

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. 12,045

APPLICATION OF BURLINGTON RESOURCES )  
OIL AND GAS COMPANY FOR AN UNORTHODOX )  
GAS WELL LOCATION, RIO ARRIBA COUNTY, )  
NEW MEXICO )

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MARK W. ASHLEY, Hearing Examiner

September 17th, 1998

Santa Fe, New Mexico

OIL CONSERVATION DIV.  
98 OCT -5 AM 9:27

This matter came on for hearing before the New Mexico Oil Conservation Division, MARK W. ASHLEY, Hearing Examiner, on Thursday, September 17th, 1998, 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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Examiner Hearing  
CASE NO. 12,045

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

## FOR THE DIVISION:

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 Attorney at Law  
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 Santa Fe, New Mexico 87505

## FOR THE APPLICANT:

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

## ALSO PRESENT:

DAVID R. CATANACH  
 NMOCD Hearing Examiner  
 2040 South Pacheco  
 Santa Fe, New Mexico 87505

\* \* \*

1           WHEREUPON, the following proceedings were had at  
2   2:30 p.m.:

3

4           EXAMINER ASHLEY: Now we'll call Case 12,045.

5           MR. CARROLL: Application of Burlington Resources  
6 Oil and Gas Company for an unorthodox gas well location,  
7 Rio Arriba County, New Mexico.

8           EXAMINER ASHLEY: Call for appearances.

9           MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of  
10 the Santa Fe law firm of Kellahin and Kellahin, appearing  
11 on behalf of the Applicant.

12           Two of the witnesses in the last case have  
13 already been sworn. I'd like the record to reflect that  
14 they continue under oath before you this afternoon.

15           I have a third witness that didn't testify in the  
16 prior case and needs to be sworn in, if you would swear Mr.  
17 Edwards in for me, please.

18           EXAMINER ASHLEY: Okay.

19           (Thereupon, the witness was sworn.)

20           EXAMINER ASHLEY: The Division also recognizes  
21 the two witnesses from the prior case to be sworn in and  
22 qualified.

23           MR. KELLAHIN: Thank you. They would be David  
24 Clark and Mr. Alan Alexander, are the other two witnesses.

25           EXAMINER ASHLEY: Okay, thank you.

1                                    ALAN ALEXANDER,

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

4                                    DIRECT EXAMINATION

5       BY MR. KELLAHIN:

6                Q.     Mr. Alexander, for the record, let's shift gears  
7       into the San Juan 27-5 Unit Well, 85-E. Have you prepared  
8       the exhibit book in this case?

9                A.     Yes, sir, I did.

10              Q.     I've asked you to examiner the issue of  
11       correlative rights that are involved in the 85-E well, in  
12       terms of whether or not there is any opportunity for  
13       correlative-rights violations by placing this well at the  
14       proposed unorthodox location. Have you been able to do  
15       that?

16              A.     Yes, sir, I have.

17              Q.     And based upon your study, do you have an opinion  
18       about the appropriateness of this well location in terms of  
19       correlative rights?

20              A.     Yes, I do. I don't believe that we are dealing  
21       with a correlative rights situation here. The situation is  
22       much the same as the prior case that we discussed for the  
23       Allison Federal Unit.

24              Q.     To orient the Examiner as to the circumstances of  
25       this case, let's turn to Exhibit Tab 1. Turn to the very

1 last page of the Application, and focus on the locator map.  
2 The proposed location is spotted on this display, is it  
3 not?

4 A. It is.

5 Q. In what way is this unorthodox?

6 A. It's unorthodox -- It's at a standard location  
7 from the north line, it's 795 feet from the north line.  
8 But the location of 2435 feet from the west line encroaches  
9 upon the eastern border of the spacing unit, which consists  
10 of the west half of Section 5, Township 27 North, Range 5  
11 West.

12 Q. Is the entirety of Section 5 within the  
13 boundaries of the San Juan 27 and 5 unit?

14 A. It is.

15 Q. The encroachment, then, by this wellbore in this  
16 spacing unit, encroaches upon common ownership?

17 A. It does.

18 Q. Let's turn to Exhibit 4 and look at the specifics  
19 of that opinion. Again, the color-coding for the wells and  
20 how they're identified is the same methodology as in the  
21 prior case?

22 A. It is, the only difference being in this case  
23 that I've drawn on there the Number 85-E well in the same  
24 symbol and color as the existing wells. However, I have  
25 noted it as a proposed well, it has not been drilled to

1 date.

