## STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

## OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY ) THE OIL CONSERVATION DIVISION FOR THE ) PURPOSE OF CONSIDERING: ) ) CASE NO	. 13,841
APPLICATION OF NOCH EXPLORATION COMPANY, )L.L.C., FOR AN ORDER AUTHORIZING )INCREASED WELL DENSITY AND SIMULTANEOUS )DEDICATION ON CERTAIN NONSTANDARD )SPACING UNITS IN THE BASIN-FRUITLAND )COAL GAS POOL, SAN JUAN COUNTY, )	
NEW MEXICO ) ORIGI	NAL
REPORTER'S TRANSCRIPT OF PROCEEDINGS	2007
EXAMINER HEARING	FEB
BEFORE: DAVID K. BROOKS, Jr., Hearing Examiner	1 AM
January 18th, 2007 Santa Fe, New Mexico	9 26

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID K. BROOKS, Jr., Hearing Examiner, on Thursday, January 18th, 2007, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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

FOR THE APPLICANT:

MILLER STRATVERT, P.A. 150 Washington Suite 300 Santa Fe, New Mexico 87501 By: J. SCOTT HALL

FOR BP AMERICA PRODUCTION COMPANY:

JAMES G. BRUCE Attorney at Law P.O. Box 1056 Santa Fe, New Mexico 87504

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WHEREUPON, the following proceedings were had at 1 9:05 a.m.: 2 3 4 EXAMINER BROOKS: Okay, we'll go back on the 5 Let the record reflect that I have the assistance record. 6 7 of Mr. William Jones as technical advisor to the Examiner. And at this time we'll call Case Number 13,841, 8 Application of Koch Exploration Company, L.L.C., for an 9 order authorizing increased well density and simultaneous 10 dedication on certain nonstandard spacing units in the 11 Basin-Fruitland Coal Gas Pool, San Juan County, New Mexico. 12 13 Call for appearances. 14 MR. HALL: Mr. Examiner, Scott Hall, Miller 15 Stratvert law firm, Santa Fe, appearing on behalf of the 16 Applicant, Koch Exploration Company, L.L.C., and I have two 17 witnesses this morning. 18 MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, 19 representing BP America Production Company. I have three 20 witnesses. 21 EXAMINER BROOKS: Any other appearances? 22 Very good, the witnesses may be sworn. 23 (Thereupon, the witnesses were sworn.) 24 EXAMINER BROOKS: Okay, Mr. Hall? 25 MR. HALL: All right.

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1	MORGAN J. CONNOR,
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. HALL:
6	Q. For the record, please state your name, sir.
7	A. My name is Morgan J. Connor.
8	Q. Mr. Connor, where do you live and by whom are you
9	employed?
10	A. I live in Denver, Colorado. I'm employed by Koch
11	Exploration Company, L.L.C.
12	Q. In what capacity?
13	A. I'm the land manager for the United States
14	operation.
15	Q. Now you've not previously testified before the
16	Division's Examiners; is that correct?
17	A. No, sir, I have not.
18	Q. Would you give the Examiners a brief summary of
19	your educational background and work experience?
20	A. I have a bachelor's of science in business
21	administration from the University of Arizona. I also did
22	graduate studies in international management at the
23	American Graduate School of International Management in
24	Arizona.
25	I was 13 years as a land manager for Vessels Oil

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1	and Gas Company, which was a privately held company with
2	operations in Colorado, Texas and Wyoming.
3	I left the oil and gas industry back in 1994, as
4	I think a lot of people did, ended up working for U.S. West
5	and Qwest Communications as a consultant and as a level 5
6	manager of the data administration group. I've done little
7	stints on my own as running my own company. And in May
8	of this last year I went to work for Delta Petroleum, a
9	public company in Denver, Colorado, as a senior land
10	consultant.
11	And in August of last year I was hired as the
12	land manager for Koch Exploration. I report to the
13	president, Dale Schlansog, directly.
14	Q. Do you have membership in any professional
15	associations?
16	A. I do. I'm a member of the AAPL, American
17	Association of Professional Landman; DAPL, Denver
18	Association of Petroleum Landmen; I'm also a real estate
19	broker in the State of Colorado.
20	Q. Are you familiar with the Application that's been
21	filed in this case and the lands that are the subject of
22	the Application?
23	A. Yes, sir, I am.
24	MR. HALL: At this point, Mr. Examiner, we would
25	offer Mr. Connor as an expert petroleum landman.

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EXAMINER BROOKS: He is so qualified. 1 (By Mr. Hall) Mr. Connor, briefly explain to the Q. 2 Examiner what it is Koch is seeking by its Application here 3 4 today. Well, if you can take a look at Exhibit 1 you'll Α. 5 see a map. If I can go into a little detail in the map, 6 explain what we're asking for here, the area that's shown 7 in yellow is our Pump Canyon area. In this area Koch 8 Exploration operates 54 Fruitland Coal wells. We have six 9 additional wells which you'll see on here as locations 10 which we intend to drill in 2007, five of which have 11 already been permitted through the BLM. 12 13 And then you'll also see a green, a blue and an orange hachmark, and these represent the original units 14 that were formed back in 1991 for production from the wells 15 in the west half of Section 6 and the northwest quarter of 16 7, the southwest quarter of 7 and the west half of 18, and 17 the west half of 19 and northwest guarter of 30. 18 What we are looking at here, Sections 6 through 19 31 are odd-size sections. They are not a full 240. 20 And 21 back when the original spacing was set up, basically what 22 was done was, the east half of these Sections 6, 7, 18 and 23 19 were set up as a unit on a 320-acre basis, and then the 24 green shows you the units that were formed in 1990 and 1991 25 through communitizations for the remainder of the acreage

1	in these nonstandard sections.
2	The locations that are circled in a bright red
3	outline are the Jaquez 331 T, the Quinn 338 T and the Quinn
4	341 T, are the exception locations that we're asking to be
5	drilled.
6	Q. Now if we look at Exhibit 1, the units you show
7	there in these five sections, these are irregular sections;
8	is that correct?
9	A. Which
10	Q. Are these irregular sections?
11	A. These are irregular sections, 6, 7, 18, 19 and 30
12	are irregular-size sections.
13	Q. Is the section size shown on Exhibit 1 exactly to
14	scale?
15	A. The section size is, as we unders as much as
16	possible, when it was drawn, is drawn to scale. The unit
17	sizes are not to scale in a true representation. I believe
18	if you take a look at the green hachmarks you'll see that
19	that green area is 330 acres, the blue hachmark is 330
20	acres and the orange hachmark is 326 acres.
21	Q. All right, let's talk about the pool rules for
22	the Basin-Fruitland Coal Gas Pool, and if you would turn to
23	Exhibit 2, what do those rules provide for currently in
24	terms of drilling densities and acreage location
25	dedication requirements?

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1	A. Rule Number 4 states that, Each standard gas
2	spacing unit will consist of 320 acres, more or less,
3	comprising any two contiguous quarter sections of a single
4	governmental section.
5	Q. And how do these rules address nonstandard units?
6	A. I'm not
7	Q. What provision is made in the rules for
8	assembling a Fruitland Coal gas well unit where you have an
9	irregular section and a nonstandard unit?
10	A. I believe that's Rule 6; is that correct? Should
11	I read that as well?
12	Q. If you can summarize that, please.
13	A. The Division Director may grant an exception of
14	the requirements of Rule (4) when the unorthodox size or
15	shape of the gas proration unit is necessitated by a
16	variation in the legal subdivision of the United States
17	Public Lands Survey or where the following facts exist and
18	the following provisions are complied with, item (c), the
19	nonstandard unit conforms to a previously approved Blanco-
20	Mesaverde and Basin-Dakota Gas Pool non-standard unit as
21	evidenced by applicants reference to the Division's order
22	number creating said unit.
23	Q. All right, and the current well density
24	limitations are two wells per standard 320-acre unit; is
25	that right?

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1	A. That's correct.
2	Q. Has the Division previously approved nonstandard
3	proration units for each of the irregular units that Koch
4	seeks approval for here today?
5	A. Yes, they have.
6	Q. And do those irregular nonstandard units conform
7	to previously approved nonstandard units for the Mesaverde
8	and Dakota formations?
9	A. Yes, they did.
10	Q. Let's turn to Exhibit 3. Is Exhibit 3 a
11	compilation of the Division's orders approving the
12	nonstandard units for the Fruitland Coal, Blanco-Mesaverde,
13	and the Basin-Dakota formations?
14	A. Yes, that is correct.
15	Q. All right, let's turn to Exhibit Number 4 now.
16	What does this demonstrate to the Examiner?
17	A. Basically what we're saying trying to show
18	here in Exhibit 4 is, you see that by a pattern of drilling
19	in the Pump Canyon area and the adjacent areas, there is no
20	wells in the northwest quarter of Section 6 of Township 31
21	North, 8 West, or Section 18 or 19, and those are where
22	we're asking for our exception locations.
23	Q. All right. When you compare the development in
24	the Fruitland Coal formation in the area under the
25	Division's pool rules for the pool, do the irregular

1	sections and nonstandard units cause there to be three
2	undrilled quarter-section locations?
3	A. That is correct.
4	Q. And then when you examiner Koch's proposal in the
5	context of the entirety of Section 6, 18 and 19, will
6	Koch's proposal result in effective development of four
7	wells per section for each of these three sections?
8	A. That is correct.
9	Q. And is that pattern consistent with the overall
10	pattern established under the Division's rules for the
11	pools?
12	A. Yes, it is.
13	Q. And here on a 640-acre basis again, there is
14	effectively no increase in the development densities for
15	this immediate area under Koch's Application; is that
16	right?
17	A. That is correct, yes.
18	Q. By continuing the current drilling pattern of
19	four wells per section, is it your understanding that you
20	improve the efficient recovery of coal gas reserves and
21	protect the correlative rights of the interest owners in
22	each of these three sections?
23	A. Yes, we definitely do. We feel that we are
24	possibly drained, definitely in Section 6, and we want to
25	protect the correlative rights of the other units.

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1	Q. All right, let's talk about the interest owners
2	in the area. Let's turn to Exhibit 5.
3	A. Exhibit 5 is a list of all the wells or the
4	exception locations, the Jaquez 331 T, the Quinn 338 T and
5	the Quinn 341 T. And as you can see there, you'll see the
6	working interest ownership; it's the first part of each one
7	of these units. And then you'll see the net revenue
8	interest ownership in each one of these wells.
9	We have fee ownership in Section 7 and BLM
10	ownership in Sections 6, 18, 19 and 30.
11	Q. Now were each of the working interest owners and
12	each of the three irregular sections notified of Koch's
13	Application?
14	A. They were.
15	Q. And what sort of response did Koch receive?
16	A. I have had a number of phone conversations with
17	some of the other non-operators in this well, and they
18	supported our moving forward on drilling these wells, with
19	the exception of BP who is contesting the drilling of these
20	three wells.
21	Q. All right, let's talk about the offsetting units.
22	Turn to Exhibit 6, please.
23	A. Again, this is just a list of all the working
24	interest ownership that is in the wells offsetting our
25	three exception locations, and you can see that we have BP,

1	we have Burlington Resources, Koch Exploration. We also			
2	have Four Star, Texaco, and then you can also see the			
3	royalty interest owners and the overriding royalty interest			
4	owners in these wells.			
5	Q. And were the operators of each of these			
6	offsetting units notified of Koch's Application?			
7	A. Yes, they were.			
8	Q. And where Koch is the operator of the offsets,			
9	were the working interest owners in each of those units			
10	notified?			
11	A. Yes, they were.			
12	Can I ask, did you have any questions regarding			
13	the first map exhibit? Did I make the clear enough to you?			
14	EXAMINER BROOKS: Yeah, I think so, but I will go			
15	back and ask questions when we get when Mr. Hall is			
16	finished examining you.			
17	THE WITNESS: Thank you.			
18	Q. (By Mr. Hall) Now turning back to the mineral			
19	interest ownership in each of the three irregular units			
20	that are the subject of Koch's Application, are these units			
21	comprised of both federal and fee mineral ownership?			
22	A. The Jaquez is federal and fee. The Quinns are			
23	federal.			
24	Q. All right. Mr. Connor, in your opinion as a			
25	landman, does Koch as both operator and lessee, owe a duty			

1	to the other interest owners in each of three units to act
2	prudently to optimize recovery of coal gas reserves,
3	prevent drainage and avoid waste?
4	A. Not only the working interest owners, but the
5	overriding royalty interest owners and other mineral
6	interest owners in these units, yes.
7	Q. All right. Now are there precedents for other
8	irregular sections in the high-productivity area of the
9	Basin-Fruitland Coal Gas Pool where the Division has
10	approved infill and nonstandard units?
11	A. Yes, if you'll take a look at Exhibit 7, this is
12	a map that shows an outline of the high-productivity area
13	in orange or red. You can see San Juan County and Rio
14	Aruba [ <i>sic</i> ] County. You can see the yellow again; it will
15	draw you back to our Pump Canyon area. And then we have
16	three areas that are sort of in a maroon-colored stipple
17	that show irregular-size section where there is four wells
18	per 640 or four wells per irregular section, excuse me.
19	Q. All right, let's look at Exhibit 8. What is
20	Exhibit 8 intended to demonstrate?
21	A. Exhibit 8 is to address the fact that out of 400
22	possible infill location, 18 infill wells have been drilled
23	in nonstandard spacing units, represents approximately 4.5
24	percent of the total. Three of these wells resulted in an
25	average well-spacing pattern smaller than the spacing

patterns of what Koch Exploration is currently proposing. 1 All 18 development wells drilled in irregular 2 sections resulted in a drilling pattern with four wells per 3 section, and the only difference between these locations 4 and KEC's proposal is the original defined spacing unit. 5 Let's turn to Exhibit 9, and we placed the ο. 6 7 exhibit sticker over a portion of the heading. What is Exhibit 9? 8 Exhibit 9 is a list of the 12 sections where we 9 Α. have irregular-size sections, and the wells that have been 10 11 drilled and the size of the units that have been dedicated to each well. And as you can see, there's a line break 12 13 between each section. And then you can see for each half-section, the 14 column that is second from the right shows the size of the 15 16 spacing unit, and then the column that is immediately on the right shows the well spacing, the number of acres per 17 unit. 18 19 You can see some of these are a standard 320, and 20 then as happened in our instance, some of the balance -- or 21 the balance of the acreage is what's dedicated to the remaining wells in that section. 22 Did -- all of these sections -- All of these 23 Q. units and wells are located within the high-productivity 24 25 area?

1	A. That is correct.
2	Q. All right. If you look at the fifth and sixth
3	wells on your list in Exhibit Number 9, the BP Isabel A 1
4	and A 1S, what was the size of spacing unit involved with
5	the BP wells there?
6	A. The BP American Isabel A 1 and A 1S, the total
7	unit size was 311.61 acres, which is equivalent of 155.81
8	acres per well.
9	Q. And if you refer back to Exhibit 7, your area
10	map, are those units apparent on that map?
11	A. Yes, they are.
12	Q. And could you point those out to the Hearing
13	Examiner? Where are they located?
14	A. One second. I believe they're located in the
15	very left-hand stippled area; is that correct?
16	Q. (Nods)
17	A. Thank you.
18	Q. If you would refer to Exhibit Number 10, Mr.
19	Connor, is Exhibit 10 the affidavit of notice where your
20	counsel provided notice to all of the interest owners in
21	accordance with the Division's Rules?
22	A. Yes, it is.
23	Q. And were Exhibits 1 through 9 prepared by you or
24	at your direction and control?
25	A. Yes, they were.

1	MR. HALL: At this point, Mr. Examiner, we'd move
2	the admission of Exhibits 1 through 9 as well as Exhibit
3	10, which is Mr. Carr's notice affidavit.
4	MR. BRUCE: No objection.
5	EXAMINER BROOKS: Exhibits 1 through 10 are
6	admitted.
7	MR. HALL: That concludes our direct of this
8	witness, Mr. Examiner.
9	EXAMINER BROOKS: Mr. Bruce?
10	CROSS-EXAMINATION
11	BY MR. BRUCE:
12	Q. Just a few questions, Mr. Connor. If you look at
13	your Exhibit 1, when you're looking at your well units,
14	just take, for instance, the west half of any of those
15	three or four four or five sections, Section 6 or
16	Section 7, those, quote-unquote, west-half are actually
17	about 220 acres in size, correct?
18	A. Yes, sir.
19	Q. So really, even though you divide the section in
20	half so it looks like the east half is the same as the west
21	half, really the west half of each of those sections should
22	have about a third of that acreage lopped off of them,
23	shouldn't it?
24	A. I would say that's correct.
25	Q. And then looking at your Exhibit 9

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1	A. Yes, sir.
2	Q virtually all I won't say that, I won't
3	characterize it that way, but the overwhelming majority of
4	these wells are inside units, correct? They are inside
5	A. They are within a section.
6	Q. But they are in federal units, exploratory units;
7	is that correct?
8	A. I cannot make that statement, I do not know.
9	Q. Well, I mean you're listing the San Juan 32-9
10	Unit, which is a federal exploratory unit covering a large
11	chunk of land in Township 32 North, 9 West, is it not?
12	A. I'm not aware of the unit size.
13	Q. Okay.
14	A. I didn't study the unit size.
15	Q. And then if you look if you go down this list,
16	if you look at the Isabel A if you leave the lands
17	outside something that is designated San Juan 32-9 Unit or
18	San Juan 30-6 Unit, you're left with five well units in the
19	entire high-productivity area of the Basin that are
20	undersized?
21	A. I mean, I'd have to
22	MR. HALL: Is that a question?
23	Q. (By Mr. Bruce) Well, I mean, is that correct
24	based on your exhibit?
25	A. I would say that's correct based on the exhibit,

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	2
1	yes, sir.
2	Q. Okay, and the very first one, which is BP's
3	Isabel unit, is almost a standard-sized unit? It's close
4	to 320 acres?
5	A. That's correct.
6	Q. Okay. So really, there are only four well units
7	in the entire high-productivity area of the San Juan Basin
8	which have units of, say, 265 or 270 acres that have two
9	wells on them?
10	A. If you eliminate the wells that you've
11	eliminated, that's true.
12	Q. Okay. Do you know how much And so five well
13	units. Do you know how many well units there are in the
14	entire high-productivity area of the San Juan Basin?
15	A. I think there are approximately 400. Is that
16	correct, Bob?
17	MR. WRIGHT: Yes.
18	Q. (By Mr. Bruce) So approximately one percent of
19	the wells outside of these San Juan units are undersized?
20	A. If you eliminate those wells, yes.
21	Q. Okay. And one final question. You claim that
22	Koch was being drained, or that Koch's well units were
23	being drained. You're not an engineer, correct?
24	A. No, sir, I'm not an engineer. And we have an
25	engineer who will make testimony.

