

## 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 RB OPERATING COMPANY FOR )  
 DIRECTIONAL DRILLING AND AN UNORTHODOX )  
 SURFACE AND SUBSURFACE LOCATION AND )  
 SIMULTANEOUS DEDICATION, EDDY COUNTY, )  
 NEW MEXICO )

CASE NOS. 13,471

APPLICATION OF RB OPERATING COMPANY FOR )  
 AN UNORTHODOX OIL WELL LOCATION AND )  
 SIMULTANEOUS DEDICATION, EDDY COUNTY, )  
 NEW MEXICO )

and 13,472

(Consolidated)

REPORTER'S TRANSCRIPT OF PROCEEDINGSEXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

April 21st, 2005

Santa Fe, New Mexico

2005 MAY 5 AM 7 34

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, April 21st, 2005, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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April 21st, 2005  
Examiner Hearing  
CASE NOS. 13,471 and 13,472 (Consolidated)

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

FOR THE APPLICANT:

KELLAHIN & KELLAHIN  
 117 N. Guadalupe  
 P.O. Box 2265  
 Santa Fe, New Mexico 87504-2265  
 By: W. THOMAS KELLAHIN

\* \* \*

1 WHEREUPON, the following proceedings were had at  
2 9:25 a.m.:

3 EXAMINER CATANACH: At this time I'll call Case  
4 13,471, the Application of RB Operating Company for  
5 directional drilling and an unorthodox surface and  
6 subsurface location and simultaneous dedication, Eddy  
7 County, New Mexico.

8 Call for appearances.

9 MR. KELLAHIN: If it please the Examiner, my name  
10 is Tom Kellahin of the Santa Fe law firm of Kellahin and  
11 Kellahin. I'm appearing on behalf of the Applicant, and I  
12 will have two [sic] witnesses to be sworn.

13 In addition, for purposes of presentation of the  
14 exhibits and the testimony we would ask that you  
15 consolidate this case with the subsequent case that's  
16 currently set on your docket.

17 EXAMINER CATANACH: At this time I will call Case  
18 13,472, the Application of RB Operating Company for an  
19 unorthodox oil well location and simultaneous dedication,  
20 Eddy County, New Mexico.

21 Call for additional appearances in either of  
22 these cases. Let the record show there are no additional  
23 appearances.

24 Mr. Kellahin, you may proceed. Let me get the  
25 witnesses to stand and be sworn in.

1 (Thereupon, the witnesses were sworn.)

2 MR. KELLAHIN: Mr. Examiner, with your permission  
3 I'd like to refer you to this document, which is a  
4 photocopy of the locator map that RB Operating used in a  
5 case these three gentlemen and I presented to Examiner  
6 Jones back in November 4th of last year.

7 Subsequent to this plat, we've attached a copy of  
8 the order that Mr. Jones entered in that case. It's Order  
9 Number R-12,246. The reason I'm showing you this is, the  
10 two cases you're about to see are in this same vicinity and  
11 involve a different combination of some of this property,  
12 so it would be a visual reference for you to see what was  
13 done in November and so we can explain to you within that  
14 context what RB Operating proposes to do with these two  
15 additional cases.

16 The plan here is one where we have 40-acre oil  
17 wells in the -- I lost track of my pool. What is it,  
18 Bobby? The Bone Springs --

19 MR. EMERY: No, the East Loving --

20 THE WITNESS: East Loving field.

21 MR. KELLAHIN: -- Brushy Canyon. And what we've  
22 done in the past is, because of the 40-acre oil spacing,  
23 there leaves a point where these four 40-acre tracts  
24 intersect that represents an opportunity for what we will  
25 call an increased-density well.

1           Our past practice was, in conversations with Mr.  
2 Stogner, we had two options: one, trying to create a  
3 nonstandard proration unit, or, in the alternative, putting  
4 this well within an existing 40-acre spacing unit and  
5 calling it a nonstandard location and having a second well  
6 in the 40-acre tract.

7           It was Mr. Stogner's preference not to create  
8 nonstandard proration units, and so we have proceeded with  
9 the alternative plan of presenting to you cases for  
10 nonstandard locations.

11           In order to consolidate the interest owners so  
12 that they could share in this increased-density well, Mr.  
13 Ebeier, for RB Operating as the landman, has prepared  
14 documents, has obtained the agreement of all the interest  
15 owners concerning taking 10 acres out of each of the 40s  
16 and calling it what he calls a drilling unit, which is not  
17 to be confused what you and I would call a spacing unit.

18           The only -- of all these cases you're about to  
19 see, only the Bureau of Land Management has yet to sign off  
20 on the documents, and we will show you that we've made  
21 filing of all those things with the BLM. And with the  
22 exception of the BLM, as to the well located in Section 14,  
23 we have signatures from all the interest owners that will  
24 share in the production.

25           And as will be explained in the testimony, the

1 production from this increased-density well is going to  
2 remain separate from production in the other wells within  
3 the area. That means to be that an original well will  
4 continue to be produced and shared among the owners of that  
5 spacing unit.

6 As to this increased-density well, the equities  
7 involved in that production will be shared among the owners  
8 in what we've called the drilling unit.

9 One of these cases does involve a directional  
10 drilling component, and we've selected to present that to  
11 you this morning. The directional drilling is being done  
12 to accommodate surface use in the area, so that we  
13 accommodate the surface owner.

14 With that introduction, Mr. Examiner, we would  
15 like to proceed with our first witness.

16 EXAMINER CATANACH: Okay.

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

20 DIRECT EXAMINATION

21 BY MR. KELLAHIN:

22 Q. Would you please state your name and occupation?

23 A. Robert Ebeier, I'm a senior landman with RB  
24 Operating Company, Forth Worth, Texas.

25 Q. Mr. Ebeier, on a prior occasion did you testify



1 before the Oil Conservation Division as a landman?

2 A. Yes, sir, I did.

3 Q. In fact, you testified back in November before  
4 Examiner Jones in the companion cases that I've described  
5 to Mr. Catanach this morning?

6 A. Yes, sir, I did.

7 Q. And pursuant to your employment by RB Operating,  
8 have you continued to execute your duties in terms of  
9 trying to consolidate the interest owners in these two  
10 project areas and get their voluntary cooperation to a  
11 procedure for drilling and producing these two additional  
12 wells?

13 A. Yes, sir, I have.

14 MR. KELLAHIN: With your permission, Mr.  
15 Catanach, we would tender Mr. Ebeier as an expert petroleum  
16 landman.

17 EXAMINER CATANACH: He is so qualified.

18 THE WITNESS: Thank you.

19 MR. KELLAHIN: There's an additional map, Mr.  
20 Catanach, that we have provided to you, that's unmarked.  
21 We are simply using it for a locator map so that you can  
22 track the two cases as we present them together. It is on  
23 the larger format, it's the 8-1/2-by-17 plat.

24 Q. (By Mr. Kellahin) Let's start with that handout,  
25 Mr. Ebeier, and have you start in Section 14. Identify for

1 us what you're trying to do here.

2 A. Well, in Section 14 we have two 80-acre tracts  
3 with unique ownership, and what we tried to do was combine  
4 these two tracts to form this -- what we call a drilling  
5 unit. The tract that's colored blue is federal acreage,  
6 and the tract that's red is fee acreage.

7 And the federal lease covering the blue acreage  
8 is a 1/8-royalty lease, I want to say maybe 1964 vintage,  
9 oil and gas lease, that covers this 80-acre tract in  
10 addition to several other sections, maybe -- cumulatively,  
11 maybe 2000 acres.

12 The fee acreage in red, the ownership is -- like  
13 I say, it is fee acreage. The royalties vary, but  
14 generally they're 3/16 royalty, and they probably have  
15 maybe 25 to 35 owners.

16 In Section 23 -- Do we want to talk about Section  
17 23?

18 Q. Yeah, let's --

19 A. Section 23, the two 80-acre tracts are both fee  
20 tracts. There's no federal or state acreage there. The  
21 vintage of the oil and gas leases are back in the 1970s,  
22 late 1970s. The ownership -- the royalty ownership, is  
23 generally 3/16 royalty. Each tract has roughly 25 to 30  
24 owners.

25 Q. Mr. Ebeier, let's start with having you describe

1 to Mr. Catanach the relationship between RB Operating and  
2 Range Resources Corporation.

3 A. Yes, RB Operating Company is a wholly owned  
4 subsidiary of Range Resources Corporation, out of Fort  
5 Worth, Texas.

6 Q. For purposes of these Applications, then, we're  
7 dealing with the operating company, RB Operating Company,  
8 as the Applicant and the desired operator of the  
9 properties?

10 A. That is correct.

11 Q. It would appear that these wells are in the East  
12 Loving-Brushy Canyon Pool; is that your understanding?

13 A. Yes, sir.

14 Q. And you've identified these two project areas.  
15 What is your understanding of the reasons for these  
16 increased-density wells in these two project areas?

17 A. Well, we're trying to drill -- capture reserves  
18 that would not ordinarily be captured by the offset --  
19 existing offset producing wells.

20 Q. Are you currently doing this pursuant to  
21 Division-approved orders that allow you to operate projects  
22 similar to the two that Mr. Catanach has before him this  
23 morning?

24 A. Yes, sir.

25 Q. What is the current status of your efforts on the

1 two wells that were approved by Mr. Jones back at the  
2 November hearing?

3 A. Well the status of it, I mean, we of course have  
4 our order, and prior to that I did similar work. We  
5 constructed an agreement, contacted all of the interest  
6 owners in the acreage that compiled the -- what we call the  
7 drilling unit, probably 30, 35 owners each, and they  
8 consist of working interests, overriding royalty interests,  
9 and royalty interests. And basically we contacted them to  
10 say, Hey, we want to drill this well; we would like your  
11 permission; if you don't have any objections, please sign  
12 the agreement.

13 And we received 100-percent approval on both of  
14 our infill wells, our Carrasco 14-4 and our South Culebra  
15 Bluff 23 Number 15 well.

16 Q. For the two wells involved in the two project  
17 areas before Mr. Catanach, do you now have voluntary  
18 agreement from all categories of ownership, with the  
19 exception of the Bureau of Land Management?

20 A. I do.

21 Q. Let's turn now, Mr. Ebeier, to the package of  
22 documents that we have marked for the first case, involving  
23 portions of the northwest quarter -- the northeast quarter,  
24 of Section 14. Let's look at the plat that's marked as  
25 Exhibit Number 1, Mr. Ebeier, and show us the approximate

1 location of the proposed increased-density well.

2 A. The approximate location is in the 40-acre tract  
3 marked -- colored purple. I would say it's the southeast  
4 of the northeast quarter of Section 14.

5 Q. Using the Division nomenclature, that's going to  
6 be in unit letter H? Yeah, unit letter H of --

7 A. Yes, sir --

8 Q. -- that section.

9 A. -- that's correct.

10 Q. And it will be located on the same spacing unit  
11 with what original well?

12 A. We call that the Carrasco 14 Number 3 well.

13 Q. For purposes of obtaining your agreement,  
14 generally describe for us what are the key components of  
15 the agreement we're about to look at.

16 A. Well, the agreement is an agreement such that it  
17 was sent to all of the interest owners, like I said, the  
18 working interest owners, the overriding royalty interest  
19 owners, and the royalty owners. It gives us permission to  
20 drill this well. It allows them to object, obviously, if  
21 they didn't want to sign it, but we have 100-percent  
22 approval, with the exception of the US acreage, federal  
23 acreage, in the north half of the northeast quarter. Sent  
24 out to all of the interest owners, and we had 100-percent  
25 response and approval.

1 Q. Let's turn past Exhibit Number 1 in this case,  
2 and look at the document that you have prepared and had  
3 executed by all the interest owners. It's marked as  
4 Exhibit Number 2.

5 A. Okay.

6 Q. For purposes of contacting these parties, you  
7 have called this a communitization agreement?

8 A. That is correct.

9 Q. The acreage associated with this agreement, then,  
10 would be 10 acres out of each of the 40-acre tracts that  
11 we've looked at in the first display?

12 A. Yes, sir, that's correct.

13 Q. How will the production be handled from the  
14 increased-density well in relationship to any of the four  
15 original wells in the area?

16 A. Well, since we created a unique ownership deck by  
17 -- I want to say communitizing the royalty; it's not really  
18 communitizing, but it is blending the ownership from the  
19 north half of that -- northeast quarter with the south half  
20 of the northeast quarter. And so we created a unique  
21 ownership deck, so that production has to be metered  
22 separately so we can pay the royalty owners as per the  
23 agreement that we had them execute.

24 Q. Is it your intention that this agreement we're  
25 looking at would modify any of the existing operating

1 agreements or Division orders or other contracts associated  
2 with this project?

3 A. No, sir, and we specifically put language in this  
4 agreement that it does not. It does not modify anything,  
5 it does not modify the ownership decks in the existing four  
6 offset producers.

7 Q. To the best of your knowledge, do you have the  
8 cooperation and approval of the surface owner at the  
9 location for this increased-density well?

10 A. Yes, sir, we do. It's verbal, we do not have it  
11 in writing, but it's verbal.

12 Q. Let's turn past Exhibit Number 2 and look at  
13 Exhibit Number 3. Exhibit Number 3 is my affidavit of  
14 notice for hearing. Have you received or are you aware of  
15 any opposition to this -- the Division approving this  
16 Application?

17 A. No, sir, there is no --

18 Q. To the best of your knowledge, have we properly  
19 notified all the interest owners that are potentially  
20 affected by the Application?

21 A. Yes, sir, we have.

22 Q. Let's turn to the topic of the Bureau of Land  
23 Management. If you'll turn to Exhibit Number 4, it's a  
24 letter dated March 31st of this year to the Bureau of Land  
25 Management, advising them of this hearing and providing the

1 documentation associated with this case.

2 Have you heard anything from the Bureau of Land  
3 Management at this point?

4 A. No, sir.

5 Q. Let's set those documents aside for a moment, Mr.  
6 Ebeier, and when you're ready let's turn to the next  
7 exhibit set, it's the 7200 case [sic]. And if you'll start  
8 with Exhibit Number 1, let's identify for the record the  
9 components of the second well within the portion of Section  
10 23 identified on Exhibit Number 1.

11 For the record, then, Mr. Ebeier, would you  
12 identify Exhibit Number 1 to this case?

13 A. Exhibit 1 is a plat of our proposed South Culebra  
14 Bluff 23 Number 17 well. It consists of four tracts.  
15 Basically, it's the south -- it's the north half of the  
16 southwest quarter and then the south half of the northwest  
17 quarter. Each tract is -- All four of those 40-acre tracts  
18 are -- it's fee acreage, and the ownership deck is unique  
19 as to the south half of the northwest quarter, and it's  
20 unique as to the north half of the southwest quarter.

21 So basically the purple and the blue are  
22 identical and the yellow and the green are identical.

23 Q. It is RB Operating's intent to put the increased-  
24 density well within the same 40-acre spacing unit  
25 identified in the purple?



1 A. Yes, sir.

2 Q. It will be associated, then, with what existing  
3 original well?

4 A. We call that the South Culebra Bluff Number 1  
5 well.

6 Q. Has your method of consolidating the interest  
7 been the same for this Application as it was for the prior  
8 Application we just talked about?

9 A. It was almost identical, with the exception of  
10 100 percent of the fee acreage. We didn't have any federal  
11 acreage in this particular drilling unit.

12 Q. For the record, then, let's turn to what is  
13 marked as Exhibit Number 2 in this case. Again, would you  
14 identify the document you're utilizing here?

15 A. This is the agreement that we used. It's called  
16 the communitization agreement, sent to all of the owners in  
17 the two 80-acre tracts. Again, it was sent to the working  
18 interest owners, the overriding royalty interest owners,  
19 and the royalty owners. And the language is generally the  
20 same. It's identical with the exception of the acreage  
21 being described, and then the exhibits are obviously  
22 different, because the ownership decks are different.

23 Q. And then when we turn to Exhibit Number 3, have  
24 you satisfied yourself that we have notified all the  
25 interest owners affected by this Application before the

1 Division Examiner?

2 A. Yes, sir, we have.

3 Q. And pursuant to that notification or otherwise,  
4 are you aware of any opposition or objection to the  
5 Division approving this Application in this case?

6 A. No, sir.

7 MR. KELLAHIN: At this point, Mr. Examiner, that  
8 concludes my examination of this witness. And for the  
9 record, we would move the introduction of Exhibits 1, 2 and  
10 3 in each of the two cases.

11 EXAMINER CATANACH: Exhibits 1, 2 and 3 in Case  
12 13,471 will be admitted, and Exhibits 1, 2 and 3 in Case  
13 13,472 will be admitted.

14 EXAMINATION

15 BY EXAMINER CATANACH:

16 Q. Mr. Ebeier --

17 A. Yes, sir.

18 Q. -- in the two previous cases that you put on for  
19 the two previous wells, did those involve federal acreage,  
20 do you recall?

21 A. No, sir, it was 100-percent fee acreage.

22 Q. Okay. So have you spoken to BLM personally, or  
23 do you have knowledge on whether or not they're going to  
24 approve this or not?

25 A. No, the only correspondence we had was Mr.

1 Kellahin's letter to the BLM.

2 Q. Well, actually the well is not going to be -- the  
3 Carrasco well is not going to be on the federal acreage?

4 A. That's correct.

5 Q. So the feds would actually get royalty from that  
6 well, which they otherwise would not?

7 A. That's exactly right, we specifically set it on  
8 the fee acreage for that purpose.

9 EXAMINER CATANACH: Okay. I don't see why they  
10 should have any objection to it, but are you going to  
11 follow up on that?

12 MR. KELLAHIN: Yes, Mr. Examiner, we'll do that.  
13 I think the difficulty is the novelty of it. It doesn't  
14 fall within their normal checklist of an expectation of a  
15 nonstandard proration unit, that kind of concept.

16 Q. (By Examiner Catanach) Okay. Who are the  
17 working interest owners in these units?

18 A. Both of these units, it's RB Operating Company,  
19 50 percent, and Chesapeake -- I'm not sure exactly the  
20 exact entity name, but it's Chesapeake Operating Company,  
21 possibly, out of Oklahoma City.

22 Q. Okay, and that's for both of the wells?

23 A. Yes, 50-50 ownership.

24 Q. Okay, those are the two working interest owners,  
25 and --

1 A. Yes.

2 Q. -- you have various --

3 A. And then the -- I'm sorry?

4 Q. -- you have various royalty interest owners --

5 A. Oh, yes.

6 Q. -- and overrides?

7 A. Yeah. And if you look at these two agreements  
8 that I put together, if you look at the Exhibits A, B and  
9 C, I set out all of the owners that are unique to both  
10 those 80-acre tracts, in both of the proposed locations.

11 Q. Okay. And do you have those identified as  
12 royalty or overriding royalty, or just royalty interest  
13 owners?

14 A. Let me see, I can't remember exactly if I did or  
15 not.

16 Yes, I did. If you look at -- I'm looking at the  
17 23-17 agreement. If you look at the last four or five  
18 pages, you'll see Exhibit A attached at the very back of  
19 the pages, our last signature page that we got.

20 But if you back up a little bit to the Exhibit  
21 A --

22 Q. Okay.

23 A. -- okay? -- you'll see the ownership in what we  
24 call tracts 1 and tracts 2.

25 Q. Okay.

1           A.   And it does set out the working interest and the  
2 overriding royalty interest, and so the balance there is  
3 the royalty interest.

4                   And then also below that, I describe the  
5 ownership deck in tract 3 and tract 4, and it sets out the  
6 working interest owners, the first two owners, and that was  
7 Chesapeake Permian, LP, was the working interest owner  
8 entity name.

9                   Then with the asterisk next to the name it was --  
10 I set out the overriding royalty interest owners --

11           Q.   Okay.

12           A.   -- and so the balance of the ownership is  
13 royalty.

14           Q.   Okay. Have you drilled the first two wells?

15           A.   We have drilled the first well, the one of the  
16 two, and it's the South Culebra Bluff 23 Number 15 well.

17           Q.   Now, on each of these -- each of the existing 40-  
18 acre spacing units in each of the units, RB is the  
19 operator, right?

20           A.   Yes, sir.

21           Q.   And do you have active wells on all eight of the  
22 40-acre tracts?

23           A.   Yes, sir.

24           Q.   And those are active Brushy Canyon wells?

25           A.   Yes, sir.

1           Q.   And my understanding is that it's -- the two new  
2 wells are going to have their own production facilities; is  
3 that correct? Or are they just going to be measured?

4           A.   They'll be measured separately, obviously,  
5 because like I said, we have a unique ownership deck for  
6 each one of those wells, so they'll have to be measured  
7 separately, because we'll have to be paying royalties out  
8 on each one of those wells.

9           Q.   Okay. Do you have four separate tank batteries  
10 out there, or how is that set up? Do you know?

11          A.   I would have to refer that to our production  
12 facility engineer.

13          Q.   And you've reached 100 percent agreement with all  
14 of the interest owners, right?

15          A.   Yes, sir.

16               EXAMINER CATANACH: Okay, I think that's all I  
17 have, Mr. Kellahin.

18               MR. KELLAHIN: Mr. Examiner, I overlooked in Case  
19 13,471 Exhibit Number 4, which was my letter to the Bureau  
20 of Land Management. We would ask that you introduce that  
21 exhibit at this point.

22               EXAMINER CATANACH: Okay, Exhibit Number 4 in  
23 Case 13,471 will be admitted.

24               MR. KELLAHIN: At this time, Mr. Examiner, we'd  
25 call Martin Emery.

1                                    MARTIN EMERY,

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

4                                    DIRECT EXAMINATION

5        BY MR. KELLAHIN:

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

8                A.     My name is Martin Emery. I'm a geologist with  
9        Range Resources, or RB Operating, in Fort Worth, Texas.

10              Q.     Mr. Emery, on a prior occasion did you testify  
11        before the Division, in fact, Examiner Jones, back in  
12        November of last year?

13              A.     Yes, I did.

14              Q.     Did you make a geologic presentation to Examiner  
15        Jones back in those hearings?

16              A.     Yes, I did.

17              Q.     For purposes of today's hearing, have you  
18        continued your work as a geologist for RB Operating?

19              A.     Yes, I have.

20              Q.     And pursuant to that employment, do you now have  
21        exhibits and testimony to present to Examiner Catanach in  
22        these two cases?

23              A.     I do.

24                      MR. KELLAHIN: We tender Mr. Emery as an expert  
25        petroleum geologist.

1 EXAMINER CATANACH: He is so qualified.

2 Q. (By Mr. Kellahin) Mr. Emery, let's start with  
3 the package of exhibits that you prepared for Case 13,471,  
4 and we'll start with what is marked as Exhibit Number 5.  
5 Do you have those, sir?

6 A. Yes.

7 Q. Let's start with Exhibit Number 5 and have you  
8 summarize for Examiner Catanach what your geologic concept  
9 is for these two wells.

10 A. What this map represents is a net isopach map of  
11 the Brushy Canyon reservoir. It's an amalgamation of about  
12 seven different productive Brushy Canyon sandstones. And  
13 net reservoir was qualified as having porosity greater than  
14 14 percent, so a porosity cutoff of 14 percent was applied  
15 to get the values which are annotated by the wells in red,  
16 which were subsequently contoured.

17 The purpose of this map was to provide  
18 engineering, reservoir engineering, with an estimation of  
19 the acre-feet of pay within the Brushy Canyon for  
20 volumetric purposes. So it's an amalgamated net isopach  
21 map. The reds are thicker, the greens are thinner.

22 Q. For each of these two project areas before  
23 Examiner Catanach, what is it that you think you're going  
24 to achieve if he approves these increased-density wells?

25 A. Well, we believe we're going to capture reserves



1 that the existing wells in the four proration units that  
2 we're drilling almost in the middle of will not ultimately  
3 capture.

4 Q. Have you found anything in your current drilling  
5 of the wells involved in the order that Mr. Jones entered  
6 for your back in last year -- have you learned anything  
7 from that data that causes you to believe that you should  
8 not be drilling these increased-density wells?

9 A. No, we have not. We've only drilled one. That  
10 would be, like Mr. Ebeier testified, the SCB 23 Number 15  
11 in Section 23, and it's currently testing.

12 Q. When we look at Exhibit 5 to this case and look  
13 within the northeast quarter of 14, there are associated in  
14 this area, outlined in the red-dashed line, four wells  
15 other than the wellspot for the increased-density well. Do  
16 you see that?

17 A. That's correct.

18 Q. What's the current status of those other wells?

19 A. All four of those wells are active Brushy Canyon  
20 producing wells.

21 Q. And they're under the control and operation of RB  
22 Operating?

23 A. That is correct.

24 Q. Turning through that exhibit set and looking at  
25 Exhibit 6, what is it that we're looking at here?

1           A.   Exhibit 6 is a structural contour map, and this  
2 is contoured on top of one of the sandstones -- we refer to  
3 it as the "A" sandstone -- in the Lower Brushy Canyon. And  
4 the map just illustrates that there's not a -- for this  
5 immediate area there's not a structural component to the  
6 trapping of hydrocarbons. This is more of a stratigraphic  
7 trap.

8           Q.   Is the lack of a significant structural component  
9 for this case the same conclusion you reached with regards  
10 to the second case before Mr. Catanach?

11          A.   That's correct.

12          Q.   Was that also true of the two cases you presented  
13 to Examiner Jones last year?

14          A.   Yes.

15          Q.   Before we leave this display, you have got a line  
16 of cross-section shown on here?

17          A.   That is correct, extending from the South Culebra  
18 Bluff Number 7 well to the Carrasco -- through the Carrasco  
19 14-6 proposed well to the Carrasco 14 Number 3 well, to the  
20 southeast.

21          Q.   When you examine and look at the available  
22 geologic information and reach conclusions, what  
23 conclusions do you reach about the correlation and  
24 continuity of the Brushy Canyon Pool reservoirs?

25          A.   As we will see on subsequent exhibits, the

1 individual sand members are quite correlative locally and  
2 continuous, but the reservoir quality is highly variable.

3 Q. When you talk about reservoir quality being  
4 highly variable, what components of that are reasons for  
5 the variability?

6 A. It's -- the quality varies because of varying  
7 porosity and permeability.

8 Q. Let's turn now, Mr. Emery, to Exhibit Number 7.  
9 Take a moment and unfold that display. Describe for Mr.  
10 Catanach what you're proposing to utilize as the top and  
11 the bottom of this pay interval in the East Loving-Brushy  
12 Canyon Pool.

13 A. Well, annotated on this cross-section, this is --  
14 I've split the Brushy Canyon into two cross-sections for  
15 ease in viewing. This is at the uppermost part of the  
16 Brushy Canyon. You can see the purple line at the top;  
17 that would be the top of the Brushy Canyon. And near the  
18 top of the Brushy Canyon are two intervals which are fairly  
19 correlative in this area and productive. Colloquially we  
20 refer to them as Pardue "yellow" and Pardue "orange"  
21 sandstones.

22 Q. When we look at the adjoining four existing wells  
23 in each of these four spacing units, has RB Operating  
24 accounted for or exhausted the opportunity to open up all  
25 the pay intervals in the East Loving-Brushy Canyon Pool?

1           A.    As you'll see in subsequent testimony by Mr.  
2 Bryant, no, they haven't opened everything. But various  
3 wells have various things open.

4           Q.    In your analysis as a geologist, do you see the  
5 opportunity to substantially change your strategy if you  
6 should open those perforations in existing wells?

7           A.    No.

8           Q.    There's nothing that you would see that would  
9 cause you not to drill the increased-density well?

10          A.    No.

11          Q.    Is there a risk posed to you if you opened  
12 additional perforations in some of these wells?

13          A.    We don't believe so. We think, in fact, some of  
14 those zones were contacted through completions in other  
15 zones when they were frac'd. And we have some evidence of  
16 that from wells that we've recompleted, and we've added  
17 perforations above zones that were frac'd and seen that  
18 they have been completed by the initial completion.

19          Q.    Is there a cost component to recompletion and  
20 attempts to produce any of these additional intervals?

21          A.    Sure, there's a cost. The key cost is the  
22 fracture stimulation.

23          Q.    Let's turn now to Exhibit Number 8, Mr. Emery.  
24 With this display now you're moving down lower into the  
25 pool?

1           A.    Yes, it's the same line of cross-section, the  
2   same wells, and now we're just at the lowestmost part of  
3   the Brushy Canyon, immediately above the Bone Spring, which  
4   you can see is the brown line -- the brown unconformity  
5   line at the base of the cross-section, near the bottom of  
6   the cross-section.

7           Q.    So then identify for Mr. Catanach what you  
8   propose to have as the pay intervals in these two project  
9   areas.

10          A.    The base of the pay interval would be what we  
11   have labeled as the thin sand just above the top of the  
12   Bone Spring, the Lower Brushy Canyon "D" zone, the base of  
13   which is at about 6185, and that would be true vertical  
14   depth, in the Carrasco 14-6. That's where it's prognosed  
15   to be.

16          Q.    Let's turn to the topic, Mr. Emery, of your  
17   working with the petroleum engineer of your company to  
18   estimate the reserve potential for the infill well. have  
19   you provided him with all necessary geologic information so  
20   he can make his engineering calculation?

21          A.    That's correct. The isopach map was used to  
22   arrive at acre-feet for the volumetrics, and then --

23          Q.    Let's turn now to Exhibit 9. What's this?

24          A.    The next exhibit, which is Exhibit 9, is  
25   petrophysical evaluation of the four offsetting wells and

1 the average porosities and water saturations from those  
2 calculations, which were then also supplied to Mr. Bryant  
3 for volumetric analysis.

4 Q. Mr. Emery, at this time let's turn to the topic  
5 of the directional wellbore portion of this Application.  
6 If you'll turn to what we've marked as Exhibit 9A, there's  
7 a package of documents, starting with a plat on Division  
8 Form C-102. Let's start with Exhibit 9A and have you  
9 identify for me the plat.

10 A. This is just a survey plat showing the surface  
11 location and proposed bottomhole location of the Carrasco  
12 14 Number 6. We have to drill directionally to get to that  
13 bottomhole location because of the Pecos River. It runs --  
14 It's not illustrated on here, but it runs approximately  
15 north northwest-south southeast, through the northwest  
16 corner of Section 14 -- I mean northeast corner of Section  
17 14.

18 Q. Your strategy, then, is to attempt to place the  
19 producing portion of this directional wellbore within a  
20 location that's at the approximate center of the four 40-  
21 acre spacing units?

22 A. Yes, that's correct.

23 Q. If you'll turn to the next page of this exhibit  
24 -- in fact, I intended to re-organize these in a different  
25 way and I didn't do it. I'm looking for the schematic. If

1 we move beyond the digits, and I think it's the fourth  
2 page, there's a profile section. Let's use this to  
3 illustrate how RB Operating proposes to directionally drill  
4 this well, Mr. Emery, if you'll describe for us how you're  
5 going to accomplish this.

6 A. Okay, this page illustrates -- on the left side  
7 is a cross-section view of the drilling plan, and it's a  
8 little bit confusing because you're looking at this from an  
9 azimuth of 270 degrees, so it actually looks like you're  
10 going from east -- or west to east --

11 Q. West to east.

12 A. -- when in fact we're going from east to west.  
13 But on the plat view, which is on the right side of this  
14 page, it illustrates that. The surface location is at the  
15 -- in the middle of the crosshairs at zero, zero. The  
16 bottomhole location is 450 feet due west of the surface  
17 location.

18 And we expect to encounter the top of the Pardue  
19 or the shallowest Brushy Canyon pay sands at a true  
20 vertical depth of 4720 feet or measured depth of 4732 feet,  
21 which is at a location relative to the surface -- or  
22 relative to the section lines, of 1400 feet from the north  
23 and 1117 feet from the east.

24 And then at the base of the Lower Brushy Canyon  
25 pay or at the base of the Lower Brushy Canyon "D" sand, we

1 expect to encounter that at a true vertical depth of, like  
2 I said, 6185 feet or a measured depth of 6202 feet. And  
3 that's at a location 1400 feet from the north line of the  
4 section and 1233 feet from the east line.

5 Q. Have you used this data, Mr. Emery, to also  
6 identify the approximate total bottomhole location of the  
7 well?

8 A. Yes, we have.

9 Q. And what are those numbers?

10 A. The bottomhole location is illustrated on the  
11 survey plat, and it is 1400 feet from the north line of the  
12 section, 1250 feet from the east line of the section.

13 Q. Have you reviewed Division Rule 111 as part of  
14 your preparation for hearing this morning?

15 A. Yes, I have.

16 Q. Can you identify for the Examiner what the  
17 Division requires for a kickoff point?

18 A. Yes.

19 Q. And on what exhibit will we see that information?

20 A. Going back to the directional plan, the kickoff  
21 point will be at approximately 600 feet. And then the plan  
22 is to build to an angle of about 4 1/2 degrees and hold  
23 that angle to total depth.

24 Q. The producing interval, then, will be between the  
25 top and the bottom of the points that you have described



1 for Mr. Catanach in your testimony just now?

2 A. That is correct.

3 Q. Without special exception, Rule 111 requires you  
4 to maintain a target of a 50-foot radius of this  
5 bottomhole?

6 A. That is my understanding, yes.

7 Q. At this point you're not seeking to have an  
8 exception from that?

9 A. No, sir.

10 Q. Let's set aside the exhibit packages for that  
11 case, and let's move on to the next case, which is 13,472,  
12 and for this exhibit set we're starting with Exhibit Number  
13 4.

14 Let's generally summarize whether or not -- are  
15 there any meaningful differences in the geology between  
16 what you have studied for the well in the prior case and  
17 what we're about to look at in the geologic displays for  
18 this case?

19 A. They're the same displays, same series of  
20 displays, and no, there's no real significant differences.  
21 The thicknesses, of course, for this net isopach map on  
22 Exhibit 4 are -- they're different from the previous -- the  
23 similar exhibit for the previous case.

24 Q. The data for Case 13,472 does not cause you to  
25 change your ultimate conclusion about the drilling of the

1 increased-density well?

2 A. No, sir.

3 Q. Let's look at Exhibit 4. In this particular  
4 project area, there are currently five wells associated  
5 with the four 40-acre spacing units?

6 A. That is correct.

7 Q. What's the status of these wells?

8 A. All five of those wells are currently active in  
9 the Brushy Canyon.

10 Q. In this case, then, you're going to put the SCB  
11 30 -- 23-17 well as the infill well?

12 A. That is correct.

13 Q. The increased-density well. And it will be on  
14 the same 40-acre spacing unit with what other well?

15 A. The South Culebra Bluff 23 Number 1, which is in  
16 the northeast of the southwest of Section 23.

17 Q. Let's have you move past Exhibit Number 4 and  
18 let's have you explain the other displays, starting with  
19 Exhibit 5. Identify and describe for us the significance.

20 A. Exhibit 5, again, is a structural contour map.  
21 Like the previous exhibit, it's constructed on top of the  
22 Lower Brushy Canyon "A" sand. Highlighted are wells which  
23 are productive from that -- or have been perforated in that  
24 interval.

25 The red line depicts the line of cross-section

1 for the next two exhibits.

2 And there is a little bit of a structural  
3 closure, but -- on the west side of the 160 acres that we  
4 are looking at, but that amount of closure is far less than  
5 the hydrocarbon column that we see in a lot of these -- or  
6 most of these reservoirs.

7 Q. Now let's turn to Exhibit Number 6 in this case.  
8 Identify this display for us.

9 A. Exhibit Number 6 is a northwest-southeast  
10 structural cross-section. This is near the top of the  
11 Brushy Canyon -- the top of the Brushy Canyon is the purple  
12 line -- illustrating the upper Brushy Canyon pay zones,  
13 colloquially known as the Pardue "yellow" and Pardue  
14 "orange" sandstones.

15 Q. Let's turn to Exhibit Number 7. Identify and  
16 describe this display.

17 A. Exhibit Number 7 is the same line of cross-  
18 section, also structural. This is in the lower part of the  
19 Brushy Canyon, including the -- what we refer to as the  
20 Lower Brushy Canyon "AA" through "D" productive sandstones,  
21 showing their continuity between the wells.

22 Q. All right, sir, let's turn to Exhibit Number 8.

23 A. Exhibit Number 8 was the petrophysical evaluation  
24 of all of the Brushy Canyon pay sandstones in the offset  
25 wells to the proposed SCB 23 Number 17, so there are five

1 of those wells, and averaging the porosity and water  
2 saturations so that Mr. Bryant could conduct his volumetric  
3 analysis for the existing wells and remaining reserves  
4 recaptured by the proposed well.

5 Q. Mr. Emery, have you provided Mr. Bryant with all  
6 the necessary geologic information so that he could prepare  
7 his engineering calculations and reach his engineering  
8 conclusion?

9 A. Yes, I have.

10 MR. KELLAHIN: Mr. Examiner, that concludes my  
11 examination of Mr. Emery.

12 We would move the introduction of his Exhibits 5  
13 through 9A in Case 13,471 and Cases [sic] 4 through 8 in  
14 Case 13,472.

15 EXAMINER CATANACH: Okay, Exhibits 5 through 9A  
16 in 13,471 will be admitted, and Exhibits 4 through 8 in  
17 13,472 will be admitted.

18 EXAMINATION

19 BY EXAMINER CATANACH:

20 Q. Mr. Emery, in the Carrasco well, what is the net  
21 thickness that you're going to encounter in that well?

22 A. We would expect to encounter something close to  
23 140 to 145 feet of net pay in the Brushy Canyon. Again,  
24 that would be scattered over seven different sandstone  
25 intervals.

1 Q. Okay. Now, the seven different intervals are not  
2 completed in every well, right?

3 A. That is correct. They haven't been perforated in  
4 every well, in each of the offset wells.

5 Q. What is completed in each of the offset wells?  
6 Is there three or four or --

7 A. I would like to defer that question to Mr.  
8 Bryant. He has production-decline curves which show which  
9 zones were open in which wells. He has it for each of the  
10 offset wells, and what happened with production when those  
11 zones were put on production.

12 Q. Okay. The porosity you have as an average of 16  
13 percent?

14 A. In the case of the offset wells for the Carrasco  
15 14-6, the average offset porosity is 17 percent.

16 Q. 17 percent, okay. Water saturation about 50  
17 percent?

18 A. That's correct.

19 Q. Now, does that vary -- Is that about right for  
20 each of the zones, or does that vary according to each  
21 zone?

22 A. It's about the same for all zones. The porosity  
23 range -- of course, we're using a cutoff of 14 percent, but  
24 the average porosity range for each zone varies from maybe  
25 15 to 18 percent, and the water saturations for the

1 productive sands are consistently around 50 percent.

2 Q. Is the permeability about the same in each of the  
3 zones?

4 A. We have some permeability data, not that I'm  
5 aware of from these particular offset wells, but we have --  
6 in our ongoing operations we have collected rotary sidewall  
7 core data. And permeability within sandstones is highly  
8 variable and -- I wouldn't say we had a statistically  
9 significant population of permeability data to say what the  
10 average permeability is for each sand.

11 Q. Now, the seven producing zones, are there some of  
12 these that are more prolific than others?

13 A. Yes, there are.

14 Q. Is that the upper two that are better, or --

15 A. The most prolific zones are the Lower Brushy  
16 Canyon "C" and "D" zones, and also the Pardue pay  
17 sandstones at the upper part of the Brushy Canyon.

18 Q. Those are the four that are most prolific?

19 A. Correct.

20 Q. Have the existing wells been producing for a  
21 while?

22 A. Yes, they have. Most of these wells were drilled  
23 in the late 1980s or early 1990s, so they've been on  
24 production since that time.

25 Again, Mr. Bryant will show you the production

1 history for the offset wells.

2 Q. Okay. And in the new well, do you know which  
3 zones that you are going to complete?

4 A. Our intent is to start in the lowest zones, and  
5 we will perforate and test like we have done in the SCB  
6 23-15, within the Lower Brushy Canyon, and probably put  
7 those together and put that on production initially, and  
8 then at some later date add the Pardue.

9 Q. What's the strategy of doing that, doing it that  
10 way?

11 A. Twofold, to see what the level of depletion is in  
12 individual -- or packages of sandstones within the Lower  
13 Brush Canyon, and also to see which ones are, you know,  
14 giving up the most hydrocarbon.

15 Q. On the -- I didn't quite get all the numbers you  
16 were giving me on the Carrasco well. As far as the  
17 directional drilling, did you give me the top of the --  
18 where the well will enter the Brushy Canyon?

19 A. I gave you the top of what I call the Pardue pay  
20 zone, so that would be the top of -- near the top of the  
21 Pardue "yellow" sandstone.

22 Q. Okay, and could you give me those again?

23 A. Measured depth was 4732 feet, true vertical depth  
24 is 4720 feet.

25 Q. Okay. And did you have a location also at that

1 point?

2 A. Yes, 1400 feet from the north line of the  
3 section, 1117 feet from the east line of the section.

4 Q. Okay. And as far as the bottom -- I'm sorry, the  
5 base of the Brushy Canyon?

6 A. The base of the Brushy Canyon "D", our lowestmost  
7 pay sand, measured depth, 6202 feet; true vertical depth,  
8 6185 feet. That location is 1400 feet from the north line  
9 of the section, 1233 feet from the east line of the  
10 section.

11 Q. Okay, and bottomhole location is 1400 feet from  
12 the north and 1250 feet from the east?

13 A. That's correct.

14 Q. Okay. And the other well, the SCB well, that's a  
15 little bit thinner section there?

16 A. That's correct.

17 Q. Do you see that in the recoveries of the existing  
18 wells? Is it less than the Carrasco wells?

19 A. In general, yes. I think if you refer back to  
20 Exhibit Number 1 for both of these wells, posted by the  
21 wells are the cumulative production. The red numbers are  
22 gas, green are oil, and blue are water.

23 EXAMINER CATANACH: Okay. I think that's all I  
24 have, Mr. Kellahin.

25 MR. KELLAHIN: Thank you. At this time, Mr.



1     Catanach, we would call Mr. Dwayne Bryant.

2                     DWAYNE BRYANT,

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. KELLAHIN:

7             Q.     For the record, sir, would you please state your  
8     name and occupation?

9             A.     Dwayne Bryant. I'm a senior reservoir engineer  
10     with RB Operating in Fort Worth, Texas.

11            Q.     Mr. Bryant, back in November of last year did you  
12     testify as an expert petroleum engineer before Examiner  
13     Jones?

14            A.     Yes, I did.

15            Q.     For purposes of your presentation today, have you  
16     gone through the same type of analysis as you did for  
17     Examiner Jones?

18            A.     Yes, sir.

19            Q.     And pursuant to that effort have you prepared for  
20     Mr. Catanach a series of exhibits and displays?

21            A.     Yes, I have.

22            Q.     Based upon your work product, do you ultimate  
23     conclude as a petroleum engineer that you would recommend  
24     the drilling of these two increased-density wells?

25            A.     I would recommend that, yes, sir.

1           Q.   Let's start, sir, with the Carrasco 14-6 package  
2 of exhibits, which will be case 13,471, and we're starting  
3 with Exhibit Number 10. Let's go through some of the  
4 available data so that we can show Mr. Catanach what you're  
5 concluding. Let's start with Exhibit Number 10. What have  
6 you displayed here?

7           A.   Exhibit 10 is an exhibit summarizing the  
8 production, ultimate recovery, current rates, the year that  
9 these wells came on, and an average GOR for the four wells,  
10 also in the proposed location.

11          Q.   Let's look over at the far right and look at the  
12 current gas and oil rates for these four wells. Do you see  
13 that?

14          A.   Right.

15          Q.   Find the well that will be produced on the same  
16 40-acre spacing unit with the proposed increased-density  
17 well.

18          A.   That would be the Carrasco 14-3, which is making  
19 25 barrels a day.

20          Q.   Your top oil allowable for wells at this depth is  
21 142 barrels a day, something like that?

22          A.   That's correct.

23          Q.   And you're using an 8000-to-1 gas-oil ratio?

24          A.   That's correct.

25          Q.   So if the current rate of the well in the spacing

1 unit is 25 barrels, then there's more than enough  
2 differential in the allowable to justify the drilling of  
3 the infill well?

4 A. That's correct.

5 Q. And the vintage for all this first production is  
6 back in 1990 for these four wells?

7 A. That's right.

8 Q. What was the source of the information you used  
9 to obtain and prepare this display?

10 A. The production information is from public domain,  
11 IHS, and reserve estimates are based from decline-curve  
12 analysis. And we got the current rates from our recent  
13 field well tests.

14 Q. As part of your work, Mr. Bryant, did you prepare  
15 and analyze and calculate various drainage areas associated  
16 with these wells?

17 A. I did, yes.

18 Q. Let's turn to Exhibit 10. Identify what Exhibit  
19 -- I'm sorry, Exhibit 11, what's Exhibit 11?

20 A. Right. Exhibit 11 illustrates the ultimate  
21 recovery calculations for the four offset wells and the  
22 resulting drainage area for each.

23 Q. Is this a conventional engineering calculation by  
24 which you can calculate drainage areas?

25 A. Yes, it is, it's just -- it's a volumetric

1 calculation, backing into the drainage area.

2 Q. Well, let's look over on the spreadsheet, and for  
3 the four wells look at the far-right column. What are you  
4 showing in that column?

5 A. The drainage areas for each and an average of 26  
6 acres for the four wells.

7 Q. Your ultimate conclusion, then, about the  
8 drainage areas in association, then, with the necessity for  
9 the increased-density well is what, sir?

10 A. There's 105 acres estimated to be drained and  
11 another 55 that is undrained at this time, that would  
12 necessitate another well.

13 Q. Let's go through the assumptions that you've made  
14 in calculating your drainage areas. If you'll turn to  
15 Exhibit 12 with me, let's go through some of the major  
16 components of your volumetric analysis.

17 A. Okay. The porosity and water-saturation  
18 determinations were made from log evaluations that Mr.  
19 Emery provided earlier.

20 Initial bottomhole pressure is estimated at 2615  
21 in the Brushy Canyon. This is based on available pressure-  
22 transient analysis data that we had at the time of the  
23 acquisition of this property, about a year ago, and some  
24 recent RFTs that we've taken on some of the recent wells  
25 that we've drilled.

1           The formation volume factor of 1.34 is based on  
2     initial GOR, API gravity and gas gravity, and then from  
3     this we were able to calculate an oil in place of 11.3  
4     million barrels, based on Mr. Emery's reservoir volume  
5     calculation of 22,518 acre-feet.

6           Q.     Where did you get your 11-percent recovery  
7     factor?

8           A.     11-percent recovery factor was obtained using  
9     Parkway field as an analogous field. It's located to the  
10    north of Loving East, and it's a Brushy Canyon waterflood  
11    projected. And it was estimated that the primary recovery  
12    there was about 11 percent, so I decided to use that in the  
13    calculations.

14          Q.     When you get to the bottom line of this work  
15    product, what is your estimate of the volume of oil that's  
16    not going to be produced by the existing wells?

17          A.     414,000 barrels are estimated not recoverable by  
18    the existing wells.

19          Q.     And at 11-percent recovery rate, is that a  
20    sufficient volume of oil to justify the costs for drilling  
21    and resulting in a profit?

22          A.     Yes, sir, it is.

23          Q.     In a generalized way, tell us what is the range  
24    of your expectation for ultimate recovery.

25          A.     The range that we're looking at is 50,000 to

1 70,000 barrels. We feel like here we're probably looking  
2 at more like the 70,000-barrel range. Our well costs are  
3 about \$645,000, and this certainly would be economic at  
4 today's pricing.

5 Q. Let's turn to the next series of displays, Mr.  
6 Bryant, and let's take Mr. Catanach through the production  
7 data and then have you show him how you've estimated  
8 ultimate recovery for each of the four existing wells.  
9 Starting first, sir, with Exhibit Number 13.

10 A. Exhibit 13 is the SCB 14-1. On each of these we  
11 have a display of the monthly production, gas and oil, and  
12 in the far-right column you'll see summarized there the  
13 cumulative oil produced, cumulative gas, remaining oil and  
14 remaining gas and ultimate recoverable reserves.

15 The typical profile of the Brushy Canyon is -- as  
16 you see here, it starts off at a high rate, declines  
17 rapidly. And the GOR begins to increase soon after  
18 production, because this is a solution gas drive reservoir,  
19 and we feel like at initial conditions we're only slightly  
20 above the bubble point. So gas comes out of solution soon  
21 after production begins and our GOR starts to increase.

22 In this particular well, the initial completion  
23 was in the Brushy Canyon "C" interval.

24 Q. Stop for a moment. Let's show Mr. Catanach how  
25 he's going to know that you're tabulating production from a

1 certain portion of the pool. When we look above the lines,  
2 you've got the abbreviations BC and then "C" in parentheses  
3 [sic].

4 A. Right.

5 Q. That's what you're talking about?

6 A. That's what I'm talking about, right. The BC "C"  
7 represents Brushy Canyon "C" production from 1990, for this  
8 well, until 2003, the early part of 2003.

9 It was recompleted to the Pardue, which is  
10 another prolific interval in the Brushy Canyon, as was  
11 indicated in earlier testimony.

12 Q. What happened when the well was completed in the  
13 Pardue?

14 A. The rate increased to over 100 barrels a day. As  
15 you can see there, the solid black squares represent oil  
16 production, and the diamonds are the gas. So we had over  
17 100 barrels a day increase.

18 Q. Was your methodology for determining the ultimate  
19 EUR for the wells based upon production decline analysis?

20 A. It was, that's right.

21 Q. And in doing so, did you account for your  
22 expectations of what all these various zones would do for  
23 each of these wells?

24 A. I did.

25 Q. Do you see any opportunity, as a geologist, that

1 you could meaningfully deplete the four 40-acre spacing  
2 units without drilling the increased-density well?

3 A. No, I don't see any way.

4 Q. Let's turn to the next display, then, and look at  
5 Exhibit 14. What are you showing here?

6 A. Okay, this is the Carrasco 14-2. As you can see,  
7 it was completed in the Lower Brushy Canyon originally,  
8 like the other one, except we just didn't have the "D"  
9 interval in the previous well. And we had the high rate,  
10 over 150 barrels a day, as you can see. And declined  
11 typically, as you would expect the Brushy Canyon.

12 And in 1999 the well was recompleted to the  
13 Brushy Canyon "AA", "A", and "B", the middle part of the  
14 Brushy Canyon intervals. And then in 2002 it was  
15 recompleted again to the Pardue.

16 So in this particular well we have two cast-iron  
17 bridge plugs above those previous zones, so that at a later  
18 date we can go back through them if we so desire.

19 Q. Let me ask you an engineering question. You said  
20 a while ago that this is a solution gas drive reservoir and  
21 that initially the pressures in the pool were slightly  
22 above the bubble point?

23 A. Originally, that's correct.

24 Q. Is this such a reservoir that we can produce it  
25 in such a way that we don't have to conserve gas drive



1 energy from the gas and go ahead and just produce the gas?

2 A. That's right, we can. It's not necessary in this  
3 case to try to preserve the gas drive.

4 Q. So the strategy will be to optimize production of  
5 the oil and gas?

6 A. That's right.

7 Q. And you don't compromise the oil production by  
8 taking the gas?

9 A. No, you don't.

10 Q. Let's look at Exhibit 15. What are you doing  
11 here, in Exhibit 15?

12 A. Exhibit 15 is a continuation of Exhibit 14. I  
13 mentioned, we have two cast-iron bridge plugs above those  
14 intervals, above the "C" and "D" and the "AA", "A", and  
15 "B", and we plan to go back and knock those out -- this  
16 particular one here is scheduled for November of this year  
17 -- and try to regain the production that we had at the time  
18 of the recompletions.

19 Q. What did you do with this information?

20 A. This information, resulting remaining reserves  
21 from knocking out the bridge plugs, is included in our  
22 ultimate recoverable reserve estimates that we used in our  
23 Application.

24 Q. Let's turn now to the other two wells within the  
25 area of study for this infill well. If you'll look at

1 Exhibit 16, what are you looking at here?

2 A. Exhibit 16 is the Carrasco 14-3, which again is a  
3 lower Brushy Canyon completion initially, in 1990, and with  
4 a completion -- recompletion in the Pardue in 2003. And as  
5 you can see, almost 100 barrels a day resulting from that.

6 Q. Okay, let's turn past that display and look at  
7 Exhibit 17. What are we seeing here?

8 A. It's the SCB 7B, which was originally completed  
9 in the "C" and recompleted to the Pardue in 2002, and had a  
10 tremendous increase in the rate at that time. And that's  
11 where we currently are.

12 This well seemed to have substantial remaining  
13 recoverable reserves below the cast-iron bridge plugs,  
14 which prompted the -- no, that's the next exhibit.

15 Q. Okay, let's look at the exhibit following, it's  
16 Exhibit 18.

17 A. Which represents 12,000 barrels remaining  
18 recoverable from the Brushy Canyon "C", based on the --  
19 about six barrels a day of rate at the time we left it.

20 Q. At this point, Mr. Bryant, let's turn to your  
21 analysis of the other project area associated with 13,472,  
22 and starting with Exhibit Number 9 let's look at the  
23 tabulation of production information.

24 A. Exhibit 9 is similar to the previous well-summary  
25 exhibit, displaying when the wells came on and cum

1 production, remaining and ultimate recovery, current rates  
2 and average GOR.

3 Q. For purposes of this project area, we're dealing  
4 with five existing wells?

5 A. That's correct.

6 Q. Of the five, which one is the one associated with  
7 the spacing unit which will contain the increased-density  
8 well?

9 A. It would be the SCB 23-1.

10 Q. The bottom one on the display?

11 A. That's correct, yes.

12 Q. And by your estimate the data shows that it's  
13 producing 28 barrels of oil a day now?

14 A. Yes, sir, that's right.

15 Q. So as for this well there's enough margin between  
16 its allowable and its producing rate to provide an  
17 opportunity to produce hydrocarbons to pay for the infill  
18 well?

19 A. That's correct, yes, sir.

20 Q. Let's turn to Exhibit 10 in this set of documents  
21 for this case and have you identify what you're showing  
22 here.

23 A. Exhibit 10 is once again a summary of the  
24 drainage areas, estimated from our recoverable reserves and  
25 calculated volumetrically.

1           An average drainage area we came up with is about  
2   28 acres in this 160-acre drilling tract. Total drained  
3   area, 140 acres, we estimate.

4           Q.   Based upon your drainage calculations, do you  
5   have a geologic opinion as to whether or not it's necessary  
6   to drill the increased-density well?

7           A.   I feel like it is necessary, yes.

8           Q.   Let's turn to the information that supports your  
9   drainage calculation. If you'll turn to Exhibit 11 in this  
10  case, let's have you identify and describe your conclusions  
11  about this information.

12          A.   Once again, this is an exhibit illustrating the  
13  volumetric analysis of the Delaware intervals underlying  
14  this 160-acre tract pertaining to the proposed well. The  
15  reservoir parameters were determined as previously with log  
16  analysis provided from Mr. Emery. In this case, the  
17  reservoir volume is 12,320 acre-feet, which resulted in an  
18  estimated recoverable of 678,000 barrels, as you can see  
19  about two-thirds of the way down the page there.

20          Q.   Your ultimate recovery of oil for this project  
21  area is about half of what you show in the previous case.

22          A.   That's right, the reservoir volume is quite a bit  
23  less than the previous.

24          Q.   Even with this small reservoir volume, are you  
25  satisfied as an engineer that the increased-density well is

1 justified?

2 A. I am, yes.

3 Q. When you complete the calculation for this  
4 project area, what is the volume of oil that you associate  
5 that's not been recovered?

6 A. Based on the volumetrics, we estimate 70,000  
7 barrels that would be unrecovered, without future drilling.

8 Q. Let's go through the production decline displays  
9 now for the wells associated with this case. Starting with  
10 Exhibit Number 12, identify the well and show us what  
11 you're concluding.

12 A. This is the Donaldson Com AB Number 1, which was  
13 initially completed in the Brushy Canyon "C" and "D"  
14 interval in 1990. The Brushy Canyon "A" zone was added in  
15 December of '04, and the Brushy Canyon "A", "C" and "D"  
16 were all commingled in January of this year. And the  
17 forecast that you see there represents the current  
18 producing rate and forecast, based on the daily rates that  
19 we have available at this time.

20 Q. Okay, Mr. Bryant, let's turn to Exhibit Number  
21 13. Identify and describe that display.

22 A. This is the SCB 23-13, which was one of the few  
23 wells in the field that was drilled in the late 1990s. It  
24 was drilled in 1998, completed in the Brushy Canyon "C" and  
25 "D". In 2001 it was recompleted to the Brushy Canyon "AA",

1 "A", and "B", and you can notice the spike in production  
2 that was achieved at that time as a result of that.

3 This well is currently making 48 MCF a day and  
4 three barrels of oil per day, and it's got the highest GOR  
5 of any of them that we have.

6 Q. Do you see any reason to shut in this well?

7 A. No, sir, sure don't.

8 Q. The strategy would then be able to produce it as  
9 long as it will produce?

10 A. Right, that's correct.

11 Q. Let's turn to the next display, Exhibit 14.

12 A. Exhibit 14 is the SCB 23-4, which was completed  
13 initially in the Brushy Canyon "D" and recompleted to the  
14 Brushy Canyon "B" at the end of 2004.

15 Q. All right, sir, and now Exhibit 15?

16 A. Is the SCB 23-2, which was completed initially in  
17 the "C" and "D" and recompleted in the "AA" and "A" at the  
18 end of 2004 also.

19 Q. And now Exhibit 16?

20 A. Exhibit 16 is the SCB 23-1, which is the same  
21 well that will be in the same proration as the proposed  
22 location, and it was completed initially in the "D". In  
23 2004 it was recompleted to the "AA", "A", and "B", as noted  
24 there with a spike production in that time period.

25 Q. And then finally Exhibit 17?

1           A.   Exhibit 17 is the rest of, actually, the previous  
2           exhibit. This forecast reflects the "B", "C", "D" reserves  
3           that's below a cast-iron bridge plug at this time. This  
4           well was abandoned at around 10 barrels a day, and we fully  
5           expect to get that at some point in time.

6           Q.   Summarize then for us, Mr. Bryant, what -- your  
7           engineering conclusions concerning both of these increased-  
8           density wells.

9           A.   We feel like that these wells are needed to  
10          capture reserves that would not be ordinarily recovered by  
11          the existing offset wells, that we would have unique  
12          reserves here. By adding another well, a fifth well in one  
13          application and a sixth well the other, you know, we'll be  
14          effectively bringing the reservoir pressure down lower than  
15          we would with the existing wells, which would result --  
16          which should result in some unique reserves recovery.

17          Q.   It's your conclusion that this is not simply rate  
18          acceleration?

19          A.   No.

20          Q.   This is a need for an additional well to capture  
21          additional reserves that you would not otherwise produce?

22          A.   It is.

23               MR. KELLAHIN: Mr. Examiner, that concludes my  
24          examination of Mr. Bryant.

25               We move the introduction of his exhibits in Case

1 13,471, of Exhibit 10 through 17, and in the next case it's  
2 Exhibit 9 through 17, which is Case 13,472.

3 EXAMINER CATANACH: Exhibits number 10 through 17  
4 in Case 13,471 and Exhibits 9 through 17 in Case 13,472 are  
5 admitted.

6 Just a couple of questions.

7 EXAMINATION

8 BY EXAMINER CATANACH:

9 Q. Mr. Bryant, in the existing nine wells that are  
10 out there, do you anticipate any additional completions in  
11 those wellbores?

12 A. We do. In the Carrasco 160-acre tract there's  
13 some "AA", "A", and "B" that we will probably test at some  
14 point in time. In that area, the "AA", "A", and "B" is not  
15 as good as the Pardue uphole and the lower zones, the "C"  
16 and the "D". I had one exhibit that demonstrated that one  
17 of the four wells was completed -- recompleted to the "AA",  
18 "A", and "B", and it didn't really contribute a whole lot  
19 to the production. But we will definitely test those zones  
20 and -- but we don't expect a lot from those in that exhibit  
21 regarding the Carrasco area.

22 The other, I think there are a few remaining in  
23 the 23-17 160-acre tract that would be tested, but very  
24 little.

25 Q. Okay, and that's not going to drastically affect



1 your numbers as far as drilling another well?

2 A. No. No, sir, it will not. We've taken into  
3 account the reserves below the cast-iron bridge plugs and  
4 any potential completions.

5 Q. You have taken that into effect -- into account?

6 A. Right, right, I mean, this -- that's right.

7 Q. Okay. Estimated recovery on the SCB well, do you  
8 have some number on that?

9 A. On the SCB 23-15? The one from the previous  
10 application?

11 Q. No, the one that you're -- the 17 --

12 A. Oh, the 17.

13 Q. -- that you're going to drill.

14 A. Oh, the 23-17.

15 Q. Yeah.

16 A. We're estimating 50,000 barrels ultimate  
17 recovery.

18 Q. And the other well, you estimate 50 to 70 --

19 A. About 70,000 barrels on the Carrasco 14-6.

20 Q. Okay. And RB is going to drill and operate these  
21 wells, right?

22 A. Yes, sir.

23 Q. Who drilled these wells originally, do you know?

24 MR. EBEIER: Ram.

25 THE WITNESS: RB, was it?

1 MR. EBEIER: I think Ram.

2 THE WITNESS: Ram.

3 EXAMINER CATANACH: Okay. Mr. Kellahin, I think  
4 that's all I have.

5 MR. KELLAHIN: All right, sir, thank you. That  
6 concludes our presentation.

7 EXAMINER CATANACH: Okay, there being nothing  
8 further in these cases, Case 13,471 and 13,472 will be  
9 taken under advisement.

10 MR. KELLAHIN: Will you give us about five  
11 minutes, Mr. Examiner, and we can get organized?

12 EXAMINER CATANACH: I'll give you 15.

13 MR. KELLAHIN: All right, sir.

14 (Thereupon, these proceedings were concluded at  
15 9:50 a.m.)

16 \* \* \*

17  
18 I do hereby certify that the foregoing is  
19 a complete record of the proceedings in  
20 the Examiner hearing of Case No. 13471, 13472  
21 heard by me on April 21, 2005.

22 David R. Catnach, Examiner  
23 of Connecticut  
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 April 23rd, 2005.



STEVEN T. BRENNER  
CCR No. 7

My commission expires: October 16th, 2006