

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 NOS. 13,667
)	13,668
APPLICATIONS OF BURLINGTON RESOURCES OIL )	13,669
& GAS COMPANY, LP, FOR EXCEPTIONS TO THE )	13,670
WELL DENSITY REQUIREMENTS OF THE BLANCO- )	13,671
MESAVERDE GAS POOL AND THE BASIN-DAKOTA )	13,672
GAS POOL, RIO ARRIBA AND SAN JUAN )	13,673
COUNTIES, NEW MEXICO )	13,674
)	(Consolidated)

2006 MAR 30 AM 9 32

WVJ 3/30/06

REPORTER'S TRANSCRIPT OF PROCEEDINGS  
EXAMINER HEARING

BEFORE: WILLIAM V. JONES, JR., Hearing Examiner

March 16th, 2006  
Santa Fe, New Mexico

ORIGINAL

These matters came on for hearing before the New Mexico Oil Conservation Division, WILLIAM V. JONES, JR., Hearing Examiner, on Thursday, March 16th, 2006, 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.

\* \* \*

## I N D E X

March 16th, 2006  
 Examiner Hearing  
 CASE NOS. 13,667, 13,668, 13,669, 13,670,  
 13,671, 13,672, 13,673 and 13,674 (Consolidated)

	PAGE
EXHIBITS	3
APPEARANCES	6
OPENING STATEMENT BY MR. KELLAHIN	7
APPLICANT'S WITNESSES:	
<u>ALAN ALEXANDER</u> (Landman)	
Direct Examination by Mr. Kellahin	10
Examination by Examiner Jones	39
<u>LAFELL THOMAS LOVELAND</u> (Reservoir Engineer)	
Direct Examination by Mr. Kellahin	45
Examination by Examiner Jones	82
REPORTER'S CERTIFICATE	88

\* \* \*

## E X H I B I T S

Applicant's	Identified	Admitted
"Introduction"	12, 22, 24	39
Case No. 13,670		
Exhibit 1	26	39
Exhibit 2	27	39
Exhibit 3	47	82
Exhibit 4	49	82
Exhibit 5	50	82
Exhibit 6	(does not exist)	
Exhibit 7	(does not exist)	
Case No. 13,669		
Exhibit 1	29	39
Exhibit 2	29	39
Exhibit 3	52	82
Exhibit 4	52	82
Exhibit 5	53	82
Exhibit 6	(does not exist)	
Exhibit 7	(does not exist)	
Case No. 13,668		
Exhibit 1	30	39
Exhibit 2	30	39
Exhibit 3	53	82
Exhibit 4	54	82
Exhibit 5	54	82
Exhibit 6	(does not exist)	
Exhibit 7	(does not exist)	

(Continued...)

## E X H I B I T S (Continued)

Applicant's	Identified	Admitted
-------------	------------	----------

## Case No. 13,671

Exhibit 1	31	39
Exhibit 2	31	39
Exhibit 3	55	82
Exhibit 4	55	82
Exhibit 5	55	82
Exhibit 6	(does not exist)	
Exhibit 7	(does not exist)	

## Case No. 13,673

Exhibit 1	32	39
Exhibit 2	32	39
Exhibit 3	56	82
Exhibit 4	60	82
Exhibit 5	60	82
Exhibit 6	61	82
Exhibit 7	(does not exist)	

## Case No. 13,667

Exhibit 1	33	39
Exhibit 2	33	39
Exhibit 3	64	82
Exhibit 4	65	82
Exhibit 5	66	82
Exhibit 6	66	82
Exhibit 7	70	82

(Continued...)

## E X H I B I T S (Continued)

Applicant's	Identified	Admitted
Case No. 13,674		
Exhibit 1	35	39
Exhibit 2	35	39
Exhibit 3	70	82
Exhibit 4	71	82
Exhibit 5	72	82
Exhibit 6	73	82
Exhibit 7	-	82
Case No. 13,672		
Exhibit 1	37	39
Exhibit 2	37	39
Exhibit 3	74	82
Exhibit 4	75	82
Exhibit 5	(does not exist)	
Exhibit 6	76	82
Exhibit 7	(does not exist)	
"Conclusions"	18, 57	39

\* \* \*

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 9:45 a.m.:

3           EXAMINER JONES: Okay, let's go back on the  
4 record. And the next cases on the docket would be the  
5 Burlington cases, and we want to consolidate all those  
6 cases?

7           MR. KELLAHIN: Yes, Mr. Examiner.

8           EXAMINER JONES: Okay, let's consolidate Case  
9 Number 13,667, which is the Application of Burlington  
10 Resources Oil and Gas Company, LP, for an exception to the  
11 well density requirements of the Blanco-Mesaverde Gas Pool,  
12 Rio Arriba County, New Mexico; and Case Number 13,668, with  
13 the exact same title; and Case 13,669, with the exact same  
14 title; Case 13,670, same title; Case 13,671, same title;  
15 Case 13,672; Case 13,673 and Case 13,674.

16           Call for appearances.

17           MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of  
18 the Santa Fe law firm of Kellahin and Kellahin, appearing  
19 this morning on behalf of Burlington Resources, and I have  
20 two witnesses to be sworn.

21           EXAMINER JONES: Any other appearances? Will the  
22 witnesses please stand to be sworn?

23           (Thereupon, the witnesses were sworn.)

24           MR. KELLAHIN: Mr. Jones, let me call Mr.  
25 Alexander to the stand, and while he's taking his position

1 at the witness table let me give you a brief introduction  
2 as to what we're presenting to you this morning.

3 In the last year, Burlington has gone through a  
4 process of examining their Mesaverde wells for regulatory  
5 compliance and in doing so has discovered that out of more  
6 than 1000 completions they have ended up mistakenly with  
7 eight spacing units, GPUs, that inadvertently they put two  
8 gas wells on the same 40 acres. And that is a  
9 noncompliance with the Blanco-Mesaverde Gas Pool rules,  
10 which have a well density, as you know, of four wells to a  
11 half section, two wells to a quarter section, but no two  
12 wells are going to be on the same 40-acre tract.

13 In doing the research and in finding this  
14 noncompliance issue, Burlington is self-reporting the  
15 mistakes. They had not been cited by the District Office  
16 nor by the Division here in Santa Fe.

17 My first witness is going to be Alan Alexander.  
18 Mr. Alexander is known to you. I asked him a while ago how  
19 many years, and he said he's got 34 years of experience.  
20 And as you know, not only is it in the land issue but in  
21 Farmington area in general, and he has sat on numerous  
22 regulatory committees before the NMOGA association and  
23 before this Division. He participated with me in the  
24 industry's participation for these rules. He's got  
25 extensive experience in this area with these rules and is a

1 -- I hope a recognized expert in this area, and he's our  
2 first witness this morning.

3 To supplement his presentation, we want to  
4 present you a reservoir engineer. Mr. Tom Loveland is a  
5 reservoir engineer with Burlington residing in Farmington,  
6 and we've asked him to do some science. And he's here to  
7 present you the production information with regards to  
8 these GPUs, the detailed information that you would want as  
9 an engineer concerning what these wells do.

10 In addition, he has developed a modeling analysis  
11 of the performance of these wells under certain  
12 assumptions, which he'll share with you. In effect, we're  
13 going to spend some time talking about no-flow boundaries,  
14 and we're keying off a case you heard some time ago and an  
15 order you entered for BP America in which they had a  
16 horizontal wellbore and a vertical wellbore that ended up  
17 in the same 40-acre tract. So that was our benchmark,  
18 where we started. And Mr. Loveland, then, has taken that  
19 and applied some science to those concepts and is here to  
20 demonstrate those for you.

21 The book is organized when you see it in such a  
22 way that we have an introductory section to it with some  
23 locator maps, and then it's subdivided into eight  
24 individual packages, each referring to a specific case.  
25 We've organized them not in numerical order to a case

1 number but in the order of difficulty. You can see the  
2 first ones that are easier, and when we get to the last  
3 one, it has the more complicated issues. And then we're  
4 here to answer any questions that you may have, Mr.  
5 Examiner.

6 And with that introduction, we're ready to  
7 proceed.

8 EXAMINER JONES: Okay.

9 ALAN ALEXANDER,

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

12 DIRECT EXAMINATION

13 BY MR. KELLAHIN:

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

16 A. My name is Alan Alexander. I'm currently  
17 employed as a senior land advisor for Burlington Resources  
18 in the Farmington, New Mexico, office.

19 Q. On prior occasions have you qualified as an  
20 expert petroleum landman before the Division?

21 A. Yes, I have.

22 Q. In addition, do you have years of experience  
23 before the Division and the New Mexico Oil and Gas  
24 Association with participating in committees on rule  
25 amendments and research projects with regards to new rules?

1 A. Yes, I have.

2 Q. Were you involved with those efforts to develop  
3 and implement the current Blanco-Mesaverde Pool rules?

4 A. Yes, insofar as the increase in density, both the  
5 Blanco-Mesaverde and the Basin-Dakota.

6 Q. On behalf of your company, can you provide the  
7 Examiner with an explanation as to how these mistakes in  
8 well density occurred?

9 A. Yes, I can.

10 Q. And have you been responsible for assimilating  
11 the ownership information for the GPUs, as well as  
12 identifying the offset operators and interest owners?

13 A. Yes.

14 Q. And finally, were you responsible for ensuring  
15 that the notifications were sent to the appropriate parties  
16 that were involved or might be impacted by the granting of  
17 approval of these Applications?

18 A. That's correct.

19 MR. KELLAHIN: We tender Mr. Alexander as an  
20 expert petroleum engineer -- or petroleum landman.

21 EXAMINER JONES: Landman.

22 MR. KELLAHIN: Probably knows a lot about  
23 engineering too.

24 EXAMINER JONES: Probably. Mr. Alexander, when  
25 did you start in the San Juan Basin?

1 THE WITNESS: In 1984.

2 EXAMINER JONES: Okay, so before that you worked  
3 in other basins?

4 THE WITNESS: Yes, I originally started with El  
5 Paso Natural Gas Company --

6 EXAMINER JONES: Okay.

7 THE WITNESS: -- and worked Anadarko Basin, then  
8 was headquartered out of the El Paso office for a while.  
9 So several other basins.

10 EXAMINER JONES: Okay. Mr. Alexander is  
11 qualified as an expert petroleum landman.

12 Q. (By Mr. Kellahin) Mr. Alexander, let's start off  
13 with the exhibit book, and if you'll open the book and turn  
14 behind the tab that says "Introduction", and let's look at  
15 the first foldout map. Before we talk about the details,  
16 identify for us what type of map we're looking at.

17 A. Yes, this is a map of a portion of the San Juan  
18 Basin where we wanted to just present a basic feel of where  
19 the problem wells, with two wells in the same quarter  
20 quarter, were located. On the map, one of the reference  
21 marks up there is Navajo Reservoir, in blue towards the top  
22 of the map. You'll also see that I've labeled the  
23 counties. Seven of the wells are in Rio Arriba County, and  
24 one of the wells is north of the reservoir up in San Juan  
25 County.

1 I highlighted the entire section, just so we  
2 could have a feel for the location, although the entire  
3 section is not a problem in our cases, it's only the GPU  
4 where the two wells are located. But it was much easier  
5 just to highlight the whole section so we could kind of get  
6 a feel for all the wells, where they're located.

7 Q. Would you take a moment and identify how you have  
8 coded the various federal units?

9 A. Yes, the federal units have the darker green  
10 outlines that are laying on top of the township, the light  
11 gray township outlines.

12 Q. And when we start looking at the individual  
13 packages of exhibits for each case, you have different maps  
14 that more specifically identify the factual information  
15 associated with that specific well?

16 A. Yes, we will look at those and they are maps  
17 where we actually zoom into the nine sections where the  
18 wells are located, so we can see in much more detail about  
19 each individual well.

