

EXAMINER HEARING
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 26, 1958

IN THE MATTER OF: Case No. 1384

TRANSCRIPT OF PROCEEDINGS

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ALBUQUERQUE, NEW MEXICO
3-6691 5-9546

EXAMINER HEARING
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IN THE MATTER OF:)

The application of Amerada Petroleum Corporation)
for a dual completion. Applicant, in the above-)
styled cause, seeks an order authorizing an oil-)
gas dual completion for its State BTO No. 1)
Well, located 990 feet from the South line and)
2310 feet from the East line of Section 34,)
Township 11 South, Range 33 East, Lea County,)
New Mexico, in such a manner as to permit the)
production of oil from the Bagley-Pennsylvanian)
(oil) Pool and the production of gas from the)
Bagley-Lower Pennsylvanian Gas Pool through)
parallel strings of tubing.)

Case 1384

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BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. UTZ: The next case on the docket will be 1384.

MR. COOLEY: Case 1384: In the matter of the application
of Amerada Petroleum Corporation for a dual completion.

MR. KELLAHIN: Jason Kellahin of Kellahin and Fox, Santa
Fe, New Mexico, representing Amerada Petroleum Corporation. We
have one witness, Mr. McBryde.

MR. UTZ: Does anyone else have an appearance to make in
this case?

MR. CAMPBELL: Jack Campbell. We might have, Texas Pacific
Coal and Oil Company. Mr. Yuronka might testify, I am not sure
until after Mr. McBryde is finished.

MR. COOLEY: Let's wait until after this witness is finished.

(Witness sworn.)

O. C. McBRYDE, JR.

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

DIRECT EXAMINATION

By MR. KELLAHIN:

Q Will you state your name, please?

A O. C. McBryde, Jr.

Q By whom are you employed and in what position?

A I am a petroleum engineer with Amerada Petroleum Corporation.

Q Have you previously testified before the Oil Commission and had your qualifications as an expert engineer accepted by the Commission?

A Yes, sir; I have.

MR. KELLAHIN: Are the witness's qualifications acceptable?

MR. UTZ: The witness has qualified before the Commission in prior cases.

Q Are you familiar with the application in Case 1384?

A Yes, sir.

Q What is proposed under that application?

A We are seeking approval of a dual completion in our State BTO No. 1 in the Bagley-Pennsylvanian Oil Pool and Bagley-Lower Pennsylvanian Gas Pool.

Q Will you give us the location of that well?

A Amerada State BTO No. 1 is located 990 feet from the South line and 2310 feet from the East line of Section 34, Township 11 South, Range 33 East, Lea County, New Mexico.

(Amerada's Exhibit No. 1 marked for identification.)

Q Referring to what has been marked as Amerada's Exhibit No. 1, would you state what that is?

A Exhibit No. 1 is a map of the Bagley Field. We have shown on this map in brown the present horizontal limits of the Bagley-Pennsylvanian Oil Pool, and in green the present horizontal limits of the Bagley-Lower Pennsylvanian Gas Pool. We have also indicated, circled in red, the subject well, the State BTO No. 1. Immediately to the west of the State BTO No. 1 is the Amerada State BTK No. 1, which has just been granted administrative approval as a gas-oil dual in the Upper Pennsylvanian gas zone and the Bagley-Pennsylvanian Oil Pool. To the south of the BTK No. 1 is the Amerada Caudle No. 7 which is dualled in the Upper and Lower Pennsylvanian gas zones. To the west of Amerada's Caudle No. 7, Section number 4, 12 South, 33 East, is Texas Pacific's gas-gas dual; it's also in the Upper and Lower Pennsylvanian gas zones.

Q Does Exhibit No. 1 show the ownership of offset leases to the subject well?

A Yes, sir, it does.

Q Is the Amerada BTO Well No. 1 located within the horizontal

limits of the two pools you mentioned?

A Yes, it's within the horizontal limits of the two pools.

Q Will the well be completed then in the defined limits of the Bagley-Pennsylvanian Oil Pool?

