feet.

Q These are both permanent type packers?

A Yes, sir, they are.

Q Can you describe for me what the head, that located at the Model "A" parallel seal nipple or just below it, would you describe what this head is that joins the two strings of tubing?

A That is a piece of equipment wherein there are two openings so that the two inch tubing will be in the one opening and that seemingly can be run when we run the two inch. In other words, the Baker parallel flow tube will be round on the bottom of the two inch tubing and at that time there will be an opening for the one and a quarter inch and we will run the one and a quarter inch and seat that, it will seat and seal off in this receptacle.

Q You say you run the head on the large string of tubing when you run the header? A Yes, sir.

Q Then you run the smaller string of tubing at a later time?

A Yes, sir.

Q Does this screw into the head or is it a seal joint?

A It seals, as I understand it, yes, sir. I might enlarge that I believe it is possible to run the two strings simultaneously if you so desire, or just run, like I said, we probably will run the two inch with the Model "A" flow tube and then run the one and a quarter inch afterwards and seat it in the head.

Q How does the two inch string of tubing fasten into the head?

A I would, the two inch tubing into the head would be screwed in. It would be made up as any joint would be.

Q What seal is provided at the point where the inch and a quarter tubing goes into the head? Are there seal rings there or just what?

A Yes, sir, they are rings or packing, seemingly that the one and a quarter inch would fit in and seal off.

Q What evidence is there that this would provide an adequate seal to separate the two formations?

A We can check by closing in the two well strings at the surface with use of recording gauges and then after they have stabilized and open up one of the zones and then observe the pressure on the closed-in zone, see if it changes.

Q You say that the two inch depends on a screwed joint?

A Yes, sir, that is my understanding.

Q To provide the seal, would there be any commingling of the

production from the two zones if a leak occurred at the junction of the inch and a quarter tubing and the head?

A At the junction of the inch and a quarter and the head? No, sir, the gas which would be that as shown by green, the Tubb gas, it would be in the annular space, it would not be in contact with the Blinebry oil.

Q Would you define for me what the cross section of this Model "A" parallel Anchor flow tube looks like?

A Yes, sir, the Model "A" parallel flow tube is a full opening tube.

Q What's the outside diameter of that?

A I'm sorry but I don't believe the outside diameter of the parallel flow tube, this is the Baker brochure, Mr. Nutter. I am sorry but I can't seem to put my finger on it. I can be sure and get that for you and advise you of the outside diameter. The Baker brochure, it shows the combination tubing strings that could be run into various well bores, and for your information the head that you asked me to describe, it looks like this, the two inch would be in the larger opening and you would seat your one and a quarter inch in the lower.

MR. NUTTER: Can you introduce this as an exhibit?

MR. KASTLER: Yes.

RE-DIRECT EXAMINATION

By MR. KASTLER:

Q Mr. Mace, will you present as Exhibit No. 4 the brochure that you have from the packer tools?

A Yes, I would be happy to introduce Exhibit No. 4.

MR. KASTLER: I ask that that be stamped and labeled as Gulf Exhibit No. 4, and introduced as evidence.

MR. NUTTER: Without objection, Gulf's Exhibit No. 4 will be introduced in this case.

RE-CROSS EXAMINATION

By MR. NUTTER:

Q What I'm interested in actually is the cross sectional area of the two parallel flow sections in that parallel flow tube, and whether they approximate inch and a quarter tubing cross sectional area or two inch tubing or just what.

A Yes, sir, I might mention that if the two inch tubing had been used to flow the tube to the surface, a bomb could be run clear to the bottom. In other words, the opening is the full opening through the parallel flow tube for the string that comes up from the bottom. In other words, a bomb could have been run from the surface through the parallel Anchor flow tube clear to the bottom of the tubing string. Of course, in this instance we do not use or advocate the use of the two inch for the Tubb gas, we are using one and a quarter, but that is a combining of one and a quarter and the two inch Hydril is the acceptable combination for five and a half inch casing.

Q Is the portion of the parallel flow tube which is open to the Blinebry zone full opening?

A No, sir, it is not full opening.

Q So the Blinebry production will be restricted in that section of the flow tube below the head, is that correct?

A As I understand it, that is correct. It's kind of a parallel, the one is full opening and the other is just on the side of it allows the Blinebry oil to come in on the side and then adjacent to it and then rise up and get into the two inch tubing.

Q What is the length of this pipe in which you will have a restriction?

A The parallel flow tube, as I remember seeing it in Hobbs, is ten feet long.

Q Do you think that this will be detrimental to the flowing efficiency of the Blinebry zone?

A No, sir, I do not.

Q Do you think that fluid levels will always be such in the Blinebry zone that the zoning can be pumped?

A Yes, sir, I do.

MR. NUTTER: Are there any further questions of Mr. Mace? If not he may be excused.

(Witness excused.)

Is there anyone that wishes to offer anything in Case 1400? We will take the case under advisement and take the next Case 1401.

C E R T I F I C A T E

STATE OF NEW MEXICO)
: SS
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, 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 31st day of March, 1958.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1959.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1400, heard by me on 3-19, 1958.

....., Examiner
New Mexico Oil Conservation Commission