BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 23, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco Inc., for a quintuple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order approving the quintuple completion (tubingless) of its G. L. Erwin "B" NCT-2 Well No. 3, located in Unit I, Section 35, Township 24 South, Range 37 East, Lea County, New Mexico, in such a manner as to produce oil from the Waddell, McKee, Fusselman, Devonian, and Drinkard zones, North Justis Field, through parallel strings of 2 7/8 and 2 3/8 inch casing cemented in a common well bore. CASE 2569

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. UTZ: Case Number 2569.

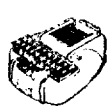
MR. MORRIS: Application of Texaco Inc., for a quintuple completion, Lea County, New Mexico.

MR. KELLY: Booker Kelly appearing for Gilbert, White, and Gilbert, Santa Fe, New Mexico. We have one witness, and ask that he be sworn.

(Witness sworn.)

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

(Whereupon, Applicant's Exhibits 1, 2, 3 marked for identification.)



C. R. BLACK

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

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name and your position?

A I am C. R. Black. I'm employed by Texaco Inc. as a Petroleum Engineer, from Midland, Texas.

MR. KELLY: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir, the witness has been previously qualified.

Q (By Mr. Kelly) What does Texaco seek by this application?

A This is the application of Texaco Inc. for a quintuple tubingless completion for our G. L. Erwin "B" NCT-2 Well No. 3. This well is completed in the North Justis, Fusselman, McKee, Devonian and Drinkard Pools and in the undesignated Waddell Pool. Each zone will be produced through a parallel string of tubing cemented in a common well bore as casing.

Q What's the present status of the well as far as you are concerned?

A At the present time this well has been drilled to total depth and each zone has been completed. However, we found upon taking communications tests that we do have communications indicated between three of the zones. We are now in the process of repairing these communications and all of the necessary and completed forms

should be submitted to the Commission in the near future.

Q Referring to what has been marked as Exhibit No. 1, would you explain that to the Commission?

A Exhibit No. 1 is a plat showing the G. L. Erwin "B" Lease bordered in yellow, and the subject well circled in red. The location of this well is 1980 feet from the south line and 330 feet from the east line of Section 35, Township 24 South, Range 37 East. Also shown on this plat are the offset operators and their wells with the appropriate field designations being shown for each of these wells. At the base of the exhibit is a list of the offset operators and their mailing addresses.

Q Has Texaco received administrative approval for any phases of this well?

A Yes, sir. Administrative Order No. NC-1155, date February 19, 1962, was issued covering a quintuple tubingless completion for Ellenburger, McKee, Fusselman, Devonian, and Drinkard formations. However, upon drilling the well to total depth, we found that the Ellenburger was not productive and therefore we are completing in the Waddell, McKee, Fusselman, Devonian, and Drinkard formations. This will be the first production from the Waddell formation in this area.

Q Would you refer to what has been marked as Exhibit No. 2 and explain that to the Commission?

A Exhibit 2 is a diagrammatic sketch of the quintuple completion installation. A 20-inch hole was drilled to 279 feet;

at that point we set 16-inch casing and circulated cement to the surface with 300 sacks. We then proceeded with the 13 3/4-inch hole to 3450 and at that point we set 11 3/4-inch casing, cemented with a total of 1200 sacks, and the top of the cement, by temperature survey, was found to be 2160 feet. We then continued on with a 10 5/8-inch hole to 7395, and at that point we reduced the hole to 8 3/4 and continued on to the total depth of 8540.

Upon reaching total depth, we ran five strings of tubing, four strings of 2 3/8 and one string of 2 7/8. These strings of tubing were set at various depths as shown on the exhibit and cemented with a total of 3624 sacks of cement. The top of the cement was found to be at 3100 feet by temperature survey after the primary cementing operations.

If you will note, in string designated as "V", there were various sliding side doors set at different depths marked on the exhibit, and after the primary cement job we went in and attempted to open these sleeves and attempted to squeeze through these sliding side doors. This was to assure ourselves of complete zone isolation before we even commenced completion operations.

Q Could you tell the Commission the crude characteristics of each zone?

A Yes, sir, the Drinkard formation was perforated through various perforated intervals from 5955 to 6052 feet. These intervals are shown on the exhibit. On potential test dated April 27, 1962, this zone flowed 72 barrels of oil per day through a 15/64-

inch choke with a tubing pressure of 250 pounds. It was a 31.4 degree API gravity, and the gas-oil ratio was 618 cubic feet per barrel. It's an intermediate sweet crude and the bottom hole pressure is estimated at 2550 psi. This is based on other bottom hole pressures in the area.

The Devonian formation was perforated from 6900 feet to 6908 feet, and we did take a test on this well and it flowed 264 barrels of oil per day on the test. It's an intermediate sweet crude with 36 degrees API gravity and a gas-oil ratio of 700 cubic feet per barrel. The bottom hole pressure is estimated at 2700 feet. Now the Devonian --

MR. UTZ: What was the gravity on that?

A 36. The Devonian, Fusselman, and McKee are the formations we had an indication of communication between on our communications test, primarily between the Devonian and Fusselman. There was some indication that the McKee was in communication, so the potential tests that have been taken on these zones will be re-taken at the time we have repaired all of these communications.