A As I said before, it's within the horizontal limits of the Bagley-Pennsylvanian Oil Pool, but the perforations are outside the present limits, the present vertical limits of the Bagley-Pennsylvanian Oil Pool. On Exhibit No. 2 I have marked in red the perforations, both the oil zone perforations.

(Amerada's Exhibit No. 2
marked for identification.)

Q What is Exhibit No. 2?

A Exhibit No. 2 is an electrical log of the State BTO No. 1, the oil perforations are from 8774 to 8834. I have also marked in red the perforations in the lower gas zone, they are from 9766 to 9820.

Q Are those perforations within the defined vertical limits of the Bagley Oil or Pennsylvanian Gas Pool?

A Yes, they are.

Q Referring to the log again, does that show any separation between the oil zone and the upper gas zone?

A Yes, sir, on the log I have marked the present upper and lower limits of the three pools, the upper gas pool, the oil pool, and the lower gas pool. I also have the productive interval marked for the upper gas pool in this well, and from the base of the upper

gas pool to the top of the oil perforations is the distance of 114 feet. However, the existing lower limits of the Bagley Upper gas pool, which is minus 4510, is only five feet above the top perforations in this oil zone.

Q In your opinion is there effective separation between the two zones?

A Yes, sir, there is.

Q In regard to the oil zone in the BTO Well No. 1, do you have any recommendation as to what should be done with that?

A I would recommend that the case go to nomenclature hearing to extend the limits of the Bagley-Pennsylvanian Oil Pool, I would recommend now, and then that this oil zone that we have found in the State BTO No. 1 be included within the vertical limits of the Bagley-Pennsylvanian Oil Pool.

(Amerada's Exhibit No. 3
marked for identification.)

Q Referring to Exhibit No. 3, will you state what that is?

A Exhibit No. 3 is a schematic of our proposed dual completion. We have shown there the casing, five and a half inch casing set at total depth of 9975. The top of the cement behind the five and a half inch casing is shown at 6336. We have shown the Bagley-Pennsylvanian zone, oil zone perforations from 8774 to 8834. The Bagley-Lower Pennsylvanian gas zone perforation from 9766 to 9820. We have also shown the two parallel strings of two and one-sixteenth O.D. high drill tubing, and the Baker Model "D" production packer separating

the two zones.

Q With that type of completion can you treat the two separate zones, or test them separately, or do any operations which you contemplated may be necessary in this well?

A Yes, sir, we can.

Q In your opinion is a completion of this type in the interest of conservation and the prevention of waste?

A Yes, sir, it is.

MR. KELLAHIN: That's all the questions we have.

MR. UTZ: Does anyone have a question of the witness? Mr. Campbell.

MR. CAMPBELL: Jack M. Campbell, Roswell, New Mexico, appearing on behalf of Texas Pacific Coal and Oil Company. I would like to state at the outset we are not opposing this application for dual completion. We would like, however, to get some explanations from the witness as to their position in connection with this particular upper zone that they're intending to produce as an oil zone.

CROSS EXAMINATION

By MR. CAMPBELL:

Q Did you conduct any bottomhole pressure tests within the defined limits of the Upper Pennsylvanian Gas Pool and the zone that you have perforated here and propose to produce as an oil zone?

A No, sir, we have not as yet.

Q Are you acquainted with the drill stem test information on your Mathers "B" No. 1 Well?

A I have seen that. I do not have it with me today. I don't remember it.

Q Would it be fair to say that drill stem information obtained on that well is quite similar to the drill stem test information you have obtained on the BTO No. 1 well?

A I have not studied the drill stem test information that we have obtained on the State BTO. It has been quite some time since I looked at the other, so I couldn't answer that.

Q Do you have any opinion as to whether there is a possibility that after this well has been produced in that upper zone for a period of time that it might become a gas distillate well?

A You are speaking of the oil zone in the State BTO No. 1?

Q Yes.

A I wouldn't expect it to.

