

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

ORIGINAL

IN THE MATTER OF THE HEARING CALLED
BY THE OIL CONSERVATION DIVISION FOR
THE PURPOSE OF CONSIDERING:

CASES NO. 14669
14670

APPLICATIONS OF COG OPERATING LLC FOR THE CREATION OF A NEW
POOL, SPECIAL POOL RULES AND THE CONTRACTION OF THE Grayburg
JACKSON POOL WITHIN THE BURCH KEELY UNIT, EDDY COUNTY, NEW
MEXICO.

REPORTER'S TRANSCRIPT OF PROCEEDINGS
EXAMINER HEARING

September 29, 2011
Santa Fe, New Mexico

BEFORE: WILLIAM V. JONES, Technical Examiner
DAVID K. BROOKS, Legal Examiner

This matter came on for hearing before the New
Mexico Oil Conservation Division, WILLIAM V. JONES, Technical
Examiner, and DAVID K. BROOKS, Legal Examiner, on September
29, 2011, at the New Mexico Energy, Minerals and Natural
Resources Department, 1220 South St. Francis, Drive, Room
102, Santa Fe, New Mexico.

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A P P E A R A N C E S

FOR THE APPLICANT:

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I N D E X

EXHIBITS

1-A, 15 and 16 ADMITTED	19
BRANDON KIMBERLY GAYNOR	
Direct by Ms. Munds-Dry	08
HARVIN BROUGHTON	
Direct by Ms. Munds-Dry	27
T. J. MIDKIFF	
Direct by Ms. Munds-Dry	37

1 EXAMINER JONES: Okay. Let's go back on the record
2 this morning and call Cases 14669 and 14670, both of the
3 applications of COG Operating LLC for the creation of a new
4 pool, special pool rules and the contraction of certain
5 Grayburg Jackson Pools within the Dodd Federal Unit and the
6 Burch Keely Units, Eddy County, New Mexico.

7 Call for appearances.

8 MS. MUNDS-DRY: Thank you, Mr. Jones. Ocean
9 Munds-Dry with the law firm of Holland & Hart LLP,
10 representing COG Operating LLC this morning, and I have three
11 witnesses.

12 EXAMINER JONES: Any other appearances?

13 (No response.)

14 MS. MUNDS-DRY: It's a great day, Mr. Jones.

15 EXAMINER JONES: I guess the record -- it's the same
16 witnesses that have been sworn in the case earlier?

17 MS. MUNDS-DRY: Two of them are the same, one is
18 different.

19 EXAMINER JONES: Will the witness that has not been
20 -- well, is that correct, Mr. Brooks?

21 EXAMINER BROOKS: I suppose so. I have never been
22 sure, but let's assume it is.

23 EXAMINER JONES: Will the witness that has not been
24 sworn in the previous hearing of these cases please stand and
25 state your name?

1 MR. GAYNOR: Brandon Gaynor.

2 EXAMINER JONES: I'm sorry?

3 MR. GAYNOR: Brandon Gaynor.

4 EXAMINER JONES: Will the court reporter please
5 swear the witness.

6 (Oath administered.)

7 EXAMINER JONES: Let the record show the two other
8 witnesses have been already sworn.

9 MS. MUNDS-DRY: Mr. Jones, before I call Mr. Gaynor,
10 I just wanted to kind of remind you and refresh all of us,
11 because it's been since June that we heard the first half of
12 this case, I just wanted to give us a little refresher of
13 where we are today.

14 The first half of this case, as you may recall,
15 Mr. Jones, was heard at the end of June. You and Mr. Brooks
16 were both present. We had decided to separate the issues in
17 the case because of Concho was asking for both the
18 contraction of certain Grayburg Jackson Pools and the
19 creation of a new pool for the Yeso, and in that new pool
20 they are asking for an increased allowable.

21 Because there was another pending case, Case 14613,
22 we decided to hear just -- or put on evidence that related
23 just to the creation of the new pool and the contraction of
24 the Grayburg Jackson Pool and reserve the evidence on the
25 increased allowable until an order was issued in that related

1 case. And as you have just shown us, we now have that order,
2 which is order R-13882-E, and, in that order, the Division
3 granted a 300-barrel-a-day allowable for certain Yeso pools,
4 and a 3000 to 1 limited GOR.

5 And so now that we have that order, we -- we are now
6 going to put on the evidence as it relates to the allowable
7 request for these pools. And just to give you a little bit
8 more context, the reason why, you may recall, that these
9 pools were separated out from that original case, that 14613,
10 is for the very reason we are here to fix those pools,
11 essentially, because they contain shallower formations,
12 specifically the Grayburg San Andres, that really were not
13 related to our request for an increased allowable in that
14 Yeso -- Glorieta Yeso Formation.

15 So the Division, at that time, dismissed those
16 Grayburg Jackson Pools, and they note that -- that's noted in
17 the order, there were two Grayburg Jackson Pools that were
18 dismissed. One of those pools is before you today, so we are
19 seeking to correct that pool by making two pools, which we
20 showed you last time as to why it should really be two
21 different pools, and today we will focus on our request for
22 the increased allowable.

23 There was another related case, as it relates to the
24 Burch Keely Unit that the Commission recently issued an order
25 on, and that was Case -- Cases 14577 and 14558, and the

1 Commission issued order R-10067-D. There Concho was seeking
2 two things in the Burch Keely unit, to expand the vertical
3 limit of the unit to extend down to 5000 feet, which is its
4 ownership limit, and also to expand the Grayburg Jackson Pool
5 down to 5000 feet.

6 Our request here doesn't really change that other
7 than we are asking for the pool to be split into two. So the
8 5000 feet in the Burch Keely we are still asking remain, we
9 are just asking it be broken off of the Yeso separate from
10 the Grayburg San Andres. So it doesn't really modify except
11 to the extent that we are seeking to separate it into two
12 pools.

13 EXAMINER JONES: Did the Commission actually extend
14 that pool beneath the Burch Keely to 5000?

15 MS. MUNDS-DRY: To 5000 feet, yes, sir, they granted
16 Concho's application. And you had already granted our
17 request to consolidate both of these cases, so we do intend
18 today as well to discuss -- because the evidence is the same
19 for our request to increase the allowable in both the Burch
20 Keely Unit and the Dodd and we will present that evidence.

21 EXAMINER BROOKS: Well, There are some things I
22 would like to get clarified, and maybe I should -- I don't
23 know if I should ask you or the witness. And if I need to
24 ask the witness, tell me which witness. I am not clear, and
25 it's probably because I have not reviewed all of the orders,

1 but I am not clear as to there are two -- there are at least
2 three pools named Grayburg Jackson.

3 MS. MUNDS-DRY: Right.

4 EXAMINER BROOKS: Do you have those names and pool
5 numbers handy so we can keep them separated when we talk
6 about them?

7 MS. MUNDS-DRY: I believe Mr. Gaynor has them.

8 EXAMINER BROOKS: Okay, the witness has them. Well,
9 I'll ask him then. I'll address these questions to him.

10 MS. MUNDS-DRY: I think I can ask him and he will
11 give you --

12 EXAMINER BROOKS: He can also tell me what order
13 numbers they are established by, and --

14 MS. MUNDS-DRY: I think he can.

15 EXAMINER BROOKS: -- what their boundaries and
16 limits are.

17 MS. MUNDS-DRY: Mr. Brooks, Mr. Gaynor has all of
18 that in his head.

19 EXAMINER BROOKS: Okay. Okay. I'm glad to know we
20 have someone smart enough to know. That's what I wanted to
21 know.

22 MS. MUNDS-DRY: With that, then, I would ask that we
23 call Mr. Gaynor to the stand.

24

25

1 BRANDON KIMBERLY GAYNOR

2 (Sworn and testified as follows:)

3 DIRECT EXAMINATION

4 BY MS. MUNDS-DRY:

5 Q. Okay. Would you please state your full name for the
6 record?

7 A. Brandon Kimberly Gaynor.

8 Q. Mr. Gaynor, where do you reside?

9 A. Midland, Texas.

10 Q. Who do you work for?

11 A. Concho Resources.

12 Q. What do you do you for Concho?

13 A. I'm a Landman.

14 Q. As a landman for Concho, what are your duties?

15 A. Acquiring leasehold interests, clearing title,
16 getting deals done, making sure that we have all of our
17 rights in line with this allowable stuff.

