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209 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
May 13, 1970

EXAMINER HEARING

-----  
IN THE MATTER OF: )  
)  
)

Case No. 4084 being reopened pursuant )  
to the provisions of Order No. R-3732, )  
which order established 160-acre )  
spacing units and an 80-acre propor- )  
tional factor of 4.77 for the Feather- )  
Wolfcamp Pool, Lea County, New Mexico. )  
)

Case No. 4084

-----  
BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: We will call next Case 4084.

MR. HATCH: Case 4084. Reopened. Continued from the April 15, 1970 examiner hearing. In the matter of Case No. 4084 being reopened pursuant to the provisions of Order No. R-3732, which order established 160-acre spacing units and an 80-acre proportional factor of 4.77 for the Feather-Wolfcamp Pool, Lea County, New Mexico.

Mr. Examiner, this case was first reopened as you notice on April 15, 1970 in Hobbs, New Mexico. No one appeared in the case to show reason why it should not be developed on less than 160-acre spacing units and if no one makes an appearance here today, I would recommend that the special rules be abolished.

MR. NUTTER: Is there anyone present wishing to make an appearance in Case 4084? No appearance in this case, the special pool rules for this pool will be rescinded.

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Glenda Burpo  
NOTARY PUBLIC

March 12, 1973

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. **4084**, heard by me on **5/13**, 19**70**.  
  
\_\_\_\_\_, Examiner  
New Mexico Oil Conservation Commission

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

209 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Hobbs, New Mexico  
April 15, 1970

REGULAR HEARING

IN THE MATTER OF:

Case No. 4084 being reopened pursuant  
to the provisions of Order No. R-3732,  
which order established 160-acre spacing  
units and an 80-acre proportional factor  
of 4.77 for the Feather-Wolfcamp Pool,  
Lea County, New Mexico.

Case No. 4084

BEFORE: A. L. Porter, Secretary-Treasurer  
David F. Cargo, Governor  
George Hatch, General Counsel

*Daniel S. Nutter, Examiner*

TRANSCRIPT OF HEARING

MR. NUTTER: Case 4084.

MR. HATCH: Case 4084. Reopened. In the matter of Case No. 4084 being reopened pursuant to the provisions of Order No. R-3732, which order established 160-acre spacing units and an 80-acre proportional factor of 4.77 for the Feather-Wolfcamp Pool, Lea County, New Mexico.

MR. NUTTER: Is there anyone here in Case No. 4084? We will continue the case until after lunch. We will call next Case No. 4336.

MR. HATCH: Do you want to give an approximate time on this after lunch?

MR. NUTTER: Yes, we will.

(No response.)

MR. NUTTER: Case 4084.

MR. HATCH: Case 4084. Reopened. In the matter of Case No. 4084 being reopened pursuant to the provisions of Order No. R-3732, which order established 160-acre spacing units and an 80-acre proportional factor of 4.77 for the Feather-Wolfcamp Pool, Lea County, New Mexico.

The call of the docket said all interested parties may appear and show cause why the said pool should not be developed on less than 160-acre spacing units and to show cause why the 80-acre proportional factor of 4.77 should or

should not be retained.

MR. NUTTER: The original hearing of Case No. 4084 was on March the 26th of 1969. The Applicant in that case was Olan F. Featherstone. Is there anyone present at the hearing representing the original Applicant, Olan F. Featherstone, in this matter today? Is there anyone present at the hearing that wishes to make an appearance in Case No. 4084?

Case No. 4084 will be continued to the Examiner Hearing to be held at nine o'clock a.m., May the 13th, at the Santa Fe Land Office Building in Santa Fe. With that, the hearing is adjourned.

(Whereupon, the hearing was adjourned.)

STATE OF NEW MEXICO )  
 )  
COUNTY OF BERNALILLO )

I, BRENDA BURKS, Court Reporter 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.

Brenda Burks  
Court Reporter

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. ....  
heard by me on ..... 19.....  
..... Examiner  
New Mexico Oil Conservation Commission



dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMAS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

APR 11 1969  
MAY 12 AM 8 37

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

March 26, 1969

EXAMINER HEARING

-----  
IN THE MATTER OF: )  
)  
)

Application of Olen F. )  
Featherstone for the )  
creation of a new pool )  
and for special pool )  
rules, Lea County, )  
New Mexico. )  
-----

Case No. 4084

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING



MR. UTZ: Case 4084.

