BEFORE THE

OIL CONSERVATION COMMISSION

NOVEMBER 19, 1958

IN THE MATTER OF:

APPLICATION OF GULF OIL CORPORATION, CASE 1337.

TRANSCRIPT OF HEARING

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BEFORE THE
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IN THE MATTER OF: Application of Gulf Oil Corporation for permission to commingle the production from two separate oil pools. Applicant, in the above-styled cause, seeks an order amending Order R-1093 and Order R-1093-A to authorize it to commingle the production from the Montoya formation with the production from the Ellenburger, Fusselman, and McKee Formations on its Learcy McBuffington Lease consisting of the S/2 of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico.	Case 1337

BEFORE:
Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: The next case will be case 1337.

MR. PAYNE: Case 1337, application of Gulf Oil Corporation for permission to commingle the production from two separate oil pools.

MR. KASTLER: My name is Bill Kastler. I am an attorney in Roswell, New Mexico, appearing for Gulf Oil Corporation.

This is the third hearing of this case to come before the Commission. The first hearing was held on November 14, 1957, with Mr. C. M. Bumpass, Gulf's Area Petroleum Engineer, as the chief witness. At that time we introduced Exhibits One, Two and Three, and the outcome of the case was the Commission's Order Number 1093.

The case came on for a second hearing on June 11, 1958. At that time Gulf proposed to add another pay into each of the separate tank batteries. The application was heard. We presented again exhibits and inadvertantly numbered them One, Two and Three.

The outcome of that case was approval as reflected in Commission Order 1093-A.

In introducing our exhibits today, if it is all right with the Examiner, I would like to designate them as Number 7, 8, 9 and so forth, in order that there won't be quite so much confusion.

MR. UTZ: We would prefer to have it One-C, Two-C and so forth.

MR. KASTLER: Very well. My witness again is Mr. Bumpass, who has previously qualified as an expert witness, and I would like him sworn, please.

(Witness sworn.)

MR. KASTLER: Are Mr. Bumpass' qualifications acceptable?

MR. UTZ: Yes.

C. M. BUMPASS

the witness, having first been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. KASTLER:

Q Mr. Bumpass, what amendment of Orders Number 1093 and 1093-A is being sought here today by Gulf Oil Company?

A For the commingling of the Montoya with the Ellenburger, Fusselman and McKee Crude.

Q Are these sweet or sour crudes?

A Sweet crudes.

Q Have you prepared a lease plat for introduction into evidence here as Exhibit Number 1-C?

A Yes, sir.

Q Would you please mark that plat 1-C and distribute it to the Hearing Officer.

(Marked Gulf Exhibit 1-C for identification.)

Q (By Mr. Kastler) Mr. Bumpass, what have you caused to be shown on Exhibit Number 1-C in Case 1337?

A Exhibit 1-C shows the outline of the Learcy McBuffington Lease with the battery location indicated in the red square.

Q Is this a 320 acre lease in a compact unit designated as the south half of Section 13, Township 25 South, Range 37 East?

A Yes, sir.

Q Does the hatched line on Exhibit 1-C designate this lease?

A That's correct.

Q Will you state what if anything is shown on this plat?

A Well, of course, the well locations and the designated pay are indicated here on our property and the offset operators and their particular wells.

Q Which wells are completed in the Montoya zone or formation?

A In the Montoya, we have Well Number 8 and Well Number 9.

Q And those appear on the plat, is that correct?

A That's correct.

Q Now, have you prepared a schematic diagram which shows the present installation and the preposed installation if this order should be granted?

A Yes, sir, I have.

Q Would you please label that Exhibit Number 2-C and distribute copies of it to the Examiner?

(Marked Gulf's Exhibit 2-C for Identification.)

Q (By Mr. Kastler) Referring now to Exhibit 2-C, Mr. Bumpass, would you outline the direction of flow of the Montoya oil into the surge tank?

A The Montoya oil coming from the individual wells enters header here at Item 1 on this diagram as being the well head. The well that is on production will flow through this indicated red part here into Item Number 2 of the drawing, which is the production separator for the Montoya. The oil then will pass from the separator through, again the red line, into the production treater for the Montoya pay, where, on receiving the necessary treatment, the merchantable crude will be routed through this green line through the check valve, Item 18, and thence into the B. S. & W. Monitor, Item 10.

On leaving the B.S.&W. Monitor, the crude passes into the re-routing valve, which is normally open, into the master dump meter for this particular pay, that being Item 12-D. Here the oil

is measured in one barrel dump instruments and it is discharged into the common surge tanks of the area, this green line.

Q In the event this B. S. & W. Monitor finds the oil unsuitable, what then happens?

A When the B. S. & W. Monitor detects that the B. S. & W. contents is in excess of the pre-set in the monitor, the monitor will send a signal simultaneously to the re-routing valve, Item 9, and to Item 11, which is the electric powered circulating pump. The signal received by Item 9, the re-routing valve,, will terminate flow from that valve into the dump type meter, Item 12-D, and open the flow through this brown line returning the oil for further treatment in the production treater, Item 8.

