BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 5, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Amerada Petroleum Corporation for a dual completion, and for commingling authority, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its S. E. Anderson Well No. 1, located in Unit B of Section 30, Township 9 South, Range 35 East, Lea County, New Mexico, to produce oil from the Bough "C" zone of the Pennsylvanian formation and from the Devonian formation through parallel strings of tubing. Applicant further seeks authority to commingle said pools on said lease by use of the subtraction method.

CASE 2829

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 2829.

MR. DURRETT: Application of Amerada Petroleum Corporation for a dual completion, and for commingling authority, Lea County, New Mexico.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, New Mexico, appearing on behalf of the Applicant. We will have one witness that I would like to have sworn, please.

(Witness sworn.)

MR. UTZ: Are there other appearances in this case? You may proceed.

LAWRENCE E. THOMAS

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q State your name, please.

A Lawrence E. Thomas.

Q By whom are you employed and in what position, Mr. Thomas?

A Employed by Amerada Petroleum Corporation as District Engineer in Hobbs, New Mexico.

Q Have you ever testified before the Oil Conservation Commission of New Mexico?

A No, sir.

Q Would you state for the benefit of the Examiner your education and experience as a Petroleum Engineer?

A I have a B.S. in Petroleum Engineering from Texas Technological College.

Q When did you get that degree?

A 1951. And have been employed by Amerada as a Petroleum Engineer since that date. I have been District Engineer in three different districts since 1958.

Q How long have you been in your present position?

A In the present position since February of this year.

Q Does the area involved in the application fall under your jurisdiction?

A It does.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q (By Mr. Kellahin) Mr. Thomas, are you familiar with the application of Amerada Petroleum Corporation in the Case 2829?

A I am.

Q Would you state briefly what's proposed by Amerada in this application?

A We propose to dual complete the Bough "C" and Devonian zones and commingle the production on the lease.

(Whereupon, Applicant's Exhibits Nos. 1 through 4 marked for identification.)

Q Referring to what has been marked as Exhibit No. 1, will you identify that exhibit, please, and state what's shown thereon?

A Exhibit No. 1 is a plat showing the location of the well in the proposed application. It also shows, outlined in red is the lease applied for commingling. I would like to point out at this time that in the application the South Half of the South Half of Section 19, Range 35 East, Township 9 South, was included in this, but since that time working interest ownership has been changed and we wish to only include as the lease the North Half, and the North Half of the Southeast Quarter, and Southwest Quarter of the Southeast Quarter of Section 30, Township 9 South, Range 35 East as the lease for commingling.

Q Is that the area that's outlined in red on Exhibit No. 1?

A That is correct. The deleted section is outlined in green. The location of the well for dual proposal is located in Unit B, Section 30, Township 9 South, Range 35 East.

Q Could you give the exact location of the well, the footage location?

A That is 1980 feet from the East line and 660 feet from the North line of Section 30.

Q Is all of the working interest ownership common throughout in the area involved in this application?

A No, sir. The Devonian working interest ownership is different from the Bough "C".

Q But that does not have anything to do with the dual completion portion of the application, does it?

A No, sir.

Q Is all of the overriding royalty and royalty interest common throughout?

A It is common, yes, sir.

Q As to all zones?

A Yes.

Q Both the Devonian and the Langley-Mattix and Blinebry, is that correct?

A We're talking about the Bough "C" and the Devonian.

Q Bough "C" and the Devonian?

A They are the same.

Q Are they the same insofar as your dual completion is concerned, Mr. Thomas?

A Yes.

Q Now referring to what has been marked as Exhibit No. 2, would you identify that exhibit and discuss the information shown on it?

A Exhibit No. 2 is a schematic of the completion showing the casing program and tubing completions, packer settings and so forth. We have 13-3/8 casing set at 422 feet with cement circulated to surface. We have 8-5/8 casing set at 4315 feet with the top of the cement at 2417. We have 7-inch casing set at 9970. That has been switched down to 5-1/2 from there down to 12,688 feet, with the total depth of the well at 12,690.

