

MR. KELLAHIN: Jason Kellahin, if the Examiner please, of Kellahin and Fox, Santa Fe, New Mexico, representing the Applicant. We will have one witness.

(Witness sworn.)

(Marked Applicant's Exhibits Nos. 1 through 6, for identification.)

HERBERT D. MILLER

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Herbert D. Miller.

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

A Amerada Petroleum, Proration Engineer.

Q Have you testified before this Commission in the past and had your qualifications as an expert engineer accepted?

A I have.

MR. KELLAHIN: Are the qualifications of the witness acceptable?

MR. NUTTER: Yes, sir. Please proceed.

Q Are you familiar with the application in Case 1792?

A Yes, sir, I am.

Q Would you state briefly what was proposed in this

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application?

A We're proposing to deepen the Federal "B" No. 2 well and dually complete it in the Mississippian and the Devonian formations, and also dually complete the well and assign 40 acres to the No. 2 well and 40 acres to the No. 1 well in the Devonian and 40 acres to the No. 2 well in the Mississippian.

Q Is the reason for this application necessitated by the existence of the survey line between the States of New Mexico and Texas?

A Yes, sir. The Bronco Siluro-Devonian, Mississippian and Wolfcamp Pools are located in Lea County, New Mexico and Yoakum County, Texas. Referring to our Exhibit No. 2 it will be noted the east line of Sections 11 and 14 coincides with the boundary line between New Mexico and Texas, and because of the adjustment of the survey on the east line, the SE/4 of Section 11 contains only 131.07 acres, the NE/4 of Section 11 contains 133.93 acres and the NE/4 of Section 14 contains only 128.20 acres. This deficiency in acreage results in lots of less than 40 acres being formed along the boundary line in New Mexico.

Q Is Amerada the owner of a lease in that area?

A Yes, sir, we own oil and gas leases covering the W/2 and SE/4 of the NE/4 of Section 11, Township 13 South, Range 38 East, Lea County, New Mexico, and also we own the Federal "B" No. 2 well located on a governmental lot of 26.61 acres,

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approximately 1983 feet from the north line and 548.46 feet from the east line of Section 11, The well is presently completed in the Bronco Wolfcamp Pool with top of perforations at 9446 feet.

Q What do you propose to do with that well?

A We propose to deepen the well, as will be shown on the exhibit, diagramatic sketch of proposed dual completion, to 11,870 feet. This would be an approximate depth.

Q I believe that has been marked as Exhibit No. 3?

A That's correct.

Q Referring to what has been marked as Exhibit No. 3 now, would you describe what is proposed to be done?

A The well is, currently has a total depth of 9660 with 7" casing set at 9652 with the top of the cement at 6854. We have 13 and 3/8ths casing set at 318 feet. We have 9 and 5/8ths inch casing set at 4536 feet, with the top of the cement at 2604. We propose to drill the well down to the new total depth, set a liner which will have the top at 9440 to a total depth of 11,770. That will be a 5 1/2" liner. Prior to setting the liner we will squeeze off the Wolfcamp perforations. Then we will run a Baker Model "D" production packer between the Mississippian and Devonian and run parallel strings of tubing and produce the Devonian out of the lower string and the Mississippian out of the upper string.

We will run 2 and 3/8ths inch tubing on both strings to the



Devonian and squeeze the tubing down to 2-1/16 inch Hydril tubing inside the liner. I believe this type dual completion is standard in the industry and it complies with all the rules of the state-wide and field rules for the Bronco Field.

Q Do you know what depth you would encounter the Mississippian and Devonian?

A I would render a guess.

Q But at the present time you have no accurate information?

A No, sir, I could give an approximate depth. I would estimate the top of the Mississippian at 11,130 feet. Top of the Devonian, 11,780 feet.

Q The structure will be described later in your testimony?

A Yes, sir.

Q Would you be willing to furnish the Commission with further information on formation depth and the actual completion when it has been made, in the event this application is approved?

A Yes, sir. Of course we'll file, of course, our amended dual completion application with the exact depths on it.

Q Now, referring to Amerada's L. W. Ward No. 2 well, will you discuss that well, please, as to its location and completion?

