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., FOR AN UNORTHODOX OIL WELL LOCATION AND FOR A LEASE LINE PRODUCTION WELL AND SIMULTANEOUS DEDICATION, LEA COUNTY, NEW MEXICO

CASE NO. 11,527



REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

May 16th, 1996

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH,
Hearing Examiner, on Thursday, May 16th, 1996, 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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APPEARANCES

FOR THE APPLICANT:

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

* * *

WHEREUPON, the following proceedings were had at 1 2 9:20 a.m.: EXAMINER CATANACH: Call Case 11,527 at this 3 time, which is the Application of Texaco Exploration and 4 Production, Inc., for an unorthodox oil well location and 5 for a lease line production well and simultaneous 6 7 dedication, Lea County, New Mexico. Call for appearances. 8 9 MR. CARR: May it please the Examiner, my name is 10 William F. Carr with the Santa Fe law firm Campbell, Carr, 11 Berge and Sheridan. 12 We represent Texaco Exploration and Production, 13 Inc., and I have two witnesses. 14 EXAMINER CATANACH: Additional appearances? 15 Okay, will the witnesses please come forward and stand to be sworn in? 16 17 (Thereupon, the witnesses were sworn.) 18 RONALD W. LANNING, the witness herein, after having been first duly sworn upon 19 20 his oath, was examined and testified as follows: 21 DIRECT EXAMINATION 22 BY MR. CARR: 23 0. Would you state your name for the record, please? 24 Α. Ronald W. Lanning. And Mr. Lanning, where do you reside? 25 Q.

A. Midland, Texas. 1 By whom are you employed? 2 Q. Texaco Exploration and Production, Inc. 3 Α. What is your current position with Texaco? 4 Q. I'm a landman for our North Hobbs Asset Team. 5 Α. Have you previously testified before this 6 Q. Division? 7 8 Α. I have. 9 At the time of that testimony, were your credentials as an expert in petroleum land matters accepted 10 11 and made a matter of record? They were. 12 Α. Are you familiar with the Application filed in 13 Q. this case on behalf of Texaco? 14 Yes, I am. 15 A. And are you familiar with the ownership of the 16 lands in the subject area, and also Texaco's efforts to 17 develop tracts along the boundary between the Vacuum 18 Grayburg San Andres unit and the Central Vacuum unit? 19 Α. I am. 20 MR. CARR: Are the witness's qualifications 21 22 acceptable? 23 EXAMINER CATANACH: They are. 24 Q. (By Mr. Carr) Mr. Lanning, would you briefly

summarize what Texaco seeks with this Application?

- What we want to do is drill a lease line well 1 Α. 2 between our Vacuum Grayburg San Andres unit and our Central Vacuum unit, and that would be our Vacuum Grayburg San 3 Andres Unit Number 159, located in an unorthodox location 4 572 from the north and 78 from the east line of Section 1, 5 6 Township 18 South, Range 34 East, as a lease line producer, and the northeast-northeast of Section 1 would be 7 simultaneously dedicated to this well and Vacuum Grayburg 8 San Andres unit Wells 50, 58, 122 and 158. 9
 - Q. Could you identify what has been marked Texaco Exhibit Number 1?

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- A. It's the Vacuum Area -- what's been titled the Vacuum Area Cooperative Lease Line Agreement.
- Q. Let's go to the plat, which is the last page of that exhibit, and using this plat could you review first the general history of the Vacuum Grayburg San Andres unit?
- A. The Vacuum Grayburg San Andres unit is outlined in blue on the plat. The unit was approved by Division Order R-4433, Case 4851, on November 8th, 1972, and a pressure maintenance project by waterflood was authorized for the unit by Order Number R-4442 in Case 4852 on November 27th, 1972.
- Q. All right, let's go to the Central Vacuum unit and again just provide the general background of that unit.
 - A. Okay, the unit was approved by Order Number 5496,

Case 5907, August 9th, 1977, and a waterflood project was authorized by Order Number R-5530, Case 6008, on September 20th, 1977.

- Q. Can you identify for Mr. Catanach the location of the well that's the subject of this hearing?
- A. Yes, it's in the very northeast, northeasternmost part of the Vacuum Grayburg San Andres unit, which is the blue outline, and it's a red dot right on the lease line.
- Q. And what is the proposed bottomhole location for this well?
- A. Bottomhole location is 572 from the north line and 78 from the east line in Section 1. This is the best site for the well, as will be shown by our next witness.
- Q. And Mr. Lanning, Texaco will directionally drill the well to this bottomhole location; is that not correct?
 - A. That's correct, because --
- Q. There are a number of wells that are being drilled, these 10-acre infill wells that require directional drilling because of surface obstructions; isn't that correct?
 - A. That's correct.

- Q. Those are being handled by administrative application, that portion of the regulatory approval for these wells?
 - A. That's correct.

All right. Are there operators, other than 1 Q. Texaco, who could be affected by this proposed unorthodox 2 3 location? A. There are not. 4 So there's no party to whom notice was required, 5 0. pursuant to Oil Conservation Division Rules? 6 7 That's correct. Α. 8 Now, how many wells are actually going to be Q. 9 located on the 40-acre tract on which this well will be bottomholed? 10 11 Α. Five. 12 And so that is the reason that you're seeking 0. 13 authority for the simultaneous dedication of that acreage to the five wells? 14 That's correct. 15 Α. 16 And you've previously identified those wells? Q. 17 A. Yes, sir. 18 They're all in the Vacuum Grayburg San Andres Q. unit? 19 That's correct, Well Numbers 50, 58, 122 and 158. 20 Α. All right, let's go to the lease line agreement 21 0. 22 itself. 23 Α. Okay. 24 Could you just generally review for Mr. Catanach Q. 25 the important parts of this agreement?

A. Well, the agreement is executed only by Texaco Exploration and Production, Inc., in our capacity as operator and 100-percent working interest owner of the Vacuum Grayburg San Andres unit, and also as operator and on behalf of our working interest owner partners in the Central Vacuum unit.

The Central Vacuum unit agreement provides for border agreements. We have working interest owner approval to enter into this agreement. It authorizes the lease line well and it also allocates costs and production to each unit on a 50-50 basis.

- Q. What percentage of the working interest ownership in each of these units has approved the agreement?
- A. A hundred percent of the working interest in the Vacuum Grayburg San Andres unit and 97.9112 percent in the Central Vacuum unit.
- Q. In that unit, have the interest owners actually withheld their approval?
- A. Well, we have two owners who did not approve it nor disapprove it, and both of those owners are in the process of selling their interest.
 - Q. So no one has objected to this proposal?
- A. That's correct.

Q. Is Exhibit Number 2 a copy of the working interest owner approvals that have been obtained by Texaco?

It is. A. 1 2 Q. And what percentage of the royalty interest in each unit has committed to this agreement? 3 A. 100 percent of the royalty ownership in each unit 4 5 has approved. 6 Q. And is Texaco Exhibit Number 3 a copy of the 7 royalty owner approvals? 8 A. Yes. 9 0. Were Exhibits 1 through 3 either prepared by you 10 or compiled under your direction? 11 A. They were. MR. CARR: At this time, Mr. Catanach, I would 12 move the admission into evidence of Texaco Exhibits 1 13 14 through 3. EXAMINER CATANACH: Exhibits 1 through 3 will be 15 16 admitted as evidence. 17 MR. CARR: And that concludes my direct 18 examination of Mr. Lanning. 19 EXAMINATION 20 BY EXAMINER CATANACH: Mr. Lanning, this agreement sets forth the 21 Q. 22 allocation of production to each unit --23 Α. Correct. 24 Q. That's going to be split? 25 Α. 50-50-50.

Q. Okay. The interest owners who haven't signed up, do you know who those are?

A. Amerada Hess. They're in the process of transferring their interest to Collins and Ware, and they have not been acting on any matters on any properties involved in that transaction.

The other interest owner is a bank in Baltimore that controls some trust under the will of Donaldson Brown. That interest is in the process of being transferred to John H. Hendricks Corporation, and they've also not been acting on any matters presented to them.

- Q. These transactions haven't taken place, as far as you know?
 - A. As far as I know, neither one of them has closed.

 I might add, they only own a little over two

percent of the working interest in the Central Vacuum Unit.

- Q. These two interest owners represent the outstanding interests that haven't committed?
- A. Well, they're committed, they're bound by a vote of the parties. We just didn't get their approval.
- Q. Okay. You don't need their approval under the unit agreement?
 - A. That's correct, we don't.
- Q. This is -- The bottomhole location is 572 from the north, 78 from the east. This is a directional drill?