Q Isn't that what you people expected and did happen to your Mathers "B" 1 well?

A It hasn't happened yet. It's still an oil well. It's outside the limits of the existing pools now.

Q But Amerada did request that it be put within the limits of the gas pool initially, did they not? A That's right.

Q Was that not on the basis that they expected it to change to a gas distillate well after some production history?

A We were basing that on our knowledge of the Amerada Mathers No. 2 in the southeast southeast of Section 3, Township 12 South, Range 33 East. That well was completed in the same zone

as the Mathers "B" No. 1 and after producing for a few years, it did change into gas distillate.

Q Should your BTO 1 Well, which you have perforated in this new zone, change over a period of time into a gas distillate well, I assume that you would then not undertake to take the position that it was in a separate zone, would you, and produce two wells in that 320 acre gas unit, the south half of Section 34?

A I don't believe I understand your question, Mr. Campbell.

Q What would be your analysis of the situation should this well, during the next six, seven or eight months, become a gas distillate well? It has a higher gas-oil ratio than your Mathers "B" No. 1. Suppose it should become a gas distillate well, what position would you take as to whether it is in the upper gas Pennsylvanian zone, or in this new zone?

A My opinion is that the oil zone that we have encountered in the State BTO No. 1 is not connected to the Upper Pennsylvanian gas zone. There's a separation of some 114 feet there, and it's completely --

Q (Interrupting) The separation between the bottom of the gas zone and the top of the oil zone is only five feet, isn't it?

A The existing vertical limits of the upper gas zone are on a common subsea basis.

Q Yes.

A The productive interval in the Upper Pennsylvanian gas zone is in this particular well considerably above the base of the

vertical limits as set out by the Commission. Now the reason that the lower limits of the upper gas zone are only five feet above the perforations here and the productive interval is so high is the fact that the limits of the pool are horizontal, common subsea basis, while the productive interval is a structure, it's higher in one part of the field than in the other. There are numerous, I won't say numerous, I can think of two pools or fields in the southeast that have a common horizontal boundary, the Langley-Mattix and Jalmat is one, and the Eumont and Monument is another.

Q You wouldn't want to use those as horrible examples here?

A I'm not recommending it.

Q You are aware of the fact that this Upper Pennsylvanian Gas Pool is now operating on a temporary order, are you not?

A Yes, sir.

Q It comes up for consideration again in June or July?

A Yes, sir.

Q Would you have any objection just prior to the hearing on the permanent order in this case to run a test on this particular well as to that upper zone to have available information as to the fluid situation at that time?

A What type of test are you talking about, bottom hole pressure?

Q Yes, bottom hole pressure and gas-oil ratio test.

A We will have all that available, I'm certain, on all the wells.

Q I was referring to one shortly before the permanent field

rules come up for consideration, if you could, so that it can definitely be determined at that time that the well is not producing from in fact the Upper Pennsylvanian gas zone. You think you probably will have current information on the well?

A I'm satisfied that we will, Mr. Campbell.

MR. CAMPBELL: That's all.

MR. UTZ: Does anyone else have a question? Mr. Nutter.

By MR. NUTTER:

Q Mr. McBryde, have you already perforated this pool in these two zones?

A Yes, sir, we have.

Q Have you already run these two strings of tubing into the well?

A Yes, sir.

Q Have you tested both of the zones?

A We have run short tests, however, they have been shut in since the dual was effected. I do not have the results of those tests with me.

Q Do you have any information regarding the gravity or the GOR's in this oil zone?

A I do not have that with me.

Q Do you know if it compares with the gravities and the gas-oil ratios as encountered in the wells that are completed within the vertical limits of the Bagley-Pennsylvanian Oil Pool?

A Mr. Nutter, I'm not certain that we have recovered all our

load oil in that zone. We tested it a short time and shut it in, waiting the approval of the dual. I just don't have that information available at the present time.

Q So you think that such production or tests that you have run to date are premature as to any evaluation of the oil or gas-oil ratios in the zone?