2 Q. When we look at Section 5, let's take a moment  
3 and figure out the color code. Within the west half of 5,  
4 which is the proposed spacing unit, are there existing  
5 Mesaverde wells?

6 A. Yes, there are. The Number 53 well is located  
7 down in the southwest quarter of Section 5, and the Number  
8 53-A well is located in the northwest quarter of Section 5.

9 Q. And where are the Dakota wells?

10 A. The Dakota wells, you will see the Number 85  
11 well, again located down in the southwest quarter of  
12 Section 5.

13 Q. Okay. When we turn past this display, what are  
14 we seeing with the next display?

15 A. The next display is simply a land plat showing  
16 the entirety of the San Juan 27 and 5 unit and all of the  
17 current development to date. We have noted the location of  
18 the proposed well as a red circle up in Section 5 on the  
19 northern part of the plat.

20 Q. The third display behind this tab, would you  
21 identify and describe that?

22 A. Yes, sir. This display is again the unit  
23 outline. However, here we are showing in a hatched green  
24 pattern the Mesaverde participating area for the 27 and 5  
25 unit. And you will note that the proposed location is

1 included in that participating area.

2 Q. And then finally the last display behind this  
3 tab?

4 A. This display is the same land plat. Here we are  
5 indicating in a red hatch mark the Dakota participating  
6 area, and the proposed location would be within the Dakota  
7 participating area for the 27 and 5 unit.

8 Q. Let's go back to the chronology. Behind Exhibit  
9 Tab Number 2 is Burlington's original administrative  
10 application, on top of which is Mr. Stogner's letter  
11 denying the administrative application and asking for --  
12 because of information that he had not received?

13 A. That's correct.

14 Q. One of the issues I'd like you to cover is Mr.  
15 Stogner's concern that the well location for the Dakota  
16 Pool in this well had been approved at a different position  
17 in the spacing unit.

18 A. Yes, sir.

19 Q. If you'll look at his cover letter of July 23rd,  
20 he first of all talks about the spacing unit. And then in  
21 numbered paragraph 2 he says, In February of 1998  
22 Burlington submitted to the BLM an APD for the 85-3 [sic]  
23 well to be drilled at a standard location.

24 Show us on one of your locator maps what it is  
25 that he's talking about.



1           If you go to the tab, I guess Exhibit 4 in the  
2 first display, could we use that?

3           A.    Yes, sir. We have some other displays in which  
4 you can see, and later on in the geologic presentation,  
5 that also show the original staked location.

6           But on the land plat behind Exhibit Number 4, the  
7 original staking of that Dakota well was fairly close to  
8 the existing Number 53-A well, the black circle with the  
9 gas symbol in it. That's where we originally had the well  
10 staked.

11          Q.    Mr. Stogner asked -- denied the application  
12 originally, because there was not an explanation provided  
13 as to why you have an approved Dakota location and yet  
14 sought to get the 85-E approved by this agency at a  
15 different position?

16          A.    That's correct.

17          Q.    Explain all that to me.

18          A.    That was actually our fault. Mr. Stogner was  
19 probably right in his analysis. What happened was that we  
20 have two separate teams that work the Dakota and the  
21 Mesaverde formation. Two wells were planned in this  
22 section, one a Dakota well, and one subsequent to that was  
23 going to be a Mesaverde well.

24               Well, we didn't coordinate very well inside  
25 Burlington, and the Dakota team got ahead of the Mesaverde

1 team and selected their location and then had it staked.  
2 And then shortly after that, when the Mesaverde people had  
3 finished their evaluation and we wanted to develop the  
4 remaining Mesaverde reserves, we discovered that we were  
5 dealing in the same area.

6 So it made better sense to try to use one  
7 wellbore to develop both the Dakota and the Mesaverde. And  
8 we could not do that at the staked Dakota location because,  
9 as you can see, it's already in an area where we have a  
10 developed Mesaverde well.

11 So that was actually our fault for not  
12 coordinating better before we staked this well in there.  
13 Had we coordinated better and delayed that staking, we  
14 would have staked this well at the location that we're  
15 presenting for you today.

16 Q. The plan for the 45-E well as it's currently  
17 proposed to be located at this location is to access both  
18 reservoirs?

19 A. Yes, sir, the 85-E well.

20 Q. Yes, sir.

21 A. It is located to access both of the reservoirs in  
22 a common wellbore.

23 Q. Okay. Have you applied for and received downhole  
24 commingling approval for this well?

25 A. We have applied for it, I believe -- Peggy

1 Bradfield handles the administrative applications for  
2 downhole commingling, and I did not check that before I  
3 came. However, if you're interested, I can check the  
4 status of that application for you. But it is intended to  
5 be commingled.

