

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

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

7   APPLICATION OF APACHE CORPORATION                   CASE NOS. 16289,  
8   FOR A NONSTANDARD SPACING AND                               16290  
9   PRORATION UNIT AND COMPULSORY POOLING,  
10   EDDY COUNTY, NEW MEXICO.

11                               REPORTER'S TRANSCRIPT OF PROCEEDINGS

12                               EXAMINER HEARING

13                               August 23, 2018

14                               Santa Fe, New Mexico

15   BEFORE:   WILLIAM V. JONES, CHIEF EXAMINER  
16               DAVID K. BROOKS, LEGAL EXAMINER

17                               This matter came on for hearing before the  
18   New Mexico Oil Conservation Division, William V. Jones,  
19   Chief Examiner, and David K. Brooks, Legal Examiner, on  
20   Thursday, August 23, 2018, at the New Mexico Energy,  
21   Minerals and Natural Resources Department, Wendell Chino  
22   Building, 1220 South St. Francis Drive, Porter Hall,  
23   Room 102, Santa Fe, New Mexico.

24   REPORTED BY:   Mary C. Hankins, CCR, RPR  
25                               New Mexico CCR #20  
                             Paul Baca Professional Court Reporters  
                             500 4th Street, Northwest, Suite 105  
                             Albuquerque, New Mexico 87102  
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## 1 APPEARANCES

2 FOR APPLICANT APACHE CORPORATION:

3 JENNIFER L. BRADFUTE, ESQ.  
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1 (10:15 a.m.)

2 EXAMINER JONES: Call Cases 16289 and  
3 16290. Both are application of Apache Corp. for a  
4 nonstandard spacing and proration unit and compulsory  
5 pooling, Eddy County, New Mexico.

6 Call for appