

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
December 11, 1961

IN THE MATTER OF:)

Application of Texaco Inc. for three)
triple completions, Lea County, New)
Mexico. Applicant, in the above-)
styled cause, seeks an order authorizing)
the triple completion of its V. M. Hen-)
derson Well Nos. 7, 8, and 9, located)
in Units F, E, and G, respectively,)
Section 30, Township 21 South, Range)
37 East, NMPM, Lea County, New Mexico,)
in such a manner as to permit the)
production of oil from each well from the)
Penrose-Skelly, Paddock, and Drinkard)
Pools through parallel strings of 3/8)
inch tubing cemented in common well bores.)

) Case 2462

BEFORE:

Elvis A. Utz; Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 2462

MR. WHITFIELD: Application of Texaco Inc. for three
triple completions, Lea County, New Mexico.

MR. KOCH: Sumner S. Koch, Gilbert, White, and Gilbert,
Santa Fe, appearing on behalf of the applicant. We have one
witness.

MR. UTZ: Let the record show that this witness has
been sworn in a previous case. Any other appearances? You
may proceed.

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C. R. BLACK

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

DIRECT EXAMINATION

BY MR. KOCH:

Q You are Mr. Black who testified in the preceeding application?

A Yes, sir, I am.

Q And your qualifications as a petroleum engineer have been recognized by the Commission?

A Yes, sir, they have.

Q You are familiar with the application which Texaco has made with respect to the three wells involved in this application?

A Yes, I am.

Q Will you tell the Examiner, please, what the application seeks?

A This is the application of Texaco Inc. to triply tube and complete its V. M. Henderson Wells Number 7, 8, and 9 in the Drinkard, Paddock, and Penrose-Skelly formations in Lea County, New Mexico. Production from each of the three zones will be produced from independent parallel strings of tubing cemented in a common well bore casing.

(Whereupon, Applicant's Exhibits 1 through 4 marked for identification.)

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MR. UTZ: Mr. Black, the Grayburg is in the Penrose-Skelly?

A Yes, sir.

MR. UTZ: What pool is the Paddock Pool?

A The Paddock Pool.

MR. UTZ: Just the Paddock Pool?

A And the Drinkard Pool.

(Whereupon, Applicant's Exhibits
5 and 5 marked for identification)

Q Mr. Black, what is the current status of the three wells involved in this application?

A These three wells have been recommended and approved; however, drilling operations have not as yet commenced on any of these three wells.

Q Referring now to Applicant's Exhibit 1, would you identify and explain that, please?

A Exhibit Number 1 is a plat showing the immediate area surrounding the Texaco V. M. Henderson lease, the Henderson lease is shown bordered in Yellow. The location of the Henderson Well Number 7 is shown circled in red. Well Number 7 is located 1980 feet from the North and West lines of Section 30, Township 21 South, range 37 East. Also shown on this plat are the offset operators with appropriate field designation being shown below each of the offset wells. Also shown at the base of this Exhibit is a list of the offset op-



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erators and their mailing addresses.

Q Are all the three zones in the area in which you propose to complete these three wells productive at the present time?

A Yes, sir. Each of these proposed zones is productive in other wells in the immediate area.

Q Is there any similar triple completion in the immediate area?

A No, sir, there is no well that is actually triply completed in these three zones themselves.

Q Referring to Applicant's Exhibit 2, would you identify and describe that, please?

A Exhibit Number 2 is a diagrammatic sketch of the proposed triple completion installation with reference to the V. M. Henderson Well Number 7. Texaco Inc. will drill a 15-inch hole to 300 feet and at that time we will set eleven and three-quarter inch surface casing, it will be cemented with 300 sacks of cement, will be circulated to the surface. We will then proceed with a ten and five-eighths inch hole to a depth of approximately 3,000 feet and at that point we will set eight and five-eighths inch intermediate casing and it will be cemented with 1200 sacks and cement circulated to the surface. We will continue on with a seven and five-eighths inch hole to a total depth of 6,700 feet. At that time we will run three strings of two and three-eighths inch O D buttress



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tubing. We will run two strings to the depth of 6,700 feet and one string to a depth of approximately 2,500 feet.

