STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

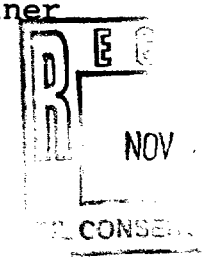
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	)	CASE NOS. 11,094 11,095 (Consolidated)
APPLICATIONS OF AMOCO PRODUCTION COMPANY	)	

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner



September 29th, 1994

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, September 29th, 1994, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, RPR, Certified Court Reporter No. 63, for the State of New Mexico.

* * *

I N D E X

September 29th, 1994
Examiner Hearing
CASE NOS. 11,094, 11,095 (Consolidated)

* * *

E X H I B I T S

Case Number 11,094	Identified	Admitted
Exhibit 1	6	24

Case Number 11,095	Identified	Admitted
Exhibit 1	10	24

* * *

A P P E A R A N C E S

FOR THE DIVISION:

RAND L. CARROLL
Attorney at Law
Legal Counsel to the Division
State Land Office Building
Santa Fe, New Mexico 87504

FOR THE APPLICANT:

CAMPBELL, CARR, BERGE & SHERIDAN, P.A.
Suite 1 - 110 N. Guadalupe
P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

* * *

MR. CARR: Mr. Catanach, the next four cases on the docket, as you're aware, relate to downhole commingling Applications filed by Amoco. The last case we have continued.

The three cases remaining, we attempted to review in hopes of being able to consolidate and we simply were unable to do so. The first case is different from the other two, and therefore we need to make two downhole commingling presentations.

With your permission, we would like to first present Cases 11,094 and 11,095, and then come back and come back after that and present Case 11,093.

EXAMINER CATANACH: I think we can handle that, Mr. Carr.

So at this time we'll call Case 11,094 and 11,095.

MR. CARROLL: Application of Amoco Production Company for downhole commingling, San Juan County, New Mexico.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, Berge and Sheridan.

We represent Amoco Production Company in these cases, and I have two witnesses.

EXAMINER CATANACH: Will the witnesses please

stand to be sworn in?

(Thereupon, the witnesses were sworn.)

GARY WEITZ,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Will you state your name for the record, please?

A. Gary Weitz, last name is spelled W-e-i-t-z.

Q. Where do you reside?

A. Denver.

Q. By whom are you employed and in what capacity?

A. Amoco Production Company as a petroleum landman.

Q. Have you previously testified before this Division?

A. Yes, I have.

Q. At the time of that testimony, were your credentials as a petroleum landman accepted and made a matter of record?

A. Yes, they were.

Q. Are you familiar with the Applications filed on behalf of Amoco in each of these cases?

A. Yes, I am.

Q. And are you familiar with the status of the lands and the ownership thereof in each of the cases?

A. Yes, I am.

MR. CARR: Are Mr. Weitz's qualifications acceptable?

EXAMINER CATANACH: They are.

Q. (By Mr. Carr) Could you briefly state what Amoco seeks in each of these cases?

A. What Amoco seeks in each of these cases, in the Bolack and the Gooch 2E, we're seeking approval to downhole commingle the Mesaverde and the Dakota formations.

Q. Now, we have an exhibit, Exhibit 1 in each of these cases?

A. Yes.

Q. Would you go to the exhibit for Case 11,094 and turn to the first page in that exhibit and identify it for the Examiner?

A. The first page was the Application that we submitted, and this Application was in turn also sent out to each of the offset operators, the working interest owners, the royalty owners, and the overriding royalty owners. This was sent out by certified mail with receipt requested.

Q. Would you go now to the second page in this exhibit. What does this show?

A. This is a plat showing the Gooch 2E, which is located in Township 28, Range 8 West, in the northeast --

excuse me, northwest quarter.

It also shows the Dakota -- all the Dakota and Mesaverde's offsets to it.

Q. Now, the Gooch well is the one with the black arrow pointed to it?

A. Yes, it is.

Q. And that is the subject of case 11,094?

A. Yes, it is.

Q. Is the Bolack well, the well which is the subject of Case 11,095, also shown on this plat?

A. No, it's not, but it's located in the southeast quarter. It's approximately where the -- it looks like an L and a zero.

