

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASES NOS. 1454, 1455 and 1456

TRANSCRIPT OF HEARING

MAY 28, 1958

DEARNLEY - MEIER & ASSOCIATES
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ALBUQUERQUE, NEW MEXICO
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BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
MAY 28, 1958

IN THE MATTER OF :

CASE NO. 1454 Application of Gulf Oil Corporation for:
an oil-oil dual completion. Applicant, :
in the above-styled cause, seeks an :
order authorizing the dual completion :
of its Learcy McBuffington No. 4 Well, :
located 660 feet from the South line :
and 1980 feet from the West line of Sec- :
tion 13, Township 25 South, Range 37 :
East, Lea County, New Mexico, in such a :
manner as to permit the production of :
oil from an undesignated Blinebry oil :
pool and oil from the Justis-Ellenburg- :
er Pool through parallel strings of :
tubing. :

CASE NO. 1455 Application of Gulf Oil Corporation for:
an oil-oil dual completion. Applicant, :
in the above-styled cause, seeks an :
order authorizing the dual completion :
of its Learcy McBuffington Well No. 5, :
located 1650 feet from the South line :
and 1980 feet from the East line of :
Section 13, Township 25 South, Range 37: :
East, Lea County, New Mexico, in such a :
manner as to permit the production of :
oil from an undesignated Blinebry oil :
pool and oil from the Justis-Ellen- :
burger pool through parallel strings of :
tubing. :

CASE NO. 1456 Application of Gulf Oil Corporation for:
an oil-oil dual completion. Applicant, :
in the above-styled cause, seeks an :
order authorizing the dual completion :
of its Learcy McBuffington Well No. 6, :
located 330 feet from the South line :
and 1980 feet from the East line of :
Section 13, Township 25 South, Range 37: :
East, Lea County, New Mexico, in such a :
manner as to permit the production of :
:

oil from an undesignated Blinebry oil :
pool and oil from the McKee formation, :
adjacent to the Justis-McKee Pool, :
through parallel strings of tubing. :
: :
-----: :
: :

BEFORE:

Elvis A. utz, Examiner

T R A N S C R I P T O F P R O C E E D I N G S

MR. UTZ: Next case on the docket is Case 1454.

MR. PAYNE: Application of Gulf Oil Corporation for an oil-oil dual completion.

MR. KASTLER: My name is Bill Kastler, appearing for Gulf Oil Corporation. If the Examiner please, we would like permission to consolidate Cases 1454, 55 and 56 for the purpose of hearing, for the reasons that all three cases involved wells recently drilled on our Learcy McBuffington 320-acre lease, and all three proposed dual completions are identical in design.

MR. UTZ: Are they in the identical formations?

MR. KASTLER: Two of them are. The third one is not. However, I believe we can save time by consolidating the cases and making separate statements concerning each well where that is necessary.

MR. UTZ: You are requesting to consolidate these only for the purpose of testimony?

MR. KASTLER: Yes.

MR. UTZ: Is there objection to the consolidation of these

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cases for the purpose of testimony? If not, that will be done.

MR. KASTLER: Our witness in these three cases will be Mr. John H. Hoover, senior engineer from Roswell.

(Witness sworn)

JOHN H. HOOVER,

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

DIRECT EXAMINATION

BY MR. KASTLER:

Q Please state your name, who you are employed by, and where you are employed, and how long you have been so employed.

A John Hoover, employed by Gulf Oil Corporation, Roswell, New Mexico. Been employed by Gulf for twelve years.

Q Have you previously appeared and testified as an expert witness before the Oil Conservation Commission of New Mexico?

A Yes, I have.

Q Are you familiar with wells Nos. 4, 5 and 6 on Gulf's Learcy McBuffington lease and with the proposed dual completion installation in each well?

A Yes, I am.

Q Are you familiar with the three applications involved in Cases 1454, 55 and 56?

A Yes.

Q Have you prepared or caused to be prepared lease plats showing the subject wells, the general lease area, and the surrounding wells?

A Yes, I have.

Q Have these been previously labeled Gulf Oil Corporation

Exhibit No. 1 in Case 1454, Gulf Oil Corporation's Exhibit No. 1 in 1455, and Gulf Oil Corporation's Exhibit No. 1 in Case 1456?

A Yes, they have.

Q Will you please explain what is shown on those three -- those location plats?

A These are lease plats, and they show the Learcy McBuffington lease, this lease being outlined with hashed marks, and this lease is described as the south half of Section 13, Township 25 South, Range 37 East, of Lea County, New Mexico. Exhibit 1 in Case 1454 shows Well No. 4 outlined in red. This well is located 660 feet from the South line and 1980 feet from the West line of this Section 13. Exhibit No. 1 in Case No. 1455 shows the -- our Learcy McBuffington Well No. 5, which is also circled in red, this well being located 1650 feet from the South line and 1980 feet from the East line of Section 13. Exhibit No. 1 in Case 1456 shows the location of our Well No. 6, being 330 feet from the South line and 1980 feet from the East line of Section 13.