Q When the circulating valve or pump is in operation, what prevents that oil from backing up or cycling right in that square you have drawn around that pump?

A The check valve, Item 18, prevents the oil from leaving the discharge side of the pump and reversing the flow into the heater treater.

Q Does the unsuitable oil re-entering the heater treater for the second time have a higher pressure by route of the pump than the oil ordinarily flowing from the wells?

A Yes, it will have in order to enter the stream of flow into the separator.

Q If the unsuitability of the oil should arise by virtue of of the heater treater becoming inoperative or the fire going out,

other actions would occur towards shutting the wells down?

A Well, if the fire goes out, then, of course, we have terminated our treatment here of the crude; and as long as the B. S. & W. Monitor monitors excessive B. S. & W., this valve continues to be closed and you have the condition where you have a continual filling but no discharge from that valve, so to speak. That will cause the fluid level to rise in this production treater, Item 8, and when the fluid rises sufficiently to activate the high level float switch, Item 19, in the production treater, that will cause the signal to be sent to the individual header valves causing them to be closed. As they are closed, the wells are continuing to feed into the flow lines, and with a small pressure build up on the flow lines, the shut in valves in the head, at the well head will be closed.

Q What arrangements are there for testing the oil from the Montoya wells?

A For the testing of the Montoya wells, the flow is from the production through the test leg of the header over to the test separator, which is Item 3 in this drawing. Here the gas is removed from the oil and is metered through an integrating type meter at Item 21. The oil on leaving the separator passes into the test production treater where it receives the treatment to remove B. S. & W. The water is discharged on a water leg through a dump type water meter. The oil is discharged through the oil leg through a dump type oil meter. The oil meter in this

case being Item 5, and the water meter being Item 6.

Q Mr. Bumpass, during that operation's testing, would you explain the activity of the valves which are designed as Item 7?

A Yes. This cluster of valves here, Item 7, are automatic valves, and they are normally in a closed position. It will be noted from close examination of this drawing that there is one such valve on a line returning to each respective pay. When the well is placed on test automatically and routed through the test facilities, the same signal that places that well through the test leg of the header sends a signal and operates this valve here which allows it to open. Thereby we have a complete open circuit of the test leg through the dump test meter, oil meter, Item 5, and then back to Item 7, which will allow the oil to return to the line of flow of a normal Montoya production where it will re-enter it and be commingled with the regular production from the Montoya.

Q You have one test facility for all three pays?

A That is correct. The same sequence of operations would happen on these others as we have previously tested.

Q Is all of the flow from the Montoya pay zone supposed to pass through the dump meter for that zone?

A All of the Montoya, yes, after separation treatment and monitoring will pass through the dump meter, Item 12-D, for the Montoya pay prior to its entering into the common surge tank.

Q What experience has Gulf had to gauge the accuracy of its

dump type oil meters used on this lease --

MR. KASTLER: We have three exhibits here which will be proposed as Exhibits 3, 4, and 5-C respectively. Our final exhibit will be Exhibit 6-C.

(Marked Gulf's Exhibits 3-C, 4-C, 5-C and 6-C for identification.)

Q (By Mr. Kastler) Mr. Bumpass, would you refer to Exhibit 2-C if necessary to indicate the nature of tests that were made of the McKee pay zone.

A Well, the test of the McKee pay zone was essentially this. We set a test tank out here, "strap" test tank, and jumped across here, bypassed this line in order that we might test or determine the agreement between the dump meter of the McKee, which is Item 12-B in this drawing, we manually gauged in, I believe, the low 500 barrel tank; and I might here --

Q -- Describe the tank.

A -- say that the Ellenburger was tested by comparing the volume meter with this dump meter, 12-A, into the 1,000 barrel surge tank, and for the Fusselman, we employed a test tank to check the volume of the meter, 12-C; and Exhibit 3-C here is a tabulation of the results of 15 tests taken on the McKee pay.

In this case, the test tank was a low 500 barrel tank. The test period was through from July '58 through October 12th; and in brief these tests show here that of a total test volume gauged manually 4,018.13 barrels, the metered volume through the

dump meter was 4,026.72 barrels, or a difference of 8.519 barrels more through the dump meter than was gauged manually.

Q What percentage of error does this give?

A Weighted average percent difference of plus 21 hundredths of one percent.

Q What were the readings of the test in the Ellenburger pay zone as are reflected in Exhibit 4-C?

A The test period here was approximately the same. We did have one additional test. The total gauge volume was 5,041.28 barrels against 5,061.71 barrels metered through the dump meter which gave a weighted average percent difference of plus 41 hundredths percent.

Q Would you now refer to Exhibit Number 5-C and describe your tests that were conducted in that Fusselman?

A Again the test period was approximately the same. The number of tests were approximately the same. The volume gauged manually was 4547.29 barrels. The volume metered through the dum meter was 4556.19 barrels, a difference of plus 8.90 barrels more metered than gauged, to give a weighted average percentage difference of plus two tenths of one percent.

Q Mr. Bumpass, by whom were these tests conducted?

A By our pumper. These tests here are, the temperature corrections were made on the manual gauging valves; and, of course, the dump meter, as in the previous test, is equipped with temperature and flash compensating valves.

Q Have any comparative tests been made between the dump meters on the other side, on the pipe line side of this?

A Yes. I would like to refer once again to Exhibit 2-C for a little statement regarding this test procedure. With these other test tanks up here, which have been necessary for that, necessary to operate using these test tanks, because we were to prove these meters before we could commingle; but in the case of the Ellenburger, it's connected into this tank here and actually serves as a test tank, but it is our permanent surge tank, and it is that tank that the pipe line is connected with the P.D. Meter here. Now, by taking, starting reading on this P.D. Meter and starting gauging on this tank and a starting meter reading on the dump meter and then by taking a final meter reading here, a final gauge volume and a final meter reading on the dump type meter, we have conducted two such tests whereby a good comparison is made between the agreement of the dump type meter with that of the P.D. Meter.

Q Are the results of those tests shown on Exhibit 6-C?

A Yes, they are.

Q Refer to 6-C and explain it.

A Essentially what this exhibit 6-C shows on the first test conducted under the method just described, the test of 9/29/58, there was 601.87 barrels metered by the P.D. Meter, and the difference in volume in the 1,000 barrel surge tank, the volume metered through the dump meter 601.20 barrels for a difference of

minus 67 hundredths of one barrel. This gives a dump meter percent error or a dump meter percent difference of 11 hundredths of one percent value.

Q In all of these tests that were conducted, with the exception of those where the P.D. Meter was compared, the comparison was made by the dump meter against manual gauging on the tanks?

A Yes, sir. We were assuming as a proof volume the hand gauging of the tank.

Q You are assuming the hand gauging of the tank is 100 percent accurate for the purpose of this test?

A Yes.

Q In your opinion, have the results as shown by these various tests proven that the dump meters are satisfactory to accurately dump the amount of oil produced from each pay zone?

A In my opinion, based on these tests, they are.

Q In there anything incompatible about the oil to be commingled?

A No, they are all classified as sweet crude.

Q Have all offset operators been given notice of Gulf's operation?

A Yes.

Q Has the pipe line purchaser been consulted about this proposal?

A Yes.

Q Are there any diversified interest owners involved in this

application to commingle?

A No.

Q If granted, will this protect correlative rights?

A Yes.

Q Will it be consistent with the State's policy of conservation of oil and the prevention of waste?

A Yes.

MR. KASTLER: That's all the questions I have of the witness on direct testimony. I would like to offer at this time Exhibits 1-C through 6-C inclusive into evidence.

MR. UTZ: Without objection, they will be received in evidence. Any questions of the witness?

EXAMINATION BY MR. PAYNE:

Q Mr. Bumpass, would you expect any order issued in this case to contain the same orders and restrictions as 1093 and 1093-A?

A Yes, sir. I presume you are referring to the monthly calibration, the monthly checking of these dump type meters.

Q Yes.

A Yes, we propose to do that.

EXAMINATION BY MR. FISCHER:

Q Mr. Bumpass, are these items on this hookup, are they gas or electrically operated?

A They are pneumatically controlled. I think I said pneumatic. They are electrically controlled and pneumatically operated.

EXAMINATION BY MR. UTZ:

Q Mr. Bumpass, you used the, I'll call it the index or manual gauging of the stock tanks as the criterion for gauging your meters. Did you do that because you felt that that was the ultimate in measuring, or could there have been error in the measuring of the stock tanks?

A Well, I think for anyone to say there can't be an error in manual gauging, why, that would be incorrect. We had a letter directing us to check this against the tanks, and this test we are submitting now is to comply with that proviso that you made. That was one additional reason, Mr. Utz, why we went through these two tests in the exhibits, feeling that there possibly is some, well, you get to the point of questioning which one is the accurate one. We are assuming that the hand gauging is. Looking at the results of these checked against the P.D. Meter, why, it would lead one to think that the dump meter is more accurate than hand gauging. It certainly is as accurate.

Q Do you think there will be any more pay zones in that lease?

A Well, I don't know. We contemplate another one or two.

MR. UTZ: Any other questions of the witness? If not, the witness will be excused.

(Witness excused.)

MR. UTZ: Is there any other statement to be made in this case? If not, the case will be taken under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, JOHN CALVIN BEVELL, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me; that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 26th day of November, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

John Calvin Bevell
NOTARY PUBLIC

My Commission Expires:
January 24, 1962

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1337, heard by me on Nov. 6, 1958.

..... Examiner
New Mexico Oil Conservation Commission