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:

APPLICATION OF TEXACO EXPLORATION AND PRODUCTION, INC.

CASE NO. 11,278

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

May 4th, 1995

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, May 4th, 1995, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, before Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

May 4th, 1995
Examiner Hearing
CASE NO. 11,278

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A P P E A R A N C E S

FOR THE APPLICANT:

CAMPBELL, CARR & BERGE, P.A.
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P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 9:05 a.m.:

EXAMINER CATANACH: At this time I'll call Case 11,278, Application of Texaco Exploration and Production, Inc., for downhole commingling, Lea County, New Mexico.

Are there appearances in this case?

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

We represent Texaco Exploration and Production, Inc., in this case, and I have one witness.

EXAMINER CATANACH: Any additional appearances?

Will the witness please stand to be sworn in at this time?

(Thereupon, the witness was sworn.)

(Off the record)

SCOTT ELKINGTON,

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. My name is Scott Elkington.

Q. And where do you reside?

A. I reside in Midland, Texas.

Q. Mr. Elkington, by whom are you employed?

A. I'm employed by Texaco, Inc.

Q. And what is your current position with Texaco?

A. I'm a reservoir engineer.

Q. Have you previously testified before this Division?

A. No, I have not.

Q. Could you summarize your educational background for the Examiner?

A. I hold a bachelor of science degree in basic engineering from the Colorado School of Mines. That degree was received in 1978.

Q. Following receipt of your degree, for whom have you worked?

A. I worked for a two-year period for Gardner-Denver as a test engineer, testing mining equipment.

Then I went to work for Texaco in April of 1980 and have been employed with them since.

Q. And at all times with Texaco, have you been employed in an engineering capacity?

A. At all times in an engineering capacity. The first four years was a production-based educational background, and then the last 11 years has been reservoir engineering.

Q. Does the geographic area of your current

responsibilities for Texaco include the portion of southeastern New Mexico involved in this case?

A. Yes, it does.

Q. Are you familiar with the Application filed in this matter on behalf of Texaco?

A. Yes, I am.

Q. And are you familiar with the wells that are the subject of this Application?

A. Yes, I am.

MR. CARR: We tender Mr. Elkington as an expert witness in reservoir engineering.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Carr) Mr. Elkington, briefly state what Texaco seeks to accomplish with this Application.

A. We're seeking a Division Order to downhole commingle production from the Justis-Blinebry Pool and the Justis-Tubb-Drinkard Pool in our redevelopment area in Lea County, New Mexico.

Q. What are the depths of the commingled zones in these wells?

A. From about 5000 to 6000 feet.

Q. And what is the current depth bracket allowable for wells at this depth, as set by OCD Rule 50C?

A. 107 barrels of oil per day on 40-acre well spacing.

Q. Will this allowable be adequate for total commingled production if in fact this Application is approved?

A. Yes, it will.

Q. Have you prepared, or has there been prepared under your direction, certain exhibits for presentation here today?

A. Yes, a total of 11 exhibits have been prepared under my supervision.

Q. All right, let's go to what's been marked Exhibit Number 1. Will you just identify this for Mr. Catanach?

A. This plat shows the southeast portion of New Mexico. We have an exploded view of our Justis acreage as shown. It's highlighted in the yellow in the green box.

The Justis field is located about five miles northeast of the city of Jal.

Q. Okay. Let's go to Exhibit Number 2. Identify this, and let's review the information on this exhibit.

A. This is basically a blown-up portion of what you saw in the first one. The red and white dashed lines shown at the top and the left-hand side are boundary lines for this plat only and have no other significance.

Our redevelopment area as we defined is highlighted in yellow. We hold a 100-percent working interest in both the Blinebry and Tubb-Drinkard intervals.

We have got common royalty owners in both the Blinebry and Tubb-Drinkard intervals.

All wells below 5000 are spotted. That would be from the Glorieta down to the Ellenburger.

The red circles -- there's three of those located -- they show our 1995 drilling wells.

We plan additional wells based on the success of these three wells.

Q. And those additional wells would be within this yellow-shaded area which is your redevelopment --

A. That is correct.

Q. -- project area?

A. That is correct.

Q. And instead of having to return to go forward with this project, it was determined to seek blanket authority for commingling of these formations in the area?

A. That is correct.

Q. The green line at the bottom of this plat shows what?

A. That is the northern boundary -- I guess part of the northern boundary of the South Justis unit.

Q. Have the Blinebry-Tubb-Drinkard formations in this unit been combined?

A. Yes, they were combined by Order Number R-9745.

Q. All right, let's go to Exhibit Number 3. Could

you identify and review this for the Examiner?

A. This is basically a standard well configuration for all of our newly drilled wells.

We've got surface casing down to about 1000 feet. We've got a long string, which is 7 7/8, down to about 7250 feet. Both strings are intended to be cemented back to surface.

Typically, the Blinebry perfs are found at a depth of about 5200 to 5400 feet; the Tubb-Drinkard are found from about 5900 to 6000 feet.

Standard completion will be located in that little black box about midway down the right-hand side. Basically just perforate, acidize, commingle the two zones and place on rod pump.

Q. This is the way you propose to commingle these zones in basically all the wells that you will be drilling in the redevelopment area?

A. That's correct.

One thing I did fail to mention there, we will be acidizing and fracturing, both.

Q. All right. Let's move to Texaco Exhibit Number 4. What is this?

A. Basically we have a table here that's showing a production comparison between a non-commingled production case versus a commingled case.

Down the left-hand side you'll see years 1 through 37.

Under the non-commingled portion, under Tubb-Drinkard, that would be our additional completion. We anticipate these wells coming in for about 50 barrels per day, declining very, very rapidly, probably in the 10- to 15-barrel-a-day after two months, and pretty much stabilized there at about five barrels -- five percent per year.

We have a well stream that goes for about 11 years under the Tubb-Drinkard whereby we would abandon that shown at about 10 barrels a day in favor of the Blinebry. It's an upper zone; it's anticipated to come in very similar to the Tubb-Drinkard.

And we declined that out to an economic limit of five barrels per day. That would result in about 155,000 barrels of total recovery.

Now, if we compare that to the commingled case -- that's where we open up the Blinebry-Tubb-Drinkard all at once -- we're going to IP these things for about 100 barrels a day, produce them down to an economic limit of five barrels per day. Production from that would result in about 228,000 barrels, or an incremental difference of 73,000 barrels.

Q. And that incremental difference is additional

recovery that you hope to achieve by downhole commingling these zones?

A. That is correct.

Q. Let's go to Texaco Exhibit Number 5. What is this?

A. This is a cost comparison of both the noncommingled case and the commingled case.

The first page here, you'll see the costs associated with the Tubb-Drinkard completion. They're broke down there separately, but they -- the total cost of roughly $77,000.

Blinebry completion would follow sometime in the future. We didn't escalate those dollars, but we assumed they would be about the same cost as the Tubb-Drinkard completion, an additional $77,000. Total completion costs associated with this portion will be $154,000.

Compare this to the next page, which would be the commingled case. It will be a little bit of a cost savings here associated with opening up all at once, a little economy of scale. And those costs would run about $136,000, result in about $17,000-per-well savings if we're allowed to commingle.

Q. Mr. Elkington, let's go to Texaco Exhibit Number 6, and I would ask you to refer to this exhibit and review with Mr. Catanach Texaco's recommended allocation method.

A. We have two proposals shown here. The first one, method one, that allocation would be on a lease basis. This would be preferred by Texaco.

The allocation formula would be based on cumulative Blinebry lease production times 100, divided by the cumulative Blinebry-Tubb-Drinkard lease production. That would be the equivalent to the Blinebry percentage.

The Tubb-Drinkard would be 100 minus that.

This would result in a savings for Texaco of about $7100 per well.

Q. The second method on this exhibit -- ?

A. The second method is the more conventional method that the State has adopted historically, and that would be your well basis.

And that would be basically stabilized daily Blinebry production times 100, divided by stabilized Blinebry-Tubb-Drinkard production.

The Tubb would be the inverse of that.

Q. And Texaco prefers method number one?

A. Yes, we would, sir.

Q. And if required to develop an allocation on a well-by-well basis, Texaco would be willing to work with the Hobbs District Office in making that determination on a well-by-well basis; is that correct?

A. Yes, we would.

Q. Okay. Let's move to Exhibit Number 7, schematic drawings with some curves attached thereto.

Could you first explain what these are designed to show and then review the information?

A. To help support our case, we went out and did several static grading surveys.

The first on here is on our ""CC" Fristoe B NCT Number 10 well. This is a Blinebry-Tubb-Drinkard completion. The well was shut in for 88 hours. Perforations are from 5151 to 5900.

I'd like you to focus to the table there, of about 5500 feet. You'll see a pressure of 418 pounds. We have phase separation at about 4500 feet. That's where we go from gas to fluid.

The wellbore is configured on the next figure there.

Second well that we did a static gradient survey on was the Fristoe "B" NCT 2 Number 12. This is in the same general area as the first well. This is just a Blinebry well. The Tubb-Drinkard is not present in this well, or is not productive.

This well was shut in for 71 hours. Depth of perforations are 5205 to 5250, and at depth of 5503 our pressure is 491 pounds, well within the 50-percent requirement that the State mandates.

Q. So based on this information, can you testify that you would anticipate no cross-flow between the commingled zones?

A. That is correct.

Q. Do these wells in fact produce water?

A. Very little water. It's almost exclusively oil and gas.

Q. And how do you plan to handle the small volumes that are produced? Will you keep them pumped off?

A. Yes, we will maintain these in a pumped-off condition either with a timer or a pump-off controller.

Q. Okay. Can you identify Texaco Exhibit Number 8?

A. Yes, I can. This is an application for permit to drill for our State L 5 -- our State 5 Number well.

We have approval for two additional wells. They are on federal acreage. We anticipate that approval to be either yesterday or today. I have not got the paperwork on those yet, but when I do we'll forward it to the State.

Q. In any event, this is the application for a permit to drill on the first well in the current development program?

A. That's correct, and that well was spud about a week ago and anticipated to TD in the next two weeks.

Q. Let's go to Texaco Exhibit Number 9. Will you identify and review this?

A. This exhibit is very similar to what you saw in Number 2.

The major difference here is that you've got some red- or purple-colored circles surrounding nine wells on our acreage. All nine of these wells have received Commission approval to commingle, downhole commingle, the Blinebry-Tubb.

On the additional exhibits here --

Q. Do you want to move to Exhibit 10 and review it at the same time?

A. Please.

Q. Okay.

A. On Exhibit Number 10 I have a series of production curves associated with each one of these wells.

There are three curves for each well. The first one is a combined Blinebry-Tubb-Drinkard production plot. Listed on it, we have commingled -- when the well was commingled.

The subsequent production graphs, we have a Blinebry production plot and then a Tubb-Drinkard plot.

So we have similar plots for all nine wells here.

Q. When we look at these plots, where commingling has occurred have you seen any loss of production?

A. No, we have not.

Q. And in some cases, have you in fact seen an

increase?

A. Yes, we have.

Q. If we look at the Exhibit Number 9, the plat --

A. Yes, sir.

Q. -- you've indicated commingled Blinebry-Tubb-Drinkard wells.

A. Yes, sir.

Q. Have you experienced any problems with the compatibility of the fluids being commingled?

A. No, we have not. It's not evidenced in the production curves whatsoever.

Q. When would you request that this Application, if granted, become effective?

A. We'd like to see it immediately, or as soon as possible. Like I say, we'll be TD'ing our first well here in the next couple of weeks.

Q. Now, Mr. Elkington, has notice of this Application been provided as required by Oil Conservation Division rules?

A. Yes, it has.

Q. Is Exhibit 11 a copy of an affidavit confirming that that notice has been provided?

A. Yes, it is.

Q. And the last page of that exhibit is in fact the letter that was sent with the copy of Texaco's Application?

A. Yes, it is.

Q. And between that, there are nine pages of individuals to whom notice was provided?

A. That is correct.

Q. And who are these individuals?

A. These are various working interest owners surrounding our so-called redevelopment area.

Q. Have all offsetting operators received notice of this Application?

A. Yes, they have.

Q. Has any objection been received?

A. No objection has been received.

Q. In your opinion, will approval of this Application and continuation of your efforts to downhole commingle the Blinebry and the Tubb-Drinkard formation in the redevelopment area -- will approval of that result in the recovery of additional hydrocarbons?