MR. HATCH: Case 4084, application of Olen F. Featherstone for the creation of a new pool and for special pool rules, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for the applicant.

MR. UTZ: Any other appearances in this case?

(Whereupon, Applicant's Exhibits  
Numbers 1 through 8, inclusive,  
were marked for identification.)

(Witness sworn.)

WILLIAM BARNHILL

called as a witness by the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q State your name, please.

A William Barnhill.

Q Mr. Barnhill, what business are you engaged in?

A I am a consulting geologist from Roswell, New Mexico.

Q In connection with your work as a consulting geologist, have you done any work for Olen F. Featherstone in connection with the application in Case 4084?

A Yes, I have. I have prepared these exhibits.

Q Have you testified before the Oil Conservation Commission and made your qualifications as a matter of record?

A Yes.

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

MR. UTZ: Yes, they are.

Q Mr. Barnhill, briefly, what is being proposed by Mr. Featherstone in the application before the Commission at this time?

A What is being proposed in this application 4084 is creation of a new pool with new pool rules, and applying for 160-acre spacing, with an 80-acre allowable, is essentially the proposal.

Q This is for the applicant's Cabot State Well No. 1?

A Yes, sir. Featherstone No. 1, Cabot State, in Section 29, 15-32, Lea County.

Q That is the well is located in the northeast of the northwest quarter of that section?

A Yes, sir.

Q Referring to what has been marked as Exhibit Number 1, would you identify that exhibit?

A Well, Exhibit Number 1 is a land plat of the area,

showing the North Anderson Ranch Unit approximately a mile to the southeast, and a dry hole in Section 32 known as the Lane Mill Unit, drilled by T.P. Coal and Oil; and a well immediately north in Section 20, a dry hole which was drilled by Cabot, and it is the Cabot Carper State.

Mr. Featherstone's well was drilled at the location you just described, in anticipation of encountering some of the Wolfcamp reef found in the North Anderson Ranch Field.

Q Did you encounter that producing formation?

A We encountered the formation, but it wasn't productive. If I could refer you to the electric log on the next sheet.

Q That is Exhibit Number 2?

A That would be Exhibit Number 2, which is the microlog of the Featherstone No. 1 Cabot State, you will notice that approximately 9,500 feet, there is approximately five feet of microlog porosity. The DST is on the log here, and that was the first DST. It went on down to the Anderson Ranch pay, itself, which is the Bough C, and took a DST at 9,725 to 9,778, and we did have gas to the surface in four minutes, and recovered 120 foot of oil and gas cut mud, and five barrels of oil.

Now, the Bough C, this particular zone here is what

is producing in the Anderson Ranch Unit to the southeast. You will notice on this microlog, we just don't have any microlog porosity.

This well was drilled to a depth of 10,200 feet, and subsequent DST below this recovered water. Five and a half-inch casing was run on this, and perforated this lower zone, which is the pay in the Anderson Ranch, more or less just seeing if anything would develop, which you will notice the perforations marked on the log, and it was acidized, and it did -- we just lost our porosity completely. So we went back up to this 9,500-foot zone, and perforated, 9,499, 9,500 to 9,501, and acidized this with 1,500 gallons. Currently, this well is out of that zone, which is the Bough B, and is flowing eight to ten barrels of oil per hour, no water.

Q Is all of the production coming from this upper zone which is designated as B?

A Yes, sir.

Q In your opinion, is the C zone contributing anything to this production?

A Not to my knowledge would it be contributing anything.

Q It is open in the well bore, however, is it not?

A We have two feet open there, yes.

Q Did you set a plug below that point?

A Yes, there is a plug below that.

Q But, in your opinion, is this a separate source of supply than that from which the Anderson Ranch is producing?

A Yes, it is. These perforations at which the oil is coming from is the Bough B section, which does not produce in the Anderson Ranch Field to the southeast, or in the immediate area. It is present in these other wells in the Anderson Ranch Field, but they developed their good porosity in the Bough C, and they just never made any attempt to complete out of this Bough B section.

Q Now, referring to what has been marked as Exhibit Number 3, would you identify that exhibit?