20 Q. Let's turn past the general locator map and look  
21 at the next display. Let's use this as an introduction,  
22 Mr. Alexander, to have you explain to Examiner Jones, the  
23 circumstances that you have discovered in researching  
24 compliance of Mesaverde completions with the Mesaverde Pool  
25 Rules.

1           A.    We developed this graph -- or actually Mr.  
2 Loveland developed the graph.  We were trying to determine,  
3 was there a consistent pattern, was there something we were  
4 missing in allowing these two wells to be drilled in a  
5 quarter quarter?

6                    Through very intensive work we have found that  
7 all of these are very unique situations, and we didn't miss  
8 anything in particular, but we did go through and analyze  
9 where each of these things happened so that we could  
10 develop additional processes to catch unique situations.

11                   And this graph is very helpful.  It shows where  
12 these situations occurred in a timeline, starting about  
13 August of 1990, and we ran it through August of '05.  And  
14 you can see where these instances occurred.

15                   Now this chart represents about 1150 either new  
16 drills or recompletions.  So there was a tremendous amount  
17 of activity going on, and it actually represents a very  
18 small population of wells, although we're not asking as an  
19 excuse for that, but we were trying to figure out, well,  
20 have we missed something in our process that allowed these  
21 things to happen?

22                   And there wasn't -- we found out there wasn't  
23 anything in particular, so we took each example and amended  
24 a process for each example, and we thought we had it all  
25 under control there in August, you know, after the rash of

1 recompletions that we had. But lo and behold, there in  
2 August of '05 we drilled the San Juan 28-and-6 Unit Number  
3 210 and 210 P wells, and that surprised us that that  
4 happened. And the reason that that happened is that both  
5 of those -- one of them was a recompletion project, and one  
6 of them was a new-drill project. And the came into our  
7 system at exactly the same time. So we had no -- There was  
8 no existing well that would have clued us to say, Whoops,  
9 nope, we already have a well here, we can't do this other  
10 work. And that one surprised us.

11           So we -- once again, we went back to the drawing  
12 board and said, Okay, now how are we going to stop this  
13 from happening? And we did come up with a process to stop  
14 that from happening. We'll go over our process a little  
15 later, just to show you what we've been working on. But in  
16 the end, we developed a process where we had to have a  
17 latitude/longitude in our data system for any well before  
18 it was released for development. And that will stop this  
19 situation where two completely independent projects come  
20 into our system at the same time, and we would have had no  
21 way of knowing that those were going to happen because  
22 there was nothing to compare against. But we think we've  
23 figured that one out, and we now have a process to even  
24 stop that.

25           But you can --

1 Q. Has the Division cited Burlington for  
2 noncompliance?

3 A. No, they have not. We brought these to their  
4 attention, and we talked with Mr. Perrin. And Mr. Perrin  
5 -- he welcomed the discussion and he said, Well, perhaps we  
6 also need to look at our processes, because obviously we  
7 missed all of these also. And so we're working with Mr.  
8 Perrin to see if not only we can stop them but if he can  
9 implement some processes that would help us catch those  
10 things.

11 Q. In the interim, until the Examiner can act on  
12 your request to have these exceptions as exceptions  
13 approved, what action have you taken on the offending  
14 wells?

15 A. We have shut the offending wells -- all the  
16 offending wells have been shut in.

17 Q. While we're on this topic, then, let's turn past  
18 the display and look at the tabulation sheet. Without  
19 discussing the specific details, generally summarize what  
20 you've made available to Examiner Jones by the next  
21 display, which is this legal paper that's to fold out and  
22 has all the blue lines on it.

23 A. On this spreadsheet we have listed the pairs of  
24 wells, the offending well and then the other well that was  
25 in the quarter quarter. The wells that are highlighted in

1 blue are the wells that are currently shut in.

2 We have also given other information about the  
3 API number or the location of the wells, whether we had  
4 downhole commingle orders, authorizing downhole  
5 commingling, and whether we had nonstandard location orders  
6 authorizing the well to be at a nonstandard location.

7 You will also see that several of these wells are  
8 completed in both the Mesaverde and Dakota formations, so I  
9 listed both formations in there, and that's why you're  
10 seeing more entries than just the eight pairs of wells.

11 Q. While you're on that point, Mr. Alexander, all  
12 eight of these GPUs involve a well that's noncompliant as  
13 to the Blanco-Mesaverde Pool rules?

14 A. That's correct.

15 Q. Is there any of these that are also noncompliant  
16 for the Dakota?

17 A. Yes, one of the pairs, the San Juan 28-and-6 Unit  
18 Number 210 well and the 210P well are completed in both the  
19 Mesaverde and Dakota, and both formations are not in  
20 compliance with the pool rules at the present time.

21 Q. Is your Application drafted in such a way and  
22 your intention such that you seek an exception for that  
23 wellbore not only for the Mesaverde but also the Dakota?

24 A. That is correct.

25 Q. If you'll take a moment now, let's flip to the

1 very end of the book and turn to where it says "Conclusion"  
2 tab, and if you'll turn past the "Conclusion" tab sheet,  
3 the next sheet in my book says "Burlington Compliance  
4 Process".

5 Q. When you testified earlier, you talked about the  
6 current system. The current system that had now been  
7 changed since the 210 well, is that what this represents?

8 A. It also represents the history of our attempts to  
9 put checks and balances in our systems from the earlier  
10 wells.

11 Q. Well let's start there.

12 A. All right.

13 Q. Let's start with this as a visual display and  
14 have you identify for Examiner Jones the process.

15 A. We have several teams in Burlington that work on  
16 projects as they come from their inception in our inventory  
17 management systems, and they flow from that system and they  
18 go through several other teams before they finally get  
19 implemented.

20 I've outlined for you here the teams that are  
21 involved. Our work starts with our RAM team, which is our  
22 resource assessment management team. The projects are  
23 identified on a budget year basis and brought forward from  
24 that team.

25 Then they go through our inventory management

1 team, and they actually select the projects for a given  
2 budget year that we will try to develop, and that's both  
3 new drills and recompletions.

4 Then the project development team actually takes  
5 those projects and contacts all of our partners and all of  
6 the regulatory agencies. They develop all the APDs.  
7 That's where we contact all of our partners to get  
8 execution of any kind of agreements that would be necessary  
9 to fully implement that particular project.

10 We have looked at each one of these teams to see,  
11 okay, at your level, at this particular team's level, can  
12 we do anything to start screening for this occurrence. And  
13 we found yes, in each level we can do that. However, at  
14 each of these levels, particularly at the RAM team, we may  
15 not have sufficient information in our system for them to  
16 stop it at that level.

17 And so as each one of these levels progress, we  
18 have implemented checks to make sure that we are not  
19 developing projects that would violate the pool rules. And  
20 we thought we had this all handled up until this last case.  
21 Lo and behold, both projects came forward, and they came  
22 together at the very same time, so we had not checks -- no  
23 previous checks would have caught them at all, and we  
24 discovered that we still have one problem we've got over  
25 time, and we implemented a solution to that by not

1 releasing any projects until we had an official lat/long in  
2 our internal system, and that would be checked before any  
3 project could be released.

4 And so we think we finally have a system that  
5 should stop any of these from happening in the future.

6 Q. Let's turn to the next page under the  
7 "Conclusions" section, and you have captioned another  
8 display. What is this?

9 A. This is the effort of our searches for these  
10 problem wells in the same quarter quarter. We started our  
11 search. That resulted from the RAM team doing an  
12 assessment of our reserves, and that started occurring  
13 about mid-year last year. And when they were doing just  
14 assessment for the reserves we started noticing, there  
15 seemed to be some problems that -- it looked like there was  
16 multiple wells showing up in the same area. And that's  
17 where we first got the idea that there could be a problem.

18 They finished their assessment and went through  
19 all of our Mesaverde inventory, which is thousands of  
20 wells, and then they -- towards the end of last year they  
21 forwarded me a list. We had narrowed it down to about 22  
22 cases that we thought might be a problem. I started to  
23 work on that late in the year and narrowed all that down to  
24 these present eight cases. We think we've found all of the  
25 Mesaverde formation problems out there.

1           Now, the next thing we need to start on is  
2 looking for the Dakota formation, and that was a very  
3 tedious manual process of going through maps and charts and  
4 some other electronic data that we had. And we said, We  
5 can't continue to do this with any reasonable ability to  
6 identify these things and in a short enough time frame to  
7 identify them, because we want to run this as we need,  
8 maybe several times a year, to see if we have any problems.

9           So we have just started building a GIS, a  
10 geographic information system, search, that involves a  
11 geodatabase, and it will spatially look for these problems  
12 automatically. And what it is, it will go in -- and we  
13 have identified -- we have shake files in that system that  
14 are for each quarter quarter in the entire San Juan Basin,  
15 thousands of them. It will go look at another shake file  
16 where all -- we have all the wells. It will say how many  
17 wells are in this quarter quarter? And we put a counter in  
18 there, and if the counter exceeds one, then that well is  
19 highlighted, it's captured. And then it would be -- and we  
20 still have to pursue a manual search to see if it was a  
21 horizontal well or if it was one of our old pilot wells  
22 that are exempted, or if maybe there's a mistake in the  
23 lat/long in the public records or our records. And we  
24 still have to -- we'll have to follow up with those kind of  
25 searches, but at least we will have the population

1 generated fairly automatically.

2 And that's the process that I'm working on right  
3 now. And I think by the end, somewhere in April, we should  
4 have that system running, and I will bring that forward and  
5 look at the other formations. But the only one we think --  
6 we're fairly confident on, is the Mesaverde at this point  
7 in time.

8 Q. Let's turn back now, Mr. Alexander, to the  
9 "Introduction" section, and if you'll turn past the spread  
10 sheets that's got the blue shading lines that identify the  
11 noncompliant wells, there's a caption here referring to a  
12 previous Division Examiner Order. Are you familiar with  
13 that case?

14 A. Yes, sir, I am.

15 Q. You've read the order and the case file and the  
16 exhibits and the testimony?

17 A. I have.

18 Q. Out of that case file, have you summarized the  
19 control issues that the Examiner utilized in granting BP  
20 America an exception from the two-well density rule in the  
21 pool?

22 A. Yes, I have.

23 Q. Go through those for us and identify for us what  
24 the criteria was used by the Division in granting BP  
25 America's exception.

1           A. Well, this was the case that the Examiner heard,  
2 Case 13,483, and resulted in Order Number R-12,385. We  
3 read through the transcript, and we considered the  
4 conclusions and the recommendations that were reached, and  
5 we thought we would just try to boil them down into the six  
6 major things that we thought were important to look at when  
7 you're faced with this kind of a problem.

8           As you can see on this chart here, we thought the  
9 first thing was that -- are the wells that in the 40-acre  
10 tract, are they standard locations? Were both -- number  
11 two thing, were both in the -- The number two thing in the  
12 BP case was that it was testified to that both wells were  
13 low productivity, generally under 150 MCF per day. BP also  
14 testified that they thought there was not any interference,  
15 at this point in time anyway, based upon some decline curve  
16 analysis, and they thought that they were getting unique  
17 reserves due to the lack of interference, which is the  
18 number 4 item.

19           And the number 5 item was that -- were there any  
20 plans to drill additional wells in there, which might have  
21 made the spacing unit contain more than the four allowed  
22 GPUs in that space -- more than four Mesaverde wells in  
23 that GPU.

24           And the sixth thing that was looked and  
25 discussed, was there any objection to their application to

1 continue producing these wells? We thought that were the  
2 main points of that case, and we thought they were good  
3 points to look at and bring forward into our case for  
4 discussion.

5 Q. After this tabulation, have you actually included  
6 a copy of the Division order that you referred to?

7 A. Yes, I have.

8 Q. And beyond the order itself, there's a file page  
9 in the "Introduction" section. It says "Evaluation  
10 Criteria". Do you find that page?