A The L. W. Ward No. 2 well is a dual completion in the Devonian and the Mississippian, which is the two zones that we propose on the Federal "B" 2. It's located in the NE/4 of the SE/4 of Section 11, and it was authorized, the dual was authorized

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by Commission Order No. R-1387 dated May 7, 1959.

MR. KELLAHIN: We will ask the Commission to take notice of the Order No. R-1387 which has been attached as an unmarked exhibit in the folder handed to the Examiner.

MR. NUTTER: We will consider that order number.

Q Does the Bronco-Mississippian Pool, as presently delineated, cover the area which is proposed to be dedicated to the subject well?

A No, sir. The Bronco-Mississippian Pool now covers the SE/4 of Section 11, Township 13 South, Range 38 East. That was by Order No. R-1441 dated July 21, 1959.

Q Is that order likewise included in the folder handed to the Examiner?

A Yes, it is.

MR. KELLAHIN: We ask the Commission to take notice of that order also.

MR. NUTTER: We will consider that order, Mr. Kellahin.

Q Units have already been established for the Siluro-Devonian production in this area, have they not, Mr. Miller?

A Yes, sir.

Q Would it be necessary to change that order, and would you give the order number and discuss it?

A Order No. R-533 dated October 4, 1954, established a 66.61 acre unit for the Federal "B" No. 1, and that was shown on

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~~our original plats of the lease. I believe that's Exhibit 4.~~

It's marked Exhibit G on the folder.

MR. NUTTER: That's identified as Exhibit 4.

A That was prior to the drilling of the well, the Federal "B" No. 2 well.

MR. NUTTER: Now, Mr. Miller, the acreage ascribed to the well you are discussing now, the Federal "B" 1?

A Yes, sir.

MR. NUTTER: It comprises what's marked as a 40-acre lot?

A Plus the 26.61.

MR. NUTTER: Plus the 26.61?

A Yes.

MR. NUTTER: That entire acreage is dedicated at the present time?

A Yes.

MR. KELLAHIN: That is by Order R-533.

MR. NUTTER: Yes.

Q Do you recommend that order be rescinded and the acreage be reallocated?

A I recommend that the order be rescinded and the acreage be reallocated as is shown on Exhibit No. 1.

Q What would the acreage then consist of?

A 40 acres for the No. 2 well and 40 acres for the No. 1 well. ~~The only difference between the two plats is we assigned~~

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an additional 416.23 feet to the north here, in which both 40-acre tracts take in part of that.

Q That would be as shown on Exhibit No. 1?

A That is correct.

Q Is that in accordance with the special rules for the Bronco Siluro-Devonian Pool?

A Yes. Yes, the Bronco Siluro-Devonian Pool presently describes diagonals of 2,000 feet or 2100 feet rather, which the diagonal on the No. 1 well, or the No. 2 well is 2,098.99 and No. 1, 1995.92. Now the statewide rules for distance from unit lines is 330. You'll note that on the No. 1 well, we will be 322.84, which would be an exception. We will ask the Commission to take notice of that.

Q It would require no exceptions for No. 2 for that phase of the order?

A No, sir, the No. 1 would be the exception.

Q Are you requesting the same units for the Mississippian production from the well No. 2?

A Yes, sir, we are.

Q Would that be identical to the unit recommended for the Devonian production?

A Yes, sir, it is.

Q Would that require an exception to statewide Rule

104(e)?

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A Yes, sir, it does.

Q Have you any information on the drill stem tests in this area?

A Yes, sir. We have drill stem tests on all the wells around the Federal "B" 2 well. Referring to Exhibit No. 2, the L. R. Weems No. 3 well is east of the Federal "B" 2 well, and we had a drill stem test 6-5-53. Do you want me to read these into the record? They are in exhibit form.

MR. NUTTER: I think we have sufficient data to just indicate that you did have some production.

A There's one other drill stem test that's not on that tabulation, that's a drill stem test on this Sinclair Harris well. They also tested oil on drill stem test in the Mississippian.

Q Now, have you prepared a contour map on the Devonian, Mr. Miller?

A Yes, sir, the Geological Department has prepared one.

