STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

28 August 1985

EXAMINER HEARING

IN THE MATTER OF:

Case 2355 being reopened on the motion of the Oil Conservation Division and pursuant to the provisions of Order No. R-2051, as amended. CASE 2355

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Jeff Taylor
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I N D E X

E X H I B I T S

MR. STOGNER: We'll call Case Number 2355, which is being reopened.

MR. TAYLOR: In the matter of Case 2355 being reopened on the motion of the Oil Conservation Division and pursuant to the provisions of Order No. R-2051, as amended, which order promulgated temporary special rules and regulations for the Bluitt-Wolfcamp Gas Pool in Roosevelt County, including a provision for 320-acre spacing units.

Operators in said pool may appear and show cause why the pool should not be developed on 160-acre spacing units.

MR. STOGNER: We will now call for appearances in this matter.

MR. PADILLA: Mr. Examiner, my name is Ernest L. Padilla, Santa Fe, New Mexico, for H. L. Brown, Jr., in this case.

I have one witness to be sworn.

MR. STOGNER: Okay, are there any other appearances in this matter?

Will the witness please stand and be sworn?

(Witness sworn.)

MIKE FEAGAN,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. PADILLA:

Q Mr. Feagan, for the record would you please state your name and what your connection with H. L. Brown, Jr., is?

A Yes. My name is Mike Reagan. I'm employed by H. L. Brown, Jr., as a petroleum engineer, production engineer.

Q You work out of Midland, Texas. Do you reside in Midland, Texas?

A That's right.

Q Have you previously testified before the Oil Conservation Division and had your credentials accepted as a matter of record?

A I have not testified previously.

Q Would you please state your educational background and when and where you received your degree in petroleum engineering?

A Yes. I attended Texas Tech University; received my degree in 1981, BS in petroleum engineering; af-

ter which I was employed by Texaco, Incorporated, and worked for a year and a half as a production engineer in Sundown and Pinwell, Texas, and then transferred to the Midland District Office as a reservoir engineer for Texaco, Incorporated.

Q When did you start working for H. L. Brown?

A February of 1984 I started working for H. L. Brown, Jr., in the present capacity I'm employed.

Q And as a petroleum engineer what are your duties with H. L. Brown?

A They really range -- with a small company they range from production and a small amount of drilling and anything that may pertain to regulations.

Q Have you made a study in connection with this case of the Wolfcamp gas pool in Roosevelt County, New Mexico.

A Yes, sir, I have.

Q Have you prepared certain exhibits or had them compiled under your direction and supervision?

A Yes. I prepared the exhibit in front of us based on some data gathered by an engineering, independent engineering consulting firm.

Q Under your direction.

A Under my direction, correct.

MR. PADILLA: Mr. Examiner, I tender Mr. Feagan as an expert in petroleum engineering.

MR. STOGNER: Mr. Feagan is so qualified.

Q Mr. Feagan, would you please turn to what we have marked as Exhibit Number One and generally describe what that is?

A Exhibit Number One is our exhibit based on data gathered by an independent engineering consulting firm of Osborn and Uhl, Incorporated.

They prepared two studies for us, one in September -- one in 1981 and the other updated study in 1984 on the Bluitt-Wolfcamp Field, and their findings and documentation are presented in this exhibit.

Q Will you give us a brief history of the Bluitt-Wolfcamp Field?

A The Bluitt-Wolfcamp Field was discovered by the completion of H. L. Brown, Jr. Federal Well No. 1 in October of 1959. The field has been developed since 1959 through 1982 with the drilling and completion of thirteen gas wells in the main Wolfcamp reservoir.

Twelve of these wells are currently operated by H. L. Brown, Jr., and one was recently sold by Sun Exploration Company and I'm not sure who's operating that well now.

As of January 1st, 1985, 319,915 barrels of condensate and 16.9 BCF of gas have been produced from the Bluitt-Wolfcamp Field.

Q Okay, can you briefly describe the study that was prepared by H. L. Brown in 1981 and what the purpose of that study was for?

A The purpose of the study in 1981 was to investigate the possibility of infill drilling the Bluitt-Wolfcamp Field on 160-acre spacing.

We found that it wasn't economically feasible at that time to infill drill.

Q Did you update that study in 1984?

A Well, we didn't do it as far as updating the economics. We did update the findings as far as pressure data, data concerning infill -- I guess drainage of the reservoir.

Q Is that pressure data contained in this exhibit?

A Yes, sir, it is.

Q Would you refer to the pressure data, please?

A Yeah. The estimated original reservoir pressure was 2900 psig.

In 1980 H. L. Brown, Jr. subjected our wells to long term pressure build-up tests. Using these

pressures an isobaric map, which is Figure No. 2 in this exhibit, was constructed by Osborn and Uhl and was updated by Figure No. 3 from pressure data gathered in September of 1984.

Q What are Figures 2 and 3?

A They're the isobaric maps based on pressure data from 1980 and 1984. You'll notice when the two isobaric maps are compared, similarities in the isobar shapes can be seen and general reservoir pressure decline can also be observed to essentially be uniform over the entire reservoir.

Q What does that mean, the comparison of those two isobaric maps?

A It's showing us that we have good pressure communication between the wells and that we don't find any undrained areas within the reservoir boundary. We're adequately drawing the pressure down with the current wells.

Q Have you also made reserve calculations for the field?

A Yes. We -- the well stream gas initially in place was determined to be 40.4 BCF for the Bluitt-Wolfcamp Field. This volume was determined by a P/z plot, or reservoir pressure divided by compressibility factor versus the cumulative well stream production.

This is shown on Figure 4, P/z plot.

Q Would you turn to that and explain that to the examiner?