18 Q. And you have a particular area of responsibility
19 that includes this Yeso area?

20 A. Yes, it does.

21 Q. And have you previously testified before the
22 Division?

23 A. Yes.

24 Q. Were your credentials as a landman accepted as a
25 matter of record?

1 A. Yes, they were.

2 Q. And are you familiar with the applications that have
3 been filed by Concho?

4 A. I am.

5 Q. Are you familiar with the status of the land that is
6 the subject of the application?

7 A. I am.

8 MS. MUNDS-DRY: With that, Mr. Jones, we tender Mr.
9 Gaynor as an expert petroleum landman.

10 EXAMINER JONES: He is so qualified.

11 Q. Mr. Gaynor, just because it's been a while since we
12 heard the first part of the case, would you remind the
13 Examiners what Concho is seeking in its two applications.

14 A. Yes. Basically there is a very big Grayburg Jackson
15 Pool called the Grayburg Jackson Seven Rivers Queen Grayburg
16 San Andres Pool, and that just covers from the top of the
17 Seven Rivers to the base of the San Andres, and it's a huge
18 area. And in our previous case, both the Dodd and Burch
19 Keely Units were removed from our other application because
20 they have special vertical limits within the larger Grayburg
21 Jackson Pool, and we were not able to just change the
22 allowable within those special vertical limit areas.

23 So what we are trying do in this case is remove
24 those special vertical limit areas from the larger Grayburg
25 Jackson Pool and create two new pools, and within those two

1 new pools we are asking for an allowable of 300 barrels per
2 day and no GOR limitation.

3 Q. And more specifically, in the Burch Keely unit, what
4 are the vertical limits that we are requesting for the new
5 pool?

6 A. The Burch Keely unit, the new pool would be from the
7 top of the Glorieta down to 5000 feet.

8 Q. And for the Dodd Unit, what are we requesting for
9 vertical limits of that pool?

10 A. From the top of the Glorieta down to the base of the
11 Yeso, which we have defined in our application as the top of
12 the tub.

13 Q. Okay. Let's turn to what's been marked as Concho
14 Exhibit Number 1A, which we presented an earlier version of
15 this in the first hearing. Mr. Gaynor, if you could -- it's
16 also up on the powerpoint -- could you explain to the
17 examiners what we are showing here and what we have changed?

18 A. Yes. This exhibit really shows the boundaries of
19 all of the Glorieta Yeso Pools that were subject to our
20 initial application. It's changed because the boundaries
21 that are the pools that are now gray were subject to the
22 previous order -- I think that's R-13382-E -- which increased
23 the allowable already in those pools to 300 barrels per day.
24 And another change is the Loco Hills Cedar Lake Fren East
25 Fren Pools name has been changed. They have been

1 consolidated into one pool called the Mar Loco Glorieta Yeso
2 Pool.

3 Q. That also resulted from R --

4 A. -- 13382-E, yes.

5 Q. And in blue here you have shown the outlines of the
6 two units?

7 A. Yes. The Dodd Unit is the unit on the left, and the
8 Burch Keely Unit is the unit in the blue on the right, and
9 these are the areas where we are trying to remove these
10 special vertical limits from the big Grayburg Jackson Pool
11 and have them just be their own pools in the Glorieta and
12 Yeso formations.

13 Q. And I want to ask you a couple of other things about
14 this, particularly addressing Mr. Brooks' question, but here
15 in the hatched gray area, what is this representing?

16 A. That is the Grayburg Jackson Seven Rivers Queen
17 Grayburg San Andres Glorieta Yeso Pool, and it was left out
18 of the other order, and it's sort of an oversight that we
19 haven't already filed to increase the allowable in there, but
20 it's not subject of this application or the other one.

21 Q. So that was just missed from that order when --

22 A. That's correct.

23 Q. And we'll -- that's not subject --

24 A. No.

25 Q. -- to our application?

1 A. No, it is not.

2 Q. Well, let's go over and we can talk about this in
3 the context of these different pools. For the record, and
4 for Mr. Brooks' clarification, would you please review the
5 three different Grayburg Jackson Pools, if you can? And I
6 know you have your -- I think you have your file there, if
7 you can give the names of them and maybe the order numbers
8 for each of the Grayburg Jackson Pools?

9 A. Sure. The starting point is there is the really big
10 pool, and that's the one that just covers from the Seven
11 Rivers down to the San Andres, except in these two areas, and
12 that's the Grayburg Jackson Seven Rivers Queen Grayburg San
13 Andres pool. Its pool number -- if you will bear with me for
14 a moment, because I don't have the --

15 EXAMINER BROOKS: It begins with a 2, I know, but I
16 can't remember the rest of it.

17 THE WITNESS: The big pool is 28509.

18 EXAMINER BROOKS: 28509?

19 THE WITNESS: Yes.

20 A. The pool that represents the gray hatched unit which
21 goes from top of the Seven Rivers down to the base of the
22 Yeso is the Grayburg Jackson Seven Rivers Queen Grayburg San
23 Andres Glorieta Yeso Pool, and it is Pool Number 97558.

24 EXAMINER JONES: Say again, what aerial?

25 THE WITNESS: It goes from the top of the Seven

1 Rivers --

2 EXAMINER JONES: No, the aerial.

3 THE WITNESS: Oh, it's the pool in gray.

4 EXAMINER JONES: The excluded part?

5 THE WITNESS: Yes, the light gray hatched --

6 EXAMINER JONES: That's not the Dodd Unit?

7 THE WITNESS: No, it is not.

8 MS. MUNDS-DRY: You can see it a little bit better
9 on the bigger map. It shows the outline of that pool.

10 EXAMINER JONES: So that one was, for some reason,
11 given a different pool code than --

12 THE WITNESS: Well, whenever they -- I don't know
13 all the details about -- about that property, but I do know
14 that when they unitized it, they went ahead and had the pool
15 go the entire extent of the unit. They separated it out from
16 the big Grayburg Jackson Pool.

17 EXAMINER BROOKS: You said, "When they unitized it,"
18 does that have a unit name?

19 THE WITNESS: Yeah. That's the GJ Unit.

20 EXAMINER BROOKS: GJ --

21 THE WITNESS: GJ West Co-Op Unit.

22 EXAMINER BROOKS: GJ West Co-Op Unit, I should
23 remember that. Okay. And that is separate from the Dodd
24 Federal and the Burch Keely?

25 THE WITNESS: It's a separate deal altogether.

1 Different pool, different properties.

2 EXAMINER BROOKS: Okay. However, that pool, the
3 Grayburg Jackson Seven Rivers Queen Grayburg San Andres
4 Glorieta Yeso Pool, also includes both the San Andres
5 Formation and the Yeso Formation?

6 THE WITNESS: Yes, it does.

7 EXAMINER BROOKS: Okay. As to that one, it's the
8 entire extent of that pool, right?

9 THE WITNESS: Yes.

10 EXAMINER BROOKS: Okay. And is this -- this area
11 outlined in gray, is that the entire extent of Pool Number
12 97558?

13 THE WITNESS: Yes.

14 EXAMINER BROOKS: I decided to use the numbers
15 because it takes too long to say the name.

16 THE WITNESS: Yes.

17 EXAMINER BROOKS: It's kind of like when I worked
18 for Studman McGray Seeley Law Firm, too many names in that
19 firm. Go ahead.

20 Q. (By Ms. Munds-Dry) And then there is a third pool,
21 if could you, Mr. Gaynor?

22 A. In the third pool, it's kind of funny in that it
23 doesn't have its own pool ID number, and we have never really
24 been sure if it's actually its own pool.

25 Q. But other than it seems to have its own name?

1 A. It has, yes -- bear with me for a second. The
2 Grayburg Jackson Yeso Pool, which is -- which was created by
3 order R-12256, but it's kind of funny because it says the
4 Grayburg Jackson, the big GJ Pool, was extended to include
5 the Yeso -- the Dodd Unit down to the base of the Yeso front
6 slash Paddock, which is kind of ambiguous, within the Dodd
7 Federal Unit area, only, and the Grayburg Jackson Pool shall
8 be renamed as the Grayburg Jackson Yeso Pool.

9 Q. And that's within --

10 A. Just within the Dodd Unit. And it goes just down
11 the base of the -- so it's extending the larger GJ Pool down
12 to the base of the Yeso front slash Paddock, and renaming
13 that interval but it was never assigned its own pool ID or
14 anything, so --

15 Q. Now, I do want to revisit the two portions of the
16 blue area on the slide there. You indicate there is no GOR
17 limit. Where did that come from?

18 A. That comes from Order R199.

19 Q. And in that -- in that order it indicated there was
20 no limiting GOR for this case?

21 A. That's right.

22 Q. And that is, as I understand, what Concho is seeking
23 to have continued in its application?

24 A. Yes. It's not really a change, it's just asking to
25 continue what's already the case in this particular pool.

1 Q. In the new pool?

2 A. Yes.

3 Q. Okay. Let's go to Exhibit Number 2, and we don't
4 need to spend a lot of time on these because we have talked
5 about this specific exhibit that was admitted in the last
6 hearing, but I want to refresh all of our recollections about
7 where we are. What is this Exhibit Number 2 showing us?

