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MR. NUTTER: We will call the next case, number 5353.

MR. CARR: Case 5353, application of Cities Service Oil Company for a dual completion, Eddy County, New Mexico.

MR. KELLAHIN: Tom Kellahin, Kellahin and Fox, Santa Fe, New Mexico, appearing on behalf of the applicant, Cities Service Oil Company and I have one witness to be sworn.

(Whereupon, the witness was duly sworn.)

GEORGE E. DAVIS

called as a witness, having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you please state your name, by whom you are employed, and in what capacity?

A My name is George Davis; I'm employed by Cities Service Oil Company as Region Petroleum Engineer.

Q Mr. Davis, have you previously testified before the Commission and had your qualifications as an expert accepted and made a matter of record?

A Yes, sir.

Q Are you familiar with the facts surrounding this particular application by Cities Service?

A Yes, I am.

MR. KELLAHIN: If the Examiner please, are the witness' qualifications acceptable?

MR. NUTTER: Yes, they are.

BY MR. KELLAHIN:

Q Mr. Davis, would you refer to what has been marked as Applicant Exhibit No. 1, identify it and state what Cities Service is seeking?

A Exhibit No. 1 is a plat of the area, including the Government-Z No. 1, which is the well in which we seek to dually complete in the Wolfcamp and the Morrow formations.

Q Your plat also shows the offsetting owners?

A That is correct. The plat also shows the Government-T No. 1 to the north, which is also a dually completed Wolfcamp-Morrow completion.

Q How do you propose to dually complete this particular well?

A We propose dual completion as shown in the schematic downhole completion.

Q That is Exhibit No. 2?

A Which is Exhibit No. 2.

Q Please explain that?

A We have 5 $\frac{1}{2}$ -inch casing set at 11,485 feet with the Morrow perforated from 11,313 to 11,320. A Baker, Model DB packer is set at 11,200 which will isolate the Morrow perforations from the upper Wolfcamp, and the Wolfcamp is perforated at 9219 to 9303, and a Baker, Model AR-1 compression packer is set at 9,005 feet. The method of completion will be to flow the Morrow through the annulus and the Wolfcamp through the tubing through a cross-over assembly in the Baker, Model AR-1 compression packer.

Q Is the well currently completed in this configuration?

A That is correct.

Q Is it ready to be approved and put on production?

A That is correct.

Q Please refer to the second sheet of Exhibit No. 2, and describe what information it contains?

A Exhibit No. 2 is a schematic of the casing that was put in the well, with 13-and-3/8-casing set at 625 feet; 9-and-5/8-casing set at 3,008 feet; and 5-and-1/2 set at 11,485. The top of the cement behind the 5-and-1/2-inch casing is at 8120; the cement on the upper two strings was circulated to the surface.

Q Have you run any packer-leakage tests on the well at this point?

A No, we have not.

Q Do you anticipate running those tests before you put it on production?

A The packer-leakage test will be run after the well is put on production.

Q Please refer to the third page of Exhibit 2 and identify it?

A The third page is a detailed schematic of the cross-over assembly which is utilized to cross over the Wolfcamp into the tubing and the Morrow into the annulus. The Wolfcamp is flowed up the tubing because it makes an appreciable volume of fluid.

Q In your opinion, Mr. Davis, does this method of completion conform to sound engineering practices so that there will be no communication between the two producing zones?

A Yes, it does.

Q In your opinion, will the approval of this application be in the best interest of conservation, the prevention of waste and the protection of correlative rights?

A Yes, it will.

MR. KELLAHIN: If the Examiner please, we move the introduction of Exhibits 1 and 2.

MR. NUTTER: Applicant's Exhibits 1 and 2 will be admitted in evidence.

(Whereupon, Applicant's Exhibits 1 and 2 were admitted into evidence.)

MR. KELLAHIN: That concludes our direct examination.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Davis, do you have a test on the Wolfcamp yet?

A Yes, sir.

Q What is that test, please?

A It is shown on Exhibit 2, the first page. The Wolfcamp flowed on a 12/64th inch choke, 1,003 barrels of oil a day, and a gas-oil ratio of 778 to 1, with a flowing tubing pressure of 1282 pounds.

Q Is this a condensate, or is this definitely an oil?

A It is about 53 degrees.

Q 53-degree oil?

A Yes, sir.

Q Do you have any idea what the pressure is on that
— at the bottomhole?

A The bottomhole is approximately 4500. In fact, yes, it is 4532 on the drill stem test, which is also on this exhibit, which is designated as drill stem test No. 1.

Q Now you do have a test on the Morrow also, is that correct?

A Yes, sir.

Q And what is that?

A The calculated absolute open flow on the Morrow is 9,711 mcf per day.

Q Now, is this a wet gas, or how much liquid does the well make?

A The well will make, on the four-point flow, approximately 15 barrels of condensate, I would have to look at the records to -- I think that was done in a four-hour period.

Q 15 barrels in 4 hours?

A Could I check that?

Q Sure. What we are interested in knowing is the GOR on the Morrow, to see if this annular flow for the Morrow is going to work.

A The Morrow zone produced 5½ barrels of 53.5 gravity, distillate at 60 degrees, in 3 hours and 34 minutes during the four-point test.

Q How much gas did it make in that same period of time?

A On the maximum rate of the four point, which was the fourth and final rate, 5,700 mcf per day. It's difficult to pinpoint the actual gas-oil ratio, I think that we have to take an average of the four points on the four point, or the four volumes, and then divide that by the volume of condensate produced.

Q Can you tell by looking there what the approximate COR would be?

A I would say we're looking at, say, 4300 mcf per day average, and then that would have to be divided by 5½ barrels, times the ratio of 24 divided by 3 hours-and-a-half.

Q That would be 5½ times 8 then, wouldn't it, approximately?

A That's about right.

Q About 40 --

A (Interrupting) 40 barrels of distillate.

Q To 4 million cubic feet, so that is a little over 100 thousand to 1 then?

A That's correct.

Q Okay.

(Whereupon, a discussion was held off
the record.)

MR. DAVIS: I get 97,727 to 1.

BY MR. NUTTER:

Q In your opinion, Mr. Davis, will a well that is producing with a ratio of 97,000 to 1 produce efficiently through the annulus?

A Yes, sir.

Q The other zone is clearly an oil well with a low GOR; will it be possible to pump the Wolfcamp formation in the event it ceases to flow?

A It would be possible.

Q You have tubing there and you could pump it?

A Yes, sir.

Q Do you have a bottomhole pressure on the Morrow?

A The bottomhole pressure on the Morrow? I have one that was taken on the drill stem test No. 2 in the Morrow, from 11,040 to 11,240. The final shut-in pressure was 4495 pounds, that was a 90-minute final shut-in pressure.

MR. NUTTER: Thank you. Does anyone else have any questions of Mr. Davis? He may be excused. Do you have anything further, Mr. Kellahin?

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MR. KELLAHIN: No, sir.

MR. NUTTER: Does anyone have anything they wish
to offer in Case 5353? We will take the Case under advise-
ment.

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STATE-WIDE DEPOSITION NOTARIES
225 JOHNSON STREET
SANTA FE, NEW MEXICO 87501
TEL. (505) 992-0386