11 A. Yes.

12 Q. Is this the same criteria as used for the BP  
13 America case, or is it different?

14 A. It's slightly different. It contains most of the  
15 items that we just talked about. But we thought, instead  
16 of talking about the nonproductivity of wells, we could  
17 provide a better solution for at least examining the  
18 evidence by looking at no-flow barriers. And so that would  
19 be different than -- BP used about 150 MCF a day as a  
20 criteria; we thought it would be best to go beyond that and  
21 actually look at no-flow characteristics to determine what  
22 we should actually do with these offending wells. And  
23 that's the major difference between the BP case and the  
24 case we'd like to present to you today.

25 Q. And Mr. Loveland is the reservoir engineer that's

1 done those calculations and will testify following you?

2 A. That's correct.

3 Q. Let's turn to the specific cases now, Mr.

4 Alexander, and I will ask you to go through each of the  
5 eight, and we're going to look at the Exhibit 1 and Exhibit  
6 2 in each of the cases. Are these -- They're not arranged  
7 according to the case number, are they?

8 A. No, they are not.

9 Q. How are they not?

10 A. We wanted to build our way into these cases, and  
11 we decided the best thing to do was to start with what we  
12 thought were the easier cases first, and then build up to  
13 what we thought were the harder cases to discuss. And so  
14 they're in that order, from the easiest to the more harder  
15 cases.

16 Q. And when we look at the tabulation of information  
17 for each of the cases, is there a concluding criteria  
18 summary evaluation for each of those cases?

19 A. Yes, there is.

20 Q. And in those instances you are actually applying  
21 the evaluation criteria that we're looking at here?

22 A. That is correct.

23 Q. Let's go to the first tab then, and the first  
24 case we're talking about is Case 13,670 for the San 27-and-  
25 4 Unit Wells 21 and 53.

1           A.    Yes, in the book -- there's a lot of material in  
2 the book, so each of the cases are delineated by a white  
3 tab, and then there are colored exhibit tabs behind each  
4 one of those.

5           Q.    If we turn to the first case, then, in the book  
6 and look behind Tab Number 1, what do we find?

7           A.    Behind Tab Number 1 we -- in every instance,  
8 we've included the Application to the Division, requesting  
9 permission to continue producing these pairs of wells.

10          Q.    In each case, is the noncompliance well  
11 specifically identified in the Application for that case?

12          A.    Yes, it is.

13          Q.    So as we move through the different Applications,  
14 the format is the same, but the well packages are unique to  
15 that Application?

16          A.    That is correct.

17          Q.    This indicates a cover sheet.  This is a notice  
18 letter, is it not?

19          A.    That's correct.

20          Q.    What if anything did you do with this letter?

21          A.    We developed our -- a list of parties that we  
22 thought should be notified of this Application.  We used  
23 the notice provisions that were used in the BP case.  It's  
24 not -- In our opinion, it's not quite clear how you would  
25 notice something like this.  We think that BP used the

1 correct notice procedure, which is basically an  
2 encroachment-based notice procedure, and we used the same  
3 procedure, and that's how we developed the parties that we  
4 needed to send notices to.

5 Q. For Case 13,670, let's turn to Tab 2 and start,  
6 then, with the refined locator map that we talked about  
7 earlier.

8 A. Yes, behind Tab 2 we have provided a -- we  
9 developed this map just to see who we thought we should  
10 notify, based upon an encroachment-type procedure. So  
11 we've included these maps in every case.

12 Then behind that plat is actually a listing of  
13 the parties that we actually notified for that particular  
14 case.

15 Q. For example, then, let's start with this plat.  
16 The noncompliant wells are in Section 30 on the plat?

17 A. That is correct.

18 Q. And the GPU then is what portion of the section?

19 A. It's the east half of the section.

20 Q. And that corresponds to the noncompliant 160  
21 acres being the northeast quarter?

22 A. That is correct.

23 Q. And then you have colored in red two wells?

24 A. That's correct.

25 Q. And what's the purpose of doing that?

1           A.    Well, it's to show us where the wells were  
2 located, and then from that we could determine which of the  
3 offsetting GPUs we thought should be notified for potential  
4 impact of those GPUs.

5           Q.    So in this case, to whom did you send notice?

6           A.    In this case, both of these wells are located in  
7 the San Juan 27-and-4 federal unit, and they're located in  
8 the middle of the federal unit, and they're also within the  
9 participating area of that federal unit, so all of the  
10 offset GPUs are common ownership. But we did go ahead and  
11 send notice to the working interests. Since we operate the  
12 unit, we dropped to the next level of notice, which would  
13 be the working interest owners, and we noticed the working  
14 interest owners in the Mesaverde participating area for the  
15 San Juan 27-and-4 unit.

16          Q.    In this case have you received any objection from  
17 those interest owners?

18          A.    We have not.

19          Q.    Let's move on, then, to the next case, Mr.  
20 Alexander. If you'll turn to the next white tab, in my  
21 book it's Case 13,669.

22          A.    Yes, sir.

23          Q.    Do you find that tab?

24          A.    Yes, sir.

25          Q.    If you'll turn past that cover tab and look at

1 Exhibit 1 for that case, what do we see here?

2 A. Yes, Exhibit 1, again -- we tried to be  
3 consistent all the way through the book -- Exhibit 1 is  
4 going to be the actual notice and the Application that was  
5 sent out to all of the noticed parties.

6 Q. Then again, let's go to Tab 2 and look at the  
7 plat and have you assist us in identifying the GPU and the  
8 offset parties.

9 A. Yes, again this plat shows that the two wells  
10 that we're concerned about are the San Juan 27-and-5 Number  
11 50 and the San Juan 27-and-5 Number 138 well. They're  
12 located --

13 Q. What's the GPU for that?

14 A. The GPU would be the east half of Section 19 of  
15 27 North and 5 West.

16 Q. And where does this GPU land in terms of its unit  
17 boundaries within the federal unit?

18 A. This one also lands internal to the federal unit  
19 and internal to the participating areas, so all offsetting  
20 GPUs have common ownership.

21 Q. Again in this case, did you go ahead and notify  
22 the working interest owner?

23 A. We did, as you can see on the very next page.

24 Q. And have you received any objection from any of  
25 the working interest owners?

1 A. We have not.

2 Q. If you'll turn now to the next white tab, and  
3 you're looking now at Case 13,668 and we're dealing with  
4 the San Juan 27 -- 29-and-7 wells?

5 A. That is correct.

6 Q. Again, Exhibit Tab 1 has got the Application?

7 A. Yes, sir.

8 Q. And then if you'll turn to Exhibit Tab 2, explain  
9 that one to us.

10 A. You can see from this presentation that we're  
11 dealing with the 29-and-7 Number 57C and Number 57A wells.  
12 They're located in the east half of Section 11 of 29 North,  
13 7 West. These wells are all in Rio Arriba County, New  
14 Mexico. And you will again see that the parties that could  
15 be most impacted are internal to the federal unit and are  
16 internal to the participating area and have common  
17 ownership.

18 Q. I lost track. What's the orientation for this  
19 spacing unit?

20 A. This should be the east half of Section 11 of 29  
21 North, 7 West. As we get further into the books, I have  
22 provided a blow-up of the wells that describe graphically  
23 what the spacing units are and the participating areas are.

24 Q. For the wellbore San Juan 29-and-7, the 57C, it  
25 looks like it's right on a quarter line.

1 A. That's correct.

2 Q. Is it?

3 A. It's very close to it. The pool rules for the  
4 Mesaverde in federal units, if you're internal to the  
5 participating area, you can get 10 feet off of any  
6 governmental section line or subsection line, and so...

7 Q. So in this case it doesn't require a special NSL  
8 approval?

9 A. It does not.

10 Q. Okay. And the encroachment here for the  
11 noncompliant well is on common acreage within the  
12 participating area of a federal unit?

13 A. That is correct.

14 Q. In addition, have you notified the working  
15 interest owners in the federal unit?

16 A. Yes, we have notified the Mesaverde participating  
17 area working interest owners.

18 Q. And have you received any objection?

19 A. We have not.

20 Q. If you'll turn past this case and find the next  
21 tab that refers to 13,671, and Tab 1 is -- ?

22 A. Again, Tab 1 is our Application and notice letter  
23 that was mailed out to the noticed parties.

24 Q. Then Tab 2, please?

25 A. In Tab 2 we have an operator/offset working

1 interest owner plat again, and you will see that the two  
2 wells are in red, the 29-and-7 Number 114M and the Number  
3 97B. They should be oriented to a west-half dedication of  
4 Section 33, 29 North, 7 West, in Rio Arriba County, New  
5 Mexico.

6 Q. Again here, are we dealing with a federal unit  
7 that has common offset ownership?

8 A. Yes, we are.

9 Q. And did you go ahead and send notice to the  
10 working interest owners?

11 A. We did.

12 Q. And have you received any objection?

13 A. No, we have not.

14 Q. Let's turn now to Case 13,673 and look at Tab 1.

15 A. Again, Tab 1 is the notice letter and  
16 accompanying Application that was sent out to the notice  
17 parties.

18 Q. And Tab 2?

19 A. And Tab 2 is the plat that we used to determine  
20 who we thought should be noticed.

21 Q. In this case, then, what's the orientation of the  
22 320 that you used?

23 A. The orientation should be the east half of  
24 Section 5 of 27 North, 5 West, again in Rio Arriba County.

25 In this instance the wells are up in the

1 northeast quarter, and so immediately above that, we are  
2 actually looking at the San Juan 28-and-5 unit, so here we  
3 have a situation where there is a potential -- where we did  
4 notice people that were offsetting it in a separate federal  
5 unit, so we went ahead and noticed the people in the 28-  
6 and-5 federal unit.

7 Q. As a result of that notification, Mr. Alexander,  
8 has Burlington received any objection?

9 A. We have not.

10 Q. And if we turn past the plat, you can see the  
11 notice list for the working interest owners?

12 A. That is correct.

13 Q. Now sir, let's turn to the next case. I have  
14 13,667.

15 A. Yes, sir.

16 Q. If you'll turn to Tab 1, identify that for us.

17 A. This is the notice letter and accompanying  
18 Application that we sent out to the notice parties.

19 Q. And now Tab 2?

20 A. And behind Tab 2 you will see an offset  
21 operator/working interest owner plat. This well is not  
22 drilled in a federal unit, it's drilled on a non-federal  
23 unit tract, and it's the State Com Number 1 and the State  
24 Com Number 1R wells.

25 Now, it is --

1 Q. This GPU is oriented how?

2 A. Yes, the GPU is the east half of Section 16 of 30  
3 North and 7 West. We are still in Rio Arriba County, New  
4 Mexico.

5 This is an odd GPU because it sits right in the  
6 middle of two federal units and is committed to neither one  
7 of them. Off to the east or to the right is the  
8 Burlington-operated San Juan 30-6 unit. And then off to  
9 the west and north you will the Devon-operated Northeast  
10 Blanco unit. So this proration unit sits in the middle of  
11 those two federal units, and therefore we noticed both the  
12 San Juan 30-and-6 unit Mesaverde participating area owners  
13 and the Northeast Blanco Mesaverde participating --  
14 actually, we noticed Devon in this example. Since they are  
15 the operator, we didn't attempt to go below that level. So  
16 just Devon for the Northeast Blanco unit.

17 Q. Have you received any objection from Devon to the  
18 approval of this as an exception to the pool?

19 A. We have not.

20 Q. And as to the working interest owners within the  
21 units that you operate for whom you sent notice, have you  
22 received any objection?

23 A. We have not.

24 Q. Let's turn now to the Allison Unit, and I have  
25 that down as Case 13,674. If you'll turn to Tab 1,

1 identify that for us, please.