A. Yes, it will.

Q. Will it otherwise be in the best interest of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, it will.

Q. Were Exhibits 1 through 11 either prepared by you or compiled at your direction?

A. Yes, they were.

Q. And can you testify as to the accuracy of all these exhibits?

A. Yes, they are accurate.

MR. CARR: Mr. Catanach, at this time we move the admission into evidence of Texaco Exhibits 1 through 11.

EXAMINER CATANACH: Exhibits 1 through 11 will be admitted as evidence.

MR. CARR: And that concludes my direct examination of Mr. Elkington.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Elkington, the -- I presume that well numbers 5, 6 and 7, the ones that you plan to drill in 1995, are three of the candidates for downhole commingling; is that correct?

A. That is correct. We're asking for downhole commingling not only on the drilling wells but the existing wells.

Q. How many existing wells are we talking about?

A. Let me see. Off the top of my head here, probably no more than a dozen wells.

Q. How many wells do you anticipate being drilled in this area?

A. Depending on the success of these three here, we're probably going to go in and drill the majority of

this on 20-acre well spacing.

Q. Can you give me an estimate of how many that might result in?

A. Top of my head here, I'd say maybe an additional ten wells. All the acreage will not be covered.

Q. Are both of these pools pretty much in a depleted state?

A. Very much so. Both these fields were discovered in about 1963. Original reservoir pressure was about 2300 pounds.

We find that right now that the reservoir pressure is down between 400 and 500 pounds.

I might add on that pressure information, we did try and get a Tubb-Drinkard pressure measurement, but we have no wells open just strictly in the Tubb-Drinkard.

Q. Okay, the pressure measurement, you did that --

A. Yes, sir.

MR. CARR: It's Exhibit 7.

Q. (By Examiner Catanach) Now, the first well was the Number 10 well?

A. That's correct.

Q. And that was -- Is that Blinebry?

A. That is a Blinebry-Drinkard-Tubb. If you look at the notes under the Number 10 designation for well number, I think it's on the pressure information itself. It shows

that's a Blinebry-Tubb-Drinkard well.

Q. So this is a commingled well?

A. That is correct. It's already been approved by the State.

Q. The second well is the Number 12 well, and that is a -- I'm sorry, Blinebry?

A. That's right, strictly a Blinebry well. You'll notice this well did not even penetrate the Tubb-Drinkard.

Q. Are these -- Are both of these wells located within this area, shaded --

A. Yes, they are. In fact, if you go back to Exhibit Number 2, under the yellow highlighted portions of the very upper one, it's called the Erwin "B" NCT Number 1. Drop down to the Erwin "B" NCT 2. That's the lease we're talking about. It's Wells Number 12 and Wells Number 10.

Everything from about State "BB" down is pretty much already commingled. That would be the southern half of that lease.

Q. So do you anticipate the pressure in those two wells as being indicative of the -- generally, of the field pressure?

A. To our knowledge, yes, sir. We have some other pressure information that was taken back in the early Sixties and -- say middle Sixties and early Seventies -- that shows considerably higher pressure than you would

expect based on the initial pressure here, but they all seem to be pretty much in line across the field.

The only recent pressure information that we have is what we just submitted to you for evidence.

Q. Okay. Did you testify that the working interest ownership is common within this yellow-shaded acreage; is that correct?

A. Yes, we own 100-percent working interest.

Q. Now, these are state and federal leases, right?

A. That is correct. State are kind of in the southern half, and everything up in north there, I believe, is all federal.

Q. Okay. So within the federal leases, is that all common royalty?

A. Yes, it is.

Q. No overrides?

A. Not that I'm aware of.

Q. Okay. So within any given wellbore that you commingle in this area, it should be commonly owned between the Blinebry and Tubb-Drinkard?

A. That is correct.

Q. When would you anticipate the existing wells would be downhole commingled?

A. Basically, it probably depends on what we find on these new wells.

There are a couple of candidates on the one that -- the state lease -- that we may commingle. And it would be based on what we see at L-5, one of the new drilling wells.

So they could come, really, any time in the future, based on the information that we receive.

Q. You -- I believe you testified the initial rates of these wells would probably be about 50 barrels a day?

A. Fifty barrels a day per --

Q. What's that based on?

A. That's based on what we're seeing down there at the Arco South Justis unit.

Their wells are coming in slightly lower. We anticipate ours coming in a little bit higher because of our fracture stimulation. They're doing nothing but acidizing them.