The string shown in yellow designated as the Penrose-Skelly string will contain five Otis type-A sliding doors. These sliding doors will be located at 3,596, 3,856, 5,106, 5,186, 6,562. The primary cement job on the long strings will be approximately 750 sacks of even core, eight percent cement, cement, and then prior to the completion in any or all of the three zones, we will go in and perform secondary or subsequent cement jobs by squeeze cementing above and below each of the producing formations with the exception of the Drinkard formation, we will not squeeze below it. We will, however, squeeze above it. This squeeze operation will be through those sliding side doors and will consist of approximately 25 to 70 sacks of cement. This is to assure ourselves of complete zone isolation before we go in and attempt completion in any one zone.

Q Would you inform the Examiner as to crude characteristics of each of the formations where completion will be sought?

A In the Drinkard formation we anticipate to perforate from 6,592 to 6,695. This will be by the oriented perforating method which has heretofore been explained to the Commission in other previous cases. We expect an intermediate sweet crude with a 35-degree gravity. We anticipate the gas-oil ratio will be between 1,700 and 3,000 cubic feet per barrel. We expect a bottom hole pressure of approximately 2300 PSI with a



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flowing life of some three years.

We will then perforate the Paddock formation from 5,136 to 5,156, by the oriented perforating method. We expect a sour crude with a gravity of 37 degrees; the GOR should range from 300 to 800 cubic feet per barrel and the expected bottom hole pressure is 1,850 PSI. We anticipate that this zone will flow for approximately three years.

We will then perforate the Penrose-Skelly or Grayburg section from 3,626 to 3,826. This will also be by the oriented perforating method. We expect a sour crude with an API gravity of 35 degrees. The estimated gas-oil ratio is 300 to 1000 cubic feet per barrel. We expect a bottom hole pressure of approximately 1,270 PSI, and it's anticipated that this zone will flow for approximately six months.

Q Will it be possible for any of the three zones to be pumped artificially if that becomes necessary?

A Yes, and if it becomes necessary it will be possible to artificially lift any or all three of the zones simultaneously.

Q Do you expect any corrosion or paraffin problems in any of these?

A In regard to corrosion, we do not expect any corrosion problems in any of the three zones. However, we will certainly carry out a corrosion program by taking periodic coupon surveys to determine if corrosion is occurring and to what extent. If it becomes necessary, we can control corrosion by the squeeze



type batch inhibitor program.

As far as paraffin, we do not expect any paraffin in the Pnerose-Skelly. We expect mild, if any, paraffin in the Paddock and Drinkard formations, but to combat this if it does occur, we plan to plaster coat the upper 1,500 feet of the Paddock and Drinkard formations.

Q Would you merely identify for the record at this time the Exhibits Number 3 and 4 and 5 and 6 respectively?

A Exhibit Number 3 is a plat showing the area of the V. M. Henderson, and showing Well Number 8 circled in red. Exhibit Number 4 is a diagrammatic sketch of the proposed triple completion installation with regards to Well Number 8. Exhibit Number 5 is a plat showing the area with Well Number 9 being circled in red, and Exhibit Number 6 is a diagrammatic sketch of the proposed triple completion installation in regards to Well Number 9.

Q Is the testimony which you have heretofore given with respect to Well Number 7 essentially the same with respect to the matters covered relating to Numbers 8 and 9?

A Yes, sir, the testimony will be the same. There are some slight variations in the actual footages on the exhibits and these will be the only variations, but they are clearly marked on Exhibits 3 through 6.

Q Referring particularly to Exhibit 4 and 6?

A Yes, the diagrammatic sketch.

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Q Were these exhibits prepared by you or under your supervision?

A Yes, they were.

Q And they depict the matters that you just testified to?