2 A. Okay...

3 Q. Is your book straight?

4 A. Nope, it's not, so I'm going to have to find it  
5 here a minute.

6 Q. Do you want this one?

7 A. Apparently we put the information backwards in  
8 this back section of this book.

9 Q. Let me trade books with you, sir.

10 A. All right. Yes --

11 Q. Mr. Examiner, we were looking at Case 13,674, and  
12 have you found that now?

13 A. Yes, I have.

14 Q. And behind that, looking at Exhibit Tab 1, what  
15 do you find?

16 A. Behind Exhibit Tab 1 is the notice letter and  
17 accompanying application --

18 Q. And they're behind --

19 A. -- for these wells?

20 Q. -- Exhibit Tab 2?

21 A. Exhibit Tab 2, we have the offset operator/owner  
22 plat, and in this instance you will see that the two wells  
23 of concern are the Allison Unit Number 16 and the Allison  
24 Unit Number 16R. The proration unit for those would be the  
25 west half of Section 15 of 32 North and 7 West, and this is

1 the only one of today's Applications that's actually  
2 located in San Juan County, New Mexico.

3 You will see from the plat that immediately south  
4 of the Allison unit we are dealing with the ConocoPhillips-  
5 operated San Juan 32-7 unit, so we notified ConocoPhillips  
6 as operator of that unit, and we also notified all of the  
7 Allison working interest owners, the Allison-Mesaverde  
8 participating working interest owners.

9 Q. When I look at the Allison 16R, that appears to  
10 be at an unorthodox location?

11 A. Yes.

12 Q. Is there an NSL order associated with that?

13 A. Yes, that's correct, it was drilled before we  
14 actually adopted the 10-foot rule in the federal units, and  
15 so we did go ahead and request a nonstandard location when  
16 this well was drilled, and did get approval for that  
17 nonstandard location.

18 Q. The nonstandard location encroaches towards the  
19 east half of Section 15?

20 A. That is correct.

21 Q. And that is common ownership within a federal  
22 unit and being a common participating area in the  
23 Mesaverde?

24 A. That is correct.

25 Q. So the encroachment is towards parties who share

1 in the production from the encroaching well?

2 A. That's correct.

3 Q. In addition, you have notified ConocoPhillips as  
4 the operator of the San Juan Unit 32-and-7?

5 A. Yes, we not only noticed them but we actually  
6 called them and talked to them because they are the  
7 operator of several of these offsetting federal units, and  
8 we have verbally communicated and talked with them, and  
9 they had no problem with any of our applications.

10 Q. Notwithstanding that, have you received any  
11 objection from any party you notified concerning this case?

12 A. We have not.

13 Q. If you'll turn now to the next case tab, I have  
14 that down as Case 13,672, and look at Tab 1.

15 A. Behind Tab 1 we again have our notice letter and  
16 accompanying Application that we sent to the notice  
17 parties.

18 Q. And then behind Tab 2?

19 A. Tab 2, we have our offset working interest owner  
20 notification plat, and on this plat you will see the wells  
21 of concern. They are the San Juan 28-and-6 Unit Number 210  
22 and the Number 210P well.

23 The Mesaverde dedication for these wells consists  
24 of the east -- I'm sorry, the west half of Section 31 of 28  
25 North, 6 West -- we're back in Rio Arriba County on this

1 one -- and the Dakota dedication is one of the nonstandard  
2 Dakota dedications that was set up many years ago. And as  
3 you will see, that line includes the west half of Section  
4 31, but it also goes up and includes a portion of Section  
5 30 of 28 North and 6 West. You can see the outline of that  
6 GPU indicated by the purple outline there.

7 Q. Is this the one case among the population of  
8 eight where we have requests for the Dakota Pool exception  
9 as well as the Mesaverde Pool exception?

10 A. That's correct.

11 Q. In this case I did not go ahead and mention that  
12 the parties who were noticed would be both the Dakota and  
13 Mesaverde participating area owners in the Burlington-  
14 operated 28-and-6 federal unit, and then to the west you  
15 will see again we are dealing with a ConocoPhillips-  
16 operated federal unit, being the 28-and-7 federal unit. So  
17 not only did we notice Conoco, we called and discussed this  
18 with them, and they had no objections to our Application.

19 Q. And finally, you did not receive objections from  
20 anyone concerning this case?

21 A. We did not.

22 MR. KELLAHIN: Mr. Examiner, that concludes my  
23 direct examination of Mr. Alexander.

24 With your permission, we would move the  
25 introduction of Exhibit 1 and 2 in each of the eight cases,

1 plus those portions of the "Conclusions" and the  
2 "Introduction" to which he testified.

3 EXAMINER JONES: Okay, we're going to admit  
4 Exhibits 1 and 2 in each of these cases, and the portions  
5 that Mr. Alexander has testified to.

6 EXAMINATION

7 BY EXAMINER JONES:

8 Q. Mr. Alexander, the process improvement that  
9 you've gone through, is that going to help you actually  
10 locate areas where you need to drill wells, in addition to  
11 areas that -- is that going to help your actual bottom line  
12 on drilling also?

13 A. We also have the separate process. Our RAM team  
14 is charged with that process, it's actually a separate  
15 process. Yes, every year they run through our inventory  
16 looking for potential drill sites. And that's actually a  
17 separate process than the process we're trying to establish  
18 to catch any particular problems once that inventory has  
19 been developed, that we do that every single year.

20 Q. Okay. I really appreciate all the work you've  
21 done in -- you guys have both done on this really nice  
22 exhibit on all these cases, and it sounds like your company  
23 is specifically organized and adapted to the San Juan  
24 Basin, to do a good job in that area. So...

25 And it sounds like you want an orderly

1 development up here, you don't want more than four wells in  
2 a 320 spacing unit for Mesaverde, that -- in any case,  
3 you're not -- this is not leading to that at all?

4 A. No, we definitely want to stay in strict  
5 compliance with the pool rules. This is unfortunate that  
6 we did have these problems, but we would like to correct  
7 them, and hopefully we'll stop all of them going forward.

8 Q. You were involved in the Mesaverde four-wells-  
9 per-spacing-unit hearing; is that correct?

10 A. That is correct.

11 Q. Did -- any of these particular wells involved in  
12 -- like in a pilot project for that?

13 A. We had -- the initial filtering -- well, probably  
14 the second filtering step that we went to, we identified 22  
15 potential problem areas, and those were the result of -- a  
16 directional well that we drilled, that made it not violate  
17 the pool rules, but several of those were the pilot wells  
18 that we drilled with that project.

19 Now, those pilot wells were exempted from that  
20 rule. Those were allowed to be drilled where we wanted to  
21 drill them to do interference in those kind of testings.  
22 So I excluded all of those. Some of those will show up as  
23 being the same well in the 40 acres, but they're exempted  
24 for that reason.

25 Q. Okay. So you're still gathering information on

1 those wells; is that correct?

2 A. I believe we are. Mr. Loveland can probably tell  
3 you what we're currently doing with those wells. He would  
4 be better to speak to that.

5 Q. Okay. All right, it does sound like you guys are  
6 really focused and you do a good job. And I sure hope that  
7 the potential merger with ConocoPhillips doesn't disrupt  
8 what you guys are doing.

9 A. As we understand it, we will take over the  
10 operations of the Conoco-operated -- we'll be  
11 ConocoPhillips, we will take over the operations of their  
12 federal units in the San Juan Basin, and we will primarily  
13 keep going just as though we're going today. That's our  
14 understanding at this point.

15 Q. That's wonderful. You went to a lot of trouble  
16 on this notice to drill down to the next level and notify  
17 the working interest owners in this unit, and you didn't  
18 get any objections or -- to any of these notices so far?

19 A. No, we have received no objections. We  
20 particularly wanted to talk with ConocoPhillips. They told  
21 us verbally that they had no objections to it. And so we  
22 have not received any objections to date, to any of these  
23 proposals.

24 Q. Okay. What about requests for information in  
25 exchange for no objection?

1           A.    ConocoPhillips was the only party that wanted to  
2 discuss them.

3           Q.    Okay.

4           A.    We have not received any requests from anybody  
5 else for any type of information.

6           Q.    Devon didn't -- on that NEBU unit, they didn't --  
7 they weren't interested in --

8           A.    No, sir.

9           Q.    -- information?

10          A.    No, sir.

11          Q.    These exhibits, did you generate these from using  
12 your GIS database?

13          A.    We did.

14          Q.    In Case 13,668, is that really the east half or  
15 is that the west half?

16          A.    13,668. No, that should be the west half of  
17 Section 11.

18          Q.    Okay.

19          A.    If I misspoke, I'm sorry, but --

20          Q.    No, that's fine. It does say that on the  
21 Application itself, and when I was reading these  
22 Applications into the record I mistakenly mentioned Case  
23 13,672 as being identical to the others, and it looks like  
24 you're asking for the Basin-Dakota to also have an  
25 exception in that case.

1           A.    Yes, that would be the San Juan 28-and-6 Number  
2 210 and 210P wells.

3           Q.    Okay.

4           A.    Yes, sir.

5           Q.    Why is that spacing unit for the Dakota then  
6 going up into the other section like that?

7           A.    We actually have quite a few of those in the San  
8 Juan Basin.

9                    Many years ago, when the rules suggested that we  
10 should have as close to 320 acres as we could, these things  
11 fall in areas where we have lots, and the lots are less  
12 than 40 acres, so they attempted to form units that would  
13 approach as close as they could to 320 acres.

14                   Now subsequent to that, we've had several  
15 amendments -- and as you're aware, we can either be 30  
16 percent less or 120 percent more of a standard GPU, so we  
17 don't form those kind of units anymore. We're able to have  
18 a standard unit with more or less than 320 acres.

19           Q.    Yeah, the -- there's -- I guess there's language  
20 for the Fruitland, the new Fruitland rules trump some of  
21 the older NSPs.

22           A.    They adopted --

23           Q.    They adopted --

24           A.    -- instead of us trying to --

25           Q.    They adopt the ones for the Mesaverde --

1           A.    Yes, sir, that's what we wanted to do, instead of  
2 going through and trying to identify all of those old  
3 nonstandard proration units, the order actually adopts  
4 those old units and goes forward with them for the  
5 Fruitland Coal.

6           Q.    And we didn't do that for the Mesaverde, did we?

7           A.    No, we did not. A lot of those -- We do have  
8 some of those types of units for the Mesaverde. Most of  
9 those were already in existence at the time we went to the  
10 increased density --

11          Q.    Okay.

12          A.    -- so we did not create more of those  
13 particularly.

14               EXAMINER JONES: It sounds like all the  
15 information that's in your head is going to be difficult to  
16 duplicate if you retire one of these days, so I appreciate  
17 your coming up here.

18               I think that's all the questions I have. Maybe  
19 I'm missing a couple, but I think --

20               MR. KELLAHIN: He's available if you think of  
21 something else, Mr. Examiner.

22               EXAMINER JONES: Okay. Well, thanks a lot, Mr.  
23 Alexander.

24               MR. KELLAHIN: With your permission, Examiner  
25 Jones, we'd call Mr. Tom Loveland as our next witness.

1                                    LAFELL THOMAS LOVELAND,

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

8                A.     Lafell Thomas Loveland. I'm a reservoir engineer  
9        currently employed by Burlington Resources.

10              Q.     On prior occasions, Mr. Loveland, have you  
11        testified as a petroleum engineer before the Division?

12              A.     No, this is my first time.

13              Q.     Would you summarize when and where you obtained  
14        your degree?

15              A.     I received a bachelor of science in petroleum  
16        engineering in May of 1997. I actually left school in  
17        December of 1996, from Montana Tech -- the name has  
18        changed, but it was Montana Tech at the University of  
19        Montana at the time.

20              Q.     Is that the one in Bozeman?

21              A.     It's in Butte, Montana.

22              Q.     Summarize for us your employment experience as a  
23        petroleum engineer.

24              A.     I started in February, 1997, with Anadarko  
25        Petroleum, working in Midland, Texas, on some of the

1 Permian Basin assets they had. Shortly thereafter,  
2 November, 1997, I began working for Burlington Resources in  
3 the San Juan Basin.

4 Q. Have you been assigned the responsibility to  
5 examine the performance of the wells in our subject  
6 application?

7 A. Yes.

8 Q. Have you looked at the production characteristics  
9 of these wells?

10 A. Yes, I have.

11 Q. In addition, have you developed parameters and a  
12 model by which you could analyze what we call a no-flow  
13 boundary?