22 That's all I have. MR. BRUCE: 1 2 EXAMINATION 3 BY EXAMINER BROOKS: 4 0. Mr. Connor --5 Α. Yes, sir. -- is that correct? My understanding is that the 6 Q. wells that you have a red circle around the red dots, are 7 the ones that are proposed wells that you're applying for 8 9 permission to drill? Yes, sir, that's correct. 10 Α. Those wells do not yet exist? 11 Q. They do not exist, sir. 12 Α. Now the other -- within the subject units, which 13 Q. 14 are cross-hached here, the other red dots, do those represent wells that are completed in the Fruitland Coal? 15 Yes, sir, they are, and they're producing. 16 Α. So there is a Fruitland Coal well in the 17 Q. southwest quarter of 6 --18 19 Α. Yes, sir. -- northwest quarter of 7, southwest quarter of 20 Q. 7, southwest quarter of 18, southwest quarter of 19, and 21 the northwest quarter of 30? 22 23 Yes, sir. Α. Okay. The ownership that you testified to -- and 24 Q. 25 your ownership exhibit is Number 5?

1	A. Yes, sir.	
2	Q. That specifies the ownership, and also Number 6,	
3	right?	
4	A. The ownership in Number 6 is the offsetting	
5	wells.	
6	Q. Okay. And the ownership in 5 is what?	
7	A. The ownership in 5 would be the ownership of the	
8	exception locations as well as the ownership in the wells	
9	that you just mentioned, so	
10	Q. Okay, so those are the ownerships in the cross-	
11	hached units?	
12	A. Exactly, yes, sir.	
13	Q. And Exhibit Number 5 is the offset ownership?	
14	A. Yes, sir, it is.	
15	MR. HALL: Exhibit 6.	
16	THE WITNESS: I'm sorry, Exhibit 6.	
17	Q. (By Examiner Brooks) Oh, thank you, thank you,	
18	Exhibit 6 is the offset ownership.	
19	Okay, let me trace these and be sure. First of	
20	all, can you tell me who is the operator of well, I	
21	guess we just need to go around here. We go up the up	
22	in the Pump Canyon unit. Who is the operator up there?	
23	A. In what section?	
24	Q. Section 31 of 32 North, 8 West.	
25	A. Peoples is the operator in that section.	

1	Q. Okay, and what about 36 of 32 North, 9 West?		
2	A. ConocoPhillips and wait a minute, or		
3	Burlington Resources.		
4	Q. Yeah, okay, that's the same entity. I have to		
5	remember those things.		
6	Okay, then starting down the west offsets,		
7	Section 1 of 31 North, 9 West, who is the operator?		
8	A. Koch Exploration Company, L.L.C., is the operator		
9	of all the wells in the Fruitland Coal in the yellow.		
10	Q. Oh, okay. So we don't need to ask about that.		
11	And then you've shown all the working interest		
12	owners The working interest owners are shown by what		
13	they're offset to, though not by the particular units in		
14	which they're offset; is that correct?		
15	A. No, sir, the unit that they are participating in		
16	is directly below the statement of what they're offset to.		
17	So if you take a look at the upper left-hand corner, you'll		
18	see it's an offset to the Jaquez 331 T, and that's the		
19	Nordhaus 10, the Nordhaus 10S, and those locations are		
20	located in the east half of Section 1.		
21	Q. Oh, okay. So the first box there is the working		
22	interest ownership of the east half of Section 1?		
23	A. Yes, sir. The units that were formed here, with		
24	the exception of those that are stippled, are all east-west		
25	units. The original wells that were drilled have no S on		

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1	them. The child wells, or the subsequent wells that were	
2	drilled, have an S on them.	
3	Q. So when you say they're east-west units, are they	
4	standup?	
5	A. Yes, sir.	
6	Q. They're standup units	
7	A. Standup 320s.	
8	Q on an east and a west half, they're because	
9	that east-west would be ambiguous. You could describe a	
10	laydown unit as an east-west unit, but	
11	A. They're standup 320s.	
12	Q. Okay, they're standup 320s. The first box shows	
13	the ownership of the east half of Section 1, correct?	
14	A. Yes, sir.	
15	Q. And the second box shows the ownership of	
16	A the east half of Section 12.	
17	Q. The east half of of 12?	
18	A. Yes, sir.	
19	Q. And the third box ?	
20	A. The third box shows the east half of Section 13.	
21	Q. And the fourth box	
22	A shows the east half of Section 24.	
23	Q. And then on the second column, the first the	
24	top box on the second column?	
25	A. Is the east half of Section 7. Then we go to the	

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east half of Section 18. 1 That's the second box on the right-hand side? 2 **Q**. 3 Α. Yes, sir. It's the east half of Section 18? 4 0. 5 Yes, sir. Α. And now we're talking section number -- on the 6 Q. right-hand column we're talking section numbers in 32 7 North, 8 West? 8 That's correct. 9 Α. Whereas on the left-hand we were talking section 10 Q. numbers in 31 North, 8 West -- 30 -- I'm sorry --11 12 Α. Thirty-one --13 Q. -- 31 North, 9 West ---- 9 West --14 Α. -- for the left-hand column? 15 Q. Yes. 16 Α. For the right-hand column, 31 North, 8 West? 17 Q. Yes, sir. 18 Α. 19 Okay --Q. Sorry if that isn't clear. 20 Α. 21 -- I think I've got it right now. Q. 22 Okay, and then the final box, the bottom box on the right-hand side? 23 24 Α. That'll be the east half of Section 19. 25 Q. Okay, thank you.

1	A. When I said that Koch operates all that in
2	yellow, we operate all the wells in yellow and the stippled
3	wells, the wells that are in the green, the blue and the
4	orange.
5	Q. Yeah, those are in yellow too, actually,
6	underneath the
7	A. Yeah, they are.
8	Q underneath the cross-haching?
9	A. Underneath that, that's correct.
10	Q. Okay, and all the remaining offsets here are down
11	in the south, are operated by BP, correct? Other That's
12	the rest of Section 30?
13	A. Looks like the Section 30 is operated by BP.
14	Q. Except for the northwest quarter?
15	A. Yes, sir.
16	Q. But you said they were No, wait, the rest of
17	that that's got to be configured some other way, because
18	that Quinn is in other than in the standard units,
19	because that Quinn is part of a nonstandard unit?
20	A. The Quinn is part of a nonstandard unit. There
21	is also a nonstandard unit in Section 30.
22	Q. Okay.
23	A. I'm sure BP could define their unit there.
24	Q. Okay, but BP operates all of Section 30 except
25	the northwest quarter?

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1	A. It is my understanding, yes, that's correct.	
2	Q. But then there are no wells shown in the south	
3	half of Section 30, so There are no wells shown in the	
4	south half of Section 30?	
5	A. Again, I think it's a configuration similar to	
6	the one that we have, and we would support BP drilling	
7	those wells if they'd like to drill them in the south half	
8	of Section 30.	
9	Q. So you're suggesting that the southwest quarter	
10	of Section 30 is Do you know how that unit is configured	
11	that includes the southwest quarter of Section 30?	
12	MR. WRIGHT: It's actually configured in the same	
13	sort of configuration as the ones immediately to the north.	
14	EXAMINER BROOKS: Okay, I'll ask you that	
15	question when you get on the stand.	
16	MR. WRIGHT: Yes, sir.	
17	THE WITNESS: I'm sorry.	
18	EXAMINER BROOKS: Okay, you do not know?	
19	THE WITNESS: No, sir.	
20	EXAMINER BROOKS: Okay, very good.	
21	Q. (By Examiner Brooks) Okay, the If you do	
22	these three wells, you've got this first unit here. Do I	
23	read that correctly as 338 acres?	
24	A. Yes, the green hachmarked is 338 acres.	
25	Q. 338 acres, so the average number of acres	

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1	dedicated	to each of the wells would be one hundred and
2	Α.	thirteen, approximately.
3	Q.	twelve-point more than five?
4	Α.	Right.
5	Q.	And it's 330 acres in the
6	Α.	blue hachmarks.
7	Q.	blue hached unit, and so that would be
8	А.	110.
9	Q.	110. And in the orange that would be 320, so
10	that's	
11	А.	No, it's 326.
12	Q.	326?
13	А.	Yes, sir.
14	Q.	Okay, yeah, I have trouble reading numbers.
15	Α.	I'm sorry.
16	Q.	It's a fault of my old age. So that's 108.
17	Okay.	
18		Now on Exhibit 9, the column headed "Well Spacing
19	(Acres)",	that's comparable to the figures I was just
20	reading fo	or your wells, correct?
21	Α.	Yes, sir.
22	Q.	In other words, that is computed by taking the
23	total num	per of acres in a spacing unit and dividing by the
24	number of	wells in a spacing unit?
25	Α.	Exactly.

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1	EXAMINER BROOKS: Okay, I think that's all my
2	questions of this witness.
3	Mr. Jones?
4	EXAMINATION
5	BY MR. JONES:
6	Q. Mr. Connor, the so Burlington and
7	ConocoPhillips didn't oppose this?
8	A. As a matter of fact, I talked to their landman in
9	Farmington, and he supported our Application.
10	Q. Peoples didn't
11	A. No, sir, no objection from Peoples.
12	Q. Are these I guess I didn't the Application,
13	is it asking for a formation of the NSPs?
14	MR. HALL: Mr. Examiner, the NSPs for the
15	Fruitland Coal are pre-approved.
16	MR. JONES: Okay.
17	MR. HALL: They're in Exhibit Number 3, there's
18	the order for that.
19	MR. JONES: That's right, I remember you saying
20	that now.
21	Q. (By Mr. Jones) So and these correspond with
22	the Mesaverde and the
23	A. Yes, sir.
24	Q Dakota spacing units
25	A. Yes.

-- that are already -- And this map includes only 1 Q. -- on Exhibit 1, only Fruitland Coal? 2 Those are the Fruitland Coal locations and 3 Α. 4 producing wells, yes, sir, in the Fruit- -- We're not 5 showing any other formation wells on that map. Did Koch -- you weren't working for Koch, 6 Q. Okay. I quess, when the last revision of the Basin-Fruitland 7 Coal --8 2003, no, I was not. 9 Α. Do you know if Koch supported the provision to 10 0. provide notice before infill -- or before increased density 11 in the high-productivity areas? 12 13 Α. I believe we supported that. The mapping program that you used -- Did you draw 14 Q. this map? 15 16 Α. No, sir, I did not. 17 **Q**. Okay. Do you know what kind of software they 18 used for that? Was it --19 Α. -- Geographics. -- Geographics? 20 Q. 21 Yes, sir. Α. 22 Q. Okay, but --23 Α. It isn't -- the units aren't to scale, I admit 24 The reason it was is, we were just trying to show that. 25 the units as they exist. But I think you'll see that we're

1	clearly stating the acreage there, and we are stating that
2	they're nonstandard units.
3	Q. Okay. And as far as the Do you have the
4	acreage for the east I guess the west half of 6? Do yo
5	know
6	A. I do, if you'll give me just a second to look it
7	up, I think I have that. Let's see Thank you.
8	I see the total acreage, I don't see what is in
9	Section 6, I apologize. It will
10	Q. I think we can look it up, it's But on your
11	Exhibit Number 3, the second page, can you look at that?
12	A. I'm sorry Oh, okay, in Section 6
13	Q. Yeah, as far as this order would correspond
14	exactly with what your acreage would be, right, in Lots 3
15	through 7, the southeast of the northwest and the east half
16	of the southwest?
17	A. Yes, sir.
18	Q. Okay. Okay, we can look that up then.
19	A. Okay.
20	Q. Does Koch have any if this got approved, would
21	it affect Koch's future plans for other irregularly spaced
22	units?
23	A. To my knowledge, we don't have any other
24	irregularly spaced units in the areas where we're an
25	operator. You know, I can't speak to what we might acquire

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1	in the future, but these are the only ones that come under
2	this category.
3	Q. Okay.
4	A. And for we have plans to drill six additional
5	wells, which will fully drill out the current allowed wells
6	in the yellow area, with these three exceptions added.
7	Q. Okay.
8	A. If you take a look there, there are a number of
9	there are six locations which haven't been drilled, and
10	we intend to drill those this year.
11	MR. JONES: Okay, that's all my questions. Thank
12	you.
13	EXAMINER BROOKS: Since I know now that you
14	didn't prepare these maps, I can ask this question. You
15	list this as Rio Arriba County, not Rio Aruba County.
16	Looks like somebody has been engaging in some wishful
17	thinking.
18	THE WITNESS: I saw you circle something on the
19	map, and it made me nervous there for a minute. But you're
20	right. We had a gentleman do it, we'll go back and
21	chastise him significantly. We apologize for that.
22	EXAMINER BROOKS: Well, he might wish to go to
23	Aruba, but he doesn't get there on this map.
24	THE WITNESS: No.
25	(Laughter)

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1	EXAMINER BROOKS: Okay, nothing further for this
2	witness.
3	MR. HALL: I have nothing more for this witness,
4	Mr. Examiner.
5	EXAMINER BROOKS: Very good, you may call your
6	next witness.
7	MR. HALL: At this time, Mr. Examiner, we'd call
8	Bob Wright.
9	BOB WRIGHT,
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. HALL:
14	Q. For the record, please state your name.
15	A. My name is Bob Wright.
16	Q. Mr. Wright, where do you live and by whom are you
17	employed?
18	A. I live in Denver, Colorado. I'm employed by Koch
19	Exploration Company, L.L.C.
20	Q. And in what capacity?
21	A. I'm senior reservoir engineer for our U.S.
22	assets.
23	Q. Mr. Wright, I understand you have not previously
24	testified before the Division or its Examiners and had your
25	credentials established as a matter of record. Please give

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1	the Hearing Examiner a brief summary of your educational
2	background and work experience.
3	A. Yes, I'd be pleased to. I have a bachelor of
4	science from Virginia Tech. I have 24 years' experience as
5	a petroleum engineer in the oil industry. I have worked
6	eight years for two different majors, for Amoco and also
7	for Phillips. I have experience with three independents in
8	addition to Koch Exploration. I have worldwide experience
9	and specific knowledge of most all of the major basins of
10	the U.S. My worldwide experience includes exposure to
11	Canada, the Dutch and British sectors of the North Sea, as
12	well as Russia and Tunisia.
13	I'm also a member of the Society of Petroleum
14	Engineers and the Rocky Mountain Association of Geologists,
15	and additionally I'm a registered professional engineer in
16	Louisiana.
17	Q. Now you've previously testified before the
18	Colorado Oil and Gas Commission and had your credentials as
19	an expert petroleum engineer
20	A. Actually no, not in Colorado either.
21	Q. I'm sorry, wrong witness.
22	Mr. Wright, are you familiar with the Application
23	that's been filed in this case
24	A. Yes, I am.
25	Q and the lands that are the subject of the

Application? 1 Yes, sir, I am. Α. 2 MR. HALL: At this point, Mr. Examiner, we'd 3 offer Mr. Wright as a qualified expert petroleum engineer. 4 He is so qualified. 5 EXAMINER BROOKS: (By Mr. Hall) Mr. Wright, have you conducted an 6 Q. engineering investigation to determine whether the drilling 7 of the three Fruitland Coal wells on the nonstandard units 8 is necessary to fully and adequately develop Fruitland Coal 9 qas reserves? 10 Yes, I have. 11 Α. And what did you conclude? 12 Q. My conclusions are summarized on Exhibit 11. 13 Α. то 14 run through the bullet points on that slide, I've concluded 15 that the drilling of the requested exception locations will 16 result in incremental recovery and thereby the prevention 17 of waste. 18 The new wells at the exception locations will protect the correlative rights of our working and mineral 19 20 interest owners. 21 Also, the infill wells at the exception locations 22 will continue the current drilling pattern that has four 23 wells per section. 24 The exception locations, as Mr. Connor noted earlier, have been granted in 18 other nonstandard spacing 25
1	units without special hearings.
2	The drilling of exception locations will not
3	adversely impact existing wells based on our past
4	experience.
5	And finally, I'll demonstrate to you that the
6	drilling of the exception locations is economically
7	beneficial to all parties concerned.
8	Q. All right, in conducting your investigation, did
9	you establish incremental reserve recovery range estimates?
10	A. Yes, sir, I did.
11	Q. And what assumptions did you use to establish
12	those?
13	A. In making the assumptions for incremental
14	recovery, I was able to utilize much of the testimony that
15	was presented in the '02 and '03 hearings that set up the
16	special rules and regulations for the Fruitland Coal.
17	During those hearings, Mr. Hawkins of BP cited a range of
18	incremental recovery for within the high-productivity
19	area, a range of 240 BCF to 640 BCF.
20	Q. Let me ask you briefly, are those ranges
21	reflected on Exhibit 11A?
22	A. Yes, they are on Exhibit 11A, that's correct.
23	Q. Okay, please continue.
24	A. A slightly different range for the high
25	productivity area was cited by Dr. Jeff Balmer of

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1	Burlington Resources. His findings for the high-	
2	productivity area were a range of 300 to 600 BCF.	
3	Now within the high-productivity area there's 205	
4	sections contained, and a total of 400 possible infill	
5	locations with four wells per section. If you use the	
6	ranges cited by Mr. Hawkins, which are the low end and the	
7	high end, and you relate those to 400 infill locations on	
8	160 acres, this would translate into incremental reserves	
9	per acre of 3.75 to 10 MMCF per acre.	
10	I applied those ranges to the sizes of the	
11	northwest corners quarter sections of the sections that	
12	we are looking at drilling.	
13	I do have to point out, I just noted an error on	
14	my item number 1, the north what I show as northwest of	
15	Section 7 should read northwest Section 6. This is the	
16	quarter section that we are looking to drill the Jaquez	
17	331 Т.	
18	In that northwest quarter there's 135 acres	
19	contained in that quarter section, and applying the range	based
20	mentioned above would give an estimated incremental	on 135
21	recovery of 506 million cubic feet to just over 1.3 BCF. I	•••
22	applied those similar in sections northwest of 18 and 19,	
23	the same ranges, to arrive at the estimated incremental	
24	recoveries for each of those quarter sections.	
25	Also noted is the total incremental estimate,	

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1	which on the low end ranges at 1.5 BCF, on the high end 4
2	BCF. And I would note that this does represent a valuable
3	resource.
4	When we look at Exhibit 11A, we see a number of
5	footnote references on there. Can you explain to us what
6	that's referring to?
7	A. The footnotes refer to the testimony taken during
8	the '02 and '03 hearings. I do have with me a bibliography
9	of the specific pages of testimony that is referenced.
10	Q. And we can make that available to Mr. Jones and
11	Mr. Brooks if they request it?
12	A. Yes, I would be pleased to.
13	Q. Okay, turn to Exhibit 12. Explain to the Hearing
14	Examiner what Exhibit 12 demonstrates.
15	A. Exhibit 12 is the same map that we have looked at
16	earlier, as far as the area of the map. Outlined in the
17	blue color is the Pump Canyon Unit that we operate.
18	What this map reflects is a productivity trend
19	based on cumulative production of the parent wells in the
20	area of the map. What is shown as contours are contours in
21	increments of 5000, and what each of the contours represent
22	would be 5 BCF of cumulative production from the parent
23	wells.
24	Also shown on this document is a variation in
25	color intensity. The strongest and most intense reds would

1	indicate the areas of highest cumulative production, and
2	the lighter shading would show areas where there's been a
3	lower level of production achieved to date.
4	The three locations that we are referring to are
5	shown in kind of a white circle. And what I would note
6	here is that the locations indicate a less color
7	intensity, showing a lower relative cumulative production
8	than some of the highest areas of intensity. It is our
9	intention that by drilling these wells we will move those
10	areas to the higher color intensity and achieve additional
11	recovery from those areas.
12	Q. Is it correct to say that the contour lines and
13	the color intensity shown on the exhibit does not reflect
14	potential?
15	A. Yes, this reflects historical production.
16	Q. So it reflects historical cumulative production,
17	and what you hope to do is intensify the red in each of the
18	three infill locations; is that
19	A. Yes
20	Q accurate?
21	A. Yes, that is accurate.
22	Q. Okay.
23	A. One last point on this. I would point out that
24	in the specific locations that we are talking about, the
25	cumulative production at those specific spots is zero, as

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1	there are not wells in those locations at this time.
2	Q. Turn to Exhibit 13, please. What does that
3	exhibit show?
4	A. This exhibit will be shown in conjunction with
5	the following exhibit, 14, will be a cross-section of five
6	wells in a generally north-south orientation, that are in
7	close proximity to the wells that we are proposing. The
8	wells that we have chosen for the cross-section were chosen
9	because we had density logs on those, which are very
10	valuable in identifying the coal layers in each of the
11	wells.
12	Q. Let's look at Exhibit 14 now. This is the cross-
13	section compiled from well logs shown on your Exhibit 13?
14	A. Yes, that is correct.
15	Q. And what does Exhibit 14 tell us about the
16	homogeneous nature of the coal sections in this vicinity?
17	A. Well, let's see, just first, I'd like to point
18	out that the north orientation is on the left side, and
19	you're moving south as you move across the page to your
20	right. The Fruitland Coal is identified above the zone
21	that is identified as the Pictured Cliffs, so the Fruitland
22	Coal is the majority of the logs indicated. The Fruitland
23	Coals are identified in the bluish-purplish color. These
24	zones were picked using an industry standard of using a
25	density log of 1.75 grams per cc. or less.

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1	And what's indicated here is that as you try to
2	move from a specific coal layer in each well, it's very
3	difficult to correlate from one well to the next. There
4	may be certain coals that can be correlated, but there's a
5	lot of specific intervals that come and go. And this would
6	point out that there's very likely in between some of
7	these wells where there are no wells, there would be
8	expected if you were to drill a well in between these,
9	you would encounter zones that are not seen in any of the
10	existing wells.
11	Q. Mr. Wright, have you investigated the potential
12	effects of interference from infill development in the
13	three Koch-operated units?
14	A. Yes, sir, I have.
15	Q. Turn to Exhibits 15 and 16 and explain what those
16	exhibits demonstrate.
17	A. I have two separate production graphs. The first
18	one is a history of the entire Pump Canyon area performance
19	to date. What is shown on this graph is production from
20	the original 31 parent wells, one of which one of those
21	wells is not currently producing. There are now 30 parent
22	wells currently producing.
23	And also shown toward the tail end of the graph,
24	on the right-hand side, is the results of the infill
25	development program that we have that has been

1	implemented, beginning in December of 2004, that we
2	currently have 24 infill wells being produced.
3	Now I might refer you to the next graph, Exhibit
4	16. This is a more detailed graph of roughly the last five
5	years of production, showing the production trends of the
6	31 parent wells for roughly three years prior to the
7	drilling of the infill wells. And as you can see, if you
8	continue to look at the performance of the parent wells,
9	there has not been a change in the performance noted of the
10	parent wells since the infill wells began production. Had
11	there been an adverse impact, I would anticipate that there
12	would have been a steepening of the decline rate in the
13	parent wells. That has not occurred, and thereby I
14	conclude that there has not been interference from the
15	infill wells.
16	Q. If you look at both the graphs let's focus on
17	Exhibit 16 we see dips in roughly January, 2005, and
18	November, December, 2006. Can you explain those?
19	A. Yes, the first dip was related to some very wet
20	weather in February of 2005. This caused some difficulty
21	operationally with being able to get water trucks to the
22	individual well sites to remove water from the wells, and
23	wells had to be shut in, causing the downward spike there.
24	The other downward spike noted in November of
25	2005 related to some operational issues with the compressor

station that TEPPCO operates. They had some down time with 1 their units there. That caused an increase in the back 2 pressure to our wells and caused a decrease in production. 3 We also did have some specific downtime with some 4 individual wells coincidentally, at the same time. 5 Now Mr. Wright, can you summarize for the Hearing 6 0. Examiner the conclusions you've reached with respect to 7 whether we can expect to realize incremental reserves due 8 to the proposed infill drilling? 9 10 Α. Yes, I'd be glad to. If you'd refer to Exhibit 17, this summarizes some of the reasons for incremental 11 reserves due to the drilling of these locations. 12 As I'm sure you're well aware, there's -- a major 13 portion of coalbed methane gas recovery occurs at very low 14 reservoir pressure. Infill drilling will have the effect 15 of reducing the average reservoir abandonment pressure. 16 Even very small decreases in reservoir pressure liberates 17 significant quantities of gas. Even if the Fruitland Coal 18 19 were a very homogeneous zone, due to the decreases in 20 abandonment pressure we anticipate by drilling these wells, 21 additional gas would be recoverable. 22 From the cross-section I've shown you, the 23 Fruitland Coal is certainly not homogeneous, so there will 24 be additional recovery anticipated due to the nature of the 25 reservoir, and that is summarized by the next bullet point

1	that incremental gas is recovered from zones that are not
2	intersected by existing wells, from zones that are not
3	effectively in communication with existing wells, or due to
4	permeability restrictions from specific pockets within the
5	producing zones.
6	In addition to these points, there has also been
7	prior testimony to pressure data within the high-
8	productivity area that has demonstrated differential
9	depletion and ineffective drainage in layers within the
10	Fruitland Coal and that it is necessary to drill additional
11	wells so as to improve drainage efficiency.
12	Q. Now, have you examined the economics of
13	recovering the incremental reserves in the infill
14	locations?
15	A. Yes, sir, I have.
16	Q. Look at Exhibit 18 and explain to the Hearing
17	Examiner how you believe that Koch's proposed infill
18	development is economically justified.
19	A. What I've looked at is based on current gas
20	pricing, the what sort of gross revenue would be
21	anticipated for the incremental reserves that I've
22	discussed previously. Let me address the gas price first,
23	how I arrived at that.
24	On last Friday, the 12th of January, I looked at
25	current average strip prices for the NYMEX at \$7.18 per

1	million BTU. We have an estimate that there would be an
2	adjustment of \$1.00 for the San Juan Basin, that would get
3	us to a net San Juan Basin price of \$6.18. This price is
4	further adjusted for a BTU content of 815 MMBTU per MCF,
5	resulting in \$5.04 per MCF. There is a gathering fee that
6	we pay of 50 cents per MCF. So after making all of these
7	adjustments, our net price to the lease is \$4.54.
8	This price is then applied to the incremental
9	reserves, the range that I mentioned earlier, which is
10	let's see, that was Exhibit 11A of 491 MMCF to a high
11	side of 1373 MMCF, and that would result in gross revenues
12	of roughly \$2.2 million to \$6.2 million.
13	There are royalties, production taxes, operating
14	costs, and the cost to drill these wells is deducted from
15	the gross revenue, and the resulting net revenue per
16	location is \$640,000, roughly, to over \$2.8 million of net
17	revenue per location. And combining that revenue for all
18	three, on the low end, \$1.9 million, to almost \$8.6
19	million.
20	Q. And isn't it correct that the severance taxes on
21	production, as well as a portion of the federal royalty
22	revenues, come back to the State of New Mexico? Is that
23	right?
24	A. Yes, sir, that is correct.
25	Q. And you're estimating approximately \$600,000 for

1	drilling costs for each of these wells?
2	A. Yes, sir, that is correct.
3	Q. Completed well costs?
4	A. Yes.
5	Q. Look back at Exhibit 12, your production trend
6	chart. If you look at that, can you tell us whether you
7	have an opinion whether the correlative rights of the
8	interest owners in each of the nonstandard Koch units could
9	be impaired by production from the offsets?
10	A. Yes, it is my belief that unless we drill these
11	wells, the correlative rights of the interests in these
12	areas would be affected by offset drainage.
13	Q. So those offsets are producing at some advantage
14	right now; is that correct?
15	A. Yes.
16	Q. Mr. Wright, if the Division approves Koch
17	Exploration's Application, will Koch also be able to
18	efficiently and economically recover additional incremental
19	reserves that would otherwise go unproduced?
20	A. Yes, it is my belief that there will be
21	incremental reserves produced, and we will thereby be
22	preventing waste and protecting the rights of the various
23	owners in these areas.
24	Q. For the three infill locations that are the
25	subject of the Application, in your opinion are we drilling

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1	unnecessary wells here?
2	A. No, these wells are not unnecessary.
3	Q. What are Koch's plans for future development in
4	the Pump Canyon area?
5	A. If you refer to Exhibit 19, this exhibit
6	summarizes the wells that are planned to be drilled in 2007
7	in standard units: the Nordhaus 712S, 716S, 717S, Quinn
8	339S, the Seymour 718S and Seymour 721S.
9	Q. All right. And is BP an interest owner in any of
10	those wells?
11	A. Yes, they are in well, in all of the wells,
12	they have a 25 percent interest in all of the wells with
13	the exception of the Nordhaus 716S, in which they have a
14	12.6-percent interest.
15	Q. All right, Mr. Wright. Were Exhibits 11 through
16	19, including Exhibit 11A, prepared by you or at your
17	direction?
18	A. Yes, they were.
19	MR. HALL: At this time, Mr. Examiner, we'd move
20	the admission of Exhibits 11 through 19, including 11A.
21	And that concludes our direct of this witness.
22	EXAMINER BROOKS: Mr. Bruce?
23	MR. BRUCE: No objection.
24	EXAMINER BROOKS: Okay, Exhibits 11 through 19,
25	including 11A, are admitted.

1	Mr. Bruce?
2	CROSS-EXAMINATION
3	BY MR. BRUCE:
4	Q. Mr. Wright, on your Exhibit 14, the cross-
5	section, are you a petroleum geologist?
6	A. No, I am not.
7	Q. Looking at well, take your Exhibit 17, and I
8	think you up front you had a similar summary of what you
9	were going to testify. You footnote these, including some
10	testimony by Mr. Hawkins here.
11	A. Yes.
12	Q. So you are relying on the prior testimony?
13	A. Yes, to a certain degree, that's correct.
14	Q. Now that testimony was to justify a second well
15	on a well unit, correct?
16	A. Yes.
17	Q. And what you're asking for is a third well on a
18	well unit?
19	A. Yes, although what we are also asking is a
20	continuance of the drilling pattern of four wells per
21	section.
22	Q. But your well units are pretty much standard
23	size, they're about 330 acres, and the offsets are all 320
24	acres?
25	A. Yes.

1	Q. Okay, so the offsetting 320-acre well units will
2	have two wells on them; that's all they're allowed?
3	A. Yes.
4	Q. And you're asking for a third well?
5	A. Yes.
6	Q. So you're asking to and the order, which was
7	part of Mr. Connor's testimony regarding infill wells,
8	doesn't talk in terms of a third well; it only talks about
9	one infill well, correct?
10	A. I believe there's really no specific language to
11	the requirements for nonstandard units.
12	Q. But it doesn't talk in terms of half-sections, it
13	talks in terms of well units, does it not, the order?
14	A. Yes.
15	Q. Whether it's standard or nonstandard, it's a well
16	unit?
17	A. Yes.
18	Q. Has Koch found any pressure depletion at any of
19	the infill locations it's drilled to date?
20	A. We have not taken specific pressure measurements.
21	Q. You haven't?
22	A. No.
23	Q. Well, you did mention pressure data showing
24	undepleted zones. Where have you measured that data?
25	A. This is from the testimony in 2002, 2003.

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And that was when there was only one well allowed 0. 1 per 320-acre unit? 2 Yes, sir. Α. 3 That's all I have, Mr. Examiner. MR. BRUCE: 4 EXAMINER BROOKS: Thank you. 5 EXAMINATION 6 BY EXAMINER BROOKS: 7 Mr. Wright, go back to your Exhibit Number 11A 8 0. 9 and see if I can understand your analysis here. This exhibit is based on the testimony in the infill hearing --10 rule hearings in '02 and '03? 11 Yes, sir, that is correct. 12 Α. And the estimates of incremental reserves that 13 ο. you're giving here were estimates of the incremental 14 reserves that could be achieved by drilling the Fruitland 15 16 Coal at an average density of one well per 160 acres, as 17 opposed to one well per 320 acres, correct? Α. Yes, sir. 18 19 Now would it be accurate to say that what you 0. have done is simply to take a linear projection of those 20 estimates and assume that you get by the further reduction 21 22 of the size of the acreage -- by the further reduction of 23 the average number of acres per well, you get the same amount of incremental production per acre that you would in 24 25 going from 320 to 160?

Yes, sir, that is correct. 1 Α. Well, I'm not an engineer, Mr. Wright, but is 2 Q. that not a flawed analysis in the sense that at some point 3 4 it's not going to be true? In other words, you can't say that if you went down to one well per acre you would get 5 the same amount of incremental reserves from each well? 6 7 There would probably be a limiting factor there Α. at some point, but to try to estimate specific incremental 8 recovery for these types of wells is -- it is an inexact 9 science, and a difficult one to do given the type of data 10 that we have available. 11 Now, would it be accurate that the same 12 0. 13 assumption is built into your Exhibits Numbers 15 and 16 in the sense that the demonstration of no interference there 14 15 is a demonstration based on infill wells going from 320 to 160? 16 17 Α. Yes, correct. And you will agree with me that at some point, if 18 Q. you keep adding wells, you will get interference? 19 20 Α. There would be the possibility of that, yes. 21 Q. Okay. Certainly a lawyer would not be able to 22 know at what point that might occur, right? 23 Α. (No response) EXAMINER BROOKS: Okay, I believe that's 24 25 basically all my questions.

1	Mr. Jones?
2	EXAMINATION
3	BY MR. JONES:
4	Q. Mr. Wright, first of all, how do you spell your
5	last name?
6	A. W-r-i-g-h-t.
7	Q. Okay. I can ask random questions, so bear with
8	me
9	A. Sure.
10	Q we're just trying to generate a transcript
11	here.
12	A. Yes.
13	Q. Is your compressors out there electric or are
14	they gas compressors?
15	A. They are gas-fired.
16	Q. Pretty much all over the San Juan Basin, huh?
17	A. (No response)
18	Q. Okay. What about this low BTU? Is that the CO $_2$
19	effect or
20	A. Predominantly, yes.
21	Q. And was that always that way?
22	A. The concentration of CO <sub>2</sub> has gradually increased
23	over time.
24	Q. Okay, what do you think it was initially up
25	there?

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1	A. I don't really recall specifically. It's I
2	know I've seen some graphs showing the trends on $CO_2$
3	concentrations, and it's a fairly it's something that
4	can be projected, and it's a fairly subtle change over
5	time.
6	Q. What about your line pressure, your gathering
7	pressure?
8	A. In Pump Canyon we have two different operating
9	systems. There is a low-pressure system on the kind of
10	the west half of our unit that we operate. On our east
11	half we have a higher-pressure system that is operated by
12	TEPPCO. We are actually currently working with them to try
13	to reduce the line pressures on the east half of the field.
14	Q. Obviously line pressure would have an enormous
15	effect on coal
16	A. Yes, sir, we try to do everything we can to
17	reduce the operating pressures as low as possible. As
18	you're well aware, the coalbed methane reservoirs are very
19	sensitive, and the ultimate recovery is very sensitive to
20	anything that can be done to lower abandonment pressures in
21	particular.
22	Q. Let's see here, the I guess also, did you
23	You're using Mr. Hawkins' estimates, but you've got
24	specific data on your unit here. What do you think is your
25	reserves per well of your let's say wells on a 320-acre

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spacing? 1 As far as what sort of cumulative would be Α. 2 expected or --3 Q. Yeah, I'm trying to get an idea -- What was your 4 peak rate on your -- per well, and what was your life on 5 your well, and what's your average reserves per well? 6 Now we're talking about the parent wells or 7 Α. the --8 The parent wells. 9 Q. 10 Α. The parent wells. 320-acre wells. 11 Q. Well, I don't recall the -- I know that there's 12 Α. 13 been some extremely good wells that we have had the 14 opportunity to operate. I believe that the highest recovery to date has been around 25 BCF. 15 The highest peak production from any of the wells, I'm not sure if I recall 16 the exact figure, but probably in excess of 5 million per 17 day, at least. 18 19 Q. This graph on Exhibit 15, you show 31 parent 20 wells and you show it peaking at 120 million a day; is that 21 right? 22 Α. Probably closer to 130 million per day. 23 ο. Okay. And was that 30 wells existing at that time? 24 25 Yes, the Quinn 339 is a well that is no longer Α.

capable of producing. I don't remember the exact date that 1 it ceased producing, so -- and it was ultimately replaced 2 by the 339R. As I say, I don't recall the exact timing of 3 when those happened, so what's represented, really, in the 4 5 curves would be 30 wells at any point in time. Q. Okay. So how do you explain the hyperbolic 6 7 decline there afterwards? Is that typical of coals, or 8 have you got like a series of exponential declines there? 9 Α. My experience is that what we are seeing here is 10 very similar to what has been exhibited in other coalbed 11 methane reservoirs as well. 12 0. Okay, so it's natural for it to decline that way. There's no contribution from the Pictured Cliffs here? 13 14 Α. No, sir, I don't believe so. 15 You're talking about -- Tell me if I'm wrong. Q. 16 You're talking about some enormously good wells here? 17 Α. Yes, sir, that's correct. Okay, those wells, were they originally 18 Q. 19 cavitated? 20 We -- a number of the wells have had different Α. completion methods applied over the years. I think at this 21 22 point, I believe all of our wells have been cavitated. 23 Q. These new wells, would you cavitate them? Okay. 24 We -- The four wells that we drilled this past Α. year, we did employ a slightly different technique. 25 I'm

1	not sure that I can really speak with good expertise on
2	that; our operational folks would have a better
3	explanation. But we did employ a different drilling
4	technique, which has helped to reduce the drilling cost of
5	the wells, to try to maximize the economics associated with
6	them. And the degree of cavitation that is done during the
7	drilling and completion of these is maybe not quite to the
8	same degree that cavitations have been done in the past.
9	Q. Okay. Is it not true that cavitations were more
10	easier implemented when the reservoir pressure was
11	higher than they are now in the sweet spot of the Basin
12	where the reservoir pressure has declined? It's kind of
13	hard to cavitate, isn't it, when the reservoir pressure has
14	declined?
15	A. Again, I don't really have specific expertise in
16	that area to perhaps offer the best conclusions there, but
17	I know that we have been successful in cavitating the wells
18	even in the lower-pressure environment that the reservoir
19	has now.
20	Q. Okay, so these are top-set and
21	A. Yes, sir.
22	Q drilled out?
23	A. Yes, sir.
24	Q. This cross-section, how come you didn't do an
25	east-west instead of north-south?

