TECHNICAL TESTIMONY TO BE PRESENTED BY VANCE HENDRICKS
IN PUBLIC HEARING (CASE 1683) ON AUGUST 19, 1959
BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

Q. Will you please state your name, position and employer.

A. Vance Hendricks, Petroleum Engineer for Gulf Oil Corporation, Roswell, New Mexico.

Q. Have you previously testified before the New Mexico Oil Conservation Commission?

A. No sir, I have not.

Q. Will you then please state your qualifications.

A. After receiving a Bachelor of Science Degree in Petroleum Engineering from the University of Texas in 1953, I joined the Gulf Oil Corporation as an Engineer-Trainee at Crane, Texas. I worked in this capacity for approximately 8 months prior to my entry into the United States Air Force. After serving in the military for approximately 20 months, I was honorably separated and returned to my Gulf employment in November, 1955, at Hobbs, New Mexico. Since that date I have worked in various engineering assignments in both our Hobbs and Roswell, New Mexico, offices.

Q. Are you familiar with Gulf's Baxter V. Culp (NCT-A) Lease in the N/2, Section 19-19S-37-E and with the application that Gulf has submitted requesting a non-standard proration unit in the Eumont Gas Pool?

A. Yes sir, I am.

Q. Is the witness acceptable to the Commission?

A. Yes, proceed.

Q. Have you prepared, or have you supervised the preparation of, a plat showing the subject lease?

A. Yes sir, I have.

Q. Gulf respectfully submits this plat as Exhibit No. 1.

A. It is so marked.

Q. Mr. Hendricks, will you please testify as to what Exhibit No. 1 shows?

A. Exhibit No. 1 is a plat of a portion of north central Lea County, which is pertinent to this case. Outlined in red is the proposed 477.19 acre B. V. Culp (NCT-A) Gas Unit No. 1 upon which Gulf is seeking Commission approval. This proposed non-standard proration unit consists of the N/2 and the SE/4 of Section 19, Township 19 South, Range 37 East. The proposed unit includes the following four leases: Gulf's B. V. Culp (NCT-A) Lease, the E/2 NW/4, Lot 2, and the NE/4, Section 19; Gulf's Graham State (NCT-D) Lease, S/2 SE/4 Section 19; Phillips' Harvey Culp Lease, Lot 1, Section 19; and Shell's State "D" Lease, N/2 SE/4, Section 19.

Encircled and shaded in red is our B. V. Culp (NCT-A) Well No. 3, located 1,980 feet from the north line and west line of Section 19, Township 19 South, Range 37 East, to which Gulf requests the proposed 477.19 acre non-standard proration unit be assigned. The subject well is approximately 4,600 feet from the southeast corner of the SE/4 of Section 19, which is the farthermost point in the unit from the well.

Outlined in green are the existing Eumont Gas Pool proration units which completely surround the unit proposed by Gulf. The Eumont gas wells to which these surrounding proration units are assigned are designated either by a solid well symbol with a superimposed cross, which indicates a gas-oil dual, or by an open well symbol with a superimposed cross, which represents singly completed gas wells.

Q. Mr. Hendricks, will you outline the history of the B. V. Culp (NCT-A) Well No. 3.

A. Gulf Oil Corporation's B. V. Culp (NCT-A) Well No. 3, located 1,980 feet from the north and west lines of Section 19, Township 19 South, Range 37 East, was originally completed at a total depth of 4,002 feet on February 17, 1936 in the Monument Pool. The seven inch oil string was cemented at 3,813 feet with 450 sacks of cement. On February 14, 1956, the subject well was dually completed in the Eumont gas pool by perforating the seven inch oil string from 3,423 to 3,570 feet with two 1/2" jet holes per foot. This perforated interval is in the Queen formation which is within the vertical limits of the Eumont Gas Pool. Separation of the Eumont Gas Pool from the Monument Pool was effected by setting a Baker Model "D" production packer at 3,744 feet. During a multi-point back pressure test, conducted on August 10, 1956, the Culp (NCT-A) Well No. 3 flowed at a rate of 10,116 MCF per day operating with a back pressure of 799 PSIG. Absolute open flow potential for the well was calculated to be 21,000 MCF per day. On August 23, 1958, on test the subject well flowed at a rate of 2,175 MCF per day operating at a back pressure of 945 PSIG.

By Administrative Order NSP-256, dated April 25, 1956, the Oil Conservation Commission approved a 278.61 acre non-standard gas proration unit covering the E/2 NW/4, Lot 2, and the NE/4 of Section 19, Township 19 South, Range 37 East. This Eumont non-standard gas proration unit, being our B. V. Culp (NCT-A) Lease was dedicated to the subject well.

Q. Mr. Hendricks, do you have any information concerning the well's ability to produce an allowable equivalent to the approximate 480 acre non-standard proration unit for which Gulf is requesting approval?

A. Yes sir, I do. During the first 8 months of 1959, the average Eumont Gas Pool allowable for 160 acres was 200 MCF per day which would amount to 600 MCF per day for 480 acres. During the peak demand months of January,

February and March, 1959, our B. V. Culp (NCT-A) Well No. 3 produced into the Permian Basin Pipe Line System a daily average of 5,589, 3,088 and 5,734 MCF per day, respectively.

Q. What is the distance from Gulf's unit well to the nearest boundary line of the proposed unit?

A. Six hundred-sixty feet.

Q. As a result of this distance is it necessary to obtain an exception to Rule 5 (a) of Order R-520?

A. Yes, since Gulf is seeking approval of approximately a 480 acre unit.

Q. To your knowledge has such an exception been previously made by this Commission in the Eumont Gas Pool?

A. Yes, in the majority of 480 acre units this exception has been made. It was made in Orders No. R-689, R-694, R-803, R-872, R-1045, R-1084 and R-1177.

Q. From the testimony you have presented, what conclusions are you able to draw?

A. In view of the fact that the proposed non-standard gas proration unit is completely surrounded by other Eumont proration units, it can be reasonably presumed that the entire proposed unit will be productive of gas and in view of the B. V. Culp (NCT-A) No. 3 well's ability to produce well in excess of its anticipated allowable, it appears that there is no reason why the subject well cannot effectively drain and produce the allowable attributable to the proposed unit.

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