14 A. Yes, sir, we did.

15 Q. And where appropriate, have you conducted those  
16 calculations for the cases that you thought necessary?

17 A. Yes, I have.

18 Q. At this point do you have an engineering  
19 presentation contained in the exhibit book that addresses  
20 those topics?

21 A. Yes, sir, I do.

22 MR. KELLAHIN: We tender Mr. Loveland as an  
23 expert reservoir engineer.

24 EXAMINER JONES: Mr. Loveland, what do you  
25 consider as your primary strength as a reservoir engineer?

1 THE WITNESS: My primary strength, I think, as a  
2 reservoir engineer is attention to detail, more than  
3 anything. This has been something new for me to work on,  
4 but I have very strong leadership and management that  
5 helped to direct me along this course of action to  
6 investigate the no-flow boundaries.

7 EXAMINER JONES: You guys have mentors in your  
8 company that you can --

9 THE WITNESS: We do informally, yes, sir.

10 EXAMINER JONES: -- work with to -- Okay. So you  
11 worked on the oil in the San Juan -- or the Permian, and  
12 now you're gas since 11 of 1997?

13 THE WITNESS: That's correct.

14 EXAMINER JONES: Okay, Mr. Loveland is qualified  
15 as an expert petroleum engineer.

16 MR. KELLAHIN: Thank you, Mr. Examiner.

17 Q. (By Mr. Kellahin) Mr. Loveland, to give the  
18 Examiner a sense of how you've analyzed the various cases,  
19 let's start with the first case in the exhibit book, and  
20 it's Case 13,670, and if you'll turn to Tab 3, let's look  
21 at a detailed plat of this area, and let's use this as an  
22 example to inform Examiner Jones as to the process that you  
23 engaged in, in reviewing the effects that may have occurred  
24 as a result of having two gas wells in the same 40-acre  
25 tract.

1           A.    All right.  To orient you on the way this map is  
2 prepared, it was prepared by Mr. Alexander and it is a  
3 zoom-in on the locator map that he discussed earlier.

4                    If you look at the legend, you will see pink and  
5 brown well spots.  Those correspond to nonoperated  
6 Mesaverde and Dakota wells.  Then you will see two well  
7 spots that are different shades of blue.  Those correspond  
8 to Burlington-operated Mesaverde and Dakota wells.

9                    The red-dashed outlines are the drill block  
10 outlines for both operated and nonoperated in the Dakota.  
11 The blue-dashed outlines are the GPU outlines for the  
12 operated and nonoperated Mesaverde GPUs.

13                   If you look here in the west half of Section 30,  
14 the north -- I said the west half, I meant the east half of  
15 Section 30, the northeast quarter of Section 30, you will  
16 see that we've got two wells labeled, the San Juan 27-4  
17 Unit Number 21 and the San Juan 27-4 Unit Number 53.  For  
18 this pair of wells, we went down through the list of  
19 criteria adapted from the BP case and order that Mr.  
20 Alexander testified to earlier, to see how we fit those  
21 criteria, and then took it a step further to look at no-  
22 flow boundary effects on any surrounding GPUs.

23                   Q.    For this case have you prepared, then, using this  
24 evaluation criteria, what your conclusions are concerning  
25 this exception?

1 A. Yes.

2 Q. If we turn behind Tab Number 4, do we find that?

3 A. We do.

4 Q. Describe for us what you've concluded.

5 A. On each point?

6 Q. Yes, please.

7 A. The first was, were all noncomplying wells  
8 located at standard locations within the spacing units?  
9 And in this case that answer is yes.

10 Are there more than four wells currently  
11 producing in the spacing unit? No, there are not.

12 Have offset operators of working interest owners  
13 been notified and were any objections received? We  
14 notified all offset operators and/or working interest  
15 owners and received no objections.

16 Are additional wells planned to be drilled in the  
17 spacing units that could exceed the maximum allowed four  
18 wells per spacing unit? That answer is no.

19 Is there any discernible interference between the  
20 wells that are in noncompliance, and will incremental  
21 reserves be obtained if both wells continue to produce?  
22 There is no discernible reservoir interference, and  
23 incremental reserves will be obtained.

24 And finally, will the no-flow boundary between  
25 noncomplying wells and offset wells extend beyond areas of

1 common interest? And that answer is no.

2 We used this same evaluation criteria, as Mr.  
3 Alexander stated, for each of the eight wells. And so  
4 behind Tab 4 in each of the case sections you will see the  
5 same criteria in our evaluation specific to that case.

6 Q. When we turn past Tab 4 and look at Tab 5, what  
7 have you included in this case?

8 A. Tab 5 shows a plot of gas production rate and  
9 cumulative production versus time for both the San Juan  
10 27-4 Unit Number 21 and the San Juan 27-4 Unit Number 53.  
11 Now in some of these cases as we go through these, those  
12 wells would be commingled, and what we're showing is the  
13 production from the Mesaverde, allocated to the Mesaverde  
14 zone.

15 What you see here in red is the gas production --  
16 the bold red is gas production from the 27-4 21, and the  
17 bold blue is the production from the 27-4 unit Number 53.

18 Q. When we turn past this display, there's an  
19 additional display in this tab section?

20 A. That's -- yes, sir. If we could look back at the  
21 gas production rate, one of the things that BP looked for  
22 was, is there any discernible reservoir interference in  
23 their case? We looked at the same way but in some cases  
24 noticed that there would be a production drop from what we  
25 could call the initial well that might be considered to be

1 reservoir interference.

2           So you can see that in this case occurs on the  
3 bold red curve, the curve for the 27-4 21. Just prior to  
4 January of 2000, you see a little drop there that looks to  
5 be about 40 to 50 MCF per day. We don't believe that  
6 that's reservoir interference. For one thing, it occurs  
7 too quickly in the life of the well. We don't think  
8 interference between wells occurs that quickly.

9           And the second thing is the second sheet that Mr.  
10 Kellahin pointed to, which is a line-pressure plot versus  
11 time. And so for these wells we looked at the line  
12 pressure that was recorded to the 27-4 Unit 21, and we saw  
13 that there was an approximate 18-pound line pressure  
14 increase at the time of that production drop.

15           Q. In later cases when we look behind Tab 6, it  
16 would be at that point in the presentation where we're  
17 going to see your no-flow boundary displays, right?

18           A. That's correct.

19           Q. When we look behind Tab 6 in this first initial  
20 case, there is no no-flow boundary display?

21           A. That's correct, there is none.

22           Q. And that is because of what?

23           A. That is because, if you would take a moment and  
24 turn back behind Tab 3, at the zoomed-in locator map, you  
25 would see that the quarter section that we're concerned

1 about sits at least one quarter section away from a  
2 boundary with a different interest. In my experience in  
3 preparing these no-flow boundaries, I did not see any  
4 situation where a no-flow boundary extended more than a  
5 quarter section away. And so we determined that in these  
6 cases the no-flow boundaries would not cross over into the  
7 San Juan 27-and-5 unit.

8 Q. Let's turn to the next case now, Mr. Loveland,  
9 and that is Case 13,669 in my book. And if you'll look at  
10 Tab 3, let's get the Examiner oriented about the specifics  
11 concerning this Application.

12 A. All right, this is following the same format as  
13 the prior locator map. Here we have -- the GPU in question  
14 is the east half of Section 19, Township 27 North, 5 West,  
15 and the specific wells in question are located in the  
16 northeast quarter section of Section 19, sitting more than  
17 one quarter section away from the boundary with the San  
18 Juan 28-and-6 unit.

19 Q. When we turn to Tab 4, then, you've got the  
20 criteria for this case file?

21 A. Yes, we do.

22 Q. And you've reached the same conclusions for this  
23 case as you did in the prior case?

24 A. Yes, we did.

25 Q. And then again, because you're encroaching

1 towards common acreage, there is no specific no-flow  
2 boundary display?

3 A. That's correct.

4 Q. If we turn past -- to Exhibit Tab 5, let's look  
5 at the production data for this well.

6 A. Here again, following the same format, in the  
7 bold red we see the gas production through time for the San  
8 Juan 27-5 Unit Number 50 Mesaverde, and the bold blue we  
9 see the gas production through time for the San Juan 27-5  
10 Unit Number 138 Mesaverde.

11 The 138 was brought on in 1999, and there was no  
12 noticeable drop in the production of the San Juan 27-5 Unit  
13 Number 50.

14 Q. As with the last case, do you recommend to the  
15 Examiner that the noncompliant well in this case be granted  
16 an exception?

17 A. Yes, I do.

18 Q. Let's turn to the third case package, and I come  
19 to Tab 13,668.

20 A. I do as well.

21 Q. Okay. Let's turn to Tab 3 of that case file, and  
22 let's now look at the foldout display for that  
23 noncompliance well.

24 A. This is a zoomed-in locator map centered around  
25 the San Juan 29-7 Unit 57B and 64A. They're located in the

1 west half of Section 11, Township 29 North, 7 West. They  
2 are sitting internal to the borders of the San Juan 29-7  
3 unit by one section at least on all sides.

4 Q. So this case is like the last two cases in terms  
5 of its encroachment or potential encroachment; it is toward  
6 common ownership?

7 A. It is.

8 Q. Okay. If we turn to Tab 4, we get the evaluation  
9 criteria for this well?

10 A. Yes.

11 Q. And all your answers are the same as they were  
12 for the last case?

13 A. They are.

14 Q. Let's turn to Tab 5 and look at the production  
15 information.

16 A. Following the same format, in the bold red, Mr.  
17 Examiner, we see the gas production through time for the  
18 San Juan 29-7 Unit 57A, and in bold blue the gas production  
19 for the San Juan 29-7 Unit 57C. Both wells came on within  
20 two years of each other, and there was no noticeable effect  
21 on the production rate for the 57A by bringing the 57E  
22 [sic] on.

23 Q. Does this wellbore meet the exceptions that you  
24 have designated as criteria for justifying the exception?

25 A. It does.

1 Q. Let's turn now to Case 13,671 and look at Tab 3.

2 A. Tab 3 is a locator map centered around San Juan  
3 29-7 Unit Number 114M and 97B. The GPU in question is the  
4 west half of Section 33, Township 29 North, 7 West. This  
5 -- these two wells sit within a quarter section that is one  
6 quarter section away of the border of the 29-7 unit with  
7 the San Juan 28-and-7 unit.

8 Q. So then again, this quarter section is surrounded  
9 by common ownership in the same GPU, in the same federal  
10 unit?

11 A. Yes, it is.

12 Q. Turning then to the tabulation of criteria  
13 evaluation behind Tab 4, what do you conclude?

14 A. The same things, that any encroachment that might  
15 be in existment -- in existence, is towards common  
16 ownership, the answers here are identical to the answers  
17 given for the prior three cases.

18 Q. And let's turn now to Tab 5 and look at the  
19 production tabulations.

20 A. Mr. Examiner, following the same format, in the  
21 bold red we see the gas production for the San Juan 29-7  
22 Unit Number 114M Mesaverde, and in the bold blue the  
23 production for the San Juan 27-7 Unit 97B Mesaverde.

24 One thing that we wanted to point out here is  
25 that the 97B began producing in 1998. And if you look at

1 the red curve there is what could be interpreted as 80 to  
2 120 MCF per day of loss that could be considered to be  
3 reservoir interference. However, for the reasons stated  
4 before, we don't think reservoir interference is going to  
5 occur anywhere near this quickly.

6 And also we investigated the line pressure -- and  
7 that's on the next sheet, Mr. Examiner -- and we see that  
8 at the same time the line pressure in this area increased  
9 by 75 pounds. And that would be the reason for the drop in  
10 production on the 114M.

11 Q. Mr. Loveland, do you recommend to the Examiner  
12 that he enter an order granting an exception in this case?

13 A. I do.

14 Q. Let's turn now to Case 13,673 and turn to Tab 3  
15 in that case set, exhibit package, and fold that out and  
16 have you identify the circumstances associated with this  
17 exception.

18 A. This is a zoomed-in locator map similar to the  
19 others that we've discussed behind Tab 3. In this case  
20 it's centered on the San Juan 27-5 Unit Number 61 and 78.  
21 This is different than the prior four cases, because the  
22 quarter section that we're concerned about borders an area  
23 of different interest. In this case it borders the San  
24 Juan 28-and-5 unit. So this is certainly one where we  
25 wanted to take the no-flow boundary investigation a step

1 further.

2 Q. This being the first of these about no-flow  
3 boundary, let's take a moment now -- save your place in the  
4 book here -- and turn to the "Conclusions" section. And  
5 we're looking at the last page in the exhibit book, which  
6 is the last entry in the "Conclusions" section --

7 A. Yes, Mr. --

8 Q. -- and let me have you use this as a way to  
9 illustrate and explain to Examiner Jones your method and  
10 your choice of parameters and assumptions when you  
11 conducted the no-flow boundary analysis.

12 A. Okay. Mr. Examiner, the hydrodynamic no-flow  
13 boundary is dependent -- and its position is dependent upon  
14 a number of factors, permeability, porosity, thickness.  
15 And for a small area -- and in these cases what we were  
16 looking at was less than two and a quarter sections -- it's  
17 very reasonable to assume that the stratigraphy of the  
18 reservoirs is not changing significantly in that small an  
19 area.

20 So you could consider that those things I  
21 mentioned earlier, the permeability, the porosity, the  
22 thickness, are constant across the area that we are  
23 investigating. The only difference that you have is rate,  
24 and that rate difference is what is determining the  
25 position of the no-flow boundary.

1           If you look at the second bullet point, it says  
2 there, "Assuming constant reservoir properties..." which we  
3 have "...the approximate drainage area for a single well in  
4 the reservoir can be calculated by..." this formula where  
5 the area of a single well is equal to the area of the  
6 reservoir multiplied by the ratio of the well's production  
7 versus the total field production.

8           That can be taken further to define the distance  
9 between a well and its no-flow boundary you see on the  
10 second equation down, underneath the third bullet point.  
11 The distance between a well and its no-flow boundary is  
12 equal to the distance between two wells multiplied by the  
13 ratio of the first well's rate to the total rate of the two  
14 wells.

15           And we've got an example showing that to the  
16 right where you see two wells, one,  $q_1$ , 100 MCF per day;  
17 the second is  $q_2$  at 200 MCF per day. Those are on the  
18 edges of a rectangular reservoir.

19           Taking the ratio of those rates,  $q_1$  produces at  
20 100 MCF per day, compared to the total rate of the two  
21 wells, 300 MCF per day. The distance between the first  
22 well and its no-flow boundary is one-third of the distance  
23 between the first well and the second well.

24           We can take that sort of an analysis and apply it  
25 radially around any specific well, and that's what the

1 example is down there at the bottom. Now, this is a  
2 cartoon, and I'm just assuming where those no-flow  
3 boundaries would be along a straight line between those two  
4 wells, but it was done to try and illustrate how you get  
5 from one rectangular reservoir to a real, natural  
6 reservoir.

7 Q. To aid you in the calculations, Mr. Loveland, is  
8 there a computer model you utilized?

9 A. We did, we used a very simple single layer model,  
10 an Eclipse, which is a reservoir simulator. And the reason  
11 we did that, Mr. Examiner, was not to determine what the  
12 position of the no-flow boundary would be between two  
13 wells, because that, as we can see in this example, is a  
14 pretty straightforward calculation.

15 However, as you get away from that straight line  
16 between two wells, there's a curvature to the no-flow  
17 boundary, and it becomes more of a subjective  
18 determination.

19 We used our reservoir model as a tool to guide us  
20 in drawing the rest of that no-flow boundary.

21 Q. Is this the same methodology that you used in all  
22 the cases in which you are presenting no-flow boundary  
23 conclusions?

24 A. It is.

25 Q. Let's turn back now in the exhibit book and find

1 our marked spot, and we were at Tab 3 of Case 13,673.

2 Let's move past the locator plat and look at Tab 4 where  
3 you've placed your evaluation criteria checklist.

4 A. Yes, sir.

5 Q. Using the no-flow boundary assessment and looking  
6 at the other criteria, can you recommend to the Examiner  
7 that this well be granted an exception?

8 A. I can.

9 Q. Let's look at the production information. If  
10 you'll turn to Tab 5, identify and describe the next two  
11 portions of this exhibit page.

12 A. All right. Behind Tab 4 -- or Tab 5, rather, is  
13 a -- production curves for the San Juan 27-5 Unit Number  
14 61, shown in red, and the San Juan 27-5 Unit Number 78,  
15 shown in blue. The 27-5 78 began producing in the middle  
16 of 1999, and sometime in 2001 there is a drop in production  
17 of about 30 MCF per day. It seems kind of a stairstep  
18 drop.

19 That amount of time between the initial  
20 production of the 78 and the loss in production on the 61  
21 is closer to the amount of time we think it would take to  
22 see reservoir interference.

23 However, if you will turn to the next sheet you  
24 will see that at that same time, between February and June  
25 of 2001, there was a 23-pound line pressure increase there

1 as well. We think that if there was any interference to  
2 see, it would be more subtle than a stairstep and that this  
3 stairstep is due to line pressure and backoff, rather than  
4 reservoir interference.

5 Q. Let's turn now to Tab 6, and describe and  
6 illustrate for Examiner Jones what he's about to see with  
7 these no-flow boundary results. And starting first of all,  
8 let's have you integrate now the pressure information that  
9 you have utilized to refine your model --

10 A. Yes, sir.

11 Q. -- starting with the multi-colored display here,  
12 the one that's primarily yellow and orange.

13 A. The multi-colored display is really a qualitative  
14 tool, and that's what we used it for, to determine where  
15 the no-flow boundaries would be located, where we're not  
16 sitting right between two wells. This is an example taken  
17 directly from our Eclipse simulator and shows areas of high  
18 pressure in red, areas of low pressure, transitioning  
19 through orange, yellow, green and into blue. The blue  
20 lower-pressure areas are centered around the existing wells  
21 that are denoted with the purple circles.

22 Q. Give us an example of how you've used this  
23 information to refine the red lines, the spider-web lines  
24 in there. Do you see those?

25 A. Yes, the --

1 Q. How does the pressure information relate to the  
2 lines?

3 A. The lines are drawn so that if they intersected a  
4 pressure contour, it was perpendicular to that. Again, we  
5 know where the no-flow boundary is going to exist between  
6 wells, and so that was very easy to draw little tick marks  
7 on the map. Again, once you get away from that area  
8 between the two wells it become somewhat a subjective  
9 exercise.

10 By using this pressure contour map, we were able  
11 to apply some standard rules over and over again in our  
12 analysis, so that we could have a consistent analysis, so  
13 that we could draw what we think are very reasonable no-  
14 flow boundaries.

15 Q. The integration of the pressure data has been  
16 done in the same fashion for each of the wells in which  
17 you're presenting a no-flow boundary display.

18 A. It has, and an example has been included for  
19 each.

20 Q. Let's move past this one and look at the next  
21 display in which you've used the same no-flow boundary  
22 spider-web map, and you've overlaid it on the spacing units  
23 and identified the wells.

24 A. Yes, sir, on the map --

25 Q. I'll direct your attention, then, to the GPU in

1 question.

2 A. On this map, Mr. Examiner, we've outlined the GPU  
3 in yellow. You can see the red dot for the 27-5 Unit  
4 Number 61 position. There's a green that is a little to  
5 the northeast for the San Juan 27-5 Unit 78 position. The  
6 offending well in this case is the 27-5 78. And so what I  
7 have highlighted is the no-boundary -- or the area within  
8 the no-flow boundary for that 78 well.

9 These purple no-flow boundary lines are identical  
10 to the ones that were on the pressure plot, we simply  
11 transferred them across and scaled them so that the wells  
12 overlaid.

13 What you can see here -- I've colored it in green  
14 -- is that the drainage area for the San Juan 27-5 Unit 78,  
15 while it does cross outside of the GPU boundary, it crosses  
16 into areas of common interest.

17 Q. Let me orient myself again. I'm looking at  
18 Section 5 --

19 A. Yes.

20 Q. -- I'm looking at the east half of the section,  
21 which is the GPU --

22 A. That's right.

23 Q. -- and the no-flow boundary calculation shows you  
24 an extension westerly of a little finger of green into the  
25 west half of 5?

1 A. It does.

2 Q. And the justification for the exception, then, is  
3 its common ownership for the entire section?

4 A. Yes, sir. While the well that's in noncompliance  
5 and the position of the no-flow boundary violates the  
6 letter of the Rule, we think that it does not violate the  
7 spirit of the Rule, and that would be the protection of  
8 different interest owners. So you can see that the no-flow  
9 boundary does not cross over into the 28-and-5 unit, which  
10 is what our big concern was.

11 Q. All right, Mr. Loveland, let's leave this -- In  
12 conclusion, then, would you recommend that this well be  
13 granted an exception from the Rule?

14 A. I would.

15 Q. Let's turn now to the next one, which is 13,667.  
16 At this point turn to Tab 3, and let's look at the foldout  
17 map.

18 A. Mr. Examiner, similar to the other locator maps  
19 that we've shown earlier, this was also prepared by Mr.  
20 Alexander, and it's centered around the State Com Number 1  
21 and the State Com 1R wells. The GPU in question is the  
22 east half of Section 16, Township 30 North, Range 7 West.

23 As Mr. Alexander stated, the GPU in question sits  
24 between the San Juan 30-and-6 unit that Burlington operates  
25 to the east and then is surrounded on all other sides by

1 the Devon-operated Northeast Blanco unit.

2 Q. Let's turn to the criteria evaluation summary  
3 page. What have you concluded concerning the evaluation  
4 criteria as it's specific to the State Com GPU?

5 A. There are a few differences on this evaluation  
6 criteria from what we've seen in the prior cases, the first  
7 one being in the bullet point number one, where we're  
8 asking about, Are all the noncomplying wells Located at  
9 standard locations within the spacing unit? And the answer  
10 here is no. The State Com 1R was drilled and completed at  
11 a nonstandard location. We sought and received NSL  
12 approval for that well due to its proximity to the Navajo  
13 Reservoir.

14 I fear that I didn't do a very good job of  
15 pointing out that reservoir and its position to the State  
16 Com 1 and 1R. But you see within the GPU behind Tab 3 that  
17 these wells sit just to the south of Navajo Reservoir. And  
18 we sought application -- or we sought approval for an NSL,  
19 because we really didn't have anywhere else that we could  
20 drill this well. And I think under those reasons is why it  
21 was granted.

22 Q. Do you recommend that the Division Examiner grant  
23 an exception for this GPU?

24 A. I do.

25 Q. Let's turn to Tab 5 and have you identify and

1 describe the information contained in that portion of the  
2 display book.

3 A. Tab 5 shows gas production rate and cumulative  
4 production for the State Com 1, shown in the bold red, and  
5 the State Com 1R, the bold blue.

6 In this case it was a little different. The 1R  
7 is the offending well, but when it was brought on the State  
8 Com 1 was shut in. There were some mechanical problems  
9 that were later addressed in a February, 1999, workover,  
10 and that's when you see the red production from the State  
11 Com 1 coming back on.

12 So in this case we see what could be a drop in  
13 production in the middle of -- or in the early part of 2000  
14 -- 1999, rather, I'm sorry -- on the State Com 1R. We did  
15 an investigation here into the line pressure at the time  
16 and found that the line pressure increased for the State  
17 Com 1R about 12 pounds at the same time. That was the next  
18 sheet behind the map.

19 Q. Let's turn to Tab 6 now, Mr. Loveland, and let's  
20 look at the no-flow boundary displays, starting first of  
21 all with this map that includes the pressure information.  
22 Identify and describe this for us.