1	A. Well, I was trying to specifically find a cross-
2	section that was in close proximity to where we were
3	drilling. I felt this would be the best representation. I
4	could have also done one in an east-west manner, but I felt
5	that this would be the most useful for the hearing today.
6	Q. You talked about pressure tests with Mr. Bruce.
7	If you were going to do some reservoir pressure testing,
8	would you just analyze the production curve and use that
9	oh, Crafton's method or something on this, or would you
10	actually do some buildup tests on the wells?
11	A. At this time, we have not found cause to take
12	detailed pressure measurements in any of our wells,
13	primarily due to the cost of taking them with the having
14	to shut in wells, loss of production, the cost of the
15	testing themselves. I know that there's been well,
16	there's I've seen in the testimony nine observation
17	wells within the high-productivity area where there were
18	some specific tests taken in individual layers of those
19	wells, which was what I referred to in my testimony showing
20	the differential depletion that has occurred in the
21	reservoir.
22	So we are utilizing the data that industry has
23	taken at, certainly, considerable expense at that time.
24	Q. That's a very elegant answer. I was expecting
25	you to say you'd get shot if you tried to shut those wells

in --1 2 (Laughter) Q. -- which is probably closer to the truth there. 3 So you've got some really nice property here. Do 4 you have a reservoir model? 5 We do not have a specific reservoir model. Α. 6 7 Okay. What about surface disturbance on these 0. new wells? Are you worried about that at all? These 8 three? 9 Surface disturbance, as in --Α. 10 -- drilling these three new wells. In other 11 0. words, this is -- this would be the third well in at least 12 the -- irregularly shaped, but the size would be similar to 13 a 320-acre unit, so is there -- the feds are not worried 14 15 about it out there? Α. No, sir. 16 17 Q. What about the other zones? Have they been 18 approved for additional wells on these units? In other words, would you drill these three on the same pads as you 19 have three Mesaverde wells on this --20 Well, we do not have ownership below the 21 Α. Fruitland Coal, so --22 23 Q. Oh. -- there -- I'm not sure whether there could 24 Α. 25 conceivably be some Mesaverde wells or Dakota wells,

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Pictured Cliff wells in the same locations. Our maps are 1 addressing just the Fruitland wells. Certainly there are a 2 lot more wellbores in the vicinity. And within our 3 operations we commonly have multiple wells on the same 4 5 location. The deeper wells that we do not operate and do not own interest in, they physically are on the same 6 location as our wells. 7 Okay. The original wells -- If you were going to 8 Q. drill an original well out here and we had to -- were able 9 to do it, how much -- would it make some water? 10 Α. Yes. 11 Okay, and what was the water average rate per 12 ο. well for the initial wells? 13 I don't recall specifically exactly what those Α. 14 were. I've been working with Koch for two years, so the 15 16 history of the parent wells predated my experience with 17 Koch and also with the San Juan Basin. 18 0. I understand. What's it making now in water? It varies some by well. We do have some wells 19 Α. 20 that make more water than others. I think typically it's 21 relatively small volumes. We do have pumping units on -- I 22 believe on all of our wells -- there may be some exceptions 23 to that -- to try to keep the water off of the formation and reduce the back pressure that the wells see. A lot of 24 the wells I think really make a fairly small amount, but we 25

1	do try to do everything we can to keep the liquid column
2	off of the reservoir and the back pressure that that
3	causes.
4	Q. Yeah. These three wells, what would be the
5	initial water production on them?
6	A. I'm not sure that I have a specific number.
7	Again, they're I'm trying to remember on our past infill
8	wells. I'm not sure if I could quote you an accurate
9	figure just off the top of my head.
10	Q. But isn't it fair to say it would be a lot less
11	than the
12	A. Yes
13	Q reservoir?
14	A than the initial parent wells, yes.
15	Q. So these would be very profitable?
16	A. Yes, sir, they we would anticipate we do
17	have what we've seen with the infill wells that we've
18	drilled is that we see a ramping up of production over
19	time, generally probably three to four months to peak
20	production. We do see gas immediately, it's not we
21	don't have a dewatering of these zones and a period of time
22	where there is no gas. We will expect to see gas
23	immediately, and I would anticipate to peak performance on
24	these will take us probably within three to four months. I
25	think that's partly related to dewatering of zones that

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1	have not been effectively dewatered, given the current
2	spacing.
3	Q. Okay. And they would just immediately start on
4	decline, or do they stay at the peak for a while and then
5	decline?
6	A. We have a kind of a probably a relatively
7	short period of plateaus for production, and then on
8	decline.
9	MR. JONES: Okay, thank you very much.
10	THE WITNESS: Yes, sir.
11	EXAMINER BROOKS: Anything further?
12	MR. HALL: Brief redirect, if I might.
13	EXAMINER BROOKS: Okay.
14	REDIRECT EXAMINATION
15	BY MR. HALL:
16	Q. Mr. Wright, if you would look at one of the area
17	maps Let's look at Exhibit 4, and if you look on that
18	map at Sections 6, 18 and 19, isn't it true that if Koch's
19	Application is not granted, those sections will wind up
20	with only three wells per section? Is that correct?
21	A. Yes, sir, that is correct.
22	Q. And is it your opinion that if Koch's Application
23	is not granted, those sections will be underdeveloped?
24	A. That would be my opinion, yes.
25	Q. And would be leaving coal gas reserves in the

ground? 1 Yes, the incremental recoveries that I had cited 2 Α. earlier would not be recovered, causing a -- causing waste. 3 And if Koch's Application is granted, and if 4 Q. three additional wells are drilled in Sections 6, 18 and 5 19, would that continue to be on pattern with the 6 established development patterns for the pool in the area? 7 Yes, sir, it would result in four wells in each 8 Α. of the three sections you mentioned, which is consistent 9 with the entirety of the high-productivity area. 10 So we're looking at no more surface disturbance 11 0. than would have normally occurred under the existing pool 12 13 rules for the pool --14 Α. Yes, sir. 15 Q. -- throughout the pool? Yes, sir. 16 Α. MR. HALL: Nothing further. 17 EXAMINER BROOKS: Anything further, Mr. Bruce? 18 19 MR. BRUCE: No, sir. 20 EXAMINER BROOKS: Very good, the witness may 21 stand down. 22 Does that conclude your presentation? 23 MR. HALL: Yes, it does. 24 EXAMINER BROOKS: Very good. Let's take a 10-25 minute recess.

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1	(Thereupon, a recess was taken at 10:30 a.m.)
2	(The following proceedings had at 10:45 a.m.)
3	EXAMINER BROOKS: Okay, back on the record.
4	It's my understanding that concludes the
5	Applicant's presentation, so Mr. Bruce, you may proceed.
6	MICHAEL J. BEIRNE,
7	the witness herein, after having been first duly sworn upon
8	his oath, was examined and testified as follows:
9	DIRECT EXAMINATION
10	BY MR. BRUCE:
11	Q. Would you please state your name for the record?
12	A. Michael J. Beirne.
13	Q. And where do you reside?
14	A. Houston, Texas.
15	Q. Who do you work for and in what capacity?
16	A. I work for BP America Production Company as a
17	land negotiator, supporting the San Juan south asset.
18	Q. Have you previously testified before the
19	Division?
20	A. No.
21	Q. Would you please summarize for the Examiner your
22	educational and employment background?
23	A. I received a bachelor of business administration
24	degree in marketing from the University of Kentucky, and
25	after graduation I took a job with Chevron USA,

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1	Incorporated, in Houston as an ownership representative in
2	their division order department. I worked in the division
3	order department for a little over a year and a half and
4	moved over into the land position as a land representative
5	and worked in that capacity for just under two years, and
6	then I recently joined BP America Production Company, in
7	February of 2006.
8	Q. And your job at BP, does it include this portion
9	of San Juan County?
10	A. Yes.
11	Q. And are you familiar with the land matters
12	involved in this Application?
13	A. Yes.
14	Q. Are you a member of any professional
15	organizations?
16	A. Yes, I am a member of the American Association of
17	Professional Landmen and the Houston Association of
18	Professional Landmen.
19	Q. Have you testified before other state regulatory
20	bodies?
21	A. Yes, I have testified before the Alabama Oil and
22	Gas Board and the Colorado the COGCC.
23	Q. The Oil and Gas Conservation Commission?
24	A. Yes.
25	MR. BRUCE: Mr. Examiner, I'd tender Mr. Beirne

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as an expert petroleum landman. 1 MR. HALL: No objection. 2 EXAMINER BROOKS: He is so gualified. 3 (By Mr. Bruce) Mr. Beirne, what does BP request 4 **Q**. 5 in this case? 6 Α. BP is asking the Division to deny Koch's 7 Application to allow an additional well in each of the 8 three nonstandard units referenced in their Application. 9 Q. Would you identify your Exhibit 1 and discuss its contents, please? 10 Yes, Exhibit 1 is a map showing predominantly 11 Α. Townships 31 North, Range 9 West, and 31 North, Range 8 12 13 West, in Rio Arriba County, New Mexico. If you will note, in orange are the units in the 14 Koch Application, and down in the legend I have labeled 15 such. And I would also note that BP is a working interest 16 owner in each of those as well. 17 18 The green acreage -- the green sections of the 19 map represent the BP-operated Fruitland Coal units. 20 And the yellow are Fruitland Coal units in which 21 BP is a working interest owner. 22 All of the other sections that are cross-hached 23 there have not been researched for this matter. 24 And I have further labeled each of the 25 nonstandard spacing units to the right, they're 332.94,

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1	330.16 and 326.56. And because of the irregular survey,
2	the Division found it necessary to combine three quarter-
3	section equivalents to comprise nonstandard spacing units
4	to bring the acreage as close to the standard size as
5	possible, which would be 320 acres.
6	And due to the fact these nonstandard units have
7	comparable acreage in regard to a standard spacing unit, BP
8	believes the irregular spacing unit should accommodate the
9	same number of wells as a standard spacing unit.
10	Q. In other words, two wells per 320, just like in
11	the offset BP units?
12	A. Yes.
13	Q. Will BP be adversely affected by the granting of
14	this Application?
15	A. BP will be significantly impacted due to our
16	interest in and around the nonstandard spacing units, as
17	Exhibit 1 outlines there. Permitting additional wells to
18	be drilled in these nonstandard units will violate the
19	correlative rights of the interest owners in the
20	surrounding spacing units, and we will have a technical
21	witness to discuss in further detail.
22	Q. Was Exhibit 1 prepared by you or under your
23	supervision?
24	A. Yes.
25	Q. And in your opinion, is the denial of the

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1	Application in the interests of conservation and the
2	prevention of waste?
3	A. Yes.
4	MR. BRUCE: Mr. Examiner, I'd move the admission
5	of BP's Exhibit 1.
6	MR. HALL: No objection.
7	EXAMINER BROOKS: Exhibit 1 is admitted.
8	MR. HALL: May I
9	EXAMINER BROOKS: Pass the witness?
10	Mr. Hall?
11	MR. HALL: May I cross-examine?
12	EXAMINER BROOKS: Yes.
13	CROSS-EXAMINATION
14	BY MR. HALL:
15	Q. Mr. Beirne, looking at your Exhibit 1, can you
16	tell us what the configuration is for the unit to which the
17	southwest quarter equivalent of Section 30 is dedicated?
18	Do you know?
19	A. Do I know I'm not sure I understand your
20	question.
21	Q. To what unit is the southwest quarter of Section
22	30 dedicated?
23	A. It is dedicated to the west-half equivalent of
24	19.
25	Q. Okay, do you know how large that unit is?

1	A. 326.56 acres.
2	EXAMINER BROOKS: You said the southwest quarter.
3	MR. HALL: Southwest quarter equivalent of
4	Section 30.
5	THE WITNESS: Oh, the southwest quarter. I was
6	The southwest quarter-section equivalent is a BP-
7	operated unit that goes down into Section 31, and I do not
8	for the purposes of this know the exact acreage of that.
9	Q. (By Mr. Hall) All right, it's a nonstandard unit
10	as well?
11	A. It is a nonstandard unit, to my understanding.
12	Q. Do you know how that nonstandard unit is
13	developed?
14	A. I do not.
15	Q. Okay. Let me ask you, Mr. Beirne, if the
16	nonstandard units in Sections 6, 18 and 19 were confined to
17	the west-half equivalents of just those sections, would BP
18	object to a well in each of the quarter-section
19	equivalents? Do you understand my question?
20	A. I do understand your question, and if those were
21	the approved standard sections, I would have to speculate
22	no.
23	Q. You would not object? BP would not object? Is
24	that your answer?
25	A. BP would not object.

Mr. Beirne, do you have an opinion on Okay. 1 ο. whether the correlative rights of the interest owners in 2 the undrilled guarter-section equivalents of Sections 6, 18 3 and 19 will be impaired if those quarter sections are not 4 5 drilled? Can you repeat the question? 6 Α. Do you have an opinion of whether the correlative 7 ο. rights of the interest owners in the undrilled quarter 8 sections of Sections 6, 18 and 19 will be impaired if the 9 three proposed infill wells are not drilled? 10 I believe they will. 11 Α. That they will be violated? 12 Q. The correlative rights of the offset owners. 13 Α. 14 0. No, the interest owners in the quarter-section equivalents for the undrilled location --15 No, I do not. 16 Α. What's the basis of your opinion? 17 Q. The basis of my opinion is that they have the --18 Α. 19 they already have the approved two wells per that section, per that drilling unit. 20 21 0. All right. Do you have an opinion on whether or not all of the reserves underlying those undrilled 22 23 locations can now be adequately produced --I would object, Mr. Examiner. 24 MR. BRUCE: He's 25 asking him an engineering question, and he's a landman.

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1	MR. HALL: Mr. Examiner, he already opined about
2	the correlative-rights violations in his direct testimony.
3	I think it's within the scope of his earlier answer.
4	EXAMINER BROOKS: Okay, I'll allow it. Go ahead.
5	THE WITNESS: I am not qualified to answer
6	reserves questions. I would not that because if they were
7	allowed an additional well within the approved spacing
8	units, the offsetting owners are not afforded the
9	opportunity to have a third well in their spacing units.
10	That was the my correlative rights.
11	Q. (By Mr. Hall) Is it correct to say that BP is
12	not opposing Koch's Application for the reason that it
13	would bear a share of the drilling costs in each of the
14	nonstandard units?
15	A. Well, I'm not in a position to answer that
16	question.
17	MR. HALL: Okay, I have nothing more of this
18	witness.
19	EXAMINATION
20	BY EXAMINER BROOKS:
21	Q. As I understand your testimony, the southwest
22	quarter of Section 30 is included in a nonstandard unit
23	that also includes the west half of 31 in 31 North, 8 West?
24	A. It is my understanding, yes, the west-half
25	equivalent of 31.

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1	EXAMINER BROOKS: Okay, I believe that's my only
2	question.
3	EXAMINATION
4	BY MR. JONES:
5	Q. Mr. Beirne
6	A. Beirne, yes.
7	Q Beirne, if you were going to object, you
8	object to all three of these locations?
9	A. The ones in orange? Yes.
10	Q. Yeah. And do you have a stronger objection to
11	any one of them?
12	A. No.
13	MR. JONES: Okay.
14	EXAMINER BROOKS: Anything further?
15	MR. HALL: No, sir.
16	EXAMINER BROOKS: Very good, you may call your
17	next witness, Mr. Bruce.
18	JAMES M. PERKINS,
19	the witness herein, after having been first duly sworn upon
20	his oath, was examined and testified as follows:
21	DIRECT EXAMINATION
22	BY MR. BRUCE:
23	Q. Would you please state your name and city of
24	residence for the record?
25	A. James M. Perkins, Katy, Texas.

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1	Q. Who do you work for?
2	A. I work for BP America Production Company.
3	Q. And what is your job with BP?
4	A. I am a senior geologist.
5	Q. Does your area of responsibility at BP include
6	this portion of San Juan County?
7	A. Yes, it does.
8	Q. Have you previously testified before the
9	Division?
10	A. No, I haven't.
11	Q. Could you summarize your educational and
12	employment background?
13	A. I received a bachelor of science in geology from
14	Mackay School of Mines in Reno, 1971, a master's from the
15	University of Oregon in 1976, and have roughly 35 years of
16	exploration and production history in the Rocky Mountain
17	and Basin and Range areas.
18	Q. How long have you worked for BP?
19	A. Coming up on 31 years.
20	Q. And how long have you worked the San Juan Basin?
21	A. I worked the San Juan Basin early on in the
22	1980s, on ARCO's development in La Plata County of the
23	coals. I worked at that time about four years, and then
24	for the past five years I've been working in the tight gas
25	sands and coal development in New Mexico.

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1	Q. And so you are familiar with the geology involved
2	in this Application?
3	A. Yes, I am.
4	MR. BRUCE: Mr. Examiner, I'd tender Mr. Perkins
5	as an expert geologist.
6	MR. HALL: No objection.
7	EXAMINER BROOKS: So qualified.
8	Q. (By Mr. Bruce) Mr. Perkins, could you identify
9	Exhibit 2 for the Examiner and discuss its contents?
10	A. Exhibit 2 is a location map showing, one, the
11	location of all the wells on all horizons, and in addition
12	the wells that have had production from the Fruitland Coals
13	are circled with a red circle. Some of those wells,
14	particularly the ones in 32 Section 32 of 32 North, 8
15	West, show wells that have been abandoned, but that's just
16	to avoid some of the confusion.
17	Also shown on here are the locations for Exhibit
18	3 and 4, which are geologic cross-sections that I'll get
19	into when asked to elaborate on that.
20	Q. Okay, let's move on to your cross-sections.
21	Rather than have me interrupt you
22	A. Sure.
23	Q why don't you just go to both Exhibits 3 and 4
24	and discuss the orientation of the cross-sections and what
25	you see with respect to the coal in this area?

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Okay, on Exhibit 3 I constructed that, keeping in 1 Α. mind the 160-acre spacing. And what I used to construct 2 this cross-section, and what's shown on here, is the gamma-3 ray caliper curve in the far left column, a resistivity 4 curve in the middle column, and a density curve in the 5 right column. And what's enhanced in the density curve are 6 density values that are less than 1.8 grams per cc., which 7 is -- as the Koch representative has indicated, is the best 8 9 way to display the distribution of coal.

The cross-section that I have here, I have chosen to hang it on the base of a shaly unit within the middle part of the Fruitland Coal interval. I feel that that represents a better datum than the regressive unconformity surface that you'd see at the top of the Pictured Cliffs sandstone.

16 But as you can see on this cross-section, again 17 I'll emphasize the distance between the wells, about 3700 18 feet between the two wells on the west, and about 2500 feet 19 on the two wells to the east. I've broken them down into 20 zones, which -- designated as the Ignacio, the Cottonwood and the Cahn zones. Those are local terminologies within 21 22 BP, and they may not be applied within general industry. 23 But what I'd like to emphasize is the similarity 24 in curve types and shapes and values in the density curve 25 for a shale that is sitting above the Cottonwood zone, and

a comparable shale within the Cottonwood zone, and a shale 1 unit that is continuous from west to east below the 2 Cottonwood zone but with only a slight -- well, a fairly 3 These correlations show significant thinning to the east. 4 a very continuous zone. Whereas the individual seams 5 within those zones may come and go, the zones themselves, 6 the ones that are produced, are continuous within a 160-7 acre spacing. 8 Now when you say a 160-acre spacing, you're 9 0. talking about one well per quarter section? 10 Α. One well per quarter section, yes. 11 And in contrast, the Exhibit 4 is more of a dip 12 section, very similar to the orientation of Koch's cross-13 Again, I hung it on a similar -- and the displays 14 section. contain the same data, the same curves, and the section is 15 hung on the same stratigraphic datum. 16 17 What you see here is, again, strikingly similar inter-coal shale continuity, which tends to 18 19 compartmentalize the coally intervals, and it shows --20 again, I'll emphasize that the distance between the two southern wells is just about a mile, and two miles between 21 the other wells. On a regional basis, the coals have a 22 tendency to be discontinuous, on a matter of tens of miles, 23 24 but on a matter of development scale they have a tendency 25 to be remarkably continuous.

And this being a dip section, it's even more 1 remarkable that they show this continuity. Usually a dip 2 section will show a lot of discontinuity, just because of 3 the depositional environment and how it was originally 4 5 deposited. So what you're seeing, based on your study of 6 0. 7 this area, is, in ranges of one-half to two and more miles, you're seeing good continuity among the coal? 8 Yes, within the coal, I am. 9 Α. And so geologically speaking, this is -- in this 10 Q. area it's one large reservoir? 11 Within this area it is one --12 Α. 13 Q. Were Exhibits 2, 3 and 4 prepared by you or under 14 your supervision? 15 Α. Yes, they were. 16 And in your opinion, is the denial of Koch's Q. 17 Application in the interests of conservation and the prevention of waste? 18 19 Α. That is my testimony. MR. BRUCE: Mr. Examiner, I'd move the admission 20 21 of BP Exhibits 2, 3 and 4. 22 MR. HALL: No objection. 23 EXAMINER BROOKS: Two, 3 and 4 are admitted. 24 MR. BRUCE: And that's all my questions. 25 EXAMINER BROOKS: Mr. Hall?

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1	CROSS-EXAMINATION
2	BY MR. HALL:
3	Q. Mr. Perkins, if we look at your cross-sections,
4	Exhibits 3 and 4, do these include all of the coal layers
5	in the area? Are there higher coal layers that are not
6	included on these logs?
7	A. Yes.
8	Q. And are they productive, do you know?
9	A. Usually not. Those coal layers are traditionally
10	higher than 1.8 grams per cc. but usually are less than 2.0
11	grams per cc.
12	Q. Now you mentioned a number of times in your
13	direct testimony that you believe that the coal layers are,
14	quote, compartmentalized. Can you elaborate on that? What
15	do you mean by compartmentalization?
16	A. They are overlain and underlain by similar shale
17	and tight silt units, which tend to describe the upper and
18	lower contacts of those coal intervals that are extensive
19	within this productive area.
20	Q. So it sounds like you're describing vertical
21	compartmentalization; is that accurate to say?
22	A. Yes.
23	Q. How about horizontally? Are they
24	compartmentalized as well?
25	A. Within this development area, I don't see any

1 compartmentalization in that direction. And that's why my direct testimony in Exhibit 4, where I would have expected 2 there to be more of a horizontal compartmentalization, I 3 didn't see it with the wells that I examined. 4 5 Q. And you testified with respect to Exhibit 3 that you saw compartmentalization that was continuous within a 6 7 160-acre spacing area. What about on a 320-acre basis? What do you see there? 8 I saw the same continuity. And Exhibit 4 would 9 Α. 10 have been constructed with a 640-acre spacing. Okay. Does it remain correct to say that with 11 0. 12 the increased development proposed by Koch that by drilling the additional wells you will still lower the reservoir 13 14 pressure and recover additional gas reserves as a result? 15 Do you agree with that? Again, that's a little beyond my expertise, but 16 Α. I'll give you an answer anyway. The incremental reserves 17 18 are probably very low. And I can point to the well that I 19 used in Exhibit 3; the Quinn Number 5 A would be a location 20 very close to where your proposed location would be. And I 21 have to emphasize the continuity shown on Exhibit 3 between 22 those zones. Your proposed well would be a twin of the 23 Quinn 5 A, which is a Mesaverde producer. 24 Well, since you're touched on it, are you able to Q. 25 say the amount of incremental recoveries that would be

1 realized by reducing reservoir pressure, say, by one pound? 2 Α. I'm not qualified for that. Okay. Is it your testimony, Mr. Perkins, that 3 Q. the reserves underlying the undrilled quarter sections that 4 we're talking about here can be adequately produced by the 5 existing development pattern of three wells per section? 6 It is my opinion that current wells in this area 7 Α. are adequately draining the reservoir. 8 Well, can you answer my question, though? 9 Q. We 10 have effectively three wells per section in the existing development pattern. Do you disagree with that? 11 Well, you have -- well, no, I don't disagree with Α. 12 that. 13 14 0. Okay. Do you have an opinion whether by drilling the fourth well in each of the three sections that we'd 15 recover incremental reserves? 16 17 Α. I've already so stated, but I will not give you 18 -- I'm not qualified to give you an exact number as to what 19 that incremental reserve would be. 20 Q. So you don't believe you can say whether the reserves in the undrilled guarter sections can be 21 22 adequately produced by the current development pattern of 23 three wells per section? 24 Α. I believe that the two wells per 320 spacing in 25 the current spacing unit is adequate to drain the reserves

1	within that 320-acre spacing unit.
2	Q. Mr. Perkins, are you familiar with the position
3	that BP took in the earlier 2002-2003 rulemaking hearing,
4	which sought increased drilling densities for the Fruitland
5	Coal formation?
6	A. No.
7	MR. HALL: Nothing further of this witness.
8	EXAMINER BROOKS: Okay, I don't believe I have
9	any questions of this witness. No, I do not
10	Mr. Jones?
11	EXAMINATION
12	BY MR. JONES:
13	Q. Mr. Perkins, I thought that was interesting. You
14	talk about the cross-sections that are built along a dip
15	are less continuous because of the stratigraphic deposition
16	environments?
17	A. Uh-huh.
18	Q. That they're changing along the dip?
19	A. Uh-huh.
20	Q. Okay. This Can you talk about the coal a
21	little bit here, the type, ash content, the gas content,
22	that kind of stuff?
23	A. All I can do is speak to the density, which does
24	reflect the ash content here, it's the shaliness. And so,
25	really, we're seeing some very good low ash contents in the

1	Cahn and the Cottonwood zones, and you're getting a higher
2	ash content up in the Ignacio zones. I'm not sure what
3	you're getting at, but
4	Q. Well, I'm just Sometimes I ramble, I guess, a
5	little bit.
6	You worked up in Ignacio I mean, up in La
7	Plata County, right?
8	A. Yeah, in the initial
9	Q. For ARCO, or what
10	A. It was ARCO.
11	Q. What was the name of that company that ARCO had
12	up there?
13	A. Well, Vastar came later
14	Q. Vastar.
15	A but I worked for both companies.
16	Q. Okay.
17	A. And in the early 1980s I was with ARCO and part
18	of a team that was evaluating the wells up there, and I
19	guess it was they were just going down to 320s at that
20	particular time, and still reacting to the tax credit and
21	all that.
22	Q. Okay. And after that they became a lot more
23	progressive about 160s up there?
24	A. That's exactly right, and that's when I was in an
25	exploration program in Wyoming.

1	Q. Oh.
2	A. And that's when it was passed over to Vastar.
3	Q. Okay. The ash content here, is it different than
4	it is up in La Plata County?
5	A. In general, it's slightly lower, and coals are
6	slightly thinner in this part of the world and New Mexico
7	in general, but they're similar, yes.
8	Q. And the water entrained water in the system
9	itself, did you study that, whether it was
10	A. Not at the time when I worked on the development
11	here, because it was less of an issue, because each of the
12	subsequent daughter wells is less and less aqueous.
13	Q. And since these wells are so prolific, is that
14	because of the things the coal, is it because of the
15	outgas content, is it
16	A. It's probably the gas content and the
17	permeability, you're seeing that the areas are more
18	efficiently draining the larger areas because of increased
19	permeability, the cleat development, as you dewater the
20	wells.
21	Q. Have you looked at any drill stem tests or any
22	other have you got an opinion on the fracturing or the -
23	- you talked about the cleat content the cleat
24	development. What about the fracturing? Have you
25	looked at any of those?

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I mean, everybody recognizes It's an enigma. 1 Α. that they're there, but they have a very difficult time 2 quantifying the direction and the extent to which they are 3 fractures. 4 I guess the most pertinent thing here is 5 **Q**. Okay. these packages of coals, these -- Is this pretty 6 widespread, or did you use this Cahn name and the 7 Cottonwood name and the Ignacio name, for groups of coal? 8 Was that easy for you to look at this project and --9 10 Α. Yeah, we use the terminology that's used by the geologist up in La Plata County, and it's just a 11 convenience to focus our managers into whether it's the 12 upper, lower or middle coal. 13 14 Q. Speaking of upper, lower or middle, there is coal above -- well, that Fruitland channel sand --15 Uh-huh. Α. 16 -- there's some coals above that, right? 17 Q. Yes, there are. And they have a tendency to be, 18 Α. 19 in reference -- higher ash content, higher shales, and 20 fairly thin. And you'll see that on the exhibit that was 21 provided by Koch, that there are. But traditionally those are not part of the package and aren't really the zones 22 23 that you would point to for the high productivity. 24 Q. Where are they setting the casing in this area to 25 cavitate below it, or do you have a knowledge about the

1	cavitation
2	A. I do not have a direct knowledge of that, no.
3	Q. Or the casing depths?
4	A. (Shakes head)
5	Q. Okay, so in case they did set the casing above
6	those lower coal, they could have the option of perforating
7	coals that would show up above that, in fracturing?
8	A. Yeah, but those have a tendency to have less
9	productive potential.
10	MR. JONES: Okay, thank you.
11	EXAMINER BROOKS: Okay, I realized I do have a
12	couple of questions here.
13	EXAMINATION
14	BY EXAMINER BROOKS:
15	Q. Looking at your Exhibit Number 2, can you explain
16	how You've got a legend here, but I just want to be sure
17	I understand what the various well indications mean. Is
18	there any distinction here as to which ones are Fruitland
19	Coal wells?
20	A. Yes, the Fruitland Coal wells that have had
21	production are circled in red. They have a red circle.
22	Q. Okay, so the red circle is all the Fruitland Coal
23	wells
24	A. Correct.
25	Q whether they're BP or somebody else?

That's correct. Α. 1 And the gas-well-symbol wells that are not red-2 Q. circled are completed in some other zone, formation? 3 Right, they could be PC or Mesaverde or Dakota. 4 Α. Okay. Now in regard to your testimony about the Q. 5 higher coals that are above this channel sand that you have 6 in here, you said they're usually not productive. 7 Ι gathered from your responses to Mr. Jones's questions that 8 9 you don't have any specific knowledge --Α. No. 10 11 -- of this particular area in that regard? Q. 12 Α. In general, throughout the Basin we find that 13 those stray coals that are above this main coal interval --14 Q. Yeah. 15 Α. -- don't contribute to the overall productivity 16 of a coal completion. 17 Q. Okay. And I really chose these intervals because 18 Α. 19 they're the intervals that are perforated and are 20 flowing --21 Q. But that's based on an analysis Basinwide --Basin- --22 Α. 23 -- not this specific area? Q. Not this specific --24 Α. 25 EXAMINER BROOKS: Okay, that's all I have.

1	Any follow-up, Mr. Bruce?
2	MR. BRUCE: No, sir.
3	EXAMINER BROOKS: Very good. You may call your
4	next witness.
5	DAVID REESE,
6	the witness herein, after having been first duly sworn upon
7	his oath, was examined and testified as follows:
8	DIRECT EXAMINATION
9	BY MR. BRUCE:
10	Q. Would you please state your name for the record?
11	A. David Reese.
12	Q. And where do you reside?
13	A. I work for BP America in Houston, Texas. I
14	reside in Cypress, Texas.
15	Q. What is your job at BP?
16	A. I'm a senior reservoir engineer.
17	Q. Have you previously testified before the
18	Division?
19	A. No.
20	Q. Would you please summarize your educational and
21	work background?
22	A. I graduated in 1975 from the University of
23	Colorado with a degree in electrical engineering, and I
24	immediately went to work for Shell Oil in New Orleans as a
25	petrophysicist. They tried to make a geophysicist out of

1	me, but I worked for Shell Oil, went through their
2	training as a petroleum engineer for a year and a half. I
3	returned to the University of Colorado, teaching and
4	graduate study.
5	In January of 1977 I went to work for Amoco as a
6	petroleum engineer and worked for Amoco for 22 years till
7	the merger with BP, and the bulk of that time has been as a
8	reservoir engineer, reservoir engineering supervisor,
9	enhanced recovery manager, nine different states and five
10	different countries.
11	And most recently, I returned to the San Juan
12	Basin, having worked there earlier, but I returned in the
13	2002 time period, to the present.
14	Previously I worked in the San Juan Basin in the
15	late 1970s, when we were starting to drain water out of the
16	Cahn gas well, or coal well, or the first well, so I got to
17	come back and see what happened.
18	Q. And are you familiar with the engineering matters
19	related to this Application?
20	A. Yes.
21	MR. BRUCE: Mr. Examiner, I would tender Mr.
22	Reese as an expert reservoir engineer.
23	MR. BRUCE: No objection.
24	EXAMINER BROOKS: So qualified.
25	Q. (By Mr. Bruce) Mr. Reese, before we get into

1	your exhibits, what is your overall assessment of this
2	Application?
3	A. Three things come to mind, and that's where I had
4	investigated and focused the efforts. One is that roughly
5	320-acre drillblocks along the west edge of the township
6	are not disadvantaged compared to the other drillblocks,
7	and I'll be able to show later, but
8	The second point has to do with recovery of gas
9	from the coals here, and this entire region is doing very
10	well, considerably well in terms of the gas, and I think
11	that additional development at a higher density is
12	unwarranted and would result in economic waste.
13	I view this area from data that I've worked with
14	as a pool, as opposed to individual drainage areas, such
15	that when I talk about drainage area for a well, I'm
16	thinking of a drainage portion of the pool expressed
17	equivalently as acres.
18	Ultimately, granting a third well to these
19	drillblocks, giving them greater access to the pool, is not
20	warranted by their acreage, it's not warranted by the
21	performance of the blocks, and it would violate the
22	correlative rights of other drillblocks, spacing units in
23	the pool.
24	Q. Okay, let's have you elaborate on these points
25	with your exhibits, starting with Exhibit 5. What does

that show?

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A. On Exhibit 5 I've -- showing the immediate drillblocks in question, spacing units, and I've expanded out a little bit east and west to show spacing units nearby. I've labeled A, B, C, et cetera, the spacing units that I'll talk about in more detail.

But the first purpose on this one is to show that 7 8 the intra-well spacings, the distance between wells that 9 are involved in this portion of the field are not unusual, 10 that there is considerable variation as to where wells are 11 placed, for many good reasons. It can be topography, it 12 can be surface-owner issues, it could be cultural or scenic beauty, but many reasons why wells aren't spaced exactly in 13 the center of a spacing. 14

And it costs perhaps \$50,000 to directionally drill one to have the bottomhole location maybe more ideally located. But when we look at the cross-sections on each of these areas when we drill them, we don't see that small expenditure even warranted to do that. And as you can see by some of these close-spaced wells, other operators haven't either.

I'll draw your attention to the top row as an example. The area around B, that inter-well spacing, I've taken that geometric shape and just overlaid it, sometimes flipped it over, but just showed it in comparison to inter-

1	well spacings to the east or west
2	Q. And B would be where one of the Koch wells is
3	located?
4	A. Right.
5	Q. Would be located?
6	A. Areas G and J are similar. G is stretched out a
7	little bit more north and south. But this is at the
8	prerogative of the operator, as to how far they space them
9	out, either close or to other drillblocks or closer
10	together. In J, again those are similar areas.
11	Down at N, N is in the fourth of these irregular-
12	shaped 330-acre-ish drillblocks. N is about 162 acres,
13	very normal for 160-acre-type development. BP operates
14	that block. We have our infill well spaced accordingly so
15	that looking vertically, these wells are reasonably spaced
16	without large gaps. Again, it was the operator's
17	prerogative as to where they placed the wells.
18	Each of these columns of blocks is 320 acres,
19	with the exception of a narrow block which is closer to 330
20	acres, but pretty similar.
21	There are four wells that are shown as open
22	symbols, starting at the mid-side on the west and moving
23	southeast. When these wells are drilled, then each of
24	these columns will be drilled with a very similar well
25	density.

Table 1. Sec.

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1	My next slide
2	Q. Yes, why don't you move on to Exhibit 6?
3	A Exhibit Number 6, I've narrowed the map on the
4	left just for clarity, showing the immediate offsets on an
5	east-west location compared to the three blocks in
6	question, and I've compared these blocks, these spacing
7	units and the recovery, with the offsets.
8	The first grouping, labeled A, B, C and B is
9	the irregular-spaced block they show up on the chart on
10	the right in columns A, B, C. This is a recovery chart,
11	shows the denser colors shows how much has been
12	recovered from the drillblock, from Dwight's data as of
13	July of 2006, and it's by drillblock. So when we're
14	looking at drillblocks A, B and C, drillblock B has
15	recovered on the order of 19 BCF and still has a
16	considerable amount to recover.
17	And I'll explain how I came up with these
18	expected ultimate recoveries on a subsequent slide, but the
19	light shading shows my expected ultimate recovery. So
20	again for drillblock B, we'd be looking at approximately 19
21	BCF recovered to date, with an ultimate recovery on the
22	order of 25 BCF. And it's done quite well compared to the
23	A and C. In fact, as far as I understand, it's
24	recovered more gas already than the surrounding blocks will
25	ever recover. Certainly not disadvantaged.

And I think one thing that worked to the 1 advantage of wells in this drillblock is their spacing 2 being further apart north-south. We've observed 3 communication in the north-south direction, and we've seen 4 open fractures in FMI logs in the north-south direction, 5 and by being spaced further away in that direction, it's a 6 relative advantage from being close-spaced in that 7 direction. 8 Looking at the next grouping of blocks -- and 9 I'll skip -- D and E are straddling the boundary, but I'll 10 compare down at blocks F, G and H, where F has recovered 11 just over 10, H has recovered 12 1/2 -- or G has recovered 12 12 1/2 -- and H has recovered 16 or so. 13 14 Just looking at the bar charts, there seems to be a gradation across there, and I can talk about the gas in 15 place on a subsequent slide, but it's performing comparably 16 17 with the offsets. And then the third drillblock -- or third set of 18 spacing units, I, J, K -- J is clearly far above the 19 20 others, definitely not disadvantaged. 21 The next exhibit is Exhibit 6A. This shows my projections -- or shows the recovery for the drillblocks to 22 date, and it shows the projection of the drillblocks. 23 The recovery to date and the projections that I'm using on this 24 25 chart are using the parent well performance. Some of the

infills haven't been drilled yet. Most of the infills that have been drilled haven't been on line long enough to show the full impact of interference on the existing wells. So in order to define the size of the drainage portion of the pool I used the parent well, in a similar fashion to what was used on the cumulative recovery map earlier, using the parent well.

In time, based on my observing interference on 8 existing wells, I expect the parent well performance to 9 decline substantially as the infill shares in the remaining 10 Each of these curves that are -- this is on a rate-11 qas. versus-cumulative perspective, and you can see it's quite 12 curved, and this is indicative of a very hyperbolic 13 14 performance. A conventional gas would be somewhat 15 hyperbolic if the line pressures are maintained to fall with the reservoir pressures. Because of the non-linear 16 17 depletion of coal, the isotherms being nonlinear, coal will be substantially more hyperbolic than a conventional gas. 18 And the previous reservoir engineer testified that -- more 19 20 recovery coming out of low pressures than at high 21 pressures.

Each of these curves were developed on a ratetime basis, and they were all developed with exactly the same hyperbolic equation with decline parameters, the only difference being the shifting of these curves with regard

1	to the level of the well's production. But the decline on
2	each of these wells seemed to be exceedingly uniform,
3	implying not proving, but implying continuity out in the
4	reservoir, and similarly declining reservoir pressure.
5	Q. Well Mr. Reese, looking at your Exhibit 6, there
6	is some difference in the recovery between these drilling
7	blocks. How do you explain that? And move on to your
8	Exhibit 7.
9	A. There are many good reasons why recovery by
10	drilling block varies. Sometimes the coal that you drill
11	into is very friable, it cavitates very readily, it was
12	cavitated at high pressure, some operators experimented
13	with different techniques, some wells had been frac'd. In
14	this portion of the world, when we had high pressure,
15	cavitation was very definitely the way to go. But because
16	of differences in how the well is completed, that can
17	affect how much you recover. There are differences in gas
18	in place. The coal thickness varies, it's not completely
19	uniform. Individual members in the coal will thin or
20	thicken across this type of a region, these type of
21	distances. How well the operator keeps up with the
22	pressure, how well they have their wellbore tubulars
23	optimized for what's happening, whether they've made the
24	repairs on the wells to clean out fill or whether the zones
25	have collapsed on them in time, many operational things, as

1	well as geological features, can affect that.
2	I'll mention a little bit more on that on Exhibit
3	7, but I'd like to mention that when we have drilled into
4	our drillblocks, that we find pressures that are depleted
5	from original pressure, typically 90-percent depleted, that
6	these wells are very these inter-well areas up to 320
7	acres were very definitely supporting the existing wells,
8	and that without any doubt when these areas are taken away
9	from the existing wells, they'll notice.
10	But the next exhibit goes a little bit more into
11	the recovery and how it varies. Again, the diagram on the
12	left shows the location of the spacing units, the same as
13	before.
14	I have several things that I'd like to illustrate
15	on the table on the right. And just an overview on the
16	table, it's a comparison by drillblock as to how they're
17	doing. The top portion is the individual listings of the
18	drillblocks. Below that I show an average for all of the
19	drillblocks. At the bottom of that table I show the
20	where it says Average and I'll explain a little bit more
21	about the numbers, but I show the average. And then the
22	very bottom line shows an average for the three nonstandard
23	blocks that can be used for comparison.
24	But going back to the upper portion of the table,
25	I show the drillblock letter on the left; I have a

designation for the block. I show the cumulative 1 production for the block, again as of July of last year. 2 The next column, which is labeled EUR, meaning 3 estimated ultimate recovery, that refers to the previous 4 exhibit where I showed my production extrapolations, 5 6 recovery extrapolations. 7 The next column shows our gas in place for each of these drillblocks that we map. This map was created by 8 my predecessors that have worked the area, and it was 9 completed in -- after we drilled the first round of 10 drilling on 320 acres, and it was done Basinwide, nothing 11 specific for this area. So I just used values; I'm not the 12 author of the map, I just used values from the map. 13 But I have modeled up all these wells, and I find 14 that in a composite sense the pore volumes -- or the -- not 15 pore volumes, but the gas-in-place volumes that we record 16 17 on the map, in total, compare very well with how the wells 18 are performing. Individually, with individual wells, it doesn't compare. Some wells have good completions, some 19 wells have poorer completions. I'll come back to that 20 topic in a little bit. 21 But the next column, I'm showing the projected 22 23 recovery factor, using our mapped gas-in-place numbers. 24 And those recovery factors vary considerably. Some are in 25 the 50-percent range, some are in the -- approaching 150

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1 percent.

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2	I'm showing a drainage equivalent acres on the
3	far right column, and that's at an arbitrary 95-percent
4	recovery factor. For these coals and for the physics of
5	the pressure depletion, 95-percent recovery would be
6	exceedingly good, so But I used a large one, to not
7	overestimate the size of the drainage. If I used a lower
8	recovery factor, those acres that are being drained would
9	go up.
10	I'd like to talk about specifically the three
11	blocks, B, G and H. I've highlighted them in yellow. And
12	when I look at block B, the second row down, again
13	recovering 19 BCF; expected to recover from the block,
14	including production from the new well, on the order of 25
15	BCF, more than its mapped gas in place, even at 100-percent
16	recovery it's doing well.
17	The next one down is G Oh, and let me also
18	point out that for block B, that the map gas in place for
19	A, B and C are quite similar, 21 1/2 for A, 22.4 for B and
20	21 for C. So we don't see appreciable variation across
21	those blocks, but we do see different recoveries.
22	Block G, with surrounding blocks of F and H G
23	is the second yellow row down it has recovered 13 BCF,
24	which is roughly midpoint between the surrounding blocks.
25	Its expected ultimate recovery is in between the

surrounding blocks. The mapped gas in place is quite 1 similar to the surrounding blocks. Again, nothing unusual 2 there. 3 And on column J, or drillblock J, it's the 4 second-best well in the township, having already recovered 5 25 BCF, expected recovery in excess of 30 BCF, and very 6 7 high drainage area. 8 I'd like to -- in my interpretation, the variable drainage area is a demonstration of competitiveness. 9 It's not explainable by mapped gas in place, but it's a sign of 10 the competitive feature in this area. 11 Do you -- You mentioned it before, but do you --12 0. have you observed, or does the data that you have before 13 you indicate interference between wells? 14 We've observed much interference. Our best Α. 15 evidence of interference is on a well-by-well throughout, 16 17 when we look at what is expected of the well and what the well observes, when new wells are drilled. We found in the 18 fairway, nearby, when we put new wells on production, that 19 within the same day, within 24 hours, we see production hit 20 parent wells, offset wells. 21 22 And we had a coal meeting in Houston in April of 23 2005. One operator was shocked that they saw interference between infill wells and parent wells within 15 minutes, 24 25 and they repeated the test four times because they didn't

1	believe it. And that's exceedingly fast, and it's
2	indicative of a fractured reservoir, of high permeability
3	and very low porosity. Coal doesn't have a porosity, the
4	cleats and fractures have a little bit.
5	But it's a dual-porosity system. We have an
6	underground transportation system through the coal, and
7	when we put wells into that transportation system they
8	interfere with each other very fast.
9	That other company that mentioned that fast
10	interference was Koch. They had their engineering manager
11	at the meeting.
12	We didn't go back to We keep data on an hourly
13	basis. We didn't go back to see if we could track it down
14	to the hourly basis, but I'm sure it's within less than 24
15	hours.
16	When we shut our wells in and we have numerous
17	shut-ins on our wells and we observe the pressure response,
18	we have transient data we stabilize, in this portion of
19	the world, frequently, within 24 hours. Very fast. And
20	again, because of the high permeability and low porosity of
21	this system.
22	Q. Do you have anything else on Exhibit 7, Mr.
23	Reese?
24	A on Exhibit 7.
25	Q. Why don't we move on to your Exhibit 8 and

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I had mentioned that Well -- the J location being 1 Α. very good, even on a township comparison. Exhibit 8 shows 2 the wells in Township 31 North, 8 West, and this is our 3 recovery for the spacing units. Second best well in the 4 field is -- or the three wells in content- -- or the three 5 drillblocks in contention are the three orange bars. The 6 7 yellow represents the median.

8 And if the better wells out here -- I'll point 9 out one, that this portion of the township is betterperforming than other portions of the township. It's 10 lower-pressured, and I believe that it's drawing gas into 11 the region across the township and that we have a pressure 12 gradient across the township, consistent with movement of 13 But I don't see justification for higher well density gas. 14 on a well-per acreage basis in the better portions of the 15 township, when they're already doing very well. 16

Each of those -- the blue ones are representing 17 drillblocks that might feel a bit disadvantaged if those 18 orange blocks got three wells per 330 acres, versus two. 19 20 0. Again, Koch is not disadvantaged by having two 21 wells in its well units? And because of the high permeability in this 22 Α. No. part of the field, again I believe in the pool concept, 23 that they have straws in the pool. And the specific 24 25 spacing of the straws is not anywhere near as relevant as

1 having more straws.

2	We would We have an interest in the block, we
3	would benefit from having more gas coming out of these
4	wells a well. And I'm sure that these wells will produce
5	large volumes of gas, but it's at the expense of the other
6	wells. And so that's a fairness aspect.
7	Q. Could it then force more competition for reserves
8	among offset blocks, perhaps them wanting to drill
9	additional wells?
10	A. If I were a royalty interest owner in any of
11	those blue blocks, or an operator, I would feel a wee bit
12	violated.
13	Q. Could you move on to your final exhibit, Number
14	9, and summarize your testimony?
15	A. Yes, again, I mentioned up front that the three
16	things that were compelling for my investigation into the
17	area, one had to do with whether or not these drillblocks
18	were disadvantaged because of their higher aspect-ratio,
19	length to width, and I saw no evidence of disadvantage.
20	They were performing exceedingly well for the amount of gas
21	in place that they had.
22	The second point relates to the adequacy of two
23	wells per 320 two wells per spacing unit, nominally 320
24	acres, that in my opinion these wells are very adequately
25	draining the coals. When I look at the coal intervals, and

when we were spacing -- or looking at our locations for 1 wells, we did not see compelling zones that would not be 2 drained by wells at the existing spacing. We did recognize 3 coal zones higher up. We gave them an opportunity of 4 producing by topsetting all of the coal interval and 5 cavitating. That's our preferred completion technique. 6 7 As we've gone into infill drill, recognizing that these higher coals are thin, they have higher ash content 8 and they might be lagging behind, I individually measured 9 pressures in zones on numerous wells. And my estimation of 10 reservoir performance based on that, I had seen that the 11 bulk of the coals are depleting quite uniformly, in the 12 80-, 85- to 90-percent already-depleted range. 13 Some variation, and that should be expected. 14 Sometimes some of the upper coals would show 15 substantially less depletion, and when I measured 16 permeability -- when I attempted to measure permeability I 17 couldn't get any flow, I couldn't get any pressure 18 transient through these coals, implying they were too tight 19 20 and shouldn't be expected to deplete. They were not economic resources. 21 I gave them the benefit of the doubt on a few 22 completions where we went in and did a hybrid completion, 23 where we set casing across -- realizing that they might be 24 25 difficult to cavitate, we set casing across the upper

1	zones, open hole below, undering the good coals which were
2	the meat and potatoes, and completed the well that way.
3	We had individually measured where we could
4	find some permeability in the upper zones, we found BTU
5	that did not match the high-performing coals. It was high-
6	BTU, and there was a lack of CO <sub>2</sub> . And this was a marker to
7	tell us how much of the upper coal production is coming in.
8	On some of these wells we had completed just the
9	upper zones themselves, prior to being inundated by
10	production from the lower zones. The upper zones did not
11	have commercial production. Sometimes we could get a
12	little bit of gas out, it declined rapidly, and was not
13	worthy of the cost of drilling for.
14	And when we looked at the BTU composite BTU
15	analysis on the wells following the completion, when all
16	the zones were put together, we didn't see the contribution
17	for the upper zones, so we ceased going to the extra
18	expense.
19	On some individual completions of those upper
20	zones, we had to go to 4000 pounds surface pressure with a
21	hydrostatic gradient to break them down. Exceedingly tough
22	coals. And for typical cavitations, I expect those coals
23	are doing nothing.
24	So I believe that the existing wells, based on
25	our investigations, in this type of the portion of the

1	reservoir, are very adequately draining the gas in place.
2	And to me the desire for an additional well would be the
3	large amount of gas to be produced from the same zones that
4	the other wells are producing. That's the driver.
5	And again, having a third well for these very
6	good-performing spacing units would disadvantage the other
7	units and would cause problems, it would violate
8	correlative rights.
9	Q. In your opinion, is the denial of Koch's
10	Application in the interest of conservation and the
11	prevention of waste?
12	A. Yes.
13	Q. And were Exhibits 5 through 9 prepared by you or
14	under your supervision?
15	A. Prepared by me.
16	MR. BRUCE: Mr. Examiner, I'd move the admission
17	of BP Exhibits 5 through 9.
18	EXAMINER BROOKS: Mr. Hall?
19	MR. HALL: No objection.
20	EXAMINER BROOKS: Five through 9 are admitted.
21	MR. BRUCE: Pass the witness.
22	EXAMINER BROOKS: How long do you anticipate your
23	cross?
24	MR. HALL: I'm guessing 30 minutes or more. It
25	might be a good time to break for lunch.

EXAMINER BROOKS: Okay, let us take a luncheon 1 recess till 1:15 then. 2 (Thereupon, a recess was taken at 11:45 a.m.) 3 (The following proceedings had at 1:22 p.m.) 4 EXAMINER BROOKS: Okay, we'll go back on the 5 record in Case Number 13,841, and I believe Mr. Hall was 6 going to start his cross-examination of Mr. Reese. 7 CROSS-EXAMINATION 8 9 BY MR. HALL: 10 Q. Mr. Reese, if you would turn to your Exhibit Number 7, please. Make sure we're on the same page here. 11 This is 7. Do we have the same one? 12 Yes. 13 Α. Okay. Mr. Reese, I understand from your direct 14 0. testimony that the data that's shown in the columns here 15 16 was done by others; is that correct? The only portion done by others was the 17 Α. 18 calculation of the gas-in-place map, which predated infill 19 drilling. 20 Q. Okay. All the rest are mine. 21 Α. 22 Did you seek to check the accuracy of the gas-in 0. place calculations for each of the drillblocks you showed 23 here? 24 25 I have reviewed the method, and I was very Α.

1	curious as to how good that mapping was. And I modeled
2	perhaps close to 200 wells out here to compare their
3	performance with the gas in place, and on a composite basis
4	I find great confidence in the map number. On an
5	individual-well basis, the well can perform as well or
6	better or less.
7	Q. All right. And by taking your gas-in-place
8	calculations, that's a way for you to back into the
9	drainage areas using your 95-percent recovery factor; is
10	that fair to say?
11	A. Yes.
12	Q. Is it also fair to say that Exhibit 7 involves
13	interpretation?
14	A. There is interpretation involved in, especially,
15	the estimated ultimate recovery.
16	Q. Right.
17	A. I've provided mine, as well as the gas in place.
18	Q. Is it also accurate to say that different
19	engineers could have different interpretations, reach
20	different conclusions?
21	A. Yes.
22	Q. Could you tell the Examiner what has been BP's
23	experience with respect to ultimate recoveries in the
24	Colorado side of the Fruitland Pool?
25	A. I'm familiar with a portion of the Colorado side

1	that my asset team operates, which is in 32 North, 9 West,
2	of Colorado, called the PLA-9 area, and the performance of
3	that area is substantially identical to the portion of the
4	fairway just south of the border.
5	Elsewhere in Colorado, we don't have the prolific
6	permeability that we have in the portion of the fairway,
7	and it grades down to places where it's difficult to
8	recover the gas on 160 acres.
9	Q. You referred to the PLE area?
10	A. PLA-9.
11	Q. PLA-9?
12	A. Yes, it's north of Cedar Hills, 32-9 or 32
13	North, 10 West, and it's a continuation of the trend across
14	the border.
15	Q. What's the development density allowed by the
16	Colorado rules for the PLA area?
17	A. For this area it's developed on 320. There have
18	been applications that have gone into perhaps around the
19	borders to get an extra well, and some of those are being
20	protested.
21	You know, on the performance side we have
22	pressure-observation wells in this area. We have two of
23	them at mid-well locations at 160-acre spacing, and we
24	track the pressure fall on those monthly, and those
25	pressures are within 1 p.s.i. of what we observe at our
1	producing wells.
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2	Q. Do you know whether any of the areas of the
3	Fruitland Coal Gas Pool in Colorado are being developed on
4	densities greater than 160s?
5	A. Yes.
6	Q. And are you familiar with BP's experience in
7	those areas?
8	A. I know the engineers working with it, and the
9	geologists, and converse with them. My information is
10	generally second-hand, just by word of mouth, although I've
11	seen some logs and pressure measurements and horizontal
12	drilling efforts, and We stay in communication, but I'm
13	not as familiar as I am with what we operate.
14	Q. Are there any areas in Colorado where BP operates
15	or owns in the Fruitland, where development is on 80s?
16	A. Yes.
17	Q. And do you have pressure data from those areas as
18	well?
19	A. Yes, and some of those pressures are showing
20	virgin pressure in inter-well areas, completely undrained
21	by existing wells because of poor continuity, unlike the
22	substantial depletion that we see here.
23	Q. Would you agree generally that by drilling infill
24	well locations you increase your ultimate recoveries by
25	reducing reservoir pressures? Do you agree with that

1 generally?