A. Correct.

Q. Has an application been filed for directional drilling for this well?

MR. CARR: We actually don't know. We do know, Mr. Catanach, that there have been — there is a program for a number of these wells this year and that because of topographic obstructions, several of them have to be done directionally. And it is our understanding that either they have been or are in the process of filing these administratively. And we tried to confirm that yesterday and were just unable to find the people. But that's how they will be handled.

EXAMINER CATANACH: What we're doing here is, we're approving the unorthodox --

MR. CARR: And I -- yes, and I believe once -- EXAMINER CATANACH: -- bottomhole location?

MR. CARR: In fact, now that you say that, once that location is approved, all the prerequisites for administrative approval will be in hand. So my guess is, they haven't been filed yet.

- Q. (By Examiner Catanach) What is the surface location for this well?
- A. It's on the first page of the lease line agreement. It's 907 feet from the north line and 350 feet from the east line. It's in Article I there on the first

1 page. 2 Is the cost to drill and operate this well -- is 3 that shared equally by both units? Α. 4 Yes. 5 EXAMINER CATANACH: Okay, that's all I have of 6 this witness. 7 MR. CARR: At this time we would call Mr. Scott 8 Wehner. 9 SCOTT C. WEHNER, 10 the witness herein, after having been first duly sworn upon 11 his oath, was examined and testified as follows: 12 DIRECT EXAMINATION BY MR. CARR: 13 14 Q. Would you state your name for the record, please? Scott C. Wehner. 15 Α. 16 How do you spell your last name? Q. 17 A. W-e-h-n-e-r. 18 And where do you reside? Q. Midland, Texas. 19 A. By whom are you employed? 20 Q. Texaco Exploration and Production, Incorporated. 21 Α. 22 Mr. Wehner, what is your current position with Q. Texaco? 23 I'm a project engineer in Texaco's Permian West 24 Α. 25 Business Unit.

1 0. Have you previously testified before the New Mexico Oil Conservation Division? 2 3 Α. No, I have not. Could you briefly review your educational 4 background for Mr. Catanach? 5 I graduated in 1980 from the University of 6 Missouri with a bachelor of science degree in geological 7 engineering, with studies in petroleum engineering and 8 9 geology. Following graduation, for whom have you worked? 10 Q. I have worked solely for Texaco. 11 Α. And at all times you've been employed as an 12 Q. 13 engineer? 14 Α. Yes. Does the current area of your responsibility 15 Q. include the portion of southeastern New Mexico involved in 16 this case? 17 Yes, it does. 18 Α. 19 Q. And have you conducted engineering studies on the 20 appropriate development pattern for the Vacuum formation in 21 this area? Yes, I have. 22 Α. 23 Are you prepared to present the results of that Q. study to Mr. Catanach? 24 25 Α. I am.

1 MR. CARR: We tender Mr. Wehner as an expert witness in petroleum engineering. 2 3 EXAMINER CATANACH: He is so qualified. 0. (By Mr. Carr) Mr. Wehner, initially what was the 4 5 original spacing or pattern of spacing used for this pool? A 40-acre spacing. 6 Α. And when did the effective spacing in this area 7 0. -- when was it actually produced? 8 1978, there was infill drilling to 20-acre 9 Α. spacing on both of these units. 10 And what really caused that infill drilling? 11 Q. 12 Α. Basically with the unitizations in 1972 and 1978 13 of the two units, they went into waterflood operations. 14 The Vacuum Grayburg San Andres unit was then on a ninespot 15 waterflood, up to 1978. At the same time that Central Vacuum unit went 16 17 into operation it was realized from the experience gained 18 back in the Grayburg San Andres unit that the spacing 19 needed to be reduced at that point, so both concurrently 20 were infill drilled at 20-acre spacing. 21 0. Now, since that time we've actually gone to a denser spacing pattern in portions of the reservoir; is 22 23 that true?

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Α.

Q.

Yes.

What has caused that?

- Well, we did studies over a number of years. 1 A. Beginning in 1987, some 10-acre locations were drilled throughout the Permian Basin. There were leases that were being drilled at 10-acre spacing, rather profitably. think originally this work was set out as just an attempt 5 to see what they could get, although originally or in the late Eighties or early Nineties there was not any study, really, as to follow-up of that work. But they were moderately profitable. 9
 - At this time, in your opinion, are there additional areas in the field that appear suitable for 10acre development?
 - Yes, there are.