A Exhibit Number 3 is just a subsurface contour map on the top of the Bough B section, and actually all it shows, it is just the updip-downdip relationship between Anderson Ranch and the Featherstone Cabot State. That is contoured on the Bough B section that we have open, and is making oil in the Featherstone well.

The next sheet attached to this Exhibit 3 is the BB cross-section, which goes from the Featherstone well to the Aztec 1-AW in Section 28. This is just a straight line cross-section.

Q The cross-section, then, is attached as the next page?

A It is the third sheet attached to Exhibit 3, which shows the Bough B section in the Featherstone well, and the Bough B section in the Aztec well, which was not tested, but the microlog, it is a very similar porosity situation. If you look down further on the Aztec 1-AW well, you can see the porosity that develops in the C section, which the Featherstone well does not have.

Q And the Aztec well, is that completed and producing from the Bough C zone?

A Yes, out of that lower porosity below 9,900.

Q Is it open in the B?

A There are no wells in the immediate area open in the B.

Q Referring to what has been marked as Exhibit Number 4, would you identify that exhibit?

A Well, Exhibit Number 4 is a subsurface map on the top of the Bough C, which is the producing horizon in the Anderson Ranch, itself, and there again it is essentially the same relationship structurally as these horizons, just updip-downdip situations. The second sheet attached to it is the AA cross-section. This section goes from the TP-Lane

Mill Unit, the dry hole in Section 32, to the Featherstone well in 29, to the dry hole Cabot Carper State in Section 20.

Again, the relationship here on the microlog is just to show the B horizon in the TP Well and the Featherstone Well. In the TP Well, you will notice the Bough B is essentially the same microlog thickness as the Featherstone Well.

TP Coal and Oil, which I have included in this record, the well data, did attempt a completion out of their Bough B section, in which the last report was that it was swabbing 40 barrels of oil per day, and they subsequently abandoned it.

There is only one thing wrong with this particular cross-section, in that the Cabot well to the north did not run a microlog section through the Bough B section, and what I have included here is just the induction log showing the same horizon, but we are looking at an induction log and microlog here, which is a little -- just isn't the way it should be, but that is all we have to use.

You will notice that in the Cabot well, the Bough B section has thickened up to, I would say, maybe fifteen feet of Queen limestone in there. That well did take a DST on the Bough B, and they had some gas and free oil on the DST, but

they attempted a completion out of the Bough C, and the well was consequently abandoned.

Q Now, the only well that is actually producing, then, from the Bough B is the Olen Featherstone Cabot State No. 1?

A That's right.

Q Referring to what has been marked as Exhibit Number 5, would you identify that exhibit?

A Exhibit Number 5 is just the well data on the Featherstone No. 1 Cabot State, with just the field records in there of the DST's, and casing, cementing, perforations, the acidizing, and the pressures they were treated under. Actually, just the complete daily history of the well on its completion.

Q Is the well presenting flowing?

A Yes, it is.

Q How long has it been operating as a Queen well?

A Well, that would be effective about February 25th.

Q What volume is it presently producing?

A It is producing 8.77 barrels of oil per hour.

Q Now, referring to what has been marked as Exhibit Number 6, would you identify that exhibit?

A Well, Exhibit Number 6 is of the wells that I just mentioned, that is the Cabot Corporation, and the TP Lane Mill.



It did have DST in the Bough B, which is just the well file on those wells, just to show that that particular zone had been tested, although there was not a completion. Plus the Union well in the Union 133 also tested the Bough B, and they recovered free oil. That is the only three wells that have even run a DST on this particular zone.

Q Now, referring to what has been marked as Exhibit Number 7, would you identify that exhibit?

A All the offset operators were asked to comply by letter whether they would have any objection to forming a new pool, and the spacing proration units, which the only one that I actually have received a copy of, they were asked to be addressed to Mr. Porter with a copy to Mr. Featherstone, and I have the copy here stating the approval of Cabot Corporation and Tenneco. Unless the Commission has something adverse to report, all the adjacent operators said they would have no objection.

Q And then the third page of that exhibit is the assignment of allowable?

A That was the assignment of the allowable by the Oil Conservation Commission.

Q That was based on what kind of acreage dedication? Was that based on 40-acre units?

A That is based on 80.

Q On 80. Because you are within one mile of the Anderson Ranch Unit, is that correct?

A Yes.

Q And that was a Wolfcamp well, and the assignment was based on the basis of 80-acre spacing as provided in the Anderson Ranch Unit, is that the situation?