8 A. This is showing the horizontal extent of the larger
9 GJ Pool.

10 EXAMINER BROOKS: What exhibit is this?

11 MS. MUNDS-DRY: Exhibit Number 2, Mr. Brooks.

12 EXAMINER BROOKS: Thank you.

13 A. And this is from the top of the Seven Rivers to the
14 base of the San Andres. The area in blue is the -- what I
15 refer to as the larger portion of the GJ Pool.

16 Q. And the gray denotes what?

17 A. Offsetting pools.

18 Q. Okay. And let's go to Exhibit Number 3. What is
19 this showing us?

20 A. This is a color-coded map showing operators within
21 the pool -- within a mile of the pool, not within another
22 pool.

23 Q. And this Exhibit Number 3 was already admitted, and
24 we also discussed in the last hearing what -- what notice we
25 provided in accordance with the rules, and we submitted that

1 notice exhibit, so this is -- just denotes basically who we
2 gave notice to?

3 A. That's right.

4 Q. Okay. And what is Exhibit Number 4?

5 A. Since this pool is strange in that it has special
6 vertical limits within the Dodd and Burch Keely Unit areas,
7 we also provided notice to offsetting operators within the
8 Glorieta and Yeso intervals to the Dodd and Burch Keely.
9 This first one here, Exhibit 4, is the operators and offset
10 operators to the Dodd Unit.

11 MS. MUNDS-DRY: And we already admitted that exhibit
12 last time, Mr. Jones.

13 Q. Exhibit Number 5, what does this show us?

14 A. Exhibit Number 5 is the same thing as Exhibit Number
15 4, except with respect to the Burch Keely Unit.

16 Q. And, again, we admitted this exhibit last time,
17 Mr. Jones. Okay. Let's turn to what we have marked as
18 Exhibit 15. Identify and review this set of documents for
19 the Examiners.

20 A. Our initial application which included the Grayburg
21 Jackson Pool, we received letters of support for our
22 application from a number of the operators within the
23 Glorieta Yeso Pools, and these are the letters of support.
24 The first one we have is a letter of support from Apache, a
25 letter of support from Cimarex, a letter of support from

1 Chevron, Clayton Williams, Devon, Lime Rock, Mack, Mewbourne,
2 Nadel and Gussman Permian, Nadel and Gussman HEYCO, Primero
3 Oil and Gas, and XTO.

4 Q. Okay. And now let's go to Exhibit 16. What is
5 this?

6 A. This was a chart that we used in that previous
7 hearing as well. It's just showing who operates wells within
8 the Yeso Formation, within the area subject to our
9 application.

10 Q. And this is -- this is including a lot larger Yeso
11 Pool that we discussed in that Case 14613?

12 A. Yes, that's right. It includes those pools, and the
13 purpose of this is to show what those letters of support
14 really mean.

15 Q. In terms of numbers?

16 A. In terms of numbers, the proportion of operators
17 supporting what we are asking for.

18 Q. Mr. Gaynor, in your opinion, will the granting of
19 this application be in the best interest of conservation, the
20 prevention of waste, and the protection of correlative
21 rights?

22 A. Yes.

23 Q. And were Exhibits 1-A, 15 and 16 either prepared by
24 you or compiled under your direct supervision?

25 A. Yes, they were.

1 MS. MUNDS-DRY: Mr. Jones, we move to admit Exhibits
2 1-A, 15, and 16.

3 EXAMINER JONES: Exhibits 1-A, 15, and 16 will be
4 admitted.

5 (Exhibits 1-A, 15 and 16 admitted.)

6 MS. MUNDS-DRY: And, Mr. Jones, I meant to do this
7 at the beginning. We would ask that you take administrative
8 notice of Case 14613, that -- that resulted in Order
9 R-13882-E that granted the increased allowable in the other
10 Yeso Pools.

11 EXAMINER JONES: We will take administrative notice
12 of Case 14613 and also Cases 14577 and 14558.

13 MS. MUNDS-DRY: Thank you, Mr. Jones, that would
14 make sense. You have it all in front of you, and I have
15 nothing further from Mr. Gaynor.

16 EXAMINER JONES: That -- that portion of the
17 Grayburg Jackson Yeso slash Paddock, wasn't that amended with
18 another order to --

19 THE WITNESS: That has not been amended. What was
20 amended was the depth within the Burch Keely Unit, taking
21 that down to 5000 feet. But within the Dodd Unit, that has
22 not been changed.

23 EXAMINER JONES: That still says --

24 THE WITNESS: That still says --

25 EXAMINER JONES: -- Paddock.

1 THE WITNESS: -- the base of the Yeso --

2 EXAMINER JONES: To the Paddock.

3 THE WITNESS: -- slash Paddock.

4 EXAMINER JONES: So below the Paddock is considered
5 Wildcat in that.

6 THE WITNESS: I believe so.

7 EXAMINER JONES: Unless it's within a mile of
8 another pool.

9 THE WITNESS: That's my understanding.

10 EXAMINER JONES: Okay. Within that acreage. And so
11 there is no other place besides these three areas that the
12 Grayburg Jackson flows below the San Andres. Is that
13 correct.

14 THE WITNESS: That's right. Well, within the big
15 Grayburg Jackson Pool, there were two areas where it goes
16 below the Grayburg San Andres. One is within the Dodd Unit,
17 and the other is within the Burch Keely Unit.

18 EXAMINER JONES: There is also --

19 THE WITNESS: There is a separate pool with its own
20 pool ID that covers the GJ Unit, which is the light gray
21 hatched area on the map.

22 EXAMINER JONES: And the GJ Unit is operated by --

23 THE WITNESS: COG.

24 EXAMINER JONES: COG, that's what I thought. The
25 original COG before --

1 THE WITNESS: Yes.

2 EXAMINER JONES: Not that it matters. Now, have you
3 talked to Paul Foutz at all about potential pool codes or a
4 pool name for this --

5 THE WITNESS: For these new pools?

6 EXAMINER JONES: -- for these new pools.

7 THE WITNESS: No, I have not.

8 EXAMINER JONES: So you guys are okay with any pool
9 name?

10 THE WITNESS: Well, I think our geologists might
11 want to have a say on the names.

12 EXAMINER JONES: Yup. Okay. Forgot about the
13 geologists. I don't know what else to ask. David?

14 EXAMINER BROOKS: Okay. You said these areas, when
15 you are talking about the vertical extension of the Grayburg
16 Jackson Seven Rivers Queen Grayburg San Andres Pool to the
17 Glorieta Yeso Formation --

18 THE WITNESS: Uh-huh.

19 EXAMINER JONES: -- these areas are the Burch Keely
20 Unit and the Dodd Federal Unit?

21 THE WITNESS: That's right.

22 EXAMINER BROOKS: And when you say these areas, they
23 are different units, but they are one contiguous area,
24 right?

25 THE WITNESS: Well, we have asked for two separate

1 pools.

2 EXAMINER BROOKS: Yeah, but -- okay. You've asked
3 for the two separate pools, one for each unit?

4 THE WITNESS: Yes, because they go to different
5 depths.

6 EXAMINER BROOKS: And they -- what are the depth
7 limitations?

8 THE WITNESS: In the Burch Keely, within the
9 horizontals of the Burch Keely, within the horizontal limits
10 of the Burch Keely Unit, we would like the new pool to go
11 from the top of the Glorieta down to 5000 feet.

12 EXAMINER BROOKS: So that is the unit in which you
13 had the 5000-foot severance --

14 THE WITNESS: That's correct.

15 EXAMINER BROOKS: -- in ownership. And in the Dodd
16 Federal, you do not have that?

17 THE WITNESS: No, we do not.

18 EXAMINER BROOKS: So you want to go from the top of
19 the Glorieta Yeso to the base of the --

20 THE WITNESS: Of the Yeso.

21 EXAMINER BROOKS: -- of the Yeso.

22 THE WITNESS: Which I think we defined as the top of
23 the tub.

24 EXAMINER JONES: You don't have a well type log for
25 that?

1 THE WITNESS: I think our geologists have that.

2 EXAMINER BROOKS: Okay. Now, do you have the order
3 number of the order that established the present depth
4 limitations of the Grayburg Jackson Seven Rivers Queen
5 Grayburg San Andres Pool?