The Fusselman formation was perforated from 6961 to 7,020 feet. It is an intermediate sweet crude with a gravity of 36.8 degrees API and a gas-oil ratio of 500 cubic feet per barrel. The bottom hole pressure is estimated to be 2525 psi. We expect it to flow initially.

The McKee formation was perforated from 8,050 feet to 8,056, and 8,111 to 8,119. It's an intermediate sweet crude with

a gravity of 38.7. Estimated bottom hole pressure is 3230 psi, and we expect the gas-oil ratio to be too small to measure.

The Waddell formation was perforated from 8246 feet to 8254 feet. On potential test of April 27, 1962, this zone flowed 105 barrels of oil in 21 hours, or at the rate of 120 barrels of oil per day through an 18/64 choke, with a gas-oil ratio of 1,087 and a gravity of 42.8 degrees. It's an intermediate sweet crude and we estimate the bottom hole pressure to be 2600 psi.

Q Have the completion techniques that you are using here been previously approved by the Commission on wells located in the area?

A Yes, sir, similar techniques were approved by Commission's Order R-2109 dated November 1st, 1961, and this was for our G. L. Erwin "B" NCT Well No. 2; it was proposed to be a quintuple tubingless completion completed in the same manner.

Q I believe you stated that you expect to have initial flow on all zones?

A That is correct.

Q If you have to artificially lift, can you do that on all zones?

A Yes, if it becomes necessary, any and all zones can be artificially lifted.

Q Do you expect any corrosion or paraffine problems?

A In these zones of completion we do not expect any corrosion or paraffine.

Q Would you explain Exhibit No. 3?

A Exhibit No. 3 is a sonic log on the subject well that has the tops of the formations and perforated intervals marked. I think it's reasonably self-explanatory. I would like to make one comment, that I'm sure the Examiner is aware of the meeting that was held in Hobbs on January 29th of various operators in the North Justis area, concerning the designation of the Waddell formation as a separate reservoir; and the zone that we have perforated and the top of the Waddell as we have picked it is in accordance with what was agreed to that day as to the top of the Waddell. The zone is corresponding with what is considered to be the Waddell in the area.

Q In your opinion, would the granting of this application be in the best interests of conservation and prevention of waste?

A Yes, it would.

Q Were Exhibits 1, 2, and 3 prepared by you or under your direction?

A Yes, sir, they were.

MR. KELLY: We move for the introduction of Exhibits 1, 2, and 3.

MR. UTZ: Without objection, Exhibits 1, 2, and 3 will be admitted into the record of this case.

MR. KELLY: That's all we have for the direct.

CROSS EXAMINATION

BY MR. UTZ:

Q Was this completion squeezed in the manner of your last two or three applications?

A Yes, they were, with secondary squeeze treatment. We did find that of all the sleeves installed in the stripping designated as "V", we were only able to actually pump into two of these sleeves. The indications were that we had an adequate cement job from the primary cement job. However, upon completing the zones, we found that we did have communication between these three zones.

Q What would be your indications that you had an adequate cement job?

A In the fact that the sleeves were opened and we could not pump into the sleeves or pump out of the sleeve and pump additional sleeve around the casing. However, certainly that can be indicative of the fact that in the immediate area of the sleeve there was adequate sleeve and it could have been channeling up the hole.

Q What manner do you intend to repair this situation?

A We have squeezed the Fusselman perforations and got an indication of cement return into the Devonian perforations, and at the present time they have drilled out cement, have reperforated the intervals and are in the process of recompleting and bringing these zones back in. The indications are now, under the treatment and we have pressure gauges on all zones with the holes loaded, and we did not have communication after this squeeze job on the Fusselman. I might add that this was, of the several multiple tubingless

completions in the area of Southeast New Mexico or Texas we have done, this is the first one we have had serious communication problems on.

Q I believe you stated that this completion was granted for another zone besides the Waddell?

A The Ellenburger was granted administratively.

MR. UTZ: Are there other questions of the witness?

MR. MORRIS: Yes, sir.

BY MR. MORRIS:

Q Mr. Black, with reference to this Waddell formation that you have explained has been the subject of an industry meeting in Hobbs, has the Commission officially recognized the Waddell as a separate producing formation?

A We were informed by Mr. Ramey in Hobbs that the Commission would not set this as a separate reservoir at this time until there was an actual completion from the Waddell formation. Then at that time they would designate this as a separate reservoir and separate pool.

Q Is this well the first completion in the Waddell?

A I understand that Amerada State NJ Well No. 1, which is located south of this well, they originally had a hearing, Case Number 2464, and they had a proposed completion in the Waddell. However, they were not able to actually complete from the Waddell so that there is no production from the Waddell formation at this time.

Q So this would be the first well?

A This would be the first completion and production from the Waddell formation.

Q Then it would be anticipated that the Commission would at some future time establish a North Justis-Waddell Pool, perhaps?

A That would be our expectation.

MR. MORRIS: Thank you.

MR. UTZ: Are all the other four zones in designated pools?

A Yes, sir, I believe they are.

MR. UTZ: Are there other questions? The witness may be excused.

(Witness excused.)

MR. UTZ: Are there any 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 Proceedings was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision, and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

DATED this 9th day of June, 1962, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

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. 2569, heard by me on May 28, 1962.

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