A That's right.

Q Referring to Exhibit Number 8, would you identify that exhibit?

A Well, Number 8 is the interpretation and calculation of the two DST's, both the Bough B horizon and the Bough C horizon, prepared by Halliburton in their Duncan, Oklahoma office on their computer calculations, which we prefer to use due to the fact they are just a little more accurate than the regular field data, although it is just the interpretation.

Q Now, that is the first two pages?

A That is the first two pages.

Q Referring to the third page of the exhibit, would you discuss the information shown on that?

A Well, that is the reserve calculations for the Bough B section at 9,498 to 9,502. And the lower zone, which would be the Bough C, that would be the reserve calculations.

Q That is referred to as Zone 1, that would be the B?

A Yes, that really should be, that would be the B zone. That is just a typographical error. That is the Bough B.

Q And Zone 2 is the Bough C, is that correct?

A Yes.

Q Based on these calculations, is that calculation based on the information shown on the Halliburton calculation?

A Yes, it is.

Q Now, based on these calculations, in your opinion, would a well located and spaced on 80 acres be economic?

A Well, 80-acre spacing, the figure is 50,000 barrels, 50,776 barrels, which would not be economically feasible.

Q What is the depth of these wells?

A The Bough B horizon is at 9,500.

Q What is the approximate cost of drilling a well to the Bough B?

A \$120,000.00

Q If the Commission sees fit to grant your request for 160-acre spacing, would that be an economic operation for the operator here?

A Well, what we would like to do, if the Commission

would grant us temporary spacing on this, we would certainly improve the situation from the reserve calculations. We calculate that 101,552 barrels, which is kind of a skinny operation at its best, but we would have hopes of doing some additional development in there, and getting more reservoir data and information to see if this B zone is an actual commercial zone, which, since it has not produced in the immediate area, we really have a lot of unanswered questions.

Q Specifically, Mr. Barnhill, do you have any pressure information at this time?

A Only on this material presented here on the calculations.

Q And that is based on the drill stem test?

A Yes, sir.

Q Do you have any information on the permeability of the formation?

A No more than what is calculated off these Halliburton charts.

Q You have no cores?

A No cores, no.

Q Now, according to your Exhibit Number 1, the Cabot well is located on acreage originally owned by Cabot and farmed out to Featherstone?

A That's correct.

Q Do you have any arrangement with Tenneco and Texas Pacific, or whoever is the owner of the remaining half of that quarter-section that would be dedicated to the well, does Featherstone have that acreage?

A Yes, he does.

Q He could dedicate the 160 acres to the well?

A Yes, he could.

Q What would be the next action in the event this application is approved on the part of the applicant here, in regard to future development?

A It would be proposed to re-enter the Cabot Carper State located in the southeast quarter of Section 20, which is diagonally to the northeast, and attempt a completion out of the Bough B section in that well. That well did test some free oil out of that zone. That would be the first step. There is not a microlog of that particular section, as mentioned earlier, but the induction log looks like there might be possibly fifteen feet of clean lime in there.

Q Would it be practical to go ahead with that type of operation on the basis of 80-acre spacing?

A I think it would be just economically feasible on 80 acres. I don't believe the economics would apply at all.

Q Actually, the present well owned by Mr. Featherstone would not make 160-acre allowable?

A No, it would be hard pressed to make an 80-acre allowable. We do have plans to go ahead and reacidize this Bough B section, but it wouldn't make 160-acre allowable under no circumstances.

Q Well, as a consultant for Mr. Featherstone, Mr. Barnhill, would you recommend to him that he enter the Carper State Well in Section 20 and attempt to complete it, if the pool was spaced on 80 acres?

A On 80 acres?

Q Yes.

A No, sir.

Q Would you recommend that he attempt to complete that well on the basis of 160 acres?

A Yes, I would.

Q In your opinion, would there be any further development of this Bough C zone in the area, if this application is not approved?

A Well, I believe when you look at the facts on the matter here, it is just a real highly questionable situation at best, but it would -- since the Bough B has not produced, we really don't know much about it. We can't present enough

evidence on drainage, and one thing or another. There wouldn't be any point in trying to kid anybody. If it was a new zone, whether it is going to be real commercial or not, we really don't know at this time. It would certainly be not commercial on 80-acre spacing.