23 A. This is a pressure contour map taken from our  
24 Eclipse model, showing again the position of the wells as  
25 the purple circles, the position of our interpreted no-flow

1 boundaries as the purple lines, and the same rules were  
2 followed in the development of -- or in the positioning of  
3 these no-flow boundaries as in the prior case.

4 Q. Okay, let's turn to the next portion of this  
5 display, and we see the spider-web no-flow boundary  
6 superimposed upon the locator map that gives us the GPU and  
7 the offsetting spacing units.

8 A. Yes.

9 Q. Identify this for us.

10 A. Mr. Examiner, in this case the GPU is shown again  
11 in yellow, and we see the State Com 1 and the State Com 1R  
12 somewhat centered within that GPU, sitting to the south of  
13 the black border that is Navajo Reservoir.

14 The State Com 1R being the offending well, we  
15 looked at the no-flow boundary for it to see if it crossed  
16 over into any areas of different interest. It did not  
17 cross over into the Northeast Blanco unit; it did, however,  
18 cross over into the Burlington-operated San Juan 30-and-6  
19 unit.

20 Q. The area of crossover is that area shaded in red?

21 A. It is.

22 Q. Okay. When we look at that adjoining federal  
23 unit operated by Burlington, the San Juan 24-and-6, there  
24 is a unit well down there in red, it's the 63 unit well?

25 A. That's correct.

1 Q. The production from that well, as well as the  
2 pressure information, helps you locate the line in which  
3 you have the no-flow boundary?

4 A. Yes, it does.

5 Q. Are you aware of whether or not there's an  
6 opportunity for additional wells along this western portion  
7 of the boundary within this unit we're talking about?

8 A. The GPU that sits just to the east of the GPU in  
9 question, within the 30-and-6 unit, has only two Mesaverde  
10 wells currently in existence, and pool rules allow for  
11 four.

12 Q. So that's Section 15?

13 A. It is.

14 Q. As part of your preparation, Mr. Loveland, did  
15 you read the transcript and review the exhibits that BP  
16 America presented to Examiner Jones at their hearing?

17 A. I did.

18 Q. Do you recall in reading that transcript and  
19 reading the discussions that BP advanced the argument that  
20 wells drilled at standard locations within a GPU would have  
21 had areas of no-flow boundary effect greater than actually  
22 was occurring with what they caused to happen?

23 A. I'm sorry, could you restate that question?

24 Q. Had the offending well been drilled at a standard  
25 location under the rules and not been located in the same

1 40-acre tract, the interference of the no-flow boundary  
2 area would encroach more extensively into the adjoining  
3 property?

4 A. Yes, sir, it would. And we have an example of  
5 that on the next sheet behind that locator map. I took the  
6 same Eclipse model and moved the position of the State Com  
7 1R from where it sits in the -- I think that would be in  
8 unit letter H -- moved it up into unit letter A, which  
9 would be a location that was in compliance. I acknowledged  
10 the current setback of 660 feet from the borders of that  
11 GPU and then kept the production constant to see what the  
12 effect of moving that well would have been. And what we  
13 see is that the area that's red, for the 30-and-6 unit, is  
14 larger, and there's also an additional red area that's in  
15 the Northeast Blanco unit to the north.

16 Q. When you flip back now and look at the display  
17 showing the State Com 1R at its noncompliant location, its  
18 location is also -- an NSL has been approved?

19 A. That's correct.

20 Q. And the encroachment into the adjoining spacing  
21 unit, into the offsetting property, can you conclude that  
22 that encroachment is attributable to the location of the  
23 well itself?

24 A. It is.

25 Q. So having previously been approved as an

1 exception, do you see any reason to not grant this as an  
2 exception as to density?

3 A. I do not.

4 Q. Let's turn now to that portion of this display  
5 section for this case file and look at Tab 7. What's  
6 included behind that tab?

7 A. Tab 7 houses a copy of Administrative Order  
8 NSL-3244, which was our official approval for the  
9 nonstandard location of the San Juan -- excuse me, the  
10 State Com 1R well.

11 Q. Does this administrative order signed by Director  
12 LeMay indicate that both these wells would be on the same  
13 40-acre tract?

14 A. Yes, sir, it does. In the first paragraph it  
15 acknowledges that the State Com 1 is in Unit H, and then  
16 between paragraphs 2 and 3 it acknowledges that the State  
17 Com 1R would also be in Unit H.

18 Q. Let's turn now to the next case file and turn to  
19 the Allison Unit wells, and I have that down as Case  
20 13,674. If you'll turn to Tab 3, let's use the locator  
21 map, fold that out, and orient us as to the situation  
22 occurring here.

23 A. Mr. Examiner, again this is a locator map zoomed  
24 in and centered on the Allison Unit 16R and the Allison  
25 Unit 16. Their GPU is the west half of Section 15, I'm not

1 -- oh, Township 32 North, Range 7 West.

2 In this case the quarter section that we're  
3 considering borders the San Juan 32-and-7 unit that is  
4 operated by ConocoPhillips, and so we knew that this is one  
5 that we wanted to look more closely at.

6 Q. Okay, let's look at the conclusions of the  
7 analysis, and then we'll go back and look at the specific  
8 no-flow boundary information. If you'll turn to Tab 4,  
9 let's look at the evaluation criteria summary. What have  
10 you concluded in total?

11 A. This is very similar to the State Com 1R in that  
12 the very first bullet point, Are all noncomplying wells  
13 located at standard locations within the spacing units?,  
14 the answer to that is no.

15 In this case, we sought and received nonstandard  
16 location approval because of the topography within the GPU.  
17 That NSL approval also acknowledges that both the Allison  
18 16 and 16R would be in the same unit letter.

19 The other answers are similar to what you've seen  
20 before.

21 Are there more than four wells currently  
22 producing in the spacing unit? No.

23 Have offset operators/working interests been  
24 notified, and were any objections received? We notified  
25 everyone, and there were no objections.

1 Do we plan to drill additional wells in the  
2 spacing unit that would exceed the maximum allowed four?

3 No, we do not.

4 Is there any discernible interference between the  
5 wells that are in noncompliance, and will incremental  
6 reserves be obtained if both wells continue to produce?

7 There is not any discernible reservoir interference, and  
8 incremental reserves will be obtained.

9 And then finally, Will the no-flow boundary  
10 between noncomplying wells and offset wells extend beyond  
11 areas of common interest? And as we'll show you in a  
12 moment, it does extend beyond areas of common interest.  
13 But that is not typical for such boundaries in the San Juan  
14 Basin.

15 Q. Let's turn now, then, to the production  
16 information and the tabulations and displays shown behind  
17 Exhibit Tab 5.

18 A. Exhibit Tab 5 shows the gas production rate in  
19 bold red for the Allison Unit 16, and the gas production  
20 rate in bold blue for the Allison Unit 16R. There is what  
21 appears to be approximately 20 MCF per day of rate loss  
22 immediately following the initial production of the 16R.  
23 As we've stated before, the time it would take for the  
24 transient to move through the reservoir and interfere with  
25 another well is much longer than this.

1                   Unfortunately in this case, when we looked to  
2 investigation line pressure we found that we did not have  
3 daily line pressure records that extend back to 1993. So I  
4 approached our resident pipeline expert, Kelly Maxwell, and  
5 asked him what the effect of bringing a new well on in this  
6 area would have been. He looked at some old pipeline maps,  
7 said that the line that was in place at the time was a  
8 4-inch line, it was inadequate for the production that was  
9 there, and so it would have been seeing higher pressures  
10 than we would have hoped for. By bringing the new 16R well  
11 on, it would have made those problems greater.

12                   And so even though we do not have specific line  
13 pressure data saying, Yes, line pressure went up, there was  
14 no doubt in his mind that it would have.

15                   Q. Let's turn to the no-flow boundary displays, and  
16 if you look behind Tab 6, let's look at the first of those  
17 displays. Would you identify and describe that?

18                   A. The first of those displays is a pressure contour  
19 map taken from Eclipse. Again, it shows the well locations  
20 as purple circles and the location of the no-flow  
21 boundaries as purple lines. We followed the same rules, if  
22 you will, in preparing the no-flow boundary positions for  
23 this plot as we did with all the others.

24                   Q. Okay, let's turn to the next display and look at  
25 all the conclusions.

1           A.    The next display shows the GPU in question,  
2 highlighted in yellow.  You see the purple now-flow  
3 boundaries that are again the same as that were on the  
4 pressure plot, only scaled to match this map.

5                    What we see here is the Allison Unit 16R, the  
6 well that's the offending well.  We see its no-flow  
7 boundary.  I've highlighted two colors there.  The green is  
8 where we are -- the no-flow boundary either exists within  
9 the GPU or crosses into a GPU of common interest.  And to  
10 the south you see a little red-highlighted area where the  
11 no-flow boundary for the 16R crosses into the  
12 ConocoPhillips-operated San Juan 32-7 unit.

13           Q.    Can you attribute the red area no-flow boundary  
14 excess to the fact that this well was drilled at an  
15 approved nonstandard location?

16           A.    I can.  Similar to the analysis we did for the  
17 State Com wells, were we to have drilled that 16R in the  
18 southeast corner of the GPU in a compliant location, the  
19 no-flow boundary would stretch further across into  
20 dissimilar interests than it does now.

21           Q.    Do you see any reason not to grant an exception  
22 for this well?

23           A.    I do not.

24           Q.    Let's turn to the final case, Mr. Loveland, and  
25 directing your attention to the tab of Exhibits behind

1 13,672, and look at Tab 3. Fold out the locator map, and  
2 let's orient the Examiner.

3 A. Mr. Examiner, this locator map is the same format  
4 as we've seen on the prior locator maps. In this case you  
5 see the blue section, Section 31, sits adjacent to the  
6 border with the San Juan 28-and-7 unit, and our particular  
7 wells, the 28-and-6 210 and 210P, are within a quarter  
8 section that borders that 28-and-7 unit.

9 Q. If you'll turn to Tab 4 now, let's summarize,  
10 then, for the Examiner your criteria conclusions concerning  
11 the evaluation criteria for this well.

12 A. These wells are located at standard locations.  
13 That's the first bullet point.

14 In this case there are more than four wells  
15 currently producing in a spacing unit. There are two  
16 Mesaverde wells producing from the northern half of that  
17 spacing unit, and there are currently three Mesaverde wells  
18 producing from the southern half, the San Juan Unit 28-6  
19 Number 17, San Juan 28-6 Unit Number 210, and the 210P.  
20 Those three are all in the southern half of that GPU.

21 Q. Ultimately, then, applying this criteria, would  
22 you recommend to the Examiner that this well be granted an  
23 exception?

24 A. I would.

25 Q. Let's turn now to the information behind Tab -- 5

1 is blank, right?

2 A. Five is blank, because the two wells haven't been  
3 producing for very long. They were brought on, I believe,  
4 in September and November of 2005, respectively. And what  
5 we typically see on initial production from those wells, at  
6 least in these cases, are, we have a first delivery team  
7 that's charged with trying to bring those wells on in a  
8 prudent fashion, rather than opening them all the way. And  
9 so in some cases, they will choke those wells back in order  
10 to avoid bringing in sand that would hamper long-term  
11 production.

12 In both of these cases, when you look at a  
13 production plot, it is flat where they have choked it back.

14 Q. Let's turn to Tab 6, then, and look at the no-  
15 flow boundary presentation. If you'll start with the first  
16 display, the multi-colored one, identify and describe what  
17 you've concluded here.

18 A. This is a pressure contour map similar to the  
19 others, taken from our Eclipse software. The purple dots  
20 are the locations of the wells, the purple lines are our  
21 interpretation of the position of those no-flow boundaries.

22 This was prepared a little bit differently than  
23 the prior no-flow boundary plots because of the age of  
24 these two wells. In all other cases we were able to, I  
25 think, correctly assume that those wells were producing at

1 pseudosteady state rates or stabilized rates. In this case  
2 the production from the 210 and the 210P has not been  
3 stabilized, and so a no-flow boundary analysis would be --  
4 What's the correct word? It would be incorrect.