A I couldn't say that they are, because I don't know one way or the other. I don't have those available right today.

Q Do you believe it's possible that the gas-oil ratio and the gravities will be comparable to the wells which are completed?

A It's possible.

Q Do you expect that they will be?

A I'm not sure that I understand just what you mean. Which ones will compare with which other ones?

Q I'm wondering if you expect the gravities and the gas-oil ratios which will be encountered in the oil zone which you have perforated from 8774 to 8834 will be comparable with the gravities and the gas-oil ratios in other wells which are completed within the defined limits of the Bagley-Pennsylvanian Oil Pool.

A I would expect them to be similar.

Q Similar enough to make the assumption that they are in the same pool?

A I would expect that, yes, sir.

Q This present zone which you have perforated is not within the limits, the vertical limits of any pool, is it?

A That is right. If you will notice on Exhibit No. 2, the electrical log, the Bagley-Pennsylvanian oil interval at the present time covered some 600 feet. It's a real long section and has several zones of the kind that we find in the State BTO No. 1 located within that interval.

Q Were any zones within the vertical limits of the Bagley-Pennsylvanian Oil Pool tested?

A I can't answer that for sure. We ran several drill stem tests in this well. I do not have the results of those with me today. I'm quite sure that we tested some intervals. I think we tested everything that looked productive all the way down and as I remember we didn't find anything within the present vertical limits of the Pennsylvanian Oil Pool.

Q Was any interval besides the present perforated interval perforated?

A No, sir.

MR. NUTTER: Thank you, that's all.

By MR. UTZ:

Q Mr. McBryde, am I correct in my understanding that you are recommending that the limits of the Bagley-Pennsylvanian Oil Pool be raised to include these perforations?

A Yes, sir.

Q In this producing zone?

A Yes, sir.

Q Can you say how close that would bring the upper limits of

the oil pool to the base of the Upper Pennsylvanian Gas Pool?

A Within five feet.

Q Wouldn't it be closer than that? That's right, five feet?

A I think that's right.

Q I note on your Exhibit No. 5 which was presented in Case 1220 which set out the vertical limits for these three pools in question that on your State BTD No. 3 the base of the upper Pennsylvanian Gas Pool was 4503. That's getting down to where it's pretty close tolerance, isn't it? I was wondering if we raised the Pennsylvanian Oil Pool we might not get into an overlap on another well.

A That's possible. I'm not familiar with that case, Mr. Utz. It's my opinion that the upper gas zone would not be productive in that well, as I recall.

Q It shows some perforations on this cross-section?

A Is that perforations or porosity? I think that is microlog porosity.

Q It's microlog pay?

A Yes.

Q Then this well is not completed in the Upper Pennsylvanian Gas zone?

A No, sir.

Q Could you give me the ground elevation of the well in question here?

A The State BTO No. 1?

Q The BTO No. 1.

A I don't have the ground elevation, the dirt floor elevation is on the log.

Q Yes, I know that it is. You have a subsea datum --

MR. YURONKA: (Interrupting) If I may be permitted to state, the dirt floor elevation is 5249.

A That's the dirt floor. The ground elevation would be some fourteen feet less than that.

Q Could you send that ground elevation to us?

A Yes, sir.

Q Would you do that?

A Yes, the subsea datums are figured from the dirt floor elevation.

Q All your derrick elevations in this pool are the same, the same distance from the ground?

A That's the way we carry all our maps and elevations, we use the dirt floor elevation.

Q Your subsea is the derrick floor?

A Yes, sir.

Q Has there been any dual completions completed in this pool completed in the same mechanical manner you are proposing here?

A I'm not familiar with the other duals, Mr. Utz. I couldn't answer that. I don't know exactly how they're completed, except the State BTK, and it's not exactly the same.

Q This dual completion you are proposing is the same mechanical

dual completion that has been approved prior by the Commission?

A I can't answer that. I don't know if it has been approved prior. I would think that it would be very similar to our Caudle No. 7. However, I don't have that dual plan with me. I don't know exactly how it is completed. I know we have two strings of tubing there, I would think that it would be very similar.

