

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. 11,581

APPLICATION OF DEVON ENERGY OPERATING )  
CORPORATION FOR ABOLISHMENT OF THE )  
FREN-SEVEN RIVERS POOL AND EXTENSION )  
OF THE VERTICAL LIMITS OF THE )  
GRAYBURG-JACKSON POOL, EDDY COUNTY, )  
NEW MEXICO )

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

July 25th, 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, July 25th, 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.

\* \* \*

STEVEN T. BRENNER, CCR  
(505) 989-9317

## I N D E X

July 25th, 1996  
 Examiner Hearing  
 CASE NO. 11,581

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\* \* \*

## A P P E A R A N C E S

## FOR THE DIVISION:

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Legal Counsel to the Division  
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## FOR THE APPLICANT:

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By: JAMES G. BRUCE

## FOR BURNETT OIL COMPANY, INC.:

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

## FOR WISER OIL COMPANY:

EARL KRIEG  
8115 Preston Road, Suite 400  
Dallas, Texas 75225

\* \* \*

1           WHEREUPON, the following proceedings were had at  
2   12:25 p.m.:

3           EXAMINER CATANACH: At this time we'll call Case  
4   11,581.

5           MR. CARROLL: Application of Devon Energy  
6   Operating Corporation for abolishment of the Fren-Seven  
7   Rivers Pool and extension of the vertical limits of the  
8   Grayburg-Jackson Pool, Eddy County, New Mexico.

9           EXAMINER CATANACH: Are there appearances in this  
10   case?

11          MR. BRUCE: Mr. Examiner, Jim Bruce representing  
12   the Applicant. I have two witnesses again.

13          EXAMINER CATANACH: Additional appearances?

14          MR. CARR: May it please the Examiner, my name is  
15   William F. Carr with the Santa Fe law firm Campbell, Carr,  
16   Berge and Sheridan. We'd like to enter our appearance in  
17   this case for Burnett Oil Company, Inc. I do not have a  
18   witness.

19          MR. KRIEG: Mr. Examiner, my name is Earl Krieg  
20   with the Wiser Oil Company in Dallas.

21          EXAMINER CATANACH: Mr. Krieg, will you be  
22   providing testimony or evidence in this hearing?

23          MR. KRIEG: No, sir.

24          EXAMINER CATANACH: Okay. Will the witnesses  
25   please stand to be sworn in?

1 (Thereupon, the witnesses were sworn.)

2 STEVE LAFOLLETTE,

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

5 DIRECT EXAMINATION

6 BY MR. BRUCE:

7 Q. Would you please state your name and city of  
8 residence?

9 A. Steve LaFollette, and I live at Edmond, Oklahoma.

10 Q. Who do you work for and in what capacity?

11 A. Devon Energy Corporation as a district geologist.

12 Q. Have you previously testified before this  
13 Division?

14 A. I have not.

15 Q. Would you outline your educational and employment  
16 background for the Examiner?

17 A. I have a bachelor's in geology from Cornell, a  
18 master's in geology from the University of Tennessee.

19 I've worked as a petroleum geologist for 22 years  
20 for Amoco, Tenneco, Grace Petroleum, and the last four  
21 years for Devon Energy.

22 I'm currently an expert witness in Oklahoma,  
23 Texas and Louisiana.

24 Q. Are you familiar with the geological matters  
25 critical to this case?

1           A.    I am.

2                   MR. BRUCE:  Mr. Examiner, I tender Mr. LaFollette  
3 as an expert petroleum geologist.

4                   EXAMINER CATANACH:  He is so qualified.

5           Q.    (By Mr. Bruce)  What is it Devon seeks in this  
6 case, Mr. LaFollette?

7           A.    Devon seeks to abolish the Fren-Seven Rivers Pool  
8 and add that interval to the Grayburg-Jackson Pool.

9           Q.    Let's orient everyone again to the area we're  
10 talking about, similar to the last case.  Would you  
11 identify Exhibit 1, please?

12           A.    Exhibit 1 is a structure map on top of the Seven  
13 Rivers in the subject area.  It covers Township 17 South,  
14 Ranges 30 and 31 East in Eddy County, New Mexico.

15                   It shows a continuous unfaulted horizon dipping  
16 to the east and southeast.  Mapping depths range from 2300  
17 feet above sea level in the west to 1150 feet above sea  
18 level on the east.

19                   It also shows all currently producing Seven  
20 Rivers wells in the Fren Unit, with the red dots.

21                   And additionally, it acts as a land plat with the  
22 Grayburg-Jackson Pool outlined in green, the Fren Pool --  
23 the Fren-Seven Rivers Pool outlined in purple.  Devon  
24 acreage is in yellow.

25                   As you can see, the Fren-Seven Rivers Pool is

1 entirely within the Grayburg-Jackson Pool.

2 Q. Does this plat show all of the acreage in the  
3 Grayburg-Jackson Pool?

4 A. No, it does not. The Grayburg-Jackson Pool  
5 covers a much larger area. It extends from Township 16  
6 South, north of the mapped area, Ranges 29, 31 and 32 East,  
7 and in Township 17 South, Ranges 29 to 31 East.

8 A listing of this acreage is provided in Exhibit  
9 2.

10 Q. Would you identify Exhibits 3 and 4 and describe  
11 the formations within the Grayburg-Jackson Pool?

12 A. Exhibits 3 and 4 are the two cross-sections shown  
13 on Exhibit 1, an east-west cross-section, A-A', and a  
14 north-south cross-section across the subject pools, B-B'.

15 Exhibit 3 is the east-west cross-section. It's  
16 larger than some and smaller than others --

17 Q. Larger than life.

18 A. -- covering a rather broad area geographically  
19 and a rather thick area stratigraphically, so there's not  
20 much getting around it.

21 Both of these cross-sections are structural  
22 cross-sections. They include the intervals from the top of  
23 the Yates formation, which is the unit above the Seven  
24 Rivers, the Seven Rivers formation, the Queen formation,  
25 the Grayburg formation and the San Andres formation.

1 All of these units are very continuous across the  
2 subject area. They're easily mappable.

3 The Seven Rivers, Queen, Grayburg and San Andres  
4 are all oil-productive in the area. They produce from  
5 similar rock types. They produce from porous zones,  
6 consisting of dolomites and sandy dolomites that are  
7 shallow subtidal to supertidal carbonate environments.

8 Both cross-sections exhibit the same  
9 characteristics. We're just trying to demonstrate here the  
10 continuity of the units within the pools across the  
11 geographic limits of the pools.

12 Q. Geologically, there's no reason to differentiate  
13 the Seven Rivers formation within the Fren Pool from the  
14 Seven Rivers formation within the Grayburg-Jackson Pool?

15 A. There is not.

16 Also shown are the wells in the cross-sections  
17 that produce from the Seven Rivers or are immediately  
18 adjacent to wells that produce from the Seven Rivers,  
19 utilizing the red-colored bar on the depth track on the  
20 individual logs.

21 And the pertinent completion and IP information  
22 is shown at the bottom of each well.

23 Q. Did Devon notify all operators in the Fren-Seven  
24 Rivers Pool and in the Grayburg-Jackson Pool within the  
25 area of overlap, as indicated by Division records?



1 A. Yes.

2 Q. And is Exhibit 5 my affidavit of notice to all of  
3 those operators?

4 A. It is.

5 Q. Now, did Devon call up any of the operators just  
6 to see if they had any objection to the proposal?

7 A. Yes, we did. Our land department has discussed  
8 our proposal with all of the major operators in question,  
9 including Burnett Oil, Southwest Royalty, Mack Energy,  
10 Marbob, Phillips, Wiser, SDX, Westall and Texaco. No one  
11 contacted had an objection to our proposal.

12 Q. Were Exhibits 1 through 5 prepared by you, under  
13 your direction, or compiled from company records?

14 A. Yes, they were.

15 Q. And in your opinion, is the granting of this  
16 Application in the interests of conservation and the  
17 prevention of waste?

18 A. Yes, it is.

19 MR. BRUCE: Mr. Examiner, I would move the  
20 admission of Exhibits 1 through 5.

21 EXAMINER CATANACH: Exhibits 1 through 5 will be  
22 admitted as evidence.

23 Mr. LaFollette, the -- Oh, I'm sorry. Mr. Carr,  
24 any questions?

25 MR. CARR: No questions.

1 EXAMINER CATANACH: Okay. Mr. Krieg, did you  
2 have any questions of the witness?

3 MR. KRIEG: No, sir.

4 EXAMINATION

5 BY EXAMINER CATANACH:

6 Q. Okay, the vertical limits of the Fren-Seven  
7 Rivers are only those -- it only comes as the Seven Rivers  
8 formation?

9 A. That's correct.

10 Q. Now, the Grayburg-Jackson goes from the top of  
11 the Seven-Rivers to the base of the San Andres?

12 A. Yes, everywhere within its outline except the  
13 Fren-Seven Rivers Pool, where the Seven Rivers has been  
14 separated.

15 So in the area of overlap, the Grayburg-Jackson  
16 includes only the Queen, Grayburg and San Andres.

17 Q. So the Grayburg-Jackson does cover the area  
18 that's covered by the Fren-Seven Rivers?

19 A. Entirely.

20 Q. But the vertical limits are reduced from the top  
21 of the Queen to the base of the San Andres; is that your  
22 understanding?

23 A. Yes.

24 Q. Do you know why that was done?

25 A. Partially. According to the findings of facts in

1 the order that was issued, that separated it out, it was to  
2 maintain historical production statistics.

3 However, that testimony was not in the  
4 transcript. They addressed other issues.

5 MR. CARROLL: Where did you learn about  
6 testimony, then, if not from the transcript?

7 THE WITNESS: The finding of fact, the --

8 MR. CARROLL: The findings of fact?

9 THE WITNESS: -- cover letter.

10 MR. BRUCE: We have -- If the Division needs  
11 copies of them, I made --

12 THE WITNESS: That is Order 5011.

13 EXAMINER CATANACH: I'm sorry?

14 THE WITNESS: That order number was 5011.

15 MR. CARROLL: What year was that? Do you recall?

16 THE WITNESS: Seventy- --

17 MR. BRUCE: 1975.

18 THE WITNESS: Uh-huh.

19 MR. BRUCE: So what he was saying, Mr. Carroll,  
20 is that the rationale given in the order is not reflected  
21 in the hearing transcript. If you want a copy of the  
22 hearing transcript, we've got a copy and can give it to  
23 you.

24 That was under Mr. Carr's reign.

25 Q. (By Examiner Catanach) Is there, in fact,

1 production from the Grayburg-Jackson pool within the area  
2 defined as the Fren-Seven Rivers Pool?

3 A. There is.

4 Q. The Seven Rivers has always been produced  
5 separately in this area? I mean, separate wellbores or --

6 MR. BRUCE: Our next witness can address those  
7 issues.

8 THE WITNESS: I think that's true for the most  
9 part, yes.

10 Q. (By Examiner Catanach) Do you know if there's  
11 any split rights, as far as depths go within the Fren area,  
12 or are the lease rights split in any form or fashion from  
13 the Seven Rivers?

14 A. They may have been historically. Currently, we  
15 don't feel that's the case, at least in the majority of the  
16 area. It's not on our acreage, on our leases, and we know  
17 it's not on the Skelly Unit to the east that Wiser  
18 operates.

19 Q. Do you think that by taking this action, that it  
20 would maybe stimulate some operators to recomplete some  
21 wells that may have not been --

22 A. Possibly.

23 Q. As far as you're concerned, it's all -- I mean,  
24 this whole area is all one common source of supply; there's  
25 nothing separating it --

1           A.     That's correct.

2                   EXAMINER CATANACH:   Okay, that's all I have of  
3     the witness.

4                   MR. BRUCE:   Call Mr. Morrow.

5                   Mr. Examiner, could we let the record reflect  
6     that Mr. Morrow in a prior case was sworn and qualified as  
7     an expert reservoir engineer?

8                   EXAMINER CATANACH:   The record shall so reflect.

9                                 DICK MORROW,

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

12                                 DIRECT EXAMINATION

13     BY MR. BRUCE:

14                 Q.     Mr. Morrow, why is it that Devon wants to abolish  
15     the Fren Pool?

16                 A.     We would like to abolish the Fren Pool and  
17     combine it with the Grayburg-Jackson for operational and  
18     economic reasons.

19                 Q.     Okay, let's discuss some of those.   Could you  
20     refer to your Exhibit 6, and maybe this will answer one of  
21     the Examiner's prior questions.

22                         What -- This doesn't cover the whole Fren Pool  
23     area, does it?

24                 A.     No, it does not.   It covers basically our acreage  
25     and the Skelly Unit immediately to the east.

1           Q.    Okay, and in that area what -- I know there's a  
2           lot of symbols on this map, but perhaps you can discuss  
3           production from the entire top of the Seven Rivers to the  
4           base of the San Andres production from this particular  
5           area.

6           A.    Yes, this is a very busy map, and you can  
7           probably ignore most of the well symbols except the Seven  
8           Rivers wells, which are shown with the red dots. The red  
9           numbers, which are beside those wells are the cumulative  
10          production, and the contour is a contour map on the  
11          cumulative production to date.

12                What I'd like to point out is that the Fren Pool  
13          currently only has about 75 active wells, and the average  
14          production is less than two barrels a day per well. It's  
15          very near its economic limit. It's a very marginal  
16          producer right now.

17                Of the 60 or so Seven Rivers wells that Devon had  
18          on its acreage, we only have four active wells remaining,  
19          and those are also producing less than about two barrels a  
20          day.

21                We feel the economic potential in the Seven  
22          Rivers is waterflooding, and that's what this map is  
23          intended to point out. If you look on the Devon acreage to  
24          the west, most of our wells have cumulative production in  
25          the 30,000-to-60,000-barrels-per-well range, with a high of

1 about 75,000. We've produced Seven Rivers on our acreage,  
2 strictly on primary production.

3 However, if you look to the east in the Skelly  
4 Unit, which has been waterflooded, they have wells that  
5 have produced up to 245,000 barrels from the Seven Rivers.

6 So this gives us an incentive to look at  
7 waterflooding the Seven Rivers on our acreage. And I've  
8 used this data to evaluate the economics of such a  
9 proposal, and that is shown on Exhibit Number 7.

10 Exhibit Number 7 is entitled "Economic Evaluation  
11 of Seven Rivers Development", and kind of what I've  
12 summarized here is the recovery from the Skelly Unit, which  
13 has been -- both primary and secondary, has been 1730  
14 barrels per acre, whereas recovery from the Devon  
15 properties, which is primary only, has only been a little  
16 over 1000 barrels per acre.

17 If you assume that difference is because of the  
18 waterflood, we have potential waterflood reserves on our  
19 property of 645 barrels per acre, which amounts to 825,000  
20 barrels, for about the two sections, 1280 acres, that we  
21 could develop.

22 Since most of the Seven Rivers wells in this area  
23 have already been abandoned, we are essentially looking at  
24 a complete redevelopment of that shallow reservoir, and the  
25 capital costs required to do so are listed there. It would

1 cost \$189,000 to drill a new Seven Rivers producer,  
2 \$165,000 to drill a new injection well, and \$45,000 to  
3 commingle a producer. And what I mean by that is that to  
4 open up the Seven Rivers in an existing Grayburg-Jackson  
5 well would cost about \$45,000.

6 I've evaluated two cases which I've shown below  
7 there. Case 1 is if separate pools are maintained in the  
8 Grayburg, Jackson and Seven Rivers in this area, we would  
9 have to drill 16 new producing wells and 16 new injection  
10 wells for a cost of about \$5.7 million to develop that  
11 125,000 barrels of reserves. And the economics shown below  
12 there, a 12.5-percent rate of return and a 4.5-year payout,  
13 are below accepted industry levels of economic return.

14 However, Case 2, if we're allowed to combine  
15 these pools, we would still drill 16 new injection wells  
16 for proper injection control, but it would allow us to  
17 commingle the Fren-Seven Rivers in 16 of the existing  
18 Grayburg-Jackson wells. Our total capital outlay there  
19 would be about \$3.4 million, which is a saving of \$2.3  
20 million over Case 1. And here the economics for developing  
21 that 825,000 barrels would give us about a 36-percent rate  
22 of return, which is acceptable for our corporation.

23 So we feel that by allowing us to commingle the  
24 Seven Rivers with the existing Grayburg Jackson well, we  
25 could economically develop these reserves, whereas if the



1 pools were kept separate it's not a venture we would  
2 undertake.

3 Q. On your Exhibit 6 Mr. Morrow, the Skelly Unit  
4 waterflood you're talking about there, there was a strictly  
5 Seven Rivers waterflood; it was not commingled with  
6 Grayburg-Jackson or anything?

7 A. No, it was separate, as required by the separate  
8 pools. There was a separate Seven River waterflood and a  
9 separate Grayburg-Jackson development. So these numbers on  
10 here are strictly Seven Rivers.

11 Q. And over on Devon's acreage, there are a number  
12 of existing Grayburg-Jackson wells, in addition to Fren-  
13 Seven Rivers wells?

14 A. Oh, yes, throughout this acreage.

15 Q. In your opinion, will the granting of this  
16 Application be in the interests of conservation and the  
17 prevention of waste?

18 A. Yes, sir.

19 Q. And were Exhibits 6 and 7 prepared by you or  
20 under your direction?

21 A. Yes, they were.

22 MR. BRUCE: Mr. Examiner, we move the admission  
23 of Exhibits 6 and 7.

24 EXAMINER CATANACH: Exhibits 6 and 7 will be  
25 admitted as evidence.

## EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Morrow, where is Devon's acreage located?

A. Well, it's outlined with the dark red.

Q. Okay.

A. And this shows basically the southern portion of our acreage that you've seen on some previous exhibits, like on Exhibit Number 1. All of our acreage is outlined in yellow. This is the southern area.

Q. Okay. Within this area that's outlined in red, that area, has it been waterflooded in the Grayburg-Jackson?

A. It is in the process of being -- It was part of the older waterflood, and we are also doing some infill drilling and injection conversions in that area also, like we were doing up in the Keel West area.

MR. BRUCE: Mr. Morrow, the Keel West area you're talking about immediately abuts the north edge of this Exhibit 6; is that right?

THE WITNESS: Yes, it's immediately to the north of this exhibit.

Q. (By Examiner Catanach) Okay, so this area will be redeveloped for secondary recovery purposes in the Grayburg-Jackson?

A. Yes.

1 Q. You're working on that right now?

2 A. Yes, sir.

3 Q. So by combining the pools it will allow you to  
4 utilize existing Grayburg-Jackson producing wells to  
5 produce from the Seven Rivers?

6 A. Yes.

7 Q. Have most of the Seven Rivers wells been -- are  
8 they P-and-A'd, or what's the status of the wells?

9 A. Yes, most of them have been plugged and  
10 abandoned.

11 Q. Now, this is the -- On Exhibit Number 7, these  
12 are the -- 645 stock tank barrels per acre is the potential  
13 in the Seven Rivers only; is that correct?

14 A. Yes.

15 Q. Did you guys talk to the geologist down in  
16 Artesia about this proposal at all, do you know?

17 A. I believe we talked with him about combining  
18 these pools administratively under his jurisdiction. And I  
19 guess we felt it would be quicker and easier doing it this  
20 way.

21 Q. Do you know if he expressed any concern about  
22 doing this?

23 A. I can't say for sure. I don't believe so.

24 EXAMINER CATANACH: Okay, I'll check with him.

25 That's basically all I have, Mr. Bruce.

1 MR. BRUCE: I have nothing further.

2 EXAMINER CATANACH: Okay, there being nothing  
3 further in this case, Case 11,581 will be taken under  
4 advisement.

5 And we'll adjourn the hearing.

6 (Thereupon, these proceedings were concluded at  
7 12:50 p.m.)

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I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 11581,  
heard by me on July 25 1996.

David R. Catanach, Examiner  
Oil Conservation Division

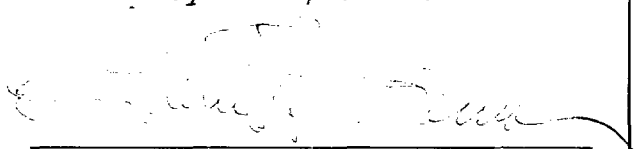
## CERTIFICATE OF REPORTER

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 July 31st, 1996.

  
\_\_\_\_\_  
STEVEN T. BRENNER  
CCR No. 7

My commission expires: October 14, 1998