The 5-1/2 casing was cemented with 300 sacks of cement, the 7-inch casing was cemented through a DV tool which is set at 10,013 feet. The top of the cement behind the 7-inch pipe is at 7,833. Then this schematic shows the location of a permanent packer, a Baker Model "D" Packer at 9,790. The perforations below this, the Devonian perforations, are 12,634 to 12,638 feet. They will be separated from the Bough "C" perforations, which are at 9,737 to 9,755, by the Model "D" Packer.

Q In your opinion, will the completion such as this fully protect all producing horizons encountered in this well bore?

A Yes, it will.

Q Will this completion, if approved, result in the recovery

of oil that would not otherwise be recovered?

A Yes, sir.

Q For what reason?

A Well, the Devonian is at present making top allowable, but we could not drill a well to this depth strictly for Devonian production.

Q You would not recommend to your management that such a well be drilled as a single completion in the Devonian?

A No, sir.

Q Will that, then, result in the prevention of waste, in your opinion?

A Yes, sir, in my opinion it would.

Q Turning to the commingling portion of the application, I direct your attention -- well, first let's get this log in. Would you refer to Exhibit 3 and identify that exhibit and state what information is shown thereon?

A The information on the Exhibit 3, which is an acoustilog, the perforations of the Devonian at 12,634 to 38 are marked, the top of the Devonian is shown to be 12,630 feet. Then the Bough "C" interval is shown to be at 9737 to 55, perforations, and the interval which is called Bough "C" would be about 9730 to 60.

Q Is this dual completion that's proposed by Amerada of the type that has heretofore been approved by the Oil Conservation Commission?

A It is.

Q Referring now to Exhibit No. 4, would you discuss the information shown on that exhibit?

A Exhibit No. 4 is a drawing outlining the surface equipment, showing the stock tanks, separators, and proposed meter location for use in the subtraction method of commingling.

Q What wells will be connected to this commingling installation?

A At the present there's only one well drilled, the Anderson No. 1, but any other wells that would be drilled on this same lease.

Q Do you anticipate there would be other wells drilled?

A It's a possibility.

Q And will this installation be sufficient to take care of such production?

A It will.

Q How do you propose to account for the production from the separate zones?

A We propose to meter by a positive displacement meter the production from the Bough "C" zone and subtract that from the total daily production for the Devonian production.

Q Is there any difference in the gravities of the fluids from the two zones?

A There is very little. The Bough "C" gravity is 45.3, the Devonian gravity is 43.7.

Q Are both zones at the present time top allowable zones?

A They are.

Q Would the commingling result in a gain or loss in the value of the product,as compared to its market value, if produced separately?

A It would make no change.

Q Would the installation be in the interest of conservation and the prevention of waste?

A In my opinion it would.

Q Would it result in an economic saving to the operator of the lease?

A Yes, sir.

Q Is the commingling installation of a type that meets the requirements of the Commission manual on commingling?

A It is.

Q Were Exhibits 1, 2, 3, and 4 prepared by your or under your supervision?

A Yes.

MR. KELLAHIN: At this time I would like to offer in evidence Exhibits 1 through 4.

MR. UTZ: Exhibits 1 through 4 will be admitted into evidence if there is no objection.

(Whereupon, Applicant's Exhibits Nos. 1 through 4 received in evidence.)

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

witness.

CROSS EXAMINATION

BY MR. UTZ:

Q Referring to your Exhibit No. 2, I note the cement behind the 8-5/8ths is topped at 2417, is that correct?

A Yes.

Q And bottom of the 13-3/8ths is 422?

A Yes.

Q Which leaves around 2,000 feet of open hole behind the casing. What formations or water bearing zones are in this area?

A To my knowledge, none.

Q You mean it's completely dry of everything?

A Well, we ran into nothing that would indicate fresh water or anything that needed to be protected during that interval.