Q That is a gas-gas dual in the Upper Pennsylvanian and Lower Pennsylvanian?

A Yes, sir.

Q Mr. McBryde, unless the pool limits are changed, then the upper completion in this well will actually be a wildcat completion, will it not?

A Yes, sir.

MR. CAMPBELL: May I ask Mr. McBryde one question?

MR. UTZ: Yes.

By MR. CAMPBELL:

Q Do you know whether your company plans to run a bottom hole fluid analysis on the upper part of your dual completion when you get it cleaned out and load oil back?

A On the oil zone in the State BTO?

Q Yes.

A No, sir, I do not know.

Q Wouldn't that pretty well give you definite indication of whether that was actually an oil reservoir or possibly might be a gas distillate area?

A It possibly would, Mr. Campbell. However, I'm satisfied with the 114 feet of separation between this oil zone and the Bagley-Upper Pennsylvanian Gas zone that they're completely different reservoirs.

Q Of course, that is only in this well bore. You don't know what it might be five feet out, do you?

A I know what it is in the State BTK No. 1. We looked on that log and the oil zone that we found in the State BTO No. 1 is present on the electric-log of the State BTK No. 1 with approximately the same vertical separation. However, we did not pick up the oil zone in our samples.

Q You are aware of the fact, of course, that the limitations, the delineation of the Upper Pennsylvanian Gas Pool was upon the recommendations of Amerada, aren't you?

A Yes, sir.

Q So they must have had some basis for setting the lower limit in some well somewhere in order to recommend that vertical limitation in the Upper Pennsylvanian Gas zone?

A Yes, sir.

MR. CAMPBELL: That's all.

By MR. COOLEY:

Q Mr. McBryde, would you have ample time between the present and July 16, 1958, if you were permitted to produce this upper completion, to run detailed analyses of the liquids produced, the GOR's and any other information that can be determined from the

production characteristics of the well to more adequately determine what zone it is actually completed in?

A Yes, sir, we would have time, I think.

Q At the present time it is, the upper zone is a wildcat completion, is it not?

A Yes, sir.

Q It's not within the vertical limits of any defined pool?

A That's right.

Q Would it not be a workable solution to this matter to permit the temporary production of this well until, say August 31st of 1958, which is the same limits placed on the special pool rules for both the Upper and Lower Bagley-Pennsylvanian Pool Rules, and come in for the July 16th hearing in 1958 and present that information and more adequately determine what zone it is completed in, rather than change the vertical limits of any pool on the basis of the scanty information we presently have?

A I think that would be all right.

MR. CAMPBELL: I might say that would be perfectly agreeable with us, provided that information is available at the time of the hearing in July.

MR. COOLEY: Mr. McBryde assures us that they should have that information.

MR. CAMPBELL: He said they would have time. He didn't say they would have it.

MR. COOLEY: That's all the questions I have.

MR. UTZ: Any other questions of the witness?

MR. KELLAHIN: I have one.

MR. UTZ: Mr. Kellahin.

REDIRECT EXAMINATION

By MR. KELLAHIN:

Q In the type of completion you used in this well, do you get effective packer separation between the two zones so as to prevent any possibility of commingling?

A Yes, sir, we do.

MR. KELLAHIN: I would like at this time to offer Exhibits 1 through 3 inclusive.

MR. UTZ: Is there objection to the introduction of Amerada's Exhibits 1, 2, and 3 in this case? If not, they will be so entered. Are there other statements in this case? The witness may be excused.

(Witness excused.)

MR. UTZ: The case will be taken under advisement.

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C E R T I F I C A T E

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 Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript 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 12th day of March, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley

NOTARY PUBLIC

My commission expires:
June 19, 1959

I do hereby certify that the foregoing is a complete record of the proceedings in the ~~English~~ Spanish language of Case No. 1389, heard by me on July 20, 1958.
[Signature]
Examiner
New Mexico Oil Conservation Commission