6 THE WITNESS: Well, it's a whole lot of order
7 numbers that have added up over time. It's --

8 EXAMINER BROOKS: Okay.

9 THE WITNESS: It's a page-and-a-half list of order
10 numbers.

11 EXAMINER BROOKS: Can you furnish us that
12 page-and-a-half list.

13 THE WITNESS: I can. I don't have it with me right
14 now, but I can --

15 MS. MUNDS-DRY: And if I may, Mr. Brooks, within the
16 Burch Keely Unit, the Commission recently modified that pool
17 down to 5000 feet, and I do have that order.

18 EXAMINER BROOKS: We will need to see that. Add
19 that to the list. We need all of those orders. We need to
20 know when all of those orders were.

21 MS. MUNDS-DRY: We can make sure we get you a list
22 of all of those orders.

23 EXAMINER BROOKS: We don't necessarily need the
24 orders that only expand the horizontal limits of the Grayburg
25 Jackson Pool because I'm sure the Grayburg Jackson Pool has

1 been horizontally expanded.

2 THE WITNESS: It's been horizontally expanded since,
3 you know -- the order that created it is, I think, R-55.

4 EXAMINER BROOKS: The only thing I'm concerned about
5 is the orders that vertically --

6 THE WITNESS: Okay. Well, no, I do have those.

7 EXAMINER BROOKS: That's what I'm concerned about.
8 I'm not concerned -- I don't need all the orders that
9 expanded it horizontally because -- because I know it's been
10 horizontally expanded.

11 THE WITNESS: I have those with me presently.

12 EXAMINER BROOKS: Okay. If you can just give me
13 those.

14 THE WITNESS: Within the Dodd Unit -- and this is
15 the order that I actually discussed a few minutes ago -- it's
16 R-12256.

17 EXAMINER BROOKS: R-12256.

18 THE WITNESS: That renames, but doesn't
19 redesignate.

20 EXAMINER BROOKS: Okay.

21 THE WITNESS: And within the Burch Keely Unit, it
22 was R-10067-D --

23 EXAMINER BROOKS: R-10067 --

24 THE WITNESS: D, I'm sorry.

25 EXAMINER BROOKS: D, as in dog. Okay. And those.

1 are the only orders that extend the Grayburg --

2 THE WITNESS: Vertical limits.

3 EXAMINER BROOKS: -- Jackson into the Yeso
4 Formation?

5 THE WITNESS: That's correct.

6 EXAMINER BROOKS: Okay. Let's see. I want to be
7 sure I ask the right questions. Somewhere I read an order --
8 Mr. Jones probably did, too, that's why I asked that
9 question -- some pool was defined as -- and it was one of the
10 Grayburg Jackson Pools, and there is an order defining --
11 naming it the Grayburg Jackson something Glorieta Yeso
12 Paddock Pool, and then there is another order that says they
13 made a mistake when they put Paddock in there, and they
14 renamed it with leaving Paddock out. Are you familiar with
15 that order?

16 THE WITNESS: Well, I believe that that is the --
17 the GJ Unit Pool, the light gray pool on the map.

18 EXAMINER BROOKS: Okay. I kind of think that's --
19 that's right.

20 THE WITNESS: I think it is.

21 EXAMINER BROOKS: I'm not sure.

22 THE WITNESS: Well, because it was the Grayburg
23 Jackson Seven Rivers Queen Grayburg San Andres Glorieta Yeso,
24 and then in parenthesis it's Paddock.

25 EXAMINER BROOKS: And then they deleted Paddock.

1 THE WITNESS: And then the parenthesis are gone.

2 EXAMINER BROOKS: I remember reading the order where
3 they deleted Paddock, but I don't have any context. I don't
4 know what pool it provided for. Okay. Well, I think I have
5 the reading material I need here.

6 MS. MUNDS-DRY: I personally vote we not name any
7 more pools Grayburg Jackson.

8 EXAMINER BROOKS: Well, Mr. Stagner suggested that
9 we ought not to at one point, and then since it was Mr.
10 Stagner, that happened several years ago that they ought not
11 to name any more pools Avalon, but -- okay. That's all I
12 have.

13 EXAMINER JONES: You're looking at, matching the
14 time up here, are we going to go past another 20 minutes?

15 MS. MUNDS-DRY: Probably another 20 minutes, but not
16 another half hour, is my guess.

17 EXAMINER JONES: Okay. Is it a possibility we can
18 move this other case until this afternoon? If you think we
19 can, we can five minutes or so.

20 MS. MUNDS-DRY: I will instruct Mr. Broughton to be
21 as brief as possible.

22 EXAMINER BROOKS: We are going to take our lunch
23 recess at 11:45. We can take it in the middle of a case. I
24 think Mr. Jones is just trying to decide whether we ought to
25 excuse the people involved in that other case until 1:30.

1 EXAMINER JONES: That was the -- it's up to the
2 other parties. If you want to do that, you can.

3 MR. FELDEWERT: I would prefer if we can start.

4 MS. GERHOLT: So would I. I think we can get this
5 done in 40 minutes.

6 EXAMINER JONES: We will keep going, and take your
7 time.

8 MS. MUNDS-DRY: We will do our best to be brief. I
9 have nothing further from Mr. Gaynor.

10 EXAMINER JONES: Thanks, Mr. Gaynor.

11 THE WITNESS: Thank you.

12 MS. MUNDS-DRY: We call Mr. Broughton to the stand,
13 please.

14 HARVIN BROUGHTON

15 (Sworn, testified as follows:)

16 DIRECT EXAMINATION

17 BY MS. MUNDS-DRY:

18 Q. Would you please state your full name for the
19 record?

20 A. Harvin Broughton.

21 Q. And where do you reside?

22 A. Midland, Texas.

23 Q. Who do you work for?

24 A. Concho Resources, COG Operating LLC.

25 Q. What's your position with Concho?

1 A. I'm a senior geologist.

2 Q. And were you previously accepted as an expert
3 witness in petroleum geology in this case?

4 A. Yes, I was.

5 Q. Let's just briefly review, if we can, some of the
6 exhibits that we discussed last time so that you can get the
7 proper framework to Mr. Midkiff. Let's go to Exhibit 6,
8 which has already been admitted. And if you could, briefly
9 review this exhibit.

10 A. Okay. This is a stratigraphic column of the
11 Northwest Shelf section of -- of Southeast New Mexico,
12 commonly referred to as the Northwest Shelf, which traverses
13 southern portions of Lea and Eddy County, New Mexico. And in
14 the second -- in the center section here, strata, we have and
15 we have started at the Seven Rivers. Here is the Seven
16 Rivers Queen Grayburg San Andres, and then we get to the
17 commonly named Yeso section, or the Glorieta and then the
18 Yeso section, which includes the Paddock, Blinbry, Tub and
19 Drinkard, and THEN below that is the Abo Section. So this is
20 the primary producing interval for us and what we are
21 discussing today.

22 Q. Let's turn to what's been marked and previously
23 admitted as Exhibit Number 8.

24 A. Okay. Exhibit Number 8 is a land plat that shows a
25 number of wells highlighted in pink, a cross section of A to

1 A prime, and these are the wells used in the cross section
2 which will come up next.

3 Q. Let's turn to what was previously marked and
4 admitted as Exhibit Number 9. Please review this cross
5 section for us.

6 A. This is a cross section that traverses the Dodd
7 Federal Unit A to A prime from the previous slide. Starting
8 at the top, you will notice on each log there is a -- there
9 is a Yates pick, a Yates top pick right up there towards the
10 top of where the log curves begin, and then we move down
11 Seven Rivers Queen Grayburg San Andres, and then down towards
12 the base there is a yellow band, that's the top and base of
13 the Glorieta Sand, and then below that is the -- the Paddock
14 slash Yeso Interval begins at the base of the Glorieta.

15 Q. And, Mr. Broughton, if I could ask you to focus and
16 characterize for the Examiners the Yeso?

17 A. Okay. The Yeso is a massive dolomite unit.
18 Specifically talking about the Paddock and Blinebry, it runs
19 roughly 14- to 1500 feet thick across the shelf. It's
20 primarily dolomite with some minor silts and some minor
21 anhydrite components, but it's primarily a dolomite
22 reservoir.

23 The lower section, the Blinebry, which is not
24 depicted here on the log because these logs were just drilled
25 to the Paddock, it is a low porosity, low permeability

1 dolomite, that generally runs about 1000 feet thick and is
2 exploited for hydrocarbon production. Just above that is the
3 Paddock -- Paddock member of the Yeso section, which
4 typically is -- it is dolomite, also. It's a heterogeneous
5 dolomite, as is the Blinebry, typically exhibits higher
6 porosity though widely ranging porosity magnitude and
7 distribution through that entire interval.

8 Q. Thank you. Let's turn then to Concho Exhibit 10
9 that's also been previously admitted.

10 A. Okay. Concho Exhibit Number 10 is also a land plat
11 showing a grouping of wells and a cross section line from A
12 to A prime again. So this is basically the same thing, just
13 across the Burch Keely Unit.

14 Q. And Exhibit 11, which was also already admitted, if
15 you will review this cross section for us.

16 A. Okay. Using the wells from the previous slide, we
17 basically have the same -- the same scheme here where we
18 start at the top. We have formations marked from the Yates
19 all the way down, and you will see that the yellow towards
20 the base of the print, you will see the yellow band across
21 there which represents the Glorieta Formation, and then just
22 below that is the Paddock.

23 Q. And do you see the same characteristics in the
24 Glorieta Yeso here as you do in the Dodd?

25 A. Yes. They are very similar.

1 Q. Mr. Broughton, will the granting of this application
2 be in the best interest of conservation, the prevention of
3 waste, and the protection of correlative rights?

4 A. Yes, I believe it will.

5 MS. MUNDS-DRY: With that, the exhibits were
6 admitted last time, Mr. Jones, so I have nothing further for
7 Mr. Broughton.

8 EXAMINER JONES: That Glorieta is really thin and
9 shaley, it looks like, but is it true that it gets thicker as
10 you go down in Texas?

11 THE WITNESS: You know, I haven't studied it there.
12 There is places where it is a producing reservoir. It's not
13 here, so it obviously exhibits some different characteristics
14 in different places. Across the entire Northwest Shelf, it's
15 not a reservoir. I think it's got -- you say shaley, and I
16 suspect you are referring to a higher gamma ray, and I'm not
17 certain that it's shaley. I think it's a lot of high
18 feldspar in the sediments, which is what's driving that gamma
19 ray up, so it's a feldspathic sand.

20 EXAMINER JONES: So there is mountains around
21 somewhere?

22 THE WITNESS: Yes. It's coming from somewhere, and
23 it's a title flat. It's being sourced from the north,
24 northwest, and northeast, and it really rims the entire --
25 it's a low stand siliciclastic title flat, is what it is.

1 And there is some shale in it, I'm sure, but it's largely
2 feldspathic, and it's probably indicative of being -- the
3 source being not that far away, the fact that there is so
4 much feldspar and the gamma ray is so high.

5 EXAMINER JONES: And this name used mainly in Texas,
6 is it equivalent to what?

7 THE WITNESS: It's equivalent to the Yeso. It's the
8 chronographic equivalent to the Yeso. The only difference is
9 it's in Texas versus New Mexico.

10 EXAMINER JONES: That's very prolific, too.

11 THE WITNESS: It's extremely prolific, but, I mean,
12 it goes all the way around, you know, way east of Midland
13 there is an Eastern Shelf, it rims the Eastern Shelf, also.
14 Similar -- similar to -- there may be some differences in it
15 just due to the -- the environment within which it was
16 deposited, but it's essentially the same. It's the same age
17 rock.

18 EXAMINER JONES: So these shelf rocks are a target
19 now?

20 THE WITNESS: Well, the Clear Fork has been a target
21 for years.

22 EXAMINER JONES: For years?

23 THE WITNESS: And the Paddock has been for a number
24 of years. The Blinberry has kind of become a problem because
25 of newer completion technologies and whatnot that allow the

1 tighter rock to be exploited.

2 EXAMINER JONES: So you're not fully calling this a
3 shale?

4 THE WITNESS: No. No.. It's a -- it's a silt slash
5 sandstone. It's fine-grain sandstone, bordering on silts.

6 EXAMINER JONES: So sometimes it can be drilled
7 vertically or horizontally depending on the silts, right?

8 THE WITNESS: In the Glorieta?

9 EXAMINER JONES: No, in the Paddock.

10 THE WITNESS: Oh, the Paddock. Historically the
11 development has been vertically just because of the
12 technology. Wiping the slate clean, if there were no wells
13 out there, you would probably want to exploit it
14 horizontally, but, you know, technologies didn't exist in the
15 30s or 40s when they started drilling this stuff.

16 EXAMINER JONES: To do that you limit yourself to
17 one little target, and so you are not seeing a bunch of shows
18 up and down the hole in the Blinebry and Paddock?

19 THE WITNESS: Well, we have actually talked about
20 drilling multilateral horizontals to exploit the entire
21 Blinebry interval. The Paddock we think we can get with one,
22 but the Blinebry, it's true, it's about a thousand feet
23 thick, you would have a hard time exploiting it with one
24 lateral.

25 EXAMINER JONES: What would you say geologically to

1 support the increased allowable and the IGOR.

2 THE WITNESS: That's really more of a reservoir
3 question, but the reservoirs are definitely, in my opinion,
4 separate. You know, the Glorieta is a bounding formation
5 that isolates the Yeso from the San Andres.

6 EXAMINER JONES: So is the Yeso one -- is the
7 Paddock considered a formation -- I mean a reservoir with the
8 gas, oil and water?

9 THE WITNESS: I'm not going to know that, I mean --

10 EXAMINER JONES: Geologically you don't see that?

11 THE WITNESS: Could you ask that again?

12 EXAMINER JONES: Yeah. If you picture a
13 homogeneous, which is not this case, I know, but homogeneous
14 reservoir that you typically in the old days were
15 targeting -- the old days meaning when I was young, I guess,
16 but you would have the -- sometimes you would have stratified
17 separate phases, not just phases, but separate products, you
18 know, gas on top --

19 THE WITNESS: Oh.

20 EXAMINER JONES: -- oil, and then water. So you are
21 not seeing that here when you --

22 THE WITNESS: You don't see that in the Blinbry for
23 sure. Now, in the Paddock, not in this area, but over east
24 in 17, 31 and 32, you do see, in the Paddock only, you see an
25 identifiable oil water contact on the log, so there is an oil

1 water contact in the Paddock. You don't see a gas cap
2 though.

3 EXAMINER JONES: Okay. But how far away is that?

4 THE WITNESS: That would be two sections away or two
5 townships away, rather, 17, 31, and 32, which is the Maljamar
6 and Loco -- or Fren area for us.

7 EXAMINER JONES: Is that higher porosity in that
8 area?

9 THE WITNESS: No. No. It's not necessarily, no.

10 EXAMINER JONES: Is there more stratigraphic
11 lenses -- non-geology term -- lenses in this area than over
12 in that area?

13 THE WITNESS: No. I haven't looked at it in those
14 terms, but I would say it's all heterogeneous rock. I
15 wouldn't say there is more or less lenses or baffles or
16 barriers vertically in that area versus this.

17 EXAMINER JONES: But your production mechanism or
18 your completion and drilling, you have decided to drill
19 horizontal wells here?

20 THE WITNESS: We're --

21 EXAMINER JONES: Under these two units.

22 THE WITNESS: Well, we are looking at that, yes. We
23 have not decided to do that. We are investigating it, and
24 the reason under these that we would be drilling horizontal
25 Blinbrys is because there is already such a population of

1 horizontal -- of vertical Paddocks, you would have a hard
2 time finding a place to put a horizontal Paddock Well with
3 all the vertical Paddock Wells already there.

4 EXAMINER JONES: Oh.

5 THE WITNESS: So the other aspect is the increased
6 density. As I understand it, there is going to be some rule
7 changes in the near future regarding horizontal wells. That
8 would give us the ability to drill multilateral Blinebry
9 wells underneath those existing Paddock wells, so that's what
10 we are looking at right now.

11 EXAMINER JONES: Oh. So you do have targets in mind
12 within the Paddock and maybe even in the Blinebry for
13 horizontal?

14 THE WITNESS: Absolutely. Absolutely. The Paddock
15 is more of a challenge because of all the existing wellbores
16 already there.

17 EXAMINER JONES: Okay.

18 THE WITNESS: So what I think our plan is going to
19 be for most of us is to just continue with the vertical
20 Paddock development while simultaneously drilling some
21 horizontal Blinebry wells underneath that to exploit the
22 entire -- that interval.

23 EXAMINER JONES: Do you leave the reserve
24 calculations to reservoir engineers?

25 THE WITNESS: Yes, sir. That's all reservoir

1 stuff.

2 EXAMINER JONES: You don't supply them the porosity
3 and effective porosity and --

4 THE WITNESS: We have another gentleman in our group
5 who is not here today who does our OOIP calculations, and he
6 does factor the log computations into that, but I'm not
7 personally involved in that process.