Q Okay. The bottom of your 8-5/8ths is 4315 and the top of the cement on your 7-inch is 7833. That's an open zone area behind your 7-inch of around 3500 feet. Now what is in this area?

A Nothing as far as producing zones were encountered in that area. There were some fresh water zones, or appeared to be fresh water that in our opinion didn't need to be protected.

Q In your opinion fresh water doesn't need to be retained in its original aquifer?

A Sir?

Q In your opinion fresh water doesn't need to be retained in its original aquifer?

A Well, I don't know that we encountered any fresh water.

Q If you did encounter any fresh water, would you say it ought to be retained in its aquifer?

A Yes, sir.

Q I'm not real clear about the 7-inch casing. Does it actually come up inside the 8-5/8ths?

A The 7-inch comes to the surface.

Q All the way to the surface?

A Yes, sir.

Q So this drawing should show that, shouldn't it?

A It does show it, doesn't it?

Q What is this lower casing?

A 5-1/2. It's swetched onto the bottom of the 7-inch. We ran 7-inch down through the Bough "C" so we could have two full strings of dual completion equipment, and instead of setting 7-inch all the way to 12,000 feet, we swetched it down to 5-1/2, actually attached it onto the 7-inch.

Q So this lower casing that is cross hatched is your 5-1/2 inch?

A Yes, sir. This schematic drawing is in error in that regard. It does not show them connected, but they are.

Q Well, that's what was a little confusing. In regard to your Exhibit No. 4, how much time will the oil sit in your storage

tanks before it is gauged?

A This will be a normal daily operation.

Q It will be gauged every 24 hours?

A Yes, sir.

Q How much shrinkage do you anticipate there will be after the oil hits the tank, from the time it's gauged?

A There should be very little just in the normal 24-hour period.

Q You do agree there will be some shrinkage?

A The normal amount for Devonian and Pennsylvanian production. I'm not sure what that figure would be.

Q Would that be in the neighborhood of maybe one percent?

A That's possible, yes.

Q It's your intention, then, to gauge the total oil and subtract the meter reading from the Bough "C" in order to arrive at the production from the Devonian?

A Yes.

Q How do you compensate for that shrinkage?

A By periodic check. We can shut the Devonian side down and run monthly checks for meter proving until we get this figure established.

Q So that the shrinkage will be divided between the two zones equally?

A Yes, sir.

Q You feel that the shrinkage in each zone will be pretty

close to the same?

A With those gravities as close as they are, I feel pretty sure it will be.

Q On this diagram just below the meter there's a little circle with an "s" in it. What is that?

A Sampler.

Q You would estimate that the total impurities or B.S. and W. in the Devonian zone would be approximately the same as it is in the Bough "C"?

A For the present time, until water encroaches in the Devonian, it should be the same, and at that time we'll probably set a treater.

Q At any rate your separator would probably get most of that out for you at the meter?

A That's right.

Q What is the cost of the P.D. meter that you are setting there?

A Including the sampler, in the neighborhood of $425.00.

Q Do you have any opinion as to what the GOR would be in each of these zones?

A GOR at the present time in the Bough "C" is about 1500 to 1, and at the present time the Devonian makes a very small amount of gas. We on original test determined it too small to measure.

Q How about your pressures, type of crude?

A They are both sweet crude; and are you talking about bottom hole pressures?

Q Yes.

A Bough "C" bottom hole pressure at perforation depths is 3428 pounds, and the Devonian is approximately 3530 pounds per square inch.

Q Were both of these zones flowing?

A We will have to gas lift the Devonian with gas from the Bough "C". The Devonian will flow intermittently, but to maintain top allowable we will have to gas lift.

Q You will bring the Bough "C" gas to the surface and then use it for the gas lift?

A Yes.

MR. UTZ: Are there 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.

* * * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal this 11th day of June, 1963.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2829, heard by me on June 5, 1963.

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

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