Q Would you discuss that briefly, please, that is Exhibit No. 6?

A Yes, sir, that's 6.

MR. NUTTER: Yes.

Q Would you discuss Exhibit No. 6?

A It's a contour map on top of the Devonian with the contour interval of 100 feet. Our Production Department estimates the water level in the Devonian at 8,077, and from the contour map



you can see that all the acreage that we're proposing to be dedicated is shown as productive in the Devonian.

Q In other words, all of the acreage proposed to be dedicated in the Devonian will fall --

A Fall above the water level.

Q -- above the water-oil contact?

A Or water-oil contact, that's correct.

Q Now, in the Devonian Pool is all of the acreage proposed to be dedicated located within the Devonian, Siluro-Devonian Pool as presently delineated?

A Yes, sir, it is. Order No. 328 dated June 10, 1953 which created the Bronco-Siluro-Devonian Pool, Lea County, New Mexico is described as follows: All of Sections 11 and 14, Township 13 South, Range 38 East.

Q Were any non-standard units formed in the Mississippian Pool in Section 11?

A Yes, sir, referring to Exhibit 2, there were three 43.69-acre units formed in accordance with Order R-1453 dated July 31, 1959.

Q All of the acreage in that area has been dedicated for Mississippian?

A Mississippian, that's correct, yes, sir. This Ward lease offsets the Federal "B" to the south there.

Q Now, as I understand it, Mr. Miller, you presently

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do have some production from the Wolfcamp Pool in the Well No. 2, is that correct?

A Yes, sir, we do.

Q Will you discuss the situation as to oil production from the Wolfcamp, briefly?

A The Federal "B" 2 well currently is making 13 barrels a day on the pump. The wells surrounding Federal "B" 2 in the Wolfcamp are Weems 8 to the east, currently producing 8 barrels per day and Ward No. 5 to the southwest producing 11 barrels per day, and Ward No. 2 or No. 4 rather, to the south, producing 11 barrels a day.

Q What is the producing mechanism in those wells?

A They're all pumping.

Q Is it a gas solution reservoir?

A It's a solution gas reservoir, yes, sir.

Q Will the squeezing off of the Wolfcamp in the Well No. 2 result in any ultimate loss of recovery from the Wolfcamp production, in your opinion?

A No, sir. Ultimately a study will have to be made on the feasibility of secondary recovery for the Wolfcamp, and at that time it can be evaluated and possibly a secondary recovery project instigated to recover what oil might be lost by shutting the well down now.

Q Were Exhibits 1 through 6 inclusive prepared by you or



under your direction and supervision?

A Yes, sir, they were.

MR. KELLAHIN: At this time we would like to offer in evidence Exhibits 1 through 6.

MR. NUTTER: Amerada's Exhibits 1 through 6 will be admitted.

Q In your opinion is all the acreage proposed to be dedicated to the Federal "B" No. 2 well productive of oil from the Mississippian formation?

A Yes.

Q In your opinion is all the acreage to the Well No. 2 productive of oil from the Devonian formation?

A Yes.

Q Would a well located as proposed in this application efficiently and economically drain the acreage proposed to be dedicated to it?

A Yes, sir, it will.

Q Would your answer be the same as to the acreage proposed to be dedicated to the Federal "B" well No. 1?

A Yes.

Q In your opinion is all of that acreage productive?

A Yes, it is.

Q Do you have anything further you wish to bring to the Commission?

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A No, sir.

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

MR. NUTTER: Any questions of Mr. Miller?

MR. PAYNE: Yes, sir.

MR. NUTTER: Mr. Payne.

CROSS EXAMINATION

BY MR. PAYNE:

Q What pool is the Sinclair Harris No. 1 well completed in?

A It's a Devonian well. Exhibit No. 2 has the various formations circled.

Q So the Barnes No. 1, Texas Company No. 1 Barnes is Wolfcamp, is that correct?

A That's right.

Q What indication do you have that the northwest quarter of the northeast quarter of Section 11 is productive of oil from the Mississippian?

A I wouldn't have any indication of the northwest of the northeast.

Q Is that a portion of what you propose to dedicate here to the No. 2 well?