8 EXAMINER JONES: Okay. It's possible we might need
9 to call you back, but I don't have any more questions.

10 EXAMINER BROOKS: I don't have any questions.

11 MS. MUNDS-DRY: I have nothing further from
12 Mr. Broughton.

13 EXAMINER JONES: Okay. Thank you.

14 T. J. MIDKIFF

15 (Sworn, testified as follows:)

16 DIRECT EXAMINATION

17 BY MS. MUNDS-DRY:

18 Q. Please state your full name for the record.

19 A. T. J. Midkiff.

20 Q. And where do you reside, Mr. Midkiff?

21 A. Midland, Texas.

22 Q. Who do you work for?

23 A. Concho Resources.

24 Q. And what is your position with Concho?

25 A. I'm a reservoir engineer.

1 Q. Were you previously accepted as an expert witness in
2 petroleum engineering?

3 A. Yes, I was.

4 Q. Let's turn to what's been marked as Concho Exhibit
5 17 if we could. If you could, Mr. Midkiff, identify and
6 review this exhibit.

7 A. Okay. I will start off, as I did last time for
8 Mr. Ezeanyim. I was just kind of giving you a breakdown of
9 how we think about the reservoir and why we operate the way
10 that we do, why we complete our wells the way we do.

11 As Mr. Broughton expressed a minute ago, the Yeso,
12 as we think of it as being stratigraphic, very low
13 permeability and porosity having large variances in the
14 distribution and the magnitude of porosity throughout the
15 interval, we think of it as being compartmentalized. We see
16 that when we complete our wells, and we refer to this type of
17 reservoir as a lenticular reservoir.

18 Q. Let's go to your next exhibit, Concho Exhibit 18.
19 What is it showing you?

20 A. One of the things that's also important in the Yeso
21 is to have a statistical view due to the heterogeneity of the
22 reservoir, and I've got real world examples that I will show
23 you right after this, but I wanted to show you a diagram of
24 why the statistics are important.

25 If you imagine for a second two wells drilled here,

1 and Well A encounters a very small amount of net pay -- and
2 I'm indicating up there with those objects colored in, those
3 being the productive lenses within the reservoir within a
4 member of the Yeso there. And so Well A encounters a very
5 small, I guess what you would say, at the wellbore, net pay,
6 and versus Well B which encounters a much higher net pay at
7 the wellbore. Now, if you just completed, based on what you
8 saw at the wellbore -- I guess I will just step back and say,
9 it's important for Concho, with our understanding of the
10 reservoir, to complete across the entire interval due to the
11 heterogeneity of the reservoir and frac out and connect all
12 of those lenses together.

13 Now why that's important statistically is if you
14 were to do a drainage calculation based off these two wells,
15 they would probably have similar reserves based off of how I
16 have drawn them on this diagram, but Well A would probably
17 calculate a much higher drainage area, versus Well B. And,
18 in reality, the drainage area would be very similar, but they
19 would calculate much different. So it's important for us to
20 take a statistical view of all of our calculations within the
21 reservoir.

22 Q. And how would you characterize the difference in the
23 porosity in this area?

24 A. There is -- there is large -- again, large variances
25 in the distribution and the magnitude of porosity within the

1 Yeso.

2 Q. Let's turn to Concho Exhibit 19, if you could, and
3 review this for the Examiner.

4 A. This is a three well cross section on the Electro
5 Lease in 17-30. And these are three wells which are ten-acre
6 offsets to each other, and just by looking at the, I guess
7 the porosity that you see there on those three logs, you
8 would assume that the log in the middle would probably be the
9 most productive if you were just going by the log
10 characteristics, and the log to the right would probably be
11 the poorest well based off of what you see on the log.

12 In reality I put EURs down at the bottom, and you
13 can see, the well in the middle actually has the lowest EUR,
14 and the well to the right actually has the highest EUR. So
15 again, what I'm saying is there is no correlation between
16 what you see at the wellbore and the productivity of the
17 well.

18 Q. And this supports Concho's statistical approach --

19 A. Yes.

20 Q. -- to drilling and competing in the Yeso?

21 A. This is why Concho completes across the entire
22 interval, to make sure we connect all of those productive
23 lenses together, and, therefore, maximize the recovery within
24 each well.

25 Q. Okay. Let's turn to Concho's Exhibit Number 20.

1 What is this slide show?

2 A. This is a cross plot that I prepared, and this is
3 similar to that cross section, but it's more of a statistical
4 view. I plotted initial 12-month cumulative oil production
5 versus PhiH, and I chose wells that had the least 12 months
6 of production, and also wells that had both the Blinbry and
7 Paddock completed within the first three months. And I
8 wanted to see if there was a correlation again between PhiH
9 seen at the wellbore and productivity.

10 And as you can see from this plot, there is a
11 horizontal distribution, which is textbook distribution for
12 there being no correlation. In fact, if you notice, some of
13 your higher points have the lowest PhiH, and some of the
14 lowest have the highest PhiH. So again, there is no
15 correlation between productivity of oil and PhiH seen at the
16 wellbore.

17 Q. What does it say then about Concho's view on taking
18 the statistical approach to the reservoir?

19 A. It's necessary to -- to take a statistical view to
20 make sure that you are, I guess, completing the whole
21 interval.

22 Q. Let's go to Exhibit Number 21. What does this slide
23 show us?

24 A. This is now similar to the diagram I put up earlier,
25 but this is really just to give you a bird's eye view of why

1 we develop it the way that we do. As Mr. Ezeanyim stated in
2 the prior hearing, the allowable is somewhat a function of
3 drilling activities. And based off the way that we see the
4 reservoir with the compartmentalization of it, it's necessary
5 for us to continue drilling -- you know, it's necessary for
6 the prevention of waste to continue drilling, and we need a
7 higher allowable to be able to satisfy our current drilling
8 activity.

9 Q. Okay. Let's go to Concho's Exhibit Number 22.
10 Review this slide for the Examiners.

11 A. This is another scatter plot of GORs, and what this
12 is, each point represents a single well, and that's the
13 initial six-month GOR for each well completed in the Yeso
14 across the shale. And what I was looking for here was, was
15 there a widening or a, you know, as you start seeing the GOR
16 break out as you continue to drill, and infill drill, and
17 because if you are competing for reserves, then you would
18 expect to see these initial GORs begin to increase, and you
19 don't see that. You see a nice flat trim there between 1000
20 and 2000 really remain constant all the way through the
21 development of the Yeso. And what this -- what you can
22 conclude here is that those reserves have not been negatively
23 affected by the wells that have been drilled to date.

24 Q. And so is this showing that there is acceleration
25 when you are infill drilling?

1 A. Not in my opinion, no.

2 Q. What is your opinion as to what the effect on
3 reservoir energy is?

4 A. It was not negatively affected by prior drilling.

5 Q. Let's go to Concho Exhibit Number 23. What is that?

6 A. This is very similar to the previous slide. Each
7 dot again represents an individual well, and these are the
8 peak monthly rates for all of the wells drilled in the Yeso,
9 and I have narrowed this plot down to be the first well in
10 the proration unit and the fourth well within the proration
11 unit. And what's important to observe is the fourth well,
12 the dark black dots, you don't see a lower trend in those
13 dots compared to the first well within the proration unit.

14 Again, this is another indication that you are not
15 competing for energy here, you are not competing for
16 reserves, and there has been no negative effect on the
17 reservoir due to your earlier drilling.

18 Q. Let's go to Concho Exhibit Number 24. What is
19 that?

20 A. Within the Yeso for a long period of time across the
21 shelf, all operators produced unrestricted, and I think that
22 is our best data set to look at the effects of unrestricted
23 production on the Yeso. And what you can see here is a
24 plot -- this is COG's total Yeso production -- and you can
25 see there around 2006 where the well count starts to take

1 off. That was where Concho got involved and began their
2 activity in this area, and you can also see the oil
3 production increase significantly. But the most important
4 thing that I think you can see on here is that decrease in
5 the GOR down at the bottom, and you can see that as wells are
6 drilled, those wells are intersecting new reserves, and you
7 are seeing the average GOR lower over time because those new
8 wells are again intersecting new reserves and adding
9 incremental oil.

10 Q. And so this is showing that there has not been an
11 impact on GOR with increase in drilling?

12 A. There has not been an impact on GOR other than the
13 total GOR coming down to new reserves being added, so --

14 Q. Okay. Let's go to Exhibit Number 25. What is this
15 slide?

16 A. These are -- what I put on here were well tests that
17 we drilled for some of our most recent wells that we drilled
18 within the Burch Keely and Dodd. These are oil tests, and I
19 have also indicated on there the current 80-barrel-oil-
20 per-day allowable, and each of those wells on -- or each
21 point represents a single well. And what's important to note
22 is the individual wells that are coming on well above the
23 allowable. And this is -- this isn't anything atypical,
24 again, for all operators, you know, up until this point have
25 produced unrestricted within the Yeso. So this is what you

1 would typically see in the field as you are completing wells.
2 And it's important to note how far above the allowable we
3 were producing, so --

4 Q. This is just a peak oil test?

5 A. Yes, this is just a peak oil test. I'm sorry.

6 Q. I think you said that, but I wanted to make sure
7 it's clarified. Okay. Let's go to Exhibit Number 26.

8 A. Now, if the allowable wasn't raised and we were, I
9 guess, asked to stay under the existing allowable, what that
10 would do, it would delay our development significantly. You
11 know, if you -- this is actually assuming less than 100
12 barrels a day initial rate, and if you look back at the
13 previous slide, you can see that we have outperformed that
14 quite significantly.