A Yes, sir, they do.

Q Is the proposed installation such that no commingling will occur among or between the various zones?

A Yes, sir, it is.

Q And in your opinion is the proposed triple completion sought by this application in accordance with sound conservation practices?

A Yes, sir, I believe it is.

MR. KOCH: We move the introduction of Exhibits 1 through 6.

(Whereupon, Applicant's Exhibits 1 through 6 offered in evidence)

MR. UTZ: Without objection Exhibits 1 through 6 will be entered into the record of this case.

Q Is there anything further you care to add to your statement, Mr. Black?

A No, sir, I have nothing further at this time.

MR. KOCH: That's all we have.



CROSS EXAMINATION

BY MR. UTZ:

Q You were going to put 750 sacks through the tubing with the sliding side doors?

A No, sir, the primary cement job will be down the yellow string designated as the Penrose-Skelly. At the base of this string we will have a conventional, or it will be conventional cementing equipment for two and three-eighths inch tubing. We will cement with 750 sacks back up the annulus and we expect the cement to come back into the intermediate casing. After we have performed our primary cement job, we will go in and open the sliding side door at 6,562. We will then squeeze with 25 to 50 sacks, depending on how much cement is necessary. We will then close the side door and proceed up the hole and perform this operation on each of the sliding side doors on up the hole.

Q You intend for the 750 sacks to come back to the eight and five-eighths?

A Yes, sir.

Q That will be injected through the yellow tubing?

A That will be down the Penrose-Skelly string.

Q You lost me, where are you going to put in any more cement?

A We realize with three strings of tubing in the hole it is completely difficult to get complete zone isolation with a

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primary cement job. This is a procedure that has been done by Texaco in other areas and has been very satisfactory, assuring us of complete zone isolation.

Q That is a cautionary cementing procedure, and to assure you have a good cement job?

A Yes. In dealing with these completions, we realize the problems of interzone communication, and we want to take every step possible to assure that we do have complete zone isolation in any or all of the three zones.

Q Have you used this method heretofore?

A This method has not been used in New Mexico by Texaco, however it has been employed in our Gulf Coast Division. This is the same method that was approved in the recent hearing concerning the Texaco quintuple completion. We anticipate using this same method there. Our South Texas or Gulf Coast Division has met with good success in using this method, and since that time on multiple tubing lease completions we have attempted to adopt this as a company-wide policy.

Q Ordinarily does the squeeze job take considerable cement?

A No, sir, we have found certainly in some instances that after you open the sliding side door that your injection rates are very small and you squeeze with very small amounts of cement. Normally we try to squeeze anywhere from 3,000 to 4,000 PSI. We have not encountered any difficulty in opening the side



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doors or closing them after the squeezing operation has been conducted. It has been found that normally anywhere between 25 and 75 sacks is adequate for any squeeze job.

Q Your bottom hole pressure on the Drinkard was 2300 pounds, and Paddock 1,850, and 1,270 on the Grayburg?

A Yes, sir.

Q Was the Drinkard a sweet crude?

A The Drinkard was classified as an intermediate sweet crude.

Q How about the gravities on the three zones?

A The Drinkard gravity is expected to be approximately 35 degrees. The Paddock gravity is expected to be 37 degrees, and the Penrose-Skelly gravity is expected to be 35 degrees. This is based on Penrose-Skelly, Paddock, and Drinkard production in the area.

Q What do you anticipate the GOR's on the Paddock and Grayburg will be?

A The Paddock GOR we expect to be between 300 and 800 cubic feet per barrel. The Penrose-Skelly is expected to be between 800 and 1,000 cubic feet per barrel.

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

(Witness excused)

MR. UTZ: Other statements in this case? The case will be taken under advisement. The hearing is adjourned.



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 Hearing 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 11th day of December, 1961, 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. 2462, heard by me on Dec. 11, 1961.

John A. Dwyer Examiner
 New Mexico Oil Conservation Commission

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