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- In fact, you have been asked by Texaco and have Q. in fact studied that particular question for your company, have you not?
- Yes, in the summer of 1994 I gathered data throughout the entire Vacuum field, from other operators, as well as Texaco's past infill drilling on 10-acre spacing, pulled that together and did a study in the summer of 1994 that identified additional development opportunities.
- Based on this study, you have gone forward with Q. 10-acre development in portions of the reservoir; isn't that true?

- A. Yes, the first quarter of 1995, we drilled 14

 10-acre wells that were identified in that 1994 study.

 Q. And now, you're going forward with additional
 - development on 10-acre spacing; is that right?
 - A. That is correct. We --
 - Q. In fact, you have gone with part of the information from this study to the Commissioner of Public Lands, seeking their concurrence in this proposed well location; isn't that right?
 - A. Yes, this is one of eight wells in a package that we have identified for drilling in the year 1996.
 - Q. Is Texaco Exhibit Number 4 a copy of the request that was submitted to the State Land Office concerning this particular well, with various attachments from your study?
- A. Yes, it is.

- Q. And the letter that -- the cover letter, the transmittal letter to Mr. Kehoe, actually summarizes

 Texaco's reasons for proposing the well?
 - A. Yes.
- Q. And then attached to that are a number of figures.
- Let's go to what has been marked Figure Number 1 in Exhibit 4, and I would ask you to just identify and then review it for Mr. Catanach.
 - A. Figure Number 1 basically identifies the limits

of the Vacuum field as inferred by the unitized operations.

There are a number of unitized operations in the field operated by a number of entities.

The yellow highlighted acreage are units operated by Texaco. The Vacuum Grayburg San Andres unit is the southwestern -- well, it's the -- on the southern limits of the field. And the Central Vacuum unit gets its name from its relative position in the field and is identified as such.

The red squares identify all the 10-acre patterns that have been drilled as of the 1994 study.

- Q. And there has been subsequent development on 10 acres?
- A. Yes, Phillips has drilled approximately 15 more wells, and Texaco has drilled 14 in 1995 and is in the progress of drilling eight more wells in 1996.
 - Q. What does Figure Number 2 show?
- A. Figure 2 is an excerpt from the 1994 study that highlighted in yellow the 14 locations that were drilled in the first quarter of 1995. It also shows the existing 10-acre patterns in red.

And in bold blocks are the patterns which we are proposing to drill in 1996, one of which is the subject lease line well in question today, and it is highlighted there on the lease line between the two respective units.

Q. Let's go now to Figure Number 3. What does this show?

A. Figure 3 is the production and injection history for the wells and the surrounding -- the 10-acre wells that were drilled in 1995 and also the surrounding wells.

And it shows -- Mainly in green is what we're trying to show in this exhibit, is the production history, the oil declining for a number of years. And with the addition of the 10-acre wells in early 1995 an approximately 600-barrel-a-day increase in production, which slowly declined until the offset injectors -- the sweep from those caught up with the production.

And we have a secondary peak building at this time, which is well over 600 barrels of oil per day, incremental.

- Q. This just simply shows the success you've achieved by going to this denser development pattern; isn't that right?
- A. That's correct, for this particular vicinity we're at a 10-year high on production.
- Q. Let's look at Figure Number 4, your oil cut versus your cumulative oil production plot. Would you explain what this shows?
- A. This is a typical tool used in the profession for estimating reserves in a waterflooded reservoir, and it's

simply on a semi-log plot of oil cut versus cumulative oil produced. Once breakthrough occurs in a waterflood, it will exhibit a linear relationship on this plot.

You can see where we affected the reservoir with the infill drilling, the oil cut improved, and we are projecting that same linear slope.

And the incremental difference between the two end points is 1.46 million barrels as a result of the 14 wells, so approximately 100,000 barrels per 10-acre location.

- Q. And that you can really attribute to the 1995 development program?
 - A. Yes.

- Q. Okay. Let's go to Exhibit Number 5, and I would ask -- or Figure Number 5, and I would ask you to explain what that shows.
- A. Figure 5 is a structure map on top of the Grayburg dolomite, and it covers -- It's shown for the Central Vacuum unit and Vacuum Grayburg San Andres units. And on there we've denoted the eight-well program that we desire to drill in 1996.