15 So this -- this plot could be even stretched out
16 even further. It would be longer than 15 years if we were
17 not granted a lot higher allowable. And there are many
18 negative effects to increasing that time, you know, many of
19 them operational, and also, you know, there is some reservoir
20 reasons for not wanting to stretch that time out.

21 Q. And what are some of those reservoir reasons that
22 you don't want to stretch the time out?

23 A. Well, one of the things we are looking at here in
24 the Burch Keely Unit is we are -- we tested the possibility
25 of a waterflood, and you want to begin that as soon as

1 possible. It's necessary to have your infrastructure in
2 place to be able to begin that, and so it's necessary for us
3 to be able to get that involved or get that in and begin
4 secondary recovery.

5 Q. Mr. Midkiff, based on your engineering study of the
6 Burch Keely and Dodd Units, what, in your expert opinion,
7 should be allowable in the GOR for the proposed new pools?

8 A. I believe an allowable needs to be in place, an
9 allowable that does not restrict production is necessary for
10 the prevention of waste. It will allow operators to fully
11 develop the acreage in a timely manner, and also you won't --
12 you won't, like I say, encounter many of those operational
13 reservoir issues if we're allowed to produce unrestricted.

14 Q. And with respect to the GOR, what is your opinion to
15 the GOR?

16 A. In my opinion, an unlimited GOR is appropriate for
17 the Yeso.

18 Q. And why is that?

19 A. Well, I have read several technical studies that
20 have been done on solution gas drive reservoirs by some of
21 the most brilliant people that have worked in our industry,
22 and they have -- they ran simulation and ran studies on some
23 of the most extreme cases out there. Now, you would
24 naturally assume that higher permeability and porosity would
25 probably tend to allow gas to break out within the reservoir

1 and cause a waste in reservoir energy. Now, if you look at
2 those technical studies, there are studies that were run at
3 Five Darcy, and the conclusions from that were higher
4 production rates actually increased your ultimate recovery.

5 Early on they were saying that there was no effect,
6 but that was -- there was only one paper that I came across
7 that said that. Over the next 20, 30 years there were
8 multiple papers that came out saying they saw increased
9 recoveries with higher production rates.

10 If you actually look at the most recent studies they
11 do on this, they don't even ask why anymore, they don't even
12 ask if that's true. I mean, they accept that you do get
13 higher recoveries with higher producing rates, they start to
14 ask why do you get that. And there is any number of theories
15 out there that they are trying to come up with as to why you
16 get better ultimate recoveries with higher producing rates.
17 Some of them range from the gas working as a friction
18 reducer, I mean, that's stuff that I'm not sure I really want
19 to dive into, but from the experts that have studied these
20 subjects, those are their conclusions.

21 Q. In your opinion, will the granting of these
22 applications be in the best interest of conservation, the
23 prevention of waste and the protection of correlative
24 rights?

25 A. Yes, they will.

1 Q. Mr. Midkiff, were Exhibits 17 through 26 either
2 prepared by you or compiled under your direct supervision?

3 A. Yes, they were.

4 MS. MUNDS-DRY: Mr. Jones, we move to admit Exhibits
5 17 through 26 into evidence.

6 EXAMINER JONES: Exhibits 17 through 26 will be
7 admitted.

8 (Exhibits 17 through 26 admitted.)

9 MS. MUNDS-DRY: And I have nothing further for Mr.
10 Midkiff.

11 EXAMINER JONES: Maybe if you can send some of these
12 references to papers through your attorney, and she --

13 THE WITNESS: Yes, sir. Absolutely.

14 MS. MUNDS-DRY: Be happy to.

15 EXAMINER JONES: Did you look at this R199 that was
16 issued in 1950? It would be quite a job to look at the case
17 because we would probably have to scan it and we'll probably
18 have to look at it through the microfiche.

19 MS. MUNDS-DRY: It's actually on your website.

20 EXAMINER JONES: It is?

21 THE WITNESS: I have actually read the order.

22 MS. MUNDS-DRY: There is about five documents in the
23 order.

24 EXAMINER JONES: So extremely -- I don't know what
25 the pricing and the environment was back then, or whether

1 they were actually able to sell gas, natural gas at that
2 time, but for some reason they gave it an unlimited GOR. Do
3 you have any ideas why?

4 THE WITNESS: Well, there was an order about the
5 same time frame in the Maljamar Paddock Pool in which they
6 granted unlimited GOR there as well, and part of the
7 operators' testimony was that they -- they kept having to
8 curtail their production for purposes of the allowable, so
9 that was causing the GOR to increase further and causing it
10 to be penalized further, and therefore they were seeing
11 negative effects, and I can't remember if they associated
12 that to waste at that time as far as seeing that increase in
13 GOR due to shutting in the wells, but around that same time
14 frame as R199, the West Maljamar Paddock Pool, that was the
15 testimony that was given as far as the Paddock there. I
16 don't remember off the top of my head for R199, though.

17 EXAMINER JONES: So the reasons back then may not be
18 the same reasons you are asking for it now. I mean, they
19 didn't sell a lot of natural gas back in the 1950s.

20 THE WITNESS: No, sir.

21 EXAMINER JONES: They flared a lot of gas.

22 THE WITNESS: I guess I shouldn't speak definitely
23 about that, I wasn't around then, but, yes, sir. But I do
24 think they are somewhat connected. If you see GOR increase
25 due to shutting in wells, I think the gas associated from

1 that increased GOR, you can associate oil to that gas and
2 that may be reservoir energy that was wasted there. I mean,
3 that's my intuition.

4 EXAMINER JONES: So, I mean, the gas breaks out due
5 to a pressure differential created by earlier production and
6 gets closer to the well and in that way loses its energy.
7 This is a solution gas drive?

8 THE WITNESS: Yes, sir. Yes, sir.

9 EXAMINER JONES: So that's the only drive mechanism?

10 THE WITNESS: To my knowledge, yes, sir.

11 EXAMINER JONES: The water -- it looks like your
12 water went up when the last drilling program started. The
13 water rate went up, but, in other words, there is no water
14 drive here?

15 THE WITNESS: I haven't seen that, no, sir.

16 EXAMINER JONES: Are you going to the -- is someone
17 picking the targets on these wells? I mean, statistically it
18 looks like your vertical wells, statistically, gets a big --
19 you have a big, thick interval, it had some random shows.

20 THE WITNESS: Yes, sir.

21 EXAMINER JONES: So it just depends on, I guess, on
22 vertical versus horizontal?

23 THE WITNESS: It does. Our geologists and
24 completions engineer typically work together to decide. Are
25 you referring to laterals?

1 EXAMINER JONES: Yes.

2 THE WITNESS: They typically decide where they want
3 to land laterals based on the completion characteristics that
4 our completion engineers see and our geologists work together
5 to pick those landing spots.

6 EXAMINER JONES: It looks like you've got your
7 decline rate here, at least one of them, because you've got
8 three of the constant well numbers between 2003 and 2006.
9 Look on Exhibit 24.

10 THE WITNESS: Yes, sir.

11 EXAMINER JONES: And at that time your oil went on a
12 decline, and looks like your gas started going up a little.
13 Maybe you are below the bubble point, do you think? Do you
14 have any idea where the bubble point and current pressure's
15 at here?

16 THE WITNESS: The bubble point pressure is, we think
17 it's around 26 hundred pounds. I can get you an exact
18 pressure, but it's in that neighborhood. Current reservoir
19 pressure is probably, in the developed areas, we think it's
20 going to be closer to around 2000 PSI, and initially we think
21 it's got to be close to the bubble point pressure, maybe a
22 little bit above, but we think it has to be very close to
23 that bubble point pressure.

24 EXAMINER JONES: Initially meaning now initially, or
25 when it first --

1 THE WITNESS: In undeveloped areas.

2 EXAMINER JONES: In undeveloped areas?

3 THE WITNESS: Yes, sir.

4 EXAMINER JONES: So not a whole lot more than bubble
5 point?

6 THE WITNESS: No, sir.

7 EXAMINER JONES: Why would you want something
8 different than what was granted for the rest of the Grayburg
9 Jackson -- I mean, not Grayburg Jackson, but the Yeso in this
10 last order? Is that just what you have been trying to tell
11 me all along?