A Yes. The P/z plot here was constructed using the reservoir pressure in 1980 and then up -- from the updated -- from the updated reservoir presssures found in 1984. We were able to circulate this to --

Q Does that P/z plot show uniform drawdown of that reservoir?

A Well, actually this plot is just showing us basically what our ultimate recovery is really predicted, --

Q Okay.

A -- which is 40.4 BCF for the field.

Q Okay, what -- that's total estimated reserves in the field, is that correct?

A That's correct.

Q What do you estimate to be your ultimate recovery from the wells currently in the field?

A Well, from Osborn and Uhl's updated study of 1984, we projected ultimate recovery to be 35.3 BCF from the field. This constitutes and 87.4 percent of the well stream calculated initially in place to be recovered.

Q Is that a good recovery factor in your opinion?

A Yes, we feel like that's a good recovery

factor for this field.

Q Now, what economic calculations or evaluations have you mde concerning infill drilling in the Bluitt-Wolfcamp Pool?

A We had a study done in 1981, again by Osborn and Uhl, to infill -- look at the possibility of infill drilling the Bluitt-Wolfcamp Field.

The economic comparisons of this study are shown in Table II in this exhibit and it shows the case of the infill drilling well, infill drilling to yield a cash flow of $1.3-million less than the described for the case of continued current operatons, so we're showing that we would be losing money by drilling the wells.

Even though a few more reserves were generated from infill drilling the well, the increase in reserves wasn't sufficient enough to offset capital expenditure required plus the increase in operating costs.

Q Now, is H. L. Brown intending to use an alternate method of recovery in order to enhance production from the field?

A Yes. We currently had approved by our partners and are in the process of putting in a compression facility out there at the Bluitt-Wolfcamp Field. It's our intentions that the lower line pressures will yield a longer life, thus more recovery, and help our recovery efficiency.

Q But you -- H. L. Brown deems this procedure as a viable economic expenditure?

A Yes, sir. Our expenditure for the compression facility will be approximately $1.65-million, as opposed to over, I believe it was $8-million for cost of infill drilling of the Bluitt-Wolfcamp Pool.

Q Have you updated the economic evaluation in 1984?

A We've not updated the economics. The economics in 1981 were based on a condensate price of $40 a barrel escalated at 8 percent per year to $75 a barrel and held constant thereafter.

A gas price of $2.23 an MCF was used, again escalating at 8 percent per year, reaching a ceiling of $10 per MCF and constant thereafter.

Operating costs were $9000 per well, escalated at 8 percent. Drilling and completion costs were estimated to be $500,000 per well.

With our present prices of $23 a barrel for condensate and $2.93 per MCF, we feel like the situation of no escalation, prices used in the previous study, indicate that with today's oil and gas markets an infill drilling program would prove even less attractive than it did in 1981.

Q And in fact is it your testimony that you

would be spending money needlessly in trying to develop additional reserves in the pool?

A Yes, that's correct.

Q What conclusions do you draw as far as maintaining 320-acre spacing for this pool is concerned?

A It's our opinion that the reservoir in the Bluitt-Wolfcamp Field is being drained efficiently and economically with the present 320-acre spacing.

Uniform pressure drawdown indicates drainage of the entire reservoir.

Infill drilling will not add enough reserves to offset the capital costs associated with drilling these wells, nor will it add significantly to the projected recovery factor of 87.4 percent of the well stream gas initially in place.

We request that the 320-acre spacing units remain in effect for the Bluitt-Wolfcamp Field.

Q Mr. Feagan, do you have anything further to add to your testimony?

A No, sir.

MR. PADILLA: Mr. Examiner, we tender Mr. Feagan for questioning.

And I move the introduction of Exhibit Number One.

MR. STOGNER: Exhibit Number

One will be admitted into evidence. Thank you, Mr. Padilla.

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Feagan, are you familiar with Order Number R-2051-C?

A No, sir.

Q Are you familiar with any of the Orders Number R-2051?

Are you referring to the ones that were opened earlier asking -- bringing this case up?

Q That was the order of the application of H. L. Brown, Jr., and Clem E. George for establishment of these special pool rules in the Bluitt-Wolfcamp. Your company was the applicant.

Are you familiar with these orders?

A No, sir.

Q Well, in particular, Order No. R-2051-C, order in paragraph number two says, the operator of the next line connected to a pipeline in the Bluitt-Wolfcamp Gas Pool shall notify the Commission in writing of such fact and that the the Commission will thereupon issue a supplemental order designating exact date for reopening this case.

Do you know if H. L. Brown, Jr. Corporation abided by this order?

A I'm afraid I don't.

Q Do you know what the second well in this pool was?

A The second well, I don't have that in front of me, no, sir. I believe it was the Federal "A" No. 1.

Q Do you know who the operator of that well was?

A H. L. Brown, Jr.

Q Is it still on line?

A Yes, sir.

Q Do you know when it was put on line?

A No, sir, I sure don't. I tell you what, I may have that data.

Q Well, to save you and me some time, it was put on line in November of 1964, so you've had approximately eleven years to abide by this order number.

A Uh-huh.

Q And I just wondered why H. L. Brown did not.

A I'm afraid I'm not familiar with that.

Q Are you familiar with the general rules and regulations of Rule 104?

A No, sir.

Q Are you familir with the statewide rules

for Wolfcamp age spacing?

A No, sir.

MR. STOGNER: I have nothing further for Mr. Feagan.

Is there anything further for Mr. Feagan?

If not, he may be excused.

Is there anything further in Case Number 2355 reopened at this time?

If not, this case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2355 (Reopened) heard by me on 28 August 1985.

Michael E. Stogner, Examiner
Oil Conservation Division