5 So what we've done in this case, Mr. Examiner,  
6 is, we've taken the forecasts for all of the wells and  
7 walked them out to a position about 2.6 years beyond today,  
8 in July of 2008, saying at that time interference would  
9 have occurred between all of the wells, all of the wells  
10 would have stabilized production, and those are the rates  
11 that we need to use to determine where the no-flow  
12 boundaries are going to be located. And so that's how this  
13 differs from the others.

14 Q. Let's turn, then, to the conclusions display, and  
15 there's two of these in here. The first one deals with the  
16 Mesaverde, does it not?

17 A. It does.

18 Q. And then we'll look at the Dakota in a minute,  
19 but let's start with the Mesaverde. What do you conclude?

20 A. In the Mesaverde you see the yellow GPU  
21 highlighted, and the drainage area is colored in for the  
22 San Juan 28-6 Unit 210, which is the offending well in the  
23 Mesaverde.

24 In this case, the 210 was an existing Dakota  
25 well. We drilled the new 210P, a Mesaverde-Dakota

1 commingled producer, and recompleted the Mesaverde in the  
2 210. The recompletion in the Mesaverde in the 210 lagged  
3 behind the completion of the 210P by, I believe, one or two  
4 months.

5 So the 210 is the offending well, and what we've  
6 shown is the area of the -- area encompassed by the no-flow  
7 boundary for that 210 well. You can see that it does cross  
8 over into the San Juan 28-and-7 unit in two locations.  
9 Those are both colored in red.

10 Q. Let's take a moment. This -- It's hard to see  
11 some of these spots on this display, particularly. If I  
12 look in the -- I guess it's going to be the southwest  
13 quarter, and I look in the northeast of the southwest, I  
14 see the San Juan -- is that the -- What number is that? Is  
15 that the 17? What is that well?

16 A. The well that's located to the -- the furthest to  
17 the left on there is the San Juan 28-6 Unit 17.

18 Q. That's the 17. And what kind of rate does that  
19 currently produce at?

20 A. Currently that well is capable of producing  
21 around 40 MCF per day. At the snapshot in time when this  
22 analysis was done, it would be capable of producing, we  
23 estimate, around 30 to 33 MCF per day.

24 Q. So when I look at the 17 and I look slightly  
25 north and east of that, there's another very faint well

1 spot. That is the 210?

2 A. That's correct.

3 Q. And then I take that spot and I go directly --  
4 looks like directly east, and I pick up the 210P?

5 A. The 210P. And I apologize for the way the well  
6 names have overlain.

7 Q. So the 210P and the 210 are in the same 40-acre  
8 tract?

9 A. Yes, they are, and that is outlined with the red  
10 dashed line.

11 Q. What would happen to the drainage patterns if the  
12 210 were required to be abandoned and redrilled at a  
13 standard location? What happens?

14 A. If the 210 were abandoned and redrilled at a  
15 standard location, the no-flow boundary would encroach even  
16 further into the San Juan 28-and-7 unit.

17 Q. Do you see any reason to plug and abandon the 17  
18 at this point?

19 A. I do not. It produces at a very low rate. It is  
20 not sitting in a -- in the same quarter quarter as the  
21 other two wells, and it looks to be serving as a  
22 protection, if you will, from the drainage area of the 210.

23 Q. When we look to the spacing unit directly to the  
24 west, in the San Juan 28-and-7 unit, has that spacing unit  
25 been fully developed?

1           A.    No, it has not.  There is an additional location  
2 that could be drilled in the northern part of that GPU.

3           Q.    If that were drilled, what happens to the no-flow  
4 drainage boundaries?

5           A.    The no-flow boundary would move, in all  
6 likelihood, back across the line into the 28-and-6 unit.

7           Q.    What happens to the GPU in the section to the  
8 south, which -- from our subject GPU we're moving to the  
9 southwest.  There's a portion of the red encroaching into  
10 that spacing unit, see it?

11          A.    There is, and again this is a situation where  
12 there is one well that could be drilled in the northern  
13 part of that GPU that would also drive that no-flow  
14 boundary back into the 28-and-6 unit.

15          Q.    Do you recommend to the Examiner that this GPU be  
16 granted an exception?

17          A.    I do.

18          Q.    If the Examiner grants an exception, you're  
19 asking that he permit you to -- Burlington, to continue to  
20 produce the 210 and the 210P, which would be located in the  
21 same 40-acre tract?

22          A.    Yes.

23          Q.    And also he would be approving your ability to  
24 continue to produce the 17, which is one of the three  
25 wells, then, in the southwest quarter of the spacing unit?

1 A. Yes.

2 Q. And you want that applied not only to the  
3 Mesaverde but to the Dakota?

4 A. To the Dakota as well.

5 Q. Let's turn to the Dakota map and have you show  
6 Examiner Jones what you have concluded about the no-flow  
7 boundaries.

8 A. Mr. Examiner, the next sheet shows a pressure-  
9 contour map taken from our Eclipse software. Again, the  
10 purple circles are the positions of the wells, the purple  
11 lines are the position of the no-flow boundaries. This  
12 analysis was performed very similarly to the analysis for  
13 the Mesaverde side of the 210 and 210P in that these wells  
14 are currently not at stabilized rates.

15 So we determined that the transition between the  
16 transient pseudosteady state or between unstabilized and  
17 stabilized flow would occur about 2.6 years from today,  
18 which would be about June -- it was May of 2008. So for  
19 each of the wells on this plot we used the forecasts to  
20 walk out to a point in time, May of 2008, and take that  
21 rate as the stabilized rate for all of these wells, to  
22 determine where these no-flow boundaries should be located.

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

25 At this time we move the introduction of his

1 exhibits. And for simplicity, we'll ask that you move the  
2 -- introduce the exhibits behind Tabs 3 through 7 in all  
3 eight cases.

4 EXAMINER JONES: Okay, Tabs 3 through 7 in all of  
5 these -- seven cases?

6 MR. KELLAHIN: There are eight.

7 EXAMINER JONES: -- eight cases, will be admitted  
8 to evidence.

9 MR. KELLAHIN: Recognizing that sometimes there  
10 is not an actual page behind Exhibit Tab 7. I didn't know  
11 how to separate that out.

12 EXAMINER JONES: Okay, that's all right.

13 I have some questions here. I'll try to be  
14 reasonably brief.

15 EXAMINATION

16 BY EXAMINER JONES:

17 Q. I guess the main question is, the pressures that  
18 you used on the Eclipse model were surface line pressures;  
19 is that right? Surface wellhead pressures?

20 A. I used an estimate of the initial reservoir  
21 pressure for the Mesaverde and then for the Dakota.

22 Q. Oh, really? Okay. And then you marched that  
23 down with depletion from the reservoir?

24 A. Yes, sir, I assumed that each of the wells would  
25 produce at a common, stabilized rate.

1           And really, the Eclipse model, again, was nothing  
2 more than a tool. We didn't want to use it quantitatively  
3 to say, What would the pressures be for these wells at this  
4 point in time? It was more to say, Where are the pressure  
5 contours located, so that we can take some of the  
6 subjectivity away from drawing those no-flow boundaries.

7           Q.    Okay, I understand that a lot better. Let's see,  
8 here.

9           Speaking of line pressure, though, you used that  
10 as one of the main explanations of why a perceived change  
11 in -- a drop in the rate of the original well would not be  
12 attributable to the second well. That's pretty close to  
13 it. Couldn't that line pressure have been also caused to  
14 have been increased by the production from the second well?

15          A.    Absolutely. Absolutely, and that's what we think  
16 is happening. When you -- So what we would be talking  
17 about is not reservoir interference, which I think is a  
18 large concern, it's a surface, line-pressure interference.  
19 And really, that sort of an effect would happen anytime we  
20 bring new wells into the existing pipeline. That effect  
21 would be alleviated if we were to loop a line and add  
22 additional gathering space, and those effects could happen  
23 if something were to happen to the compressor at a  
24 gathering point. It would come on or go off, or we'd add  
25 additional horsepower. Those changes of line pressure

1 would be introduced.

2 Q. Okay. Let's see here, it looks like only one of  
3 these cases, you're actually asking for approval of five  
4 wells in the spacing unit. That pilot -- projects that  
5 were done originally to approve the four wells in the  
6 Mesaverde, did those ever -- would this be the first  
7 approved, officially approved, five-well spacing unit in  
8 the San Juan Basin for the Mesaverde?

9 MR. ALEXANDER: That's probably true.

10 MR. KELLAHIN: It's probably true for us. I'm  
11 not sure that's true for everybody.

12 Q. (By Examiner Jones) Okay, recognizing that one  
13 of the wells, you're attributing only 40 MCF a day to it,  
14 and it's really a downhole commingled well; is that  
15 correct?

16 A. The 17, is that the well in question?

17 MR. KELLAHIN: Yes.

18 Q. (By Examiner Jones) It would be -- Yeah, I think  
19 so. Actually -- the Number 17, yeah.

20 A. Mr. Examiner, that Number 17 is not downhole  
21 commingled with the Dakota. It is a Mesaverde-only  
22 producer.

23 It -- As the pool rules are defined, the Blanco-  
24 Mesaverde Pool in this area of the Basin starts at the  
25 Huerfanito bentonite marker and extends down below the top

1 of the Point Lookout. Within that interval is included the  
2 Lewis Shale, which is separate from the standard Cliff  
3 House, Menefee and Point Lookout layers that we attribute  
4 to the main productive part of the Mesaverde.

5 This San Juan 28-6 Unit 17 well was abandoned in  
6 the Cliff House, Menefee and Point Lookout, and is only  
7 producing from the Lewis shale.

8 Q. Oh, okay, I think that's a --

9 A. So technically it's the Mesaverde; geologically,  
10 it's different.

11 Q. Okay, I really appreciate you saying that,  
12 because -- Lewis shale, now tell me again. Is that below  
13 the Cliff House? That's above --

14 A. It's above.

15 Q. Above the Cliff House, a little bit above the  
16 Cliff House. Okay.

17 So Mesaverde is -- seems to be a catch-all pool,  
18 to me. It's got all these members in it and -- okay, that  
19 -- I don't understand how you can keep a well going at 40  
20 MCF a day anyway. How are you guys doing that? Is it --

21 A. I think it's through intermittent flow, either  
22 using pistons to lift produced liquids or simply by  
23 shutting in the well, allowing the pressure to build, and  
24 then letting the well pressure lift the produced liquids.

25 Q. Okay. Pretty low liquids volume, obviously, too

1 then?

2 A. And certainly in this case, we think that the --  
3 In most parts of the Basin we haven't found evidence to  
4 indicate that the Lewis produces water.

5 EXAMINER JONES: Okay. Okay, that was my  
6 critical questions, and the others you pretty much answered  
7 with your model that you ran. And I really appreciate you  
8 doing all the work to look at these no-flow boundaries.

9 The fact that the wells are so low-rate is a big  
10 -- seems to be a big -- at least a practical consideration  
11 in this case also.

12 And another one would be the different geologic  
13 horizons the wells are producing in.

14 But this information -- hopefully you can expand  
15 on it and use it in the future for other tools that you --  
16 other reasons.

17 So that's all the questions I had. Thank you,  
18 Mr. Loveland.

19 MR. LOVELAND: Thank you.

20 MR. KELLAHIN: That concludes our presentation,  
21 Mr. Jones.

22 EXAMINER JONES: Okay. With that, we'll take all  
23 eight cases under advisement.

24 Do I need to read the case numbers? I will, I'll  
25 read them.



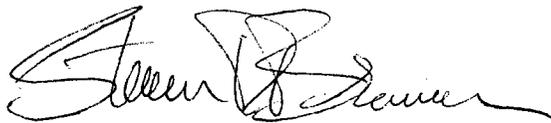
## CERTIFICATE OF REPORTER

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 March 21st, 2006.



STEVEN T. BRENNER  
 CCR No. 7

My commission expires: October 16th, 2006