6 I believe our plans would be to drill and  
7 complete the well in the Dakota first to get some  
8 production and pressure information off of that, and then a  
9 little bit -- a little ways down the road, then, we would  
10 add the Mesaverde to the wellbore.

11 MR. KELLAHIN: That concludes my examination of  
12 Mr. Alexander.

13 EXAMINER ASHLEY: No further questions, thank  
14 you.

15 THE WITNESS: Yes, sir.

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

19 DIRECT EXAMINATION

20 BY MR. KELLAHIN:

21 Q. Okay. Mr. Edwards, would you please state your  
22 name and occupation?

23 A. My name is Neal Edwards. I'm a licensed land  
24 surveyor. I have an office in Farmington, New Mexico.

25 Q. Are you employed on a regular basis by Burlington

1 Resources to assist them in staking their various wells in  
2 the San Juan Basin?

3 A. Yes, I am.

4 Q. Were you asked to, and did it become your  
5 responsibility to find a well location for the 85-E well?

6 A. Yes, it was.

7 Q. Are you knowledgeable about the surface  
8 conditions within that spacing unit?

9 A. Yes, I am.

10 Q. In fact, you've walked it on a number of times,  
11 and it was your responsibility to try to find a standard  
12 location for this wellbore, was it not?

13 A. Yes, it was.

14 MR. KELLAHIN: Mr. Examiner, we tender Mr.  
15 Edwards as an expert professional land surveyor.

16 EXAMINER ASHLEY: Mr. Edwards is so qualified.

17 Q. (By Mr. Kellahin) Let me ask you, sir, to turn  
18 to the end of the exhibit book. Let's look at Exhibit 9.  
19 When we look at Exhibit 9 are we looking at an accurate  
20 topographic map that demonstrates the depiction of the  
21 surface through this process?

22 A. Yes, we are.

23 Q. Finding Section 5 and looking at the northwest  
24 quarter of 5, were you asked by Burlington to find them a  
25 well location in that quarter section for the 85 well that

1 would be at a standard location?

2 A. Yes, I was.

3 Q. Were you able to do that?

4 A. Yes, in my first attempt to do so up there in the  
5 northwest corner where you see where it says "benchmark",  
6 just to the right of it is a little circle --

7 Q. Yes.

8 A. -- that's a existing wellbore there. And due to  
9 the terrain and archaeology in the area, the only place we  
10 could find was to get on that pad directly next to that  
11 well. We're 75 feet from it. And they'd allow us to  
12 utilize that pad that was there to drill on.

13 Q. All right. If that was not the location  
14 acceptable to Burlington, was there any other location in  
15 the northwest quarter of 5 in which to place this well?

16 A. No, sir.

17 Q. What was available to you at standard locations?  
18 Is that what's represented by the two boxes?

19 A. Yes. In the standard windows, we were -- we  
20 walked that entire northwest quarter, and due to  
21 archaeology, more than the terrain, the terrain in the  
22 north half, those symbols there, there's a power line runs  
23 through there along with the pipeline that go right through  
24 the center of those windows, but the archaeology was our  
25 biggest detriment to get in there.

1 Q. How were you aware of the archaeological  
2 limitations of siting a well in this spacing unit?

3 A. Well, from working them before, but I actually  
4 had an archaeologist with me as we were searching for this  
5 location.

6 Q. So you're trying to satisfy the BLM restrictions  
7 on surface use that are applicable in the northwest  
8 quarter. We're on federal property here, are we not?

9 A. Yes.

10 Q. And so you're knowledgeable about their  
11 limitations of surface use for topographic and  
12 archaeological reasons?

13 A. Yes, I am.

14 Q. And you had an archaeologist with you?

15 A. Yes, I did.

16 Q. All right. And were you able to find a standard  
17 location that met all those conditions?

18 A. No, I wasn't.

19 Q. What is the significance of the black arrow?  
20 What does that tell us?

21 A. That shows us where this location is presently  
22 staked --

23 Q. And how --

24 A. -- at the end of that arrow, that little black  
25 dot.

1           Q.    And how did you come to stake it at that  
2 position?

3           A.    In order to satisfy the archaeological concern  
4 and stay in the northwest quarter, they would not let us --  
5 there was no position south of those power lines that  
6 they'd let us in.