The well in question today is Vacuum Grayburg San Andres Unit Number 159, which is shown with a red circle on the lease line between the two respective units.

Q. In your opinion, is this well placed at the

- optimum location to effectively produce the reserves in that portion of this reservoir?
 - A. That is correct. This location, this bottomhole location, is the exact equidistance between the offset producers and injectors.
 - Q. In your opinion, will approval of this

 Application and the drilling of the proposed well result in
 the recovery of oil that otherwise would be left in the
 ground?
 - A. Yes, I do.

- Q. Will approval of this agreement and the drilling of this well otherwise be in the best interest of conservation, the prevention of waste and the protection of correlative rights?
 - A. It will.
- Q. Was Texaco Exhibit Number 4, although signed by Mr. Lanning, actually prepared by you, or did you participate with him in the development of Exhibit Number 4?
 - A. Yes.
- MR. CARR: At this time, Mr. Catanach, we would move the admission into evidence of Texaco Exhibit 4.
- EXAMINER CATANACH: Exhibit 4 will be admitted as evidence.
- 25 MR. CARR: That concludes my direct examination

of this witness. 1 2 EXAMINATION BY EXAMINER CATANACH: 3 Mr. Wehner, Texaco only plans to infill drill 4 portions of these fields; is that correct? 5 Yes, the study in 1994 showed what I've termed, 6 Α. 7 and I believe shows up on Figure --8 MR. CARR: -- 2. 9 THE WITNESS: -- Figure 2, what I've termed as a 10-acre alleyway, and although it's hard to see, there's a 10 blue line outlining an area that we feel would be 11 profitable for infill drilling to a 10-acre spacing. 12 13 Beyond that, there is not enough original in 14 place as a relative term to measure to, does not suggest that we would be profitable. In other words, strategic 15 16 drilling instead of blanket infill drilling has been done 17 by some operators. The line that goes around the basic 18 MR. CARR: fairway in which you find these 10-acre development 19 20 possibilities is the line that sort of has a question mark 21 on each end of it, over on the right-hand side of the 22 figure; isn't that right? 23 THE WITNESS: That is true. 24 MR. CARR: Okay. 25 And the only reason there's THE WITNESS:

question marks is because I did not have data to carry that on to Phillips' acreage.

- Q. (By Examiner Catanach) Okay. One of the factors is original oil in place, you said?
- A. Yes, pretty much. We investigated six or seven different characteristics, trying to find some relationships, and it all boiled down to original oil in place, and structure.
- Q. You said that the 159 well was equidistant from what, now?
- A. From the offset producers and injectors, the existing wells in that pattern.

If you would look at Figure 5 of Exhibit 4, although small in scale here, if you were to -- There is an injector on the corner of this Section 1 and an injector south of the proposed location, which do not show up well at this scale.

There's also a producer 162 to the east on the Central Vacuum unit, and to the west the Vacuum Grayburg San Andres Unit Number 58.

If you were to look at the equidistance positions from those four wells, the bottomhole location for this subject well is fixed to be at that point, which is why we're exactly 78 feet from the line and 500 and some feet from the north.

1	MR. CARR: 572 feet.
2	THE WITNESS: Okay.
3	EXAMINER CATANACH: Okay, I have no other
4	questions of this witness.
5	MR. CARR: That concludes our presentation in
6	this case.
7	EXAMINER CATANACH: Mr. Carr, I think The only
8	thing that I appear to be lacking is, do you have a topo
9	map which would demonstrate the surface obstructions that
10	we're dealing with here?
11	MR. CARR: That is going to be submitted with the
12	administrative application. I don't have that with me. I
13	do have a plat that simply shows the directional trajectory
14	of the wellbore.
15	But we can certainly provide you with that topo.
16	We're prepared to go forward with that administrative
17	filing right away.
18	EXAMINER CATANACH: Okay. If you can give me a
19	copy of that, I would appreciate it.
20	Okay, there being nothing further in this case,
21	Case 11,527 will be taken under advisement.
22	(Thereupon, these proceedings were concluded at
23	9:46 a.m.)
24	* * *
25	

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 18th, 1996.

STEVEN T. BRENNER

CCR No. 7

My commission expires: October 14, 1998

I do hereby certify that the foregoing to

a consider record of the proceedings in the sea seas saring of Case No. //597

L, Examiner

Oil Conservation Division

heard on May/6