The reason behind their acidizing only is that those wells will be produced up front but they will be turned to injection down the road here, and they don't want to fracture-stimulate an injection well.

Q. Okay, and that rate applies to both pools?

A. That's correct.

Q. And they have fairly steep declines?

A. Very steep. In fact, come in about 50 a day, and they'll be down to about 15 to 20 within about a two- or

three-month period and then go on about a five-percent decline there on after. So these are somewhat marginal wells.

Q. What kind of water rates are you looking at?

A. Very low. Typically, it's not even a one-to-one; it's maybe a one-to-five ratio. So for a 50-barrel-a-day well you may see 10 barrels of water, max.

Q. Mr. Elkington, are these not sufficient producing rates to dual-complete these wells? Is that not even considered?

A. Basically, since these are very marginal wells to begin with here, we'd prefer to go in there with about a 5-1/2-inch casing string and one tubing string. That would be a more preferable case for us.

We could go in there and dually complete these things, but the added cost associated with that is going to make it pretty marginal.

Q. Your Exhibit Number 4, that's your production --

A. Yes, sir.

Q. -- is that just a generalized kind of thing? Does that maybe apply to all wells?

A. It would primarily be to the new drilling wells.

Some of the old ones there, we've got some slimholes out there, and they are dual strings in those, very hard to fracture-stimulate. So the chances of getting

any real good fracture stimulation on that are pretty remote.

So these production strings here would probably be pretty much more representative of the new drilling wells.

Q. Now, the existing wells, are most of those single completions?

A. No, we have a bunch of slimholes up here that --

Q. That are dually completed?

A. We've got multiple strings up here, some of them up to five strings, and they'll produce anywhere from the Glorieta down to the Ellenburger.

But for the most part, anything on the state leases, those were pretty much single-tubing strings in there and pretty much just Blinebry-Tubb-Drinkard. It's on the federal acreage there where you see your multiple strings.

Q. So those could be Blinebry or Tubb-Drinkard completions?

A. That's correct. And if those were already separate, we'd leave those separate. But there are no strictly just Tubb-Drinkard wells out there right now.

Q. So the wells on the federal acreage, most of those are completed in both of the subject pools?

A. That's correct. You get to the northern part,

there's -- only the Blinebry is present.

Q. Okay. Your proposed allocation, in some of the wells that are open in both pools, can't you use the existing production to allocate?

A. Yes, we could. The lease basis would be mainly for our newer wells, new-drill wells.

Q. Now, in terms of the lease allocation, now, you're talking about -- when you're talking about lease, you're talking about just this yellow-shaded acreage, this area --

A. Yes --

Q. -- or --

A. -- but it would be each individual lease itself.

In other words, the Erwin "B" NCT-1 would be considered a lease, the Fristoe "B" NCT-2 would be considered a lease.

Q. So you would take the cumulative production from all wells on the lease, from --

A. That's correct, in both zones, and allocate it based on that.

Q. There may be leases where the -- some of the pools aren't open in some of the wells, right?

A. That is correct.

Q. So it's not going to be entirely accurate, that --

A. That is correct.

Q. Is it possible to allocate, say, based on reserves that are left on that basis?

A. Yes, we could do that, wouldn't be opposed to that.

Q. Would that be more accurate, in your opinion?

A. Probably so.

Q. The other method that you -- I take it you would not like to do, would be to test the zone separately in any wells?

A. That's correct. That's based on the cost savings by the other method.

Q. What additional cost would that incur, do you think?

A. If you look up under there in lease 1, that kind of outlines the difference between the -- the method 1 -- you look at the cost difference there.

There would be some reduced pulling time, there's some swabbing time. They're about $3600. Some tank rental about $1000, and tool rental about $2500.

Total, about $7100 per well.

EXAMINER CATANACH: I think that's all I have, Mr. Carr.

MR. CARR: That concludes our presentation, Mr. Catanach.

THE WITNESS: Thank you, Mr. Catanach.

EXAMINER CATANACH: Thank you.

There being nothing further in this case, Case 11,278, will be taken under advisement.

(Thereupon, these proceedings were concluded at 9:35 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11278, heard by me on May 4 1995.

David K 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 May 13th, 1995.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998