7                   This area, they put out a -- They have a book  
8 they put out in January, 1998, also.  It's called A  
9 *Cultural Resource Area as a Critical Environmental Concern*.  
10 And in that book, this Santos Peak area down to the  
11 southwest is listed in their critical environmental concern  
12 areas, and so we did -- In fact, we spent three days  
13 working on that location.  And since it's already a  
14 critical area they've really kept us out of it.  And we did  
15 try to get in it, and that's the closest they'd let us get.

16               MR. KELLAHIN:  That concludes my examination of  
17 Mr. Edwards.

18                               EXAMINATION

19           BY EXAMINER ASHLEY:

20           Q.    Now, you stated the main reason was  
21 archaeological reasons.  What were some of the others  
22 again?  Topographic and --

23           A.    Yes, topography over there -- There's a few draws  
24 in there, but it's nothing that probably couldn't be  
25 worked, other than in the northerly part, in the window up

1 there, the topography along with the existing, that's more  
2 the development in there with the pipeline and the power  
3 lines running right through the middle of it.

4 EXAMINER ASHLEY: No further questions. Thank  
5 you.

6 MR. KELLAHIN: Call at this time Mr. David Clark.  
7 Mr. Clark is Burlington's geologist that's responsible for  
8 determining the location of this well.

9 DAVID CLARK,  
10 the witness herein, having been previously duly sworn upon  
11 his oath, was examined and testified as follows:

12 DIRECT EXAMINATION

13 BY MR. KELLAHIN:

14 Q. Mr. Clark, let me ask you to look first of all at  
15 the situation concerning the Mesaverde. We'll start with  
16 Exhibit 5. When we look at the first display behind  
17 Exhibit 5, what are we seeing here?

18 A. This is a map of -- contoured map of the  
19 cumulative production out of the Mesaverde. It shows that  
20 we were within the confines of the Blanco-Mesaverde Pool.  
21 The spacing outline in the west half of Section 5 is  
22 outlined in red. The original approved Basin-Dakota test  
23 location is the red triangle without being colored in  
24 solid, and our proposed location is the solid red triangle.

25 The hot colors, the reds and yellows, are the



1 wells that have had higher cumulative production, grading  
2 down through green into purple and light purple.

3 Q. When you're attempting to put a Mesaverde well in  
4 the northwest quarter of 5, are you adversely affected by  
5 having the surface limitation cause you to be at the  
6 proposed unorthodox location, rather than being at the  
7 closest standard location?

8 A. No. Probably proceed to --

9 Q. Let's turn to the next display.

10 A. -- to the next map.

11 Q. If you turn to the next display, we're looking at  
12 the Mesaverde elliptical drainage patterns that have been  
13 placed here based upon data for this area?

14 A. Yes, that's correct.

15 Q. And what does it tell you about putting the 85-E  
16 at the proposed unorthodox location?

17 A. Again, the drainage ellipses are based upon  
18 original gas in place values determined for the whole  
19 Mesaverde Pool, as well as EURs projected for all the  
20 Mesaverde producers in the pool. They're elliptical in  
21 shape, reflecting that the controlling factor on  
22 productivity in the Mesaverde is density of natural  
23 fractures based on core data, and interference testing  
24 showing variations in permeability, in directional  
25 permeability. The long axis of these ellipses parallels

1 the fracture direction. They're elliptical in  
2 approximately a three-to-one ratio.

3 In the west half of 18, our analysis indicates  
4 that there are undrained reserves, and that would be the  
5 area outside the elliptical -- the drainage ellipses. And  
6 the 85-E would recover those reserves remaining.

7 Q. In an attempt to access the remaining recoverable  
8 reserves in the Mesaverde, is -- Have you compromised your  
9 position in the reservoir by being required to drill at  
10 this unorthodox location?

11 A. No, we have not.

12 Q. In terms of the potential in this immediate area,  
13 can you drill a stand-alone Mesaverde well under current  
14 parameters and current economics?

15 A. No, we cannot at this time. An economic analysis  
16 for a stand-alone Mesaverde test, we project reserves of  
17 780 million for the Mesaverde at this location. And based  
18 upon our well costs, that reserve recovery would -- for  
19 that cost, would not meet our economic hurdle rate at this  
20 time. Management would not approve such a well.

21 Q. So when you're thinking of a Mesaverde location,  
22 you also have to be aware of packaging this with the Dakota  
23 formation?

24 A. That's correct.

25 Q. Have you examined this location in terms of the

1 potential in the Dakota?

2 A. Yes, I have.

3 Q. Let's turn to Exhibit Tab 7 and look at that  
4 examination. First of all, we see a Dakota cum map again?

5 A. Yes. Again, this is included for general  
6 reference to indicate the cumulative production from Dakota  
7 wells. Just Dakota producers are plotted on here. Again,  
8 the open triangle is the -- was the original proposed  
9 Dakota location, and the Mesaverde Dakota proposed location  
10 now is the solid red triangle.