2	A. I do generally, but there are specific exceptions
3	to that. And what's happening in the fairway in lots of
4	wells, the completion techniques of these wells can
5	actually reduce recovery, because when they focus their
6	completion on the good zones, the ones that are producing
7	all of the gas, there are some lesser zones that don't get
8	adequately completed. And we find from the BTU analysis
9	that new wells are preferentially producing from the most
10	depleted zones, and they'll draw those down faster at the
11	expense of other zones. So conceivably, we'd be shutting
12	in other zones earlier than we would otherwise, and that
13	could actually reduce recovery.
14	Our existing wells generally have the capability
15	of drawing the pressure down low enough to where the $ ext{CO}_2$
16	will rise high enough that the gas won't burn anymore, and
17	to the extent that we drilled more wells in there, we
18	didn't really help that process.
19	Q. You didn't bring any of that data with you today
20	to support that, did you?
21	A. I brought a lot of data on the computer, but I
22	didn't bring exhibits.
23	Q. Okay, let's turn to Exhibit 5. See if we can
24	understand what you're trying to demonstrate here. You've
25	connected four well locations and established spacing

1	blocks. Isn't it true that you picked these locations
2	arbitrarily? You could have connected any different number
3	of locations and configurations for your spacing blocks?
4	A. There are many possible ways to connect different
5	wells, and some wells are spaced closely, and if you
6	connect them you find that, in fact, they are spaced
7	have a close spacing. Others are spaced far. I was merely
8	illustrating that the types of spacing that we're looking
9	at along the narrow drillblocks is not unusual to what we
10	can find in many places in the township.
11	Q. You didn't mean to imply that these spacing
12	blocks portray drainage areas, necessarily?
13	A. No, I had testified that when I speak of acreage,
14	I speak of equivalent acres, but recognize that there
15	really one well is affecting wells many, many locations
16	away and draining from the pool.
17	Q. And as I recall your testimony with respect to
18	Exhibit 5, I believe you indicated that the development
19	pattern exhibited on this particular exhibit is not unusual
20	for the fairway. Did I state that accurately?
21	A. These well spacings are not unusual for the
22	fairway. And the irregular aspects of whether wells are
23	close or far apart is also experienced broadly across the
24	fairway. We have places where the wells are 35-acre spaced
25	apart, drain the whole drillblock adequately.

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All right. And isn't it correct to say that the 1 Q. 2 well locations proposed by Koch for the three infill wells 3 are at standard coal gas well locations? 4 Α. I wouldn't call it standard because the sections are not standards, standard sections. 5 In any case, is any location closer than 660 feet 6 0. to the side of the unit? 7 Α. Of the proposed locations? 8 Yes, sir. 9 Q. I have not seen the lat-longs and the proposed 10 Α. locations, just merely a nominal quarter-section 11 12 designation. But would it be accurate to say that just by 13 ο. eyeballing it from your Exhibit 5 it appears that all of 14 15 these coal wells, including the proposed infill wells, are generally 1220 feet apart or more? 16 I would say that generally they're 1200 feet 17 Α. 18 apart or more. 19 0. All right. And is it also accurate to say that the infill well locations would be on pattern, we're still 20 looking at four wells per section at standard locations, if 21 Koch's Application is granted? 22 23 I wouldn't agree, because they're not standard Α. 24 sections. It would result in a higher well density than 25 standard.

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All right, if we assume that the nonstandard 1 Q. units are contained entirely within the west-half 2 equivalents of each of the three sections, wouldn't you 3 agree that we are on pattern with the infill locations? 4 If I assume that the section had 640 acres, I 5 Α. would agree that adding another well there would be on 6 7 pattern. Otherwise it wouldn't. Let's turn to your Exhibit 6 briefly. If you 8 Q. look at the undrilled infill location in what you've 9 labeled as drilling block B, is that acreage disadvantaged 10 because of the wells to the east and west of that location? 11 The drillblock is not at all disadvantaged, and I 12 Α. don't see any undrilled locations. I see two wells in the 13 320-acre block. 14 Well, if you look at the --15 ο. I see lots of area that hasn't been drilled, but 16 Α. I don't see undrilled locations. 17 18 Q. If you look at the approximate area where Koch's 19 proposed infill location would be, say in Exhibit [sic] B, it would be just about where you have the letter B; isn't 20 that right? 21 22 Α. Uh-huh, 23 0. Is the acreage in that 160-acre equivalent 24 disadvantaged by the two offsets on the east and west? 25 Α. I would be willing to say that. Portions of that

1	I'll call it the northern third of the spacing unit,
2	wouldn't surprise me in the least if some of that gas was
3	moving across section lines. In fact, I would expect some
4	of that gas to be moving north, east, west and south.
5	Q. All right.
6	A. And likewise for the well that's located in the
7	middle, I would expect that it's drawing gas in from the
8	east and west. It's very close to the lines in the east,
9	and I see no borders protecting that gas from moving west,
10	and I expect that it's drawing gas in from the surrounds as
11	well. And I don't see any voluntarily or refunding of
12	gas to offset drillblocks.
13	Q. Let's talk about that briefly. I think we've
14	heard a couple of times this morning questions that
15	suggested that there were a Pump Canyon unit. There is no
16	Pump Canyon unit, is there?
17	A. I'm not aware of a Pump Canyon unit.
18	Q. Okay, so these are stand-alone
19	A. I know of a Pump Canyon area.
20	Q. Correct. These are stand-alone well units that
21	are shown, for example, on your Exhibit 6?
22	A. I believe they're not connected with others, but
23	I do believe they're connected to the pool.
24	Q. They are within the pool, but they are not
25	unitized

1	A. Right.
2	Q isn't that accurate to say?
3	And so the interest owners in drilling block B,
4	they don't have the opportunity to participate in the
5	production revenues from the wells in the offsets, drilling
6	blocks A or C; isn't that right?
7	A. They're not sharing in the revenue from gas that
8	comes from wells in the surrounding drillblocks, nor do
9	they share.
10	Q. And if we accept, as you said, that you can
11	envision drainage by those wells, isn't it true that the
12	correlative rights of the interest owners in drillblock B
13	are violated?
14	A. I expect ultimately I would see I could see
15	an argument for violation of correlative rights, and I
16	would say that if there is any violation of correlative
17	rights, that drillblock B has enjoyed being able to crowd
18	more offset acreage and drain from them, and they've
19	produced more than their share and, if anything, they
20	should refund some of that.
21	Q. Let's look at Exhibit 6A.
22	A. Okay.
23	Q. I'm going to ask you how that would come about.
24	Let's look at Exhibit 6A.
25	As I understood your testimony with respect to

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1	this exhibit, you said that this demonstrates continuity;
2	is that right?
3	A. My work with these decline curves corroborated my
4	understanding of continuity.
5	Q. All right. Can you explain to us why in almost
6	any of these graphs there's so much variation in the rates
7	before the decline trend begins?
8	A. I expect there are similarities to the wells that
9	I've worked with, and on the wells that we've worked with
10	many things happened early in time. Dewatering of the well
11	was one issue, getting the line pressure down was another
12	issue, or the wellhead pressure, optimizing our tubulars,
13	pulling liners, re-cavitating, many operational aspects
14	have affected how these wells have built up to their
15	maximum level and before they are more dominated by
16	reservoir pressure decline. Early on, they're dominated by
17	wellbore effects, operational effects.
18	Q. Okay. Well, let's be specific. If you'd look at
19	the BP Kernaghan B 7 down in the lower right-hand corner,
20	do you have any direct knowledge of why there's so much
21	volatility in that production
22	A. Early on?
23	Q trend? Yes, sir.
24	A. Early on, the combination of dewatering, the
25	combination of re-cavitating, pulling liners, cleaning

1	things out. I don't have the specific well history with
2	me, but I know that many activities had transpired, trying
3	to optimize these wells to reach the maximum potential.
4	And when I look at the declines, because of the
5	torturous history that has transpired during that cleaning
6	out the well and reservoir time period, I find that not to
7	be specifically either extrapolatable or diagnostic.
8	Q. Okay.
9	A. So I look at the decline periods when we're
10	dominated by reservoir pressure decline.
11	Q. Now you testified that in a couple of instances
12	BP observed relatively quick interference from infills to
13	the parent well, and in some cases I believe you said as
14	quick as a matter of hours; isn't that right?
15	A. I said within 24 hours, and I didn't look for a
16	shorter time period. I mentioned that Koch had seen it
17	within 15 minutes.
18	Q. Okay. Can you tell us where on Exhibit 6A that
19	might be reflected?
20	A. For the wells that we operate on Exhibit 6A, I
21	believe there are only two wells, and one of those is the
22	Kernaghan B 7, which is the best performing well, I
23	believe, in the township, and draining well more than 320
24	acres. And in fact, we haven't infill drilled there, so we
25	can't really see an impact of our direct operation there.

The other well that we operate is up in the 1 Jaguez 2 area, and you'll notice that there is some 2 irregularities happening. But we've gone into that --3 4 as we have on many wells, as we conducted our infill 5 operations, we looked at the offset wells. And we looked 6 to optimize the performance on the offset wells in terms of 7 cleaning out, adding pumping units, lowering the pressure. 8 When we had compressors to handle the new wells, we 9 typically connect them up to where we can produce the other wells more efficiently as well. 10 And we actually have seen some benefit from these 11 activities on the Jaquez 2, which was greater than the 12 instantaneous-rate impact that we might have otherwise 13 But we've done a lot of work to improve the 14 seen. performance on the Jaquez 2. This is not one of the wells 15 where we'd be describing that. 16 Okay. Can you show us an example of any of these 17 Q. wells on Exhibit 6A where the infill well came on line and 18 accelerated the production decline? Anything like that? 19 20 Well, the first one that would come to mind if I Α. were to -- and I didn't make this exhibit for that 21 demonstration purpose, because I don't show the rate-time 22 aspects of the infill, but if I were to look in areas, say, 23 24 of Jaquez 331, in Section 8, you see that from the rate 25 level of about 2 million a day to about 1300 a day, it's

1	going on a steep decline. And it shouldn't be doing that,
2	it should be hyperbolic, it should be curving out flatter.
3	But instead, it's curving downwards. And that curving
4	downwards shows the impact of interference.
5	Q. Can you tell us when that well would have come on
6	by looking at the chart for the Jaquez 331?
7	A. I could look that up on my computer, but this is
8	a rate versus cum. It doesn't have a time projection on
9	there.
10	Q. Okay
11	A. My general reflection, having gone through the
12	rate-versus-time, would be that for the amount of cum that
13	we've accumulated in this time period, that it would have
14	been offset drilled approximately at the 2-million-a-day
15	level, or at the cumulative would be probably about 18 BCF.
16	And if you look at the well immediately south on
17	the G, you can see that that well is going on a steeper
18	decline. For the last couple BCF it's much steeper than
19	before.
20	Q. So the graph data on Exhibit 6A reflects parent
21	well performance only, correct?
22	A. It reflects parent well rates, but it is
23	cumulative for the section
24	Q. Okay.
25	A and reflects interference on many of these

1 | with infill drilling.

2	Q. And is that indicated by a steeper inflection to
3	the curve? It's not apparent to me is why I'm asking. Can
4	you show me, for example, on the 331 where if we look at
5	your 2-million-a-day line, wouldn't we expect to see a
6	steeper decline at that point than is shown here?
7	A. I expect that steepness occurs towards the end of
8	2003 and at that point in time would coincide to
9	approximately the point where this well crossed the 2-
10	million-a-day level.
11	And from where it crosses the 2-million-a-day
12	level to the point where that red curve takes on, if I were
13	to draw a line on this, we would see my line being steeper
14	than the previous history, when in fact it should be
15	shallower than the previous history. It should be
16	flattening as we go along.
17	Q. Mr. Reese, is it your understanding that Mr.
18	Hawkins, who's present here today, gave testimony to the
19	Division Examiners in support of increased development
20	densities for the Fruitland Coal Gas Pool?
21	A. I understand that Mr. Hawkins gave testimony
22	supporting infill drilling.
23	Q. Is that why he's not being called as a witness
24	today?
25	A. I don't believe so. I think he would be happy

1	to. I think I got volunteered by myself, actually.
2	And I support infill drilling. I think there's a
3	lot of good areas that have benefitted greatly from infill
4	drilling, and I think a lot of area has had wasted dollars
5	with regard to infill drilling. And when you look at some
6	of the big units you'll find out, boy, the first thing the
7	operator did was ring-fence them with wells, trying to keep
8	their gas from getting drained by the offset units, with
9	that being their recognition that, oh, this is a
10	competitive reservoir in the fairway.
11	Q. Mr. Reese, do you agree or disagree that the
12	infill wells proposed by KEC will produce incremental
13	reserves that would otherwise go unrecovered? Do you
14	disagree with that?
15	A. What's KEC?
16	Q. Koch Exploration Company, I'm sorry.
17	A. Okay. I view reserves as those quantities
18	economically recoverable, and I don't believe that these
19	wells will increase the economic recovery in this area, so
20	I wouldn't call them reserves from that perspective. I
21	agree that these wells will produce more gas, I agree that
22	there will be some incremental gas produced, but I think
23	it's immeasurably small and insignificant compared to the
24	competitive aspects.
25	MR. HALL: Nothing further of this witness.

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122 Okay, thank you. EXAMINER BROOKS: 1 EXAMINATION 2 BY EXAMINER BROOKS: 3 Mr. Reese, looking at your Exhibit Number 5, you 4 0. would agree with me, would you not, that the rectangle --5 or not rectangle, the quadrilateral that you've drawn 6 around the letter G has a greater north-south displacement 7 than just about any other that you -- any other that you've 8 9 drawn --10 Α. Certainly --11 Q. -- and that just about -- and pretty much close 12 to what -- more than any other you could draw; is that not 13 correct? I believe that's true, because the north well 14 Α. 15 looks like it's reasonably close to the top and the south 16 well is reasonably close to the bottom. 17 Q. Yes. Does that suggest to you that there might 18 be more likely to be reserves that would be unrecovered in 19 between those --20 Α. It would if this were to be viewed as a tight gas 21 I would say a reasonable amount of increment in reservoir. a tight-gas reservoir with that kind of spacing. 22 23 But you don't believe that this is such a Q. 24 reservoir? 25 Α. No, I do not with the pressure transients that we

1 | see and the past performance.

Q. Okay.

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A. And I'll just mention that from an operator perspective, they chose to place those wells that far apart. Towards the bottom we chose to space them out a little more uniformly.

Q. Is there any difference in the drainage east-towest versus north-to-south that you are aware of in this
area?

I observed some data suggestive of a greater 10 Α. 11 ability to drain north-south than east-west. And in 12 particular when we drill conventional wells through the 13 Fruitland Coal and we lose circulation, that drilling mud seems to make a beeline in a north-south direction and show 14 15 up at our coal wells, and we have to dig that out of the compressors from the drilling of these conventional wells. 16 But it's generally in a north-south direction, and -- Yeah. 17 Okay. And on Exhibit Number 6, the circles 18 Q. that -- well, on all these exhibits, the circles that are 19 20 not filled in, those are wells that have not yet been 21 drilled? Those -- Yes. And I believe each of those have 22 Α.

been permitted. The two on the left, on the west side, are
Koch wells. The third one on the right side is a BPoperated well that again sits next to the best well out

1	there, and we've not gone in and drilled that. We let the
2	permit expire. And it's not because we wouldn't like to
3	produce more gas
4	Q. Are you talking about the Seymour 121 S?
5	A. No, the one that we've not drilled is southeast
6	of there, it's the Kernaghan B 7S.
7	Q. Okay, which
8	A. It's in M.
9	Q. Oh, okay.
10	A. That's the block we operate there.
11	Q. Now the Seymour, the block I, that would be
12	operated by Koch?
13	A. Correct.
14	Q. Okay.
15	A. I've checked the NMOCD data site, and they
16	haven't been drilled yet, as far as
17	Q. Okay. Moving on to your Exhibit Number 7, you
18	said you did not do the gas-in-place calculations; is that
19	correct?
20	A. I did not create the gas-in-place map, and I did
21	not do the calculations that went into the map. I merely
22	used what had been generated.
23	Q. And
24	A. I selected contour points from that map to
25	calculate recovery factors.

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1	Q. Were those Was that gas in place based on
2	reservoir volume in some way, manner or
3	A. Yes, it was based on the amount of coal present,
4	footage of coal. It was based on an ash-content
5	calculation. It was based on a pressure calculation,
6	pressure being variable
7	Q. Yeah.
8	A with depth. And I believe a vitrinite
9	reflectance went in there as well, and measurements of
10	desorption from gas cuttings, and restoration efforts along
11	the way.
12	Q. And you said it was done before the infill
13	drill
14	A. Correct.
15	Q drilling was done, and that's the infill
16	drilling from 320 to 160, so it would have been done at a
17	time when there was presumably one well per 320
18	A. Yes.
19	Q and based on the whatever formation data
20	you got from those wells.
21	Okay, now explain to me this last column, the
22	equivalent drainage in acres. What is the formula that
23	results in that calculation? How is that calculated from
24	the other data?
25	A. The equivalent drainage was calculated by taking

the estimated ultimate recovery as defined by the parent 1 well for the block --2 3 0. Right. -- prior to interference aspects, infillwise, and 4 Α. it was divided by the gas in place, being the third column. 5 And then it was divided by the recovery factor, estimated, 6 7 of 95-percent top --Divided --Q. 8 -- and then multiplied by 320 acres for a 9 Α. standard drillblock. 10 11 Q. Oh, okay. So --So it was the percent of the gas produced, times 12 Α. 320 acres, adjusted by the recovery factor estimation. 13 So looking at the first one, you take 11.2 14 Q. divided by 21.5, which is going to get you somewhere a 15 little less than half? 16 Yeah, these mapped numbers that I quote are for a 17 Α. standard 320 acres, so I'm taking the drillblock recovery, 18 divided by the drillblock gas in place, to get a 19 20 percentage. Okay, and then you multiply by the projected 21 Q. 22 recovery factor, or does that --23 No, that column didn't enter the calculation. Α. 24 Okay. Okay, you just take the -- you take the --Q. 25 I defaulted to a 95 percent --Α.