A No, sir. It would be the south portion, well, a portion of that. Next to that is the Harris tested oil in the Mississippian, and it's also Devonian well too, and we feel that at least that 416 feet there is productive, as to what beyond that



would be productive we couldn't say.

Q The drill stem test did show that the Harris No. 1 was, would have been productive in the Mississippian?

A Yes, sir.

Q Could you describe these units for me, Mr. Miller, these proposed units?

A The Federal, referring to Exhibit No. 1, the unit for the Federal "B" 1 well is 1013.26 feet on the south side. It's 1719.59 feet on the east and west side.

MR. NUTTER: Is that a true north line that runs 1719?

A Yes, sir.

MR. NUTTER: This 1013 foot line, is that a true east-west line?

A Yes, sir, I believe it is. And the other unit, the Federal "B" 2 unit would be, starting at the northwest corner, would be 337.16 feet along the north, the farthest north line, south 416.23 feet, east 890.34 feet, and the south would be the difference between 416.23 and 1719.59, and the south line would be 1203.66 feet.

MR. NUTTER: Then back to the point of origin?

A Then back to the point of origin, yes, sir.

MR. NUTTER: How about on the unit that you dedicated to your No. 1 well, is the north boundary of that unit the same width as the south boundary?

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A Yes, sir.

MR. NUTTER: So in describing the unit, we could say that you go back to the west 1013.26 feet?

A That's correct.

MR. NUTTER: Then is this line coming back to the point of origin a true north-south line?

A Yes, sir, I believe it is.

MR. NUTTER: It would be 1719.59 feet?

A That's correct.

Q (By Mr. Payne) Now, you give the wells' approximate location in your application. Do you have any reason to believe that these approximate locations aren't correct? On your Exhibit 1 you show the exact location.

A I would say they're correct, the wells were surveyed in.

MR. PAYNE: All right, sir.

BY MR. NUTTER:

Q What, Mr. Miller, does Amerada actually request here today? They request that an order which established a 66.21 acre, or 66.01 acre unit be rescinded?

A That's correct.

Q Is that the first thing?

A Yes, sir. And the formation of two new units as outlined.

Q Ask that one order be rescinded, the old order setting



up the 66 acre unit?

A Yes.

Q They ask that two new non-standard units be established?

A That's correct.

MR. PAYNE: Three.

Q Three?

A Actually there would be three with the dual completion.

Two Devonian, one Mississippian.

Q They ask for the dual completion of a well?

A Yes, sir.

Q They ask for a non-standard location for a well?

MR. PAYNE: For the No. 1 well.

Q Being less than 330 feet from the boundary of the unit?

A Yes, sir.

Q Does that cover everything that is requested here?

A I believe so.

MR. KELLAHIN: The only thing I should add is that present acreage is not within the present limits of the pool as defined.

Q It will require the extension of the pool at a later nomenclature hearing. Referring to the dual completion, Mr. Miller, do you have any data on the bottomhole pressures that are available in these two zones?

A I don't have data with me. The Devonian is extremely



good water drive and it had a bottomhole pressure of some 4400, but I don't have the exact figures. The Mississippian we just started producing it, it has a fairly high bottomhole pressure, but as to what it is, I don't have that figure.

Q How about the gravity of the two zones?

A The gravity is similar of the two. The Mississippian, incidently it doesn't have the water drive that the Devonian does. We don't anticipate any water drive there.

Q How about the GOR of the two zones?

A The GOR's, the Devonian is very low and the Mississippian so far is low. It probably will increase though.

Q The Commission has authorized the dual completion in the Mississippian and Devonian of your Ward No. 2 well, has it not?

A Yes, sir.

Q You expect that conditions in this Federal "B" No. 2 will be similar to the Ward No. 2?

A Very similar, yes, sir.

MR. NUTTER: Are there any other questions of Mr. Miller? He may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: That's all I have.

MR. NUTTER: Does anyone have anything further for

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Case No. 1792? We'll take the case under advisement and take next Case 1794.

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 4th day of November, 1959.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:
June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings at the Examiner hearing of Case No. 1792, heard by me on 10-28, 1959.

[Signature], Examiner
New Mexico Oil Conservation Commission

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