Q Would a temporary order for a period of one year give Mr. Featherstone an opportunity to obtain additional information which may or may not justify 160-acre spacing on the basis of drainage? Would the additional year give you enough time to obtain that information?

A I think it would, yes.

Q Would the additional one year give you time to make tests on the present well, and establish some information as to the drainage pattern of that well?

A Yes.

Q Then, frankly, we do not have information showing drainage, is that correct?

A We have very little information on this Bough B section here, that's right, very little information.

Q Are you then requesting the Commission on the basis of economics, for an opportunity to make further developments in this pool and test to determine the proper acreage dedication, is that what you are asking for?

A Yes.

Q Were Exhibits 1 through 8 prepared by you or under your supervision?

A Yes, they were.

MR. KELLAHIN: At this time, I would like to offer Applicant's Exhibits 1 through 8.

MR. UTZ: Without objection, Exhibits 1 through 8 will be entered into the record of this case.

MR. KELLAHIN: That is all we have.

(Whereupon, Applicant's Exhibits Numbers 1 through 8, inclusive, were admitted into evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Barnhill, what do you estimate the profit would be on a barrel of oil?

A \$1.60.

Q It would be a little rough on 23,400 barrels to pay out that \$120,000, wouldn't it?

A Which figure was that, sir?

Q 23,400 barrels, which you show as your recoverable reserves from 160 acres.

A Well, on 160 acres, is 101,552.

Q Your net recovery on 160 is 23,400, isn't it, if



you assume the factor of 25 per cent?

MR. KELLAHIN: That is the Bough C zone, if the Examiner please.

Q Is that the C zone?

A That is the C zone, yes. That zone is not going to contribute anything to the well bore.

Q You don't think that you will get any of that 23,400?

A No, sir, I really don't.

Q Then there is not much reason for being here, is there?

A It is a matter of presenting the data we have. But the C zone just isn't producing in this well, unfortunately.

Q So it is 101,552?

A Yes.

Q And that Zone 1 is the B zone?

A Yes, sir. I am sorry that is called Zone 1 there, but that is the Bough B.

Q Do you have a suggestion for a pool name?

A Not at this time, sir. I am not the operator in this, and I don't know what they are going to attempt to call it.

Q Does he have a suggestion?

A I don't know of one at this time, sir.

Q What did you say the top of the perforations were on your B zone?

A That is at, on the B zone, the top of the perfs is 9,499, 9,500, and 9,501.

Q And you are not asking for a discovery allowable here, since the well won't make it anyhow?

A That's right.

Q But you are asking an 80-acre allowable?

A Yes, sir.

Q And I believe you requested a one-year temporary order?

A Yes, sir.

MR. UTZ: Any other questions of the witness?  
The witness may be excused. Any statements?

MR. HATCH: The Commission has received a letter from Tenneco Oil Company dated March 11th. The application of Olen Featherstone for the formation of a new pool and adoption of a 160-acre proration unit surrounding their recent discovery northeast, northwest Section 29, Township 15 South, Range 32 East, will be heard March 26, 1969. Tenneco Oil Company has no objections to this spacing unit. Signed, C. H. Madsen, Geologist. That is the only communication I

have a record of receiving here. That is from Tenneco.

THE WITNESS: I believe we have one there from Cabot Corporation.

MR. HATCH: You show a copy coming here, but I couldn't find it.

MR. UTZ: Well, we didn't find it. Any other statements? The case will be taken under advisement. We will adjourn now until one thirty o'clock this afternoon.

(Whereupon, the hearing was adjourned for the morning, to reconvene at one thirty o'clock, P.M.)

I N D E X


<u>WITNESS</u>	<u>PAGE</u>
WILLIAM BARNHILL	
Direct Examination by Mr. Kellahin	2
Cross Examination by Mr. Utz	17

<u>EXHIBITS</u>	<u>MARKED</u>	<u>ADMITTED IN EVIDENCE</u>
Applicant's Exhibits Numbers 1 through 8	2	17

STATE OF NEW MEXICO       )  
                                   )  
 COUNTY OF BERNALILLO    )    ss.

I, SAMUEL MORTELETTE, Court Reporter 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.

  
 COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4054 heard by me on Mar. 29. 1959.  
  
 Examiner  
 New Mexico Oil Conservation Commission