Q. And that is shown on this plat diagonally offsetting to the north and west from the Gooch well?

A. Yes, it is.

Q. What is the purpose of the next document in Exhibit 1?

A. The next document is just to show the Gooch 2E, and it's showing the acreage dedication plat and showing the location of the Gooch 2E being in the north half of Section 29, Township 28 North, Range 8 west.

Q. The spacing unit for the Gooch 2E in the Basin Dakota, then, will be a laydown north-half unit?

A. That's correct.

Q. Okay. Now, let's go to the next page. What does this show?

A. This is also a well location and acreage dedication for the Mesaverde -- well, it says Mesaverde -- and it is for the Florance C LS 4, which is a standup location in Section 29, in the west half.

Q. So what we have is, we have a laydown unit in the Dakota formation and a standup unit in the Mesaverde?

A. That's right.

Q. And these are because of prior development in the acreage dedication -- has been determined by other development in the area?

A. Yes, that's correct.

Q. Okay. Let's go to the next page in Exhibit Number 1.

Could you identify and review that, please?

A. This is an offset operator plat indicating location of the Gooch 2E being the north half of Section 29, Township 28 North, Range 8 West, with the offset operators being Meridian Oil and Koch Exploration.

Q. And as you previously indicated, the offset operators as well as all interest owners in this property received notice by certified mail?

A. Yes, they have.

Q. Now, this is the Dakota dedication.

Let's go for the next page and review the Mesaverde dedication.

A. This is a Mesaverde offset operator plat, and -- indicating that the only other offset operator in this area associated with this well is Meridian, which we also notified, and this plat also indicates the location of the Florance C LS Number 4, which is a west-half stand-up spacing unit.

Q. Now, because the dedicated acreage is different in each of these formations, there is a differing ownership in each of the zones; is that right?

A. Yes. The working interests in both the Mesaverde and the Dakota formations is identical, being Amoco and Conoco, 50 percent.

The royalty is identical, being 12-1/2 percent BLM.

The only difference is in the overriding royalty interest owners. Not all overriding royalty interest owners have an interest in both the Mesaverde and Dakota.

Q. And there are approximately ten pages following the two plats in Exhibit 1 which indicates which owner owns an interest in which formation?

A. That's correct.

Q. Now, do you have anything else to present in terms of land testimony in Case 11,094 as it relates to the

Gooch 2E?

A. No.

Q. All right. Let's go to Exhibit 1 in Case 11,095.

A. Yes.

Q. The first page of that exhibit, again, is the Application, which you sent to all interest owners?

A. That's correct.

Q. As well the offset?

A. Yes.

Q. The next page is, again, a plat which shows the location of the Bolack well, and it offsets the Gooch well to the north and the west?

A. That's correct.

Q. What is the next page in Exhibit 1?

A. The next one is again an acreage dedication for the Dakota, showing the east half of Section 19, Township 28 North, Range 8 West, where the Bolack 2E is located.

Q. Okay, so we have an east half in the Dakota.

The next page shows the Blanco-Mesaverde. What's dedicated in that formation?

A. The Mesaverde is a laydown.

It's the Florance C LS Number 3, and it's located in Township 28 North, Range 8 West, the south half of the 19 location being J.

Q. Okay, Mr. Weitz, let's go to the next page in

this exhibit.

What is the purpose of including this document?

A. This is also a proration plat, and it's indicating that it is for the south half of Section 19 in Township 28 North, Range 8 West, for the location of the Florance CL S Number 3.

Q. In the Mesaverde formation?

A. In the Mesaverde.

Q. Okay, let's go to the next page.

A. Next page is an offset operator plat, and it indicates that Amoco is the only offset operator for the Dakota formation.

It also indicates the Bolack 2E well located in the east half of Section 19, Township 28 North, Range 8 west.

Q. The next page?

A. The next page is an offset operator plat for the Florence C LS Number 3, located in the south half of Section 19, Township 28 North, Range 8 West, and also indicating that the offset operators are Amoco Production and Meridian Oil.

Q. Again, we have a different orientation on the spacing unit in the Dakota and in the Mesaverde formation?

A. Yes, we do.

Q. Following these plats, have you again broken out

the interest owners in each of these spacing units?

A. Yes, we have. The interests in both the Mesaverde and Dakota, as far as working interest, is Amoco 50 percent, Conoco 50 percent.

The royalty interest is common, being the BLM.

The overriding royalty owners have interest in each zone within the Mesaverde and Dakota, but the only difference is that there is a slight decimal interest difference in some of the interests there.

Q. Were the portions of Exhibits 1 in both Cases 11,094 and 11,095, the portions that we've just reviewed, were they prepared by you or under your direction?

A. Yes.

Q. And you can testify as to their accuracy?

A. Yes.

Q. Will Amoco also be calling an engineering witness to review the technical portions of these cases?

A. Yes, we will.

MR. CARR: That concludes my examination of this witness.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Weitz, were the overriding royalty interest owners notified of this case?

A. Yes, they were.

Q. Have you had any objection from any of those parties?

A. No, we have not.

EXAMINER CATANACH: Nothing further of the witness.

FURTHER EXAMINATION

BY MR. CARR:

Q. Mr. Weitz, have you in fact received any response to the notice that was provided in this case?

A. Not on these two cases.

Q. And do you have copies of the return receipts from the mailing?

A. Yes, we do.

MR. CARR: Mr. Catanach, we can provide the return receipts if you desire.

We have sent each of the letters by certified mail, and we do have virtually all the return receipts back.

EXAMINER CATANACH: No, we don't need the return receipts, except that -- Your testimony is that each of those interest owners has received notice?

THE WITNESS: Yes.

EXAMINER CATANACH: Okay, that's fine.

MR. CARR: All right. At this time we call Mr. Hawkins.

JAMES W. HAWKINS,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your name for the record, please.

A. James William Hawkins.

Q. And where do you reside?

A. In Denver, Colorado.

Q. By whom are you employed and in what capacity?

A. Amoco Production Company as a petroleum engineer.

Q. Have you previously testified before this Division?

A. Yes, I have.

Q. At the time of that testimony were your credentials as a petroleum engineer accepted and made a matter of record?

A. Yes.

Q. Are you familiar with the Applications filed in each of these cases?

A. Yes.

Q. And are you familiar with the proposal before the Division to downhole commingle production in each of these wells?

A. Yes, I am.

MR. CARR: Are the witness's qualifications acceptable?

EXAMINER CATANACH: They are.

Q. (By Mr. Carr) Mr. Hawkins, would you go to the production graph in Exhibit 1 in Case 11,094, which is the third page from the back of that exhibit?

A. Yes.

Q. Would you review the information? First identify this exhibit and then review the information for Mr. Catanach.

A. Yes. This is a historical production plot for the Gooch 2E well. It has two curves shown on the graph.

The dashed line at the top is the gas production and the MCF per day. The solid line at the bottom of the page is the oil production in barrels per day.

We show that the wells produced from early 1982 up through 1993; it actually has produced some 1994. It's declined from its initial rates of about 380 MCFD down to a rate of approximately 60 MCFD, say, average, in 1993.

Q. In your opinion is this a marginal well?

A. Well, it's certainly economic but it's not any barn-burner. I'd call it a marginally economic well at this point.

Q. What do you hope to achieve by commingling Dakota production with the Mesaverde in this particular well?

A. Well, in this wellbore we hope to be able to improve the economic status of this well and recover the Mesaverde resource reserves by utilizing this same wellbore.

Q. By doing that, will you in fact ultimately recover more from this property than if you are not allowed to downhole commingle production?

A. Probably be able to reduce the economic limit of producing this wellbore by combining the reserves.

Q. Will commingling, in your opinion, be the only economically justifiable way to recover these additional reserves at this time?

A. Yes.

Q. And you will present an exhibit later that will review that for the Examiner?

A. Yes.

Q. All right. Let's go to the next page in Exhibit Number 1. Could you identify and review this?

A. Yes, the next page is a wellbore sketch of the Gooch 2E as it exists today.

It shows that we have a 4-1/2-inch casing set down through the Dakota. The current perforations in the Dakota are from about 6570 down through 6708.

We plan to perforate the Mesaverde interval through a number of sets of perforations in the interval of

4170 through 4720 and then downhole commingle both zones through a single string of tubing, 2-3/8-inch tubing.

Q. Do you anticipate any compatibility problems with the proposed downhole commingling?

A. No, we do not. Both zones produce very little water, similar types of gravity condensates. We wouldn't anticipate any problem.

Q. Is it possible that you could achieve production from both zones by dually completing the well?

A. Well, in this case we would have some problems due to the 4-1/2-inch casing. We'd either have to run small string tubings, which could restrict the flow, or try to flow the Mesaverde up the back side with a packer between, and that could cause some problems in trying to produce the condensate from the Mesaverde.

So downhole commingling does appear to be the most feasible and economically attractive method.

Q. What sort of pressure information do you have on the zones in the area?

A. We have some pressure information from the Dakota zone that we're in, plus some offset Mesaverde wells.

The last Dakota pressure that we have for the Gooch 2E is roughly 2300 pounds. That's based on a shut-in tubing pressure, and it's an estimated downhole gravity due to the density of the gas.

Q. 2300 pounds is in the Dakota formation?

A. In the Dakota zone. That was taken back in the summer of 1992.

The Mesaverde pressures that we have are going to be in offset wells. In the Riddle F LS Number 4 which is also in Section 29 in the northeast, that Mesaverde well has a bottomhole pressure of roughly 1340 p.s.i.

Also in Section 30, which is to the west, up in the northeast quarter of Section 30 is the Florance C LS Number 5 well. It's a Mesaverde well. It has a shut-in bottomhole pressure of approximately 1345 p.s.i.

So pressures are lower than the Dakota but do not exceed the 50-percent limitation.

Q. In this situation, would you anticipate any cross-flow between the zones if commingling is approved?

A. No, I would not.

Q. All right, let's go to the last page in this exhibit.

Would you identify this for the Examiner and then review the information for him?

A. What we show on the last page is an economic threshold for development under two cases.

The first case we show is a drill case for the Mesaverde.

If we were to attempt to try to recover the

Mesaverde reserves through a new well, that well would cost us roughly $500,000. And in order for us to have an economic rate of return of 15 percent, we would need to recover about 1.4 BCF of gas, and an initial stabilized rate during the first year of about 400 MCFD.

Based on our analysis of the surrounding Mesaverde wells, we don't believe we would be able to achieve that type of rate of reserve from a new well.

The downhole commingle case would cost us approximately $200,000 to use this existing wellbore, and in order to get an economic rate of return at 15 percent we would need to recover about .5 BCF with an initial stabilized rate during the first year of 200 MCFD.

In looking at the offset Mesaverde wells, we think we can achieve the 200 MCFD rate and probably get an economic -- or estimated recovery of about .7 BCF.

Q. So it's economically feasible if you commingle to go after the additional reserves in the Mesaverde?

A. Yes, it is.

Q. If you do not at this time, it is not feasible to do so?

A. That's correct.

Q. All right, let's go to the Bolack well, Case 11,095. And again, let's go to the production plat, which is --

A. Third from the last.

Q. -- the third from the last page in the exhibit. What does this show?

A. Well, it shows very similar information, both gas production and liquid production. Gas is shown in the dashed curve at the top.

Again, this well was drilled and began production in 1982 and has production up through 1983.

It's declined from a high rate, it looks like, of about 650 MCFD initially, very rapidly declined, and it's currently down at about 25 MCFD, is the average rate, say, for 1993.

Again, I think this would be classified as a marginal gas well.

And as you can see, there's very little liquids that are recovered, very little condensate recovered with this Dakota well.

Q. And you're again proposing to commingle this production with the Mesaverde?

A. That's correct.

Q. And in so doing hope to be economically able to reach those Mesaverde reserves?

A. Yes.

Q. All right. Let's go to the next page in the exhibit. Would you identify and review that?

A. Yes. This next page is, again, a wellbore diagram as it exists today for the Bolack 2E.

It shows 4-1/2 inch casing set through the Dakota zone. Dakota perforations from 6581 down through 6748. We have 2-3/8-inch tubing we're producing the Dakota through.