11 Q. Let's see what the impact of that location is  
12 when you look at the specific maps you've prepared,  
13 starting with the lower Cubero, if you'll turn to that  
14 display and show us what you've concluded.

15 A. Okay. There's a type log -- can I talk --  
16 well --

17 Q. Yeah, it's the same type log as we used in the  
18 last --

19 A. It's a different type log. It's a well in the  
20 27-5 unit, the 59-M, which is located in Section 6. That's  
21 included to show the nomenclature that I've used, but the  
22 terminology is similar. The type log starts at the  
23 Greenhorn interval at approximately 75 -- oh, 7515 to  
24 -20, -25. The Dakota top is approximately 7610. The upper  
25 of the two sands that I've mapped is the -- our

1 nomenclature uses upper Cubero for that, and that's located  
2 at approximately 7643. The lower Cubero is approximately  
3 7680, and those are the two -- those two intervals are what  
4 I've mapped back in Exhibit 8.

5 Q. All right, let's go back to Exhibit 8 and look at  
6 the lower Cubero map.

7 A. I apologize, that would be Exhibit 7.

8 Q. I'm sorry, it is 7. All right, Exhibit 7 is the  
9 lower Cubero map. Is there a material difference between  
10 the standard and the unorthodox versus the formally  
11 approved location?

12 A. No, there is not.

13 Q. So if the surface use limits you to an eastern  
14 position in the northwest quarter, this is an acceptable  
15 Dakota position in this member of the Dakota?

16 A. Yes, it is. The lower Cubero has a thick sand  
17 trend that extends down from the northwest through the  
18 spacing unit. I would anticipate approximately 60 to 65  
19 feet of sand, and the original location is not any more  
20 favorable than the proposed unorthodox location.

21 Q. All right. Let's turn to the next display and  
22 have you give us your opinions concerning the upper Cubero.

23 A. This is an isopach, again. Both isopachs, I've  
24 mapped the number of feet of that particular interval with  
25 gamma ray less than 60. This is contoured on a two-foot

1 interval, so in reality there's not a whole lot of  
2 thickness variation. Thicker values are the orange,  
3 grading down into thinner blue -- green through blue.

4 The four surrounding wells each have  
5 approximately 25 feet of upper Cubero. The two locations,  
6 the original approved Basin-Dakota location and our new  
7 proposed location, are geologically comparable on this  
8 upper Cubero sand.

9 Q. And then finally, let's look at the structural  
10 significance, if any, if you'll turn to the last display.

11 A. This is a map of structure on the upper Cubero  
12 sand. It shows a gentle nose dipping northeast into the  
13 Basin.

14 I don't feel that structure plays any control in  
15 the productivity of the Dakota, but this structure map is  
16 included to indicate that really again there's no  
17 significant difference structurally between our proposed  
18 unorthodox location and the original approved APD.

19 MR. KELLAHIN: Okay. That concludes my  
20 examination of Mr. Clark, Mr. Examiner.

21 At this time we move the introduction of  
22 Burlington's exhibit book, which contains Exhibits 1  
23 through 9.

24 EXAMINER ASHLEY: Okay, Exhibits 1 through 9 will  
25 be admitted into evidence.

1 I don't have any further questions. Thank you  
2 very much.

3 MR. KELLAHIN: That concludes our presentation in  
4 this case.

5 EXAMINER ASHLEY: Okay, Case 12,045 will be taken  
6 under advisement, and this concludes today's hearing.

7 MR. KELLAHIN: Okay, thank you very much.

8 (Thereupon, these proceedings were concluded at  
9 3:00 p.m.)

10 \* \* \*

11  
12  
13 I do hereby certify that the foregoing is  
14 a complete record of the proceedings in  
15 the Examiner hearing of Case No. 12045,  
16 heard by me on Sept 17 1998.  
17 Mark Ashley, Examiner  
18 Oil Conservation Division  
19  
20  
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24  
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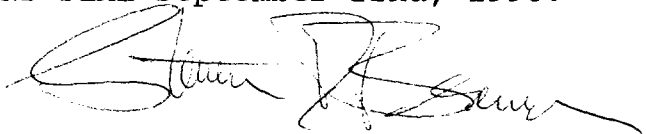
## CERTIFICATE OF REPORTER

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 September 22nd, 1998.



STEVEN T. BRENNER  
CCR No. 7

My commission expires: October 14, 1998