1	Q. Okay.
2	A assuming that all of these are approaching a
3	similar very low pressure.
4	Q. Do you multiply by 95 percent or divide by 95
5	percent?
6	A. I divided by 95.
7	Q. So you've got a factor on that first one of just
8	a little under .5, and then you go by 95 you divide by
9	95 percent, that's going to increase it just a little bit,
10	so it's going to be right around .5, which works out
11	because half of 320 would be $180 [sic]$ .
12	A. Yeah.
13	Q. Excuse my fourth-grade mathematics.
14	A. I forgot that I should have shown the equation.
15	Q. That's about the level I have to get to. Okay,
16	very good. Thank you.
17	Now there was some discussion of what's going on
18	up in Colorado, and I do know, or have heard anyway, that
19	COGCC has approved four wells per 320-acre unit in some
20	areas of the Fruitland Coal, and I don't know which ones.
21	But that's not in this area.
22	A. Was that a company that you had mentioned? I
23	didn't quite hear.
24	Q. In Colorado.
25	A. Right.
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1	Q. Not, it's not a company
2	A. Oh, the Colorado Oil and Gas
3	Q. The Colorado Oil and Gas Conservation Commission.
4	A. Uh-huh.
5	Q. That was I said COGCC. But my understanding
6	is that they have in some places approved or authorized
7	going to a density of four wells per 320-acre unit in the
8	Fruitland Coal.
9	A. Yes.
10	Q. But I gathered from your testimony that those are
11	areas that have different characteristics from this area.
12	A. They're very much dissimilar to this, because
13	they've had very poor recovery for the same mapped gas in
14	place, compared to where we have an exceedingly high
15	recovery.
16	And the area of Colorado that is similar to this
17	that we operate amusing, I had heard one of our Colorado
18	hands think about the concept of infill drilling there, and
19	I advised him, That's cool, but we would protest you, that
20	BP Operating out of Farmington would protest BP Operating
21	out of Durango if they ever thought of doing that.
22	(Laughter)
23	Q. (By Examiner Brooks) Has BP done any to your
24	knowledge, done any have they done any thinking about
25	going to more infill wells than the Fruitland, than

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1	presently authorized in New Mexico, or any idea of going to
2	more wells?
3	A. I've personally reviewed all of our well
4	locations and all of our acreage, with the exception of the
5	GCU Unit. I haven't been able to get to that. But for all
6	of our acreage that we have an interest in, that we
7	operate, none of that would I advocate going to a higher
8	density than currently authorized.
9	Q. Okay. You said something in discussing this
10	subject of areas where the areas in Colorado, you said
11	that they demonstrated very little interference, and then
12	you said, if I my note is correct, Compared to the
13	substantial depletion we see here.
14	Now what is it in this is there something in
15	these exhibits that shows the substantial depletion, or
16	what is it? And if so, what is it?
17	A. Well, one evidence of towards that is
18	certainly the high recoveries compared to what we can
19	measure as in-place volumes, and that would be supportive
20	of highly depleted.
21	Q. And that would be shown in the projected recovery
22	factors in your Exhibit 7?
23	A. Yes.
24	Q. Okay, anything else?
25	A. I didn't bring rate-time information, but I have

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1 looked at the performance of the infill -- drilled wells on 2 a rate-time basis, and they generally -- they more closely 3 approximate -- and I could refer to the Koch exhibit for 4 that -- they more closely approximate what the existing 5 wells are currently doing, as opposed to what the existing 6 wells had previously done.

And when I look at the Koch wells, frequently, as 7 shown on Exhibit 6A, their rates are reaching upwards of 9 8 million a day, at location M we have rates of 10 million a 9 day, I is at rates of 8 million a day. Infill wells tend 10 to come in either somewhat below or somewhat above the 11 current rate, as opposed to an undepleted rate. So the 12 similarity of those rates with depletion at the existing 13 well would suggest corroboration of the depleted reservoir. 14 Now have you reviewed the Koch exhibits? 15 Q. Not before today, just what I've seen today. 16 Α. 17 Okay. As I recall, the Koch witness testified --Q. if I find the right exhibit here --18 15 and 16 perhaps. 19 Α. No, I'm talking about the graphs there, 20 Q. production of parent and infill wells. Okay, yeah, these 21 22 Exhibits 15 and 16. As I recall, the Koch witness's 23 testimony indicated that in his opinion these graphs 24 demonstrated that there was not any significant interference from the infill wells. Would you disagree 25

1 | with that characterization?

A. I would definitely disagree. I've performed many
of these types of calculations on a township-by-township
basis, and they have statistics inherent in them that don't
show the full aspect of that. And you go into the township
and look section by section, you can see quite a bit of
interference.

8 Frequently on a township-wide or region-wide 9 basis, the losses that you see one place might be offset by 10 some gains seen elsewhere as wells are optimized. And 11 specifically, if I look at Exhibit 16, there is an 12 expectation inherent in this that perhaps this is a 13 straight line and not falling off very guickly.

This is plotted on a rate versus time, and for diagnostic purposes I believe most petroleum engineers would agree that if you're going to do it on time, you should do it on a semi-log versus time. It will help show the decline rates better and changes in rates.

In this case, if you showed it on a rate versus time on coordinate paper it should be more hyperbolic than on semi-log, and it should be -- this coal should be very hyperbolic on semi-log, so it should be flattening out. The fact that it's not flattening out as fast as it would otherwise is interference, so it's a matter of what the high expects versus what you're seeing.

Also, interference would have started earlier than when these wells started, interference from offset wells. So some of the preceding decline would already be affected by other wells in the area, and one would have to back up further and look at the decline rates before then to see if this whole trend is not steeper than what was happening before the infill program.

And it would also have to take into account the 8 -- whatever remedial activities and changes in pressure and 9 10 wellbore cleanouts happened in the time. And generally it's not enough time to see -- You can see at the top that 11 the total decline is much steeper, the decline rate above 12 than below, and that would perhaps point to a -- maybe the 13 same recovery, but just being shared by more wells, or 14 15 perhaps somewhat different.

Q. Okay.

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A. This is not the best diagnostic for that.
EXAMINER BROOKS: Okay, thank you. Let's see
here, see if I have anything else.

I think that's all.

Mr. Jones?

EXAMINATION

23 BY MR. JONES:

Q. Mr. Brooks has pretty much asked most of my
questions. I would explore a little bit more this business

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1	about the mapped gas in place being so low in the past when
2	you only had available to look at the original wells, so
3	quite obviously from your recovery factors averaging above
4	100 percent here, the gas-in-place numbers ought to be a
5	lot higher, and the new information that you've got since
6	then was the new wells, right? That's been drilled? So
7	A. As well as additional performance on the existing
8	wells.
9	Q. Existing, okay. So have you done the exercise of
10	now the 95 percent, that sounds decent for a like a
11	gas well from conventional reservoirs. Are you going that
12	high on coal gas?
13	A. I don't believe that we're going to recover 95
14	percent.
15	Q. Okay, you just used that number?
16	A. That was to not to not be accused of
17	overestimating the drainage area, I pushed that number as
18	high as I could conceivably
19	Q. Okay.
20	A push that. I could have left it at a,
21	perhaps, more reasonable lower number. I think that it's a
22	fair comment that one person's mapping a gas in place will
23	undoubtedly be somewhat different than another person's.
24	We've had the same method consistently applied so it wasn't
25	skewed one way or another. I think that conceivably it

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1	could be 10 percent larger or 10 percent smaller, and that
2	would affect the recovery.
3	I think it's also likely that because of the good
4	performance here versus the rest, that we are pulling gas
5	into this area from to the east and west of this region,
6	and that helps the recovery calculation.
7	Q. So it's an acreage adjustment?
8	A. I didn't understand that.
9	Q. What I mean is, you said pulling from a wider
10	area, so
11	A. Yeah, it's part of a bigger pool. The
12	Q. Bigger pool.
13	A. The pool as we understand it goes well beyond
14	this well spacing. And there's nothing here to prevent gas
15	from migrating into this area from the area to the
16	either the east or the west, and it's a pretty good area.
17	Q. It seems to be a nice area.
18	Did you go through the calculation on trying to
19	cram tat gas back into the volumetrics to see if our coal
20	thicknesses were reasonable, and your ash you know, all
21	that stuff? Or are you getting some contribution from the
22	sands around the coal or
23	A. The best way for me to do that is through the
24	performance modeling, which includes the effect of the
25	or the current pressure that we derive from the modeling

1	process, as well as shut-ins, and it's a reconciliation of
2	the nonlinear isotherms with that pressure, with these
3	volumes, and with the well's performance, and the modeling
4	tries to pull all those things together.
5	And I cannot model the wells' performance
6	generally if I limit them to whatever coordinates their
7	drillblock boundaries are. But when I look at the overall
8	performance I see areas where the drainage circles, as I
9	might draw them, overlap substantially, and other areas
10	where they're still further apart. And that to me, I
11	interpret that as being consistent with gas migration. Not
12	proving it, but consistent.
13	Q. Mr. Wright testified that there's a difference in
14	the two different pipelines in the east side of the field
15	and the west side of the field, and his map was pretty
16	interesting, showing the basically the lower recovery
17	over to the west. It does seem like there's something
18	going on that I guess can only be explained on an average
19	basis
20	A. We see
21	Q average well
22	A. Yeah, we see a reduction in coal thickness to the
23	west.
24	Q. Okay.
25	A. And we see continuation, good continuation, to

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1	the east. And my estimation is that to the extent that we
2	have migrated gas into this area, that it came from the
3	east side of the block rather than the west.
4	Q. Okay.
5	A. We tend to operate our wells into the single
6	digits on the surface pressure. We've pulled the pressure
7	down over time as the pressure depletes, and sometimes we
8	drop just a little bit below zero on the pressure, but
9	because of contract aspects we tend to keep it just above
10	zero. But we have seen big increases in the past when we
11	did drop the pressure.
12	Q. Oh, really?
13	A. We've measured bottomhole flowing pressures on
14	some of those as low as 1 p.s.i.
15	MR. JONES: I guess the Powder River Basin is
16	training everybody in how to decline a reservoir, coal
17	reservoir, down.
18	I don't have any more questions.
19	EXAMINER BROOKS: Okay. Follow-up, Mr. Hall?
20	MR. HALL: No further questions of this witness?
21	EXAMINER BROOKS: Mr. Bruce?
22	REDIRECT EXAMINATION
23	BY MR. BRUCE:
24	Q. I just have one question, something you mentioned
25	about when the pressure draws down, the carbon dioxide

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1	content of the gas goes up in this area?
2	A. Yes.
3	Q. And what type of percentages are you talking
4	about?
5	A. The types of percentages, the highest that I've
6	seen which is in this area and it occurs in the best
7	performing areas because we get the pressure down the
8	lowest, the fastest, and the carbon dioxide and the methane
9	desorb differentially. The methane comes off more quickly,
10	the carbon dioxide is a heavier molecule, and it clings to
11	the coal more clings better.
12	And as time goes by, because we're preferentially
13	taking off methane, the remaining concentration increases,
14	and the CO <sub>2</sub> rises as we go. In the Kernaghan B 7 area, the
15	initial concentrations of CO <sub>2</sub> were on the order of 12
16	percent. They're currently approaching 30 percent and will
17	continue up towards 40 percent, and we'll start having to
18	import NGL or something to be able to run compressors to
19	keep that going. But we have the well density at the two
20	wells per spacing unit to get the pressures low enough to
21	where that high CO <sub>2</sub> is the issue anymore.
22	MR. BRUCE: Thank you. I have nothing further.
23	EXAMINER BROOKS: Very good. Does this complete
24	your evidentiary presentation?
25	MR. BRUCE: I'm done.

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1	EXAMINER BROOKS: Any rebuttal, Mr. Hall?
2	MR. HALL: Brief rebuttal through Mr. Wright.
3	EXAMINER BROOKS: Very good.
4	Mr. Reese, you may step down.
5	Okay, you may proceed.
6	BOB WRIGHT,
7	the witness herein, having been previously duly sworn upon
8	his oath, was examined and testified as follows:
9	DIRECT EXAMINATION
10	BY MR. HALL:
11	Q. Mr. Wright, you've heard Mr. Reese's testimony.
12	Let's turn to his Exhibit 6A. Can you help us see anywhere
13	on 6A in the production history and projections the
14	interference that Mr. Reese says he sees from the infill
15	wells?
16	A. Well, I've examined Mr. Reese's exhibit. I have
17	difficulty making the same conclusions that he has drawn
18	regarding interference.
19	Q. Is the interference that he sees apparent
20	anywhere on the exhibits at all?
21	A. Not that I see.
22	Q. Okay. Let's turn to Exhibit Number 7. Do you
23	have an opinion on whether or not the methodology and the
24	underlying data that Mr. Reese used to compile this exhibit
25	is helpful to the Examiner in making his decision here?

I'm guite uncomfortable with the mapped gas-in-1 Α. place column, which is really the key to this exhibit. As 2 we've observed, this column is something which is very 3 I don't know whether there subject to interpretation. 4 could be bias in the data unless we were able to analyze it 5 in a similar fashion. I think it's conceivable that --6 it's conceivable to me that the data could be slanted in a 7 certain direction, without, you know, preparing the same 8 9 study ourselves. 10 Similarly, even the numbers that go into the 11 estimated ultimate recovery do involve some judgment, and 12 there's a variability component there. I don't think that's as significant here. As there is such a large 13 component of cumulative production, the remaining reserve 14 is a smaller component of it. 15 But I am concerned that there -- as discussed 16 here, there could be bias that has been brought into this 17 analysis that we could conceivably conclude a different 18 19 result. 20 ο. And is it accurate that even though the map area shown on the left side of the exhibit reflects infill 21 22 wells, the gas-in-place-calculations column relies only on pre-infill-well data? 23 That's as I understand it, yes. 24 Α. 25 That's all we have on Mr. MR. HALL: Okay.

Wright. 1 2 EXAMINER BROOKS: Mr. Bruce? 3 CROSS-EXAMINATION BY MR. BRUCE: 4 5 Q. Just one question regarding your comments on 6 Exhibit 7, Mr. Wright. You haven't done any equivalent 7 studies or calculations that Mr. Reese did in preparing Exhibit 7? 8 9 Α. No, I don't have anything as a direct comparison, 10 that's correct. 11 MR. BRUCE: That's all. 12 EXAMINER BROOKS: I have nothing. 13 Mr. Jones? 14 MR. JONES: (Shakes head) 15 EXAMINER BROOKS: Very good, I assume that completes the evidentiary case? 16 17 MR. HALL: Yes, sir. 18 EXAMINER BROOKS: Do the attorneys wish to 19 present summations? 20 MR. HALL: Very briefly --MR. BRUCE: I've got one. Do you want me to go 21 22 first, Scott? 23 MR. HALL: Well, I'm the Applicant. I believe I 24 get to go first. 25 MR. BRUCE: Oh, it doesn't matter to me.

1	MR. HALL: I think the evidence you've heard here
2	today establishes that what Koch is requesting of the
3	Division is not effective increased density, although
4	that's referenced on the face of the Application. In fact,
5	what they are requesting is authorization to drill on
6	pattern at standard well locations consistent with the
7	prevailing development pattern for the high-productivity
8	area in the pool, which is necessary, as even BP's
9	witnesses have testified, to recover additional incremental
10	reserves. That's really what we're asking for.
11	The evidence before you has also shown that the
12	undrilled locations on a section basis are disadvantaged by
13	the offsets. Even BP's witnesses concede that in their
14	testimony here today.
15	They contend that the narrowly configured
16	nonstandard units are draining larger areas than they
17	should be, but at the same time they do admit that the
18	undrilled infill locations are being drained by the
19	offsets. That would be one thing in the context of a
20	unitized area, but that's not what we have here.
21	We have reserves that are going unrecovered.
22	That's waste. We have a violation of correlative rights
23	when the offsets can drain the undrilled locations and the
24	interest owners in the undrilled locations do not have the
25	opportunity to participate in the offsetting production,

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1	that is the clearest example of a violation of correlative
2	rights that you will ever see before this Division.
3	For that reason we're requesting that Koch's
4	Application be approved with respect to each of the
5	nonstandard units, so that development on pattern can be
6	complete and so that the State can realize increased
7	incremental reserve recoveries.
8	EXAMINER BROOKS: Okay, as I understand, this is
9	the Fruitland Coal, as I recall, is a nonprorated pool;
10	is that correct?
11	MR. HALL: That's right.
12	EXAMINER BROOKS: And nobody has said anything
13	about any kind of a production adjustment that might be
14	that might offset the increased density, the effective
15	density that would be shown here, so I guess we don't have
16	any evidence of that, and we couldn't do it in any case; is
17	that
18	MR. HALL: We're not advocating the Fruitland
19	Coal Pool.
20	EXAMINER BROOKS: Okay. Well, I wasn't talking
21	about the pool, I was talking about these particular wells,
22	since they have an increased effective density. But I
23	think that's a red herring, because there's no evidence
24	about it in the record.
25	Mr. Bruce?

MR. BRUCE: Mr. Examiner, BP has presented 1 evidence that the Fruitland Coal reservoir in this part of 2 the Basin has very good continuity over large distances. 3 It is, in effect, one big pool, and this area is highly 4 5 competitive. BP further showed that Koch is recovering its 6 7 fair share of reserves from its existing wells on these three well units. BP is the only one who has shown 8 production data and taken pressure data into account in 9 calculating the reserves and the production from this area. 10 BP believes that reliance on the infill drilling 11 case from, well, four or five years ago now is misplaced in 12 that that case was to allow two wells per well unit. 13 14 That's it. Koch is asking for three wells in a well -- in 15 16 three well units that are in effect standard in size. Even though they are irregularly shaped, they are standard in 17 size. 18 Since BP and the other offsets are only about two 19 wells per 320 acres, we think it's inequitable to allow 20 three wells on a 330-acre unit. 21 Furthermore, Mr. Reese's Exhibit 7 clearly shows 22 23 that Koch is producing as much or more gas from its units 24 as the offset units are. Clearly it is not disadvantaged, 25 and it doesn't need additional wells to produce the

1 reserves.

2	Regarding other nonstandard units that was
3	testified to, most of those are inside the 32-9 unit, the
4	32-8 unit and the 30-6 unit. Even though the engineering
5	is the same more or less, clearly when you have wells
6	inside units you do not have the same competitive pressures
7	that you do in non-unitized portions of the Basin. When
8	you extract those wells, you have four well units that are
9	in effect, small nonstandard units. There's no need to, in
10	effect, double the number of those nonstandard units by
11	allowing three wells in this unit in these units.
12	If this Application is granted, you may create a
13	domino effect where offset operators may need to seek
14	additional wells to compete against Koch, just creating a
15	domino effect. We don't think this is necessary, we think
16	it's wasteful, and we think the Application should be
17	denied.
18	EXAMINER BROOKS: Very good.
19	MR. HALL: Mr. Brooks, may I clear up one
20	additional matter? I think I can do it briefly just by
21	EXAMINER BROOKS: Okay.
22	MR. HALL: counsel commented If you'll look
23	at our Exhibit Number 1, we reflect the acreages for each
24	of the nonstandard units.
25	EXAMINER BROOKS: Yes, sir.
There was some rounding that occurred MR. HALL: 1 when those figures were placed on there. If you want the 2 accurate acreages for each of those units, you ought to 3 refer to the first order in Exhibit 3, where they approved 4 the three Fruitland Coal units, and those acreages are 5 correctly reflected there. 6 EXAMINER BROOKS: 7 Thank you. MR. BRUCE: Mr. Beirne's Exhibit 1 also has the 8 9 correct acreages on it. EXAMINER BROOKS: Very good, thank you. 10 Anything further from anyone? 11 MR. HALL: That's all we have. 12 EXAMINER BROOKS: Very good. Then Case Number 13 13,841 will be taken under advisement. 14 15 (Thereupon, these proceedings were concluded at 2:25 p.m.) 16 \* \* \* 17 18 19 20 I do hereby certify that the foregoing is a complete record of the proceedings in 21 the Examiner buaring of Case No. neard by me on 22 Oil Conservation Division 23 24 25

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## CERTIFICATE OF REPORTER

STATE OF NEW MEXICO ) ) ss. COUNTY OF SANTA FE )

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL January 21st, 2007.

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STEVEN T. BRENNER CCR No. 7

My commission expires: October 16th, 2010