12 THE WITNESS: Well, we -- we did ask for the
13 unlimited GOR in that hearing as well, and we were granted
14 the 3000 to 1. We do feel that unlimited is appropriate,
15 but --

16 EXAMINER JONES: You know how to -- how you
17 calculate it, right? I mean, your limiting gas GOR is times
18 your limiting 300, so it would be 3000 times 300 for any one
19 40-acre proration unit.

20 THE WITNESS: Yes, sir.

21 EXAMINER JONES: So that's a lot of gas.

22 THE WITNESS: It is a lot of gas, and really, we
23 were just going by what was theoretically, I guess,
24 appropriate.

25 EXAMINER JONES: Yeah.

1 THE WITNESS: Concho can operate, I guess, under the
2 3000 to 1, but we do believe theoretically it's appropriate
3 to have an unlimited GOR.

4 EXAMINER JONES: More unlimited. Do you do cores
5 out here, or are you going to do any cores for any reason or
6 sideball cores or --

7 THE WITNESS: We have a very extensive library of
8 cores. Mr. Broughton can speak on that a lot more than I
9 have.

10 EXAMINER JONES: I should have asked him.

11 THE WITNESS: Yeah, geologists like that stuff.

12 EXAMINER JONES: And you probably somewhere have a
13 relationship between your core porosity and log porosity?

14 THE WITNESS: Yes, sir.

15 EXAMINER JONES: And it's probably no relationship
16 at all?

17 THE WITNESS: Well, what we have --

18 EXAMINER JONES: Or no correlation at all.

19 THE WITNESS: I can't speak on that right now.
20 That's not something I have studied. I know others have, but
21 that's not something I have studied, so --

22 EXAMINER JONES: What about -- do you have a set of
23 pressures and relative curve pressures that you would use?

24 THE WITNESS: I don't know that we have the curves.
25 The -- the variances are so huge that you see, and there is

1 such a wide range of permeability, we might have that data if
2 I could talk with some of our geoscientists.

3 EXAMINER JONES: That's all right. The -- your oil
4 gravity?

5 THE WITNESS: It's right around 42.

6 EXAMINER JONES: That's pretty good oil.

7 THE WITNESS: Yes, sir.

8 EXAMINER JONES: Is it sweet?

9 THE WITNESS: Yes, sir. Yes, sir.

10 EXAMINER JONES: And there is no relationship to
11 what you see in the logs as to what you are going to get?

12 THE WITNESS: As far as productivity, no, sir, due
13 to the heterogeneity, you know, that log may be defined as 6
14 inch or a 6-inch radius outside of the wellbore there, and
15 something that's this heterogeneous, you don't know what
16 happens past that. And the confirmation also is that
17 development in this area for a long time was just acid, and
18 it was definitely statistical then because it really became a
19 function of what could you drill into. Until we started
20 fracking the wells and reaching out in the other lenses that
21 were out there that weren't quite close our wellbore, that's
22 when we started economic wells a better statistical basis.
23 So you know that you are reaching out and touching new
24 reservoirs, and that's stuff that's not showing up on your
25 logs.

1 EXAMINER JONES: So this map you have to still run
2 the logs, I take it?

3 THE WITNESS: Absolutely. We need to know where the
4 formation is at.

5 EXAMINER JONES: The geologists would revolt if you
6 didn't run the log. Yeah, so -- and sometimes in areas where
7 logs don't show you anything, they have to core, you know,
8 but this is not one of those areas, I take it?

9 THE WITNESS: We use a lot of well patrol in this
10 area.

11 EXAMINER JONES: But I mean, for the rock
12 properties, and -- you would have to core.

13 THE WITNESS: Yes, sir.

14 EXAMINER JONES: But the logs are good enough, you
15 can get lithology.

16 THE WITNESS: Yes, sir. We can get tops. That's
17 the most important thing we get off the logs to find out
18 where we are at.

19 EXAMINER JONES: Okay. And as far as this, you are
20 asking for 300?

21 THE WITNESS: Yes, sir.

22 EXAMINER JONES: Under both of these units?

23 THE WITNESS: Yes, sir.

24 EXAMINER JONES: Why did you pick that number?

25 THE WITNESS: Well, if we -- when I looked across

1 the shelf -- and there's some slides we had in the previous
2 presentation that showed the rates that we were reaching in
3 some of our proration units, and that number was around 300.
4 Sometimes we went over that, but we felt like that was a
5 number that would allow us to operate.

6 EXAMINER JONES: Okay.

7 THE WITNESS: And you see, again, if you look at
8 the -- this plot here -- I'm not sure which exhibit it is.

9 MS. MUNDS-DRY: 25.

10 THE WITNESS: I guess, if anything, based off of
11 this plot, I would ask to go higher because we've been
12 drilling some pretty good wells, but I feel like 300 barrels
13 a day would allow Concho to operate.

14 EXAMINER JONES: Speaking of that, you do the
15 economics?

16 THE WITNESS: Yes, sir.

17 EXAMINER JONES: So you have done sensitivities on
18 whether you could get restricted would hurt your economics?

19 THE WITNESS: You would definitely see a decrease in
20 your rate of return.

21 EXAMINER JONES: Okay. So no restriction at all
22 would -- would help your economics?

23 THE WITNESS: Absolutely.

24 EXAMINER JONES: Enable to you to present work them
25 better, drill all your wells now and get the --

1 THE WITNESS: Well, you know, another thing, the
2 reason it helps our economics is we think we are going to
3 produce more oil if production is unrestricted, and that's
4 based off the technical studies that we have. So there is
5 multiple benefits to being able to produce unrestricted.

6 EXAMINER JONES: Okay. Are you -- so are you
7 possibly going to look at maybe a waterflood ability by the
8 core and running it through some lab tests?

9 THE WITNESS: Yes, sir. Another one of our
10 engineers is heading up the waterflood project. I'm working
11 with him closely, but right now he is selecting the locations
12 and picking out the wells that he wants to do that science
13 on, and we'll be doing that data where it necessitates.

14 EXAMINER JONES: I don't have any more questions.

15 EXAMINER BROOKS: No questions.

16 MS. MUNDS-DRY: I have nothing further from
17 Mr. Midkiff.

18 EXAMINER JONES: Thank you very much. Is that the
19 last witness?

20 MS. MUNDS-DRY: That is the last witness. And,
21 Mr. Jones, you had asked the other landman, Mr. Gaynor, if we
22 had any suggestions for a name of pools, and Mr. Broughton
23 has come up with some really smart names. Wait until you
24 hear this. The Burch Keely Glorieta Yeso Pool, and the Dodd
25 Glorieta Yeso Pool. Just as a suggestion.

1 EXAMINER JONES: Nothing like --

2 EXAMINER BROOKS: Sounds like a brilliant one to
3 me.

4 MS. MUNDS-DRY: Mr. Broughton is a very brilliant
5 guy.

6 EXAMINER JONES: Okay.

7 MS. MUNDS-DRY: We have nothing further. We would
8 ask, if you have no other questions, that you take the matter
9 under advisement.

10 EXAMINER JONES: Mr. Broughton, could you talk to
11 Paul Foutz and suggest those names and let me know through
12 your attorney whether what he says.

13 MR. BROUGHTON: So just visit with him concerning
14 the pool names?

15 EXAMINER JONES: Names, yeah.

16 MR. BROUGHTON: I will.

17 EXAMINER JONES: Okay. With that, we'll take these
18 two cases under advisement. I don't have my --

19 MS. MUNDS-DRY: Thank you, Mr. Jones. Thank you,
20 Mr. Brooks.

21 EXAMINER JONES: Case Number 14669 and 14670 taken
22 under advisement, and let's take a 15-minute break.

23

24

25

I hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. _____,
heard by me on _____.

_____, Examiner
Oil Conservation Division

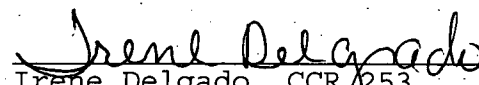
REPORTER'S CERTIFICATE

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I, IRENE DELGADO, New Mexico CCR 253, DO HEREBY
CERTIFY THAT ON September 29, 2011, proceedings in the
above-captioned case were taken before me and that I did
report in stenographic shorthand the proceedings set forth
herein, and the foregoing pages are a true and correct
transcription to the best of my ability.

I FURTHER CERTIFY that I am neither employed by nor
related to nor contracted with any of the parties or
attorneys in this case and that I have no interest whatsoever
in the final disposition of this case in any court.

WITNESS MY HAND this _____ day of October 2011.


Irene Delgado, CCR 253
Expires: 12-31-2011