STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	)	CASE NO. 12,215
APPLICATION OF ANADARKO PETROLEUM CORPORATION FOR DOWNHOLE COMMINGLING, LEA COUNTY, NEW MEXICO	)	ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

August 5th, 1999

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, August 5th, 1999, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

August 5th, 1999
Examiner Hearing
CASE NO. 12,215

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E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	6	13
Exhibit 2	7	13
Exhibit 3	8	13
Exhibit 4	9	13
Exhibit 5	10	13
Exhibit 6	11	13

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A P P E A R A N C E S

FOR THE DIVISION:

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FOR THE APPLICANT:

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By: W. THOMAS KELLAHIN

* * *

WHEREUPON, the following proceedings were had at 9:16 a.m.:

EXAMINER CATANACH: Okay, at this time I'll call Case 12,215, which is the Application of Anadarko Petroleum Corporation for downhole commingling, Lea County, New Mexico.

Call for appearances in this case.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing on behalf of the Applicant, and I have one witness to be sworn.

EXAMINER CATANACH: Any other appearances?

Will the witness please stand to be sworn in?

(Thereupon, the witness was sworn.)

MR. KELLAHIN: Mr. Catanach, this is an Application by Anadarko for downhole commingling. They're seeking to take the Walden Number 12 well and downhole commingle production from the Penrose Skelly-Grayburg Pool, with production from the Southwest Eunice-San Andres Pool.

The well currently produces from the Grayburg Pool. They want to prolong the life of this wellbore to recover what additional oil could be produced out of the San Andres, and so they want to add the San Andres.

The Application was filed administratively. It's our understanding that it meets all the requirements for

approval for downhole commingling with the exception that the anticipated water production from the San Andres will be a volume in excess of what you're allowed to approve administratively under 303.C.

Our witness is Mr. Richard Lauderdale. Mr. Lauderdale is the production engineer that filed the administrative application and understands the details and circumstances of the Application.

RICHARD LAUDERDALE,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Lauderdale, for the record, sir, would you please state your name and occupation?

A. Richard Lauderdale, production engineer for Anadarko Petroleum Corporation.

Q. When and where did you obtain your engineering degree?

A. I obtained my engineering degree in 1996 from Texas Tech University.

Q. And what are your current responsibilities for Anadarko?

A. I'm the production engineer for the Level Land properties as well as the New Mexico properties that

Anadarko operates.

Q. This microphone is just for the court reporter, and there's a ceiling fan in the false ceiling that's hard for me to hear you, sir. So if you speak up, I think it will be easier to hear your presentation.

Has it been your responsibility to prepare the Division Form C-107.A for downhole commingling?

A. Yes, sir.

Q. And you, in fact, did that?

A. Yes, sir.

Q. All right, and you're familiar with the engineering aspects and the information concerning the Number 12 well?

A. Yes, sir.

MR. KELLAHIN: We tender Mr. Lauderdale as an expert production engineer.

EXAMINER CATANACH: Mr. Lauderdale is so qualified.

Q. (By Mr. Kellahin) Mr. Lauderdale, let's take Exhibit 1 of the exhibit package and have you identify for us where this well is located.

A. The well is located in Section 15 of Township 22, Range 37 East, in Lea County. It's denoted in the yellow. It is Well Number 12 in the E.W. Walden lease.

Q. All right, what are you proposing to do?

A. I would like to downhole commingle the Penrose-Skelly Grayburg and the Eunice Southwest-San Andres. The well is currently only completed -- or only producing from the Penrose-Skelly Grayburg.

Q. Approximately what is the current rates of production from the well as it is now configured for production out of the Grayburg?

A. The current daily production rate is about one to two barrels of oil a day and about two to four barrels of water a day and about 20 MCF of gas a day.

Q. Based upon your studies, what do you anticipate to be the production attributable to the San Andres Pool?

A. Based on tests that were performed when the well was originally drilled and before we were able to commingle the zones, the San Andres test was about 25 barrels of oil a day and about 250 barrels of water per day.

Q. Let's set aside Exhibit 1 and have you identify for the record what is marked as Anadarko Exhibit 2.

A. This was the application that I filed to try to get administrative approval to downhole commingle the Penrose Skelly-Grayburg in the Southwest Eunice-San Andres.

Q. I've numbered the pages of your administrative application, Mr. Lauderdale. If you'll turn with me to page number 10, describe for me and for Mr. Catanach how this wellbore is configured.

A. The wellbore is configured as shown on the wellbore schematic, of which the bottom perforations are the San Andres. They are isolated by a cast-iron bridge plug and ten feet of cement, and then the current and producing perforations are in the Penrose Skelly-Grayburg.

Q. If Mr. Catanach approves the commingling, how will you alter the wellbore configuration?

A. Basically, it will involve drilling out the cast-iron bridge plug and running in with the current production equipment as shown in the schematic.

Q. All right. Set aside Exhibit 2 for a moment. Let's turn to Exhibit 3. What are we looking at with Exhibit 3?

A. Exhibit 3 is a production plot of the Penrose Skelly-Grayburg in the E.W. Walden Number 12, and only the Penrose Skelly-Grayburg.

Q. All right, and this is the data that supports your conclusion about the minimal oil production from that zone?

A. Yes, sir.

Q. What is the benefit to Anadarko and the interest owners that are entitled to share in production from this well if commingling is approved?

A. We can efficiently and effectively produce more of the reserves from the Penrose Skelly-Grayburg beyond

what would be produced by simply leaving it a Penrose Skelly-Grayburg producer.

Q. Let's turn to Exhibit 4 and have you illustrate to Mr. Catanach the support for your opinion about the forecasted production from the San Andres Pool.

A. This is the two different intervals of the San Andres that was originally perforated, and the tests are shown as well.

Q. There are a range of oil rates and water rates tested over the test period, are there not?

A. Yes, sir.

Q. What's your anticipated average oil rate and water rate for the San Andres? Do you have an estimate?

A. It seems to me that that has seemed to stabilize at around 25 barrels of oil a day and around 250 to 300 barrels of water a day in that.

Q. What is the current Division rule with regards to the amount of water produced in association with the oil that's been commingled?

A. I believe the rule is that you cannot produce more than two times the amount of water from the top -- from the shallowest zone, which is the Penrose Skelly-Grayburg, you cannot produce more than two times the amount of water as the top oil allowable.

Q. And what is your oil allowable in the Grayburg?

A. It is 80 barrels of oil per day.

Q. All right, it's 160 barrels, and so there's the real probability that you'll exceed that number?

A. I believe so.

Q. Can that number be exceeded in this wellbore without causing waste or impairing correlative rights?

A. Yes, sir.

Q. And why is that so?

A. I have two exhibits which -- We think the main concern in producing this well would be precipitant formation, inhibiting production.

Q. All right, let's turn to Exhibit 5 and have you describe your conclusion that the commingling of fluids and waters is not going to cause you any kind of compatibility problem.

A. This is a result of two waters that were obtained from leases that Anadarko operates as -- to the end of last month. One was a San Andres water which is from the Hugh 13. The other is the Penrose Skelly-Grayburg, water that was taken from the E.W. Walden Number 12.

And Martin Water Labs performed water analysis, and in their opinion they find no precipitant, and these waters are compatible.

Q. How recent is this test data and results?

A. It was the end of last month.

Q. Are you satisfied that based upon this analysis and your other information, there is not a compatibility or a scaling problem if downhole commingling is approved?

A. Yes, sir.

Q. What is another possible concern that you would have as a production engineer with the commingling of a zone that's been depleted with another zone that has a substantial quantity of water associated with its oil production?

A. The main concern there would be crossflow.

Q. Have you made a calculation to determine whether this wellbore is configured with surface facilities and subsurface equipment such that you will be able to keep it pumped off?

A. Yes, sir.

Q. Let's turn to Exhibit 6 and have you identify and describe the support for that opinion or conclusion.

A. Exhibit 6 is a RODSTAR, which is what we use to calculate pump efficiency and pump capacity of our downhole equipment, and in this run we are using the current equipment that we have. And up in the right-hand corner, the production rate of 282 barrels per day at 85-percent efficiency is shown. Therefore, with no changes I believe we can keep this well in a pumped-off condition.

Q. If there is a change that's necessitated by the

fact that your production rate of fluids might exceed 282 a day, what would yo have to do?

A. We are prepared to install a bigger pump, move pumping unit equipment as necessary to keep the well pumped off.

Q. And that's all you'd have to do?

A. Yes, sir.

Q. You don't have to change downhole configurations or anything else like that?

A. No, sir.

Q. Is there an opportunity to Anadarko as operator of this Walden lease and similar wells in this vicinity to commingle Grayburg and San Andres production on other wells?

A. Yes, sir.

Q. And in all probability this water issue is likely to impact those subsequent applications, would it not?

A. Yes, sir.

Q. Do you think this would be typical of the circumstances associated with similar wells commingled in these two pools?

A. Yes, sir.

Q. This is not an atypical situation with regards to the Walden 12?

A. No, sir.

Q. In summary, then, Mr. Lauderdale, will approval of this Application be in the best interests of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, sir.

MR. KELLAHIN: Mr. Catanach, we move the introduction of Anadarko's Exhibits 1 through 6.

EXAMINER CATANACH: Exhibits 1 through 6 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Lauderdale, as far as allocating production in this well, is that included in your Application?

A. Yes, sir, it is.

Q. And that is based on -- Is that based on the anticipated San Andres rate?

A. Yes, sir.

Q. Is it the average that you've used?

A. Yes, sir.

Q. 25 barrels of oil per day?

A. Yes, sir.

Q. Do you anticipate any gas production from that zone?

A. There has been evidence that we will see some gas production from the San Andres.

Q. Okay, so you've got some 93 percent of the gas allocated to the San Andres?

A. Yes, sir.

EXAMINER CATANACH: I have nothing further. This witness may be excused.

Anything further in this case, Mr. Kellahin?

MR. KELLAHIN: No, sir.

EXAMINER CATANACH: There being nothing further, Case 12,215 will be taken under advisement.

(Thereupon, these proceedings were concluded at 9:28 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12215, heard by me on August 5 1999.

David R. Catanach, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL August 9th, 1999.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002