We plan to perforate the Mesaverde through a number of intervals within this gross section of about 4248 to 4762 and produce both of the formations through that single string of 2-3/8-inch tubing.

I think there would be the same type of restrictions here. If we were to try to dually complete, we would have to run either small-string tubing with packer or -- and, you know, could potentially have some problems in trying to recover the liquids from the Mesaverde if we try to flow up the back side.

So downhole commingling does appear to be the most technically feasible recover the reserves using this wellbore.

Q. And again, with this well you wouldn't anticipate compatibility problems?

A. That's correct.

Q. What sort of pressure information do you have on this particular well?

A. The Dakota zone in the Bolack 2E has a bottomhole pressure of approximately 1950 p.s.i. Again, that's based

on a pressure taken in the summer of 1992.

It has its shut-in tubing pressure and then an estimated additional pressure or column of gas from the tubing down to the perforations.

The Mesaverde offsets would be the same Mesaverde offsets that we showed for the Gooch with pressures on the order of 1350.

Q. So again, you wouldn't anticipate any cross-flow between the commingled zones?

A. That's correct.

Q. Let's go to the last page on Exhibit 1.

A. The last page is identical to the presentation for the Gooch. It simply shows the drill case versus the downhole commingle case.

We're anticipating the same type of recovery for the Bolack as we do for the Gooch of about .7 BCF and 200-MCFD-type initial rate, which would not meet the economic threshold for development under drilling but would be economic under a downhole commingle case.

Q. If in fact you're permitted to downhole commingle with Dakota and Mesaverde production in this well, in your opinion, will additional reserves ultimately be recovered?

A. Yes.

Q. And accordingly, the value of those reserves would be increased?

A. Yes.

Q. How do you propose the production should be allocated between the zones in each of the two wells in this hearing?

A. When we make a completion in the Mesaverde, we'll be able to do some initial testing on that zone individually, produce it to get a stabilized flow rate.

And then when we commingle the two zones, we'll be able to get a stabilized rate for both zones together, and that should provide us with a fixed percentage that we can use to allocate production throughout the life of the well.

Q. Have you proposed that you work out the actual allocation percentages with the Oil Conservation Division's Aztec District Office?

A. Yes, that's correct.

Q. In your opinion, will approval of these Applications and downhole commingling of Basin Dakota and Blanco Mesaverde production in each of these wellbores be in the best interest of the conservation, the prevention of waste and the protection of correlative rights?

A. Yes.

Q. Were the portions of Exhibits 1 in Cases 11,094 and 11,095, the portions which you've just discussed, prepared by you?

A. Yes.

MR. CARR: At this time, Mr. Catanach, I move the admission of Exhibits 1 in Cases 11,094 and 11,095.

EXAMINER CATANACH: Exhibit Number 1 in 11,094 and 11,095 will be admitted as evidence.

MR. CARR: And that concludes my direct examination of this witness.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Hawkins, how long would it take you to achieve a stabilized rate in these wells?

A. Well, I'm not really sure exactly how long it will take.

We're hoping we can produce it for a period of maybe 30 days and get the clean-up from the frac fluid and get, you know, some reasonable estimation of a stabilized rate. It may actually take us a little more time than that, depending how the frac-fluid flowback comes from the Mesaverde.

But we would anticipate something on the order of 30 to 60 days.

Q. Minimum of 30 days would be appropriate?

A. I think so.

EXAMINER CATANACH: I have nothing else of the witness.

MR. CARR: I have nothing further in each of these cases, Mr. Catanach.

EXAMINER CATANACH: There being nothing 25 further, Cases 11,094 and 11,095 will be taken under advisement.

* * *

CERTIFICATE OF REPORTER

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

I, Deborah O'Bine, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that my notes were transcribed under my supervision; 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.

Deborah O'Bine

DEBORAH O'BINE
CCR No. 63

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11094, 11095 heard by me on September 29 1994.

David R. Catanach, Examiner
Oil Conservation Division