Q Have you prepared or caused to be prepared three schematic diagrams to explain the features of each proposed installation in Cases 1454, 55 and 45 respectively? A Yes.

Q Have these been labeled Gulf Oil Corporation's Exhibit No. 2? A Yes, they have.

Q Are all three installations identical insofar as the mechanical features are concerned? A Yes, they are.

Q Will you please explain each one by well now, giving the

perforations in each well?

A Yes. Exhibit No. 2 in Case No. 1454, which is the proposed mechanical installation for Well No. 4 for dual completion in the Blinebry and Ellenburger Pool in the Justis area, shows we have thirteen and three-eighths inch OD casing set at 410 feet. Cement was circulated to the surface. We have nine and five-eighths inch OD casing set at 3,449 feet, cement also circulated to the surface. We have seven inch casing set at 8,230 feet, cemented with 1250 sacks and by temperature survey, the top of the cement is at 3,610 feet. We will have two strings of parallel tubing of two and three eighths inch OD. We will have a Baker Model D packer set at 8,135 feet with a long tubing string set through the packer. We will have a Baker parallel string anchor at approximately 5,050 feet, and the short two inch tubing string will be anchored into this string anchor. We propose to perforate the Blinebry zone within the interval of 5,134 feet to 5,547 feet. The Ellenburger is perforated 8,220 feet to 8,245 feet. The well is at a total depth of 8,264 feet.

Q Can you give the respective pressures of the two zones in Case No. -- in Well No. 4 at this time?

A Yes. The bottom hole pressure of the Ellenburger at a datum of minus 5,050 feet is approximately 3,253 pounds. The pressure of the Blinebry at a datum of a minus 2,209 feet, is approximately 2,478 pounds. Correcting these bottom hole pressures to the packer depth, we will have a pressure below the packer of 3,256 pounds; on

top of the packer 3,463 pounds.

Q What is the differential, then?

A Two hundred and seven pounds.

Q Thank you. unless you have something to add on Well No. 4, will you go next to Well No. 5 and explain Exhibit No. 2 in Case No. 1455?

A This is the proposed mechanical installation for Learcy McBuffington No. 5, also to be dually completed in the Blinebry and Ellenburger formation. We have thirteen and three-eighths inch casing set at 433 feet, cement circulated, nine and five-eighths inch casing at 3,450 feet, cement circulated. Seven inch casing at 8,260 feet, cemented with one thousand sacks and by temperature survey the cement was at 2,575 feet. We will have two strings of two and three-eighths inch OD tubing, the long string set through a Baker Model D production packer which is set at 8,150 feet, a Baker parallel string anchor at approximately 5,100 feet. The short tubing string will be anchored in the string anchor. We propose to perforate the Blinebry within the interval 5,130 feet to 5,650 feet. The Ellenburger is completed in the open hole interval 8,260 feet to 8,300 feet. Total depth of the well, 8,300 feet.

Q Mr. Hoover, can you give the relative pressures and the pressure differential on this well that is expected to be encountered?

A Well, a bottom hole pressure on the Ellenburger has a bottom hole pressure at a datum of 5,050 feet, of 3,253 pounds. Blinebry,

at a datum of minus 2,290 feet, 2,470 pounds. Correcting this to our packer depth, we will have a pressure underneath the packer of 3,263 pounds, on top of the packer 3,473 pounds.

Q Is it correct that both -- Well No. 3 and Well No. 4 and Well No. 5 are presently completed in the Justis-Ellenburger Pool?

A Yes, they are.

Q unless you have something else to add, would you now go to Exhibit No. 2 in Case 1456, and likewise explain it?

A Yes. This is the proposed mechanical installation for Learcy McBuffington No. 6 as a dual completion in the Blinebry and McKee. We have thirteen and three-eighths inch OD casing set at 432 feet, cement circulated to the surface, nine and five-eighths inch OD casing at 3,450 feet, cemented with 2,570 sacks. Temperature survey indicates the top of the cement at 880 feet. We have seven inch casing set at 7,600 feet cemented with 900 sacks and by temperature survey the top of the cement is at 3,220 feet. Total depth of the well, 7,600 feet, plugged back to 7,525 feet. We have two strings of parallel two and three eighths inch OD tubing. We have a Baker Model D production packer set at 7,200 feet. We have a Baker parallel string anchor set at 5,103 feet with the short string anchored into this string anchor.. The Blinebry is perforated within the interval 5,158 feet to 5,598 feet. The McKee is perforated within the interval 7,356 feet to 7,484 feet.

Q Would you now give the relative pressure differentials?

A The Blinebry bottom hole pressure at a minus -- at a datum

of minus 2,290 feet is 2,478 pounds. The McKee at a datum of minus 4,250 feet, has a pressure of 2,934 pounds. Correcting these bottom hole pressures to our packer setting depth, we will have a bottom hole pressure on top of the packer in the Blinebry of 3,133 pounds, underneath the packer in the McKee 2,891 pounds.

Q Which zone is presently being produced in Learcy McBuffington No. 6? A The McKee.

Q Mr. Hoover, in all three proposed installations, did Gulf Oil Corporation install two and three-eighths inch tubing?

A Yes.

Q Have installations of this type or similar type previously been approved by this Commission -- A They have.

Q -- in this same area or similar area?

A Yes.

Q Is the capacity of each string of tubing adequate to permit production from each zone by pumping, if necessary, each zone independant of the others?

A Yes, it can be.

Q Is it possible to tell if any commingling of oil should occur? A Yes, it is.

Q How would this be possible?

A In the case of our Learcy McBuffington No. 4, which is Case 1454, the gravity of the Ellenburger oil by test indicated to be 45.8 degrees, the Blinebry oil 39.8 degrees. Also, we -- the Ellenburger oil is sweet and the Blinebry oil is sour. We also

have a differential pressure -- tubing pressure which is sufficient to adequately make packer leakage tests in that the Ellenburger tubing pressure is approximately 150 pounds, Blinebry tubing pressure approximately 450 pounds. In the case of our Learcy McBuffington Well No. 5, Case 1455, the Ellenburger oil, again, is 45.8 degree gravity; the Blinebry 39.8; and again, the Ellenburger oil is sweet, the Blinebry oil is sour, and the tubing pressure on the Ellenburger 11,050 pounds approximately, and Blinebry 450 pounds approximately. In the case of our Learcy McBuffington No. 6, Case No. 1456, the Blinebry oil gravity 39.8 degrees, the McKee gravity, 42.5 degrees. As mentioned, the Blinebry oil is sour, the McKee oil is classified as sweet. The tubing pressure on the Blinebry, approximately 450 pounds, the McKee, approximately 1,000 pounds.

Q As I understand it, then, there are three tests which would aid you in determining if there were any commingling. Namely, there would be a great differential, there is a difference in the sulphur content of the two pays, and there is a pressure differential?

A Yes, that's correct.

Q If these applications or any of them should be granted, would Gulf comply with the operating tests, reports and procedures which might be required by the Commission?

A Yes, they will.

Q Are these applications in the interest of prevention of economic waste?

A Yes, they are.

Q In which way?

A By means of this dual completion, it allows the production of oil which otherwise might not be economically justified to produce, and I would like to quote some costs to give an idea of the saving. "Ellenburger Well, cost approximately \$155,000, single zone. A single zone Blinebry Well, approximately \$70,000, making a total of \$225,000 to drill two wells." We can dual in the Ellenburger, Blinebry for a cost of \$182,600 or a saving of approximately \$42,400. In the case of Blinebry and McKee dual, the Blinebry -- cost of a single zone Blinebry Well, \$70,000; single zone McKee Well, \$130,000, or \$200,000 for twin wells. We can dual one well in these two pays for approximately \$159,000 or a saving of \$41,000.

MR. KASTLER: This concludes the number of questions I have, Mr. Utz. At this time I would like to move that Exhibits Nos. 1 and 2 in Cases 1454, 1455 and 1456 be admitted into evidence.

MR. UTZ: Without objection they will be admitted.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Hoover, the gravity on the No. 4 McBuffington Well, would you give me that again?

A The gravity of the Ellenburger, 45.8 degrees.

Q Is that sweet or sour?

A That's sweet. The Blinebry 39.8, and sour.

Q And the Ellenburger on the No. 5?

A 45.8 degrees. Sweet. Blinebry 39.8, sour.

Q And the Blinebry or the McBuffington No. 6, is that sour too?

A That's sour. Gravity 39.8. And McKee, did you get that?

Q Is that sweet or sour?

A That's sweet. Gravity 42.5.

Q I believe you stated that you had these wells already completed?

A No 4 and no. 5 are only completed in the Ellenburger. No. 6 is dual completed. It is only producing one zone.

Q Which zone is it producing?

A McKee on the No. 6.

Q And did you state that you intend to take the required packer leakage tests --

A Yes, sir.

Q -- through separation?

A Yes, sir.

MR. UTZ: Are there any questions of the witness? If there are no questions of the witness, you may be excused.

(Witness excused)

MR. UTZ: Are there any other statements in these cases? If there is nothing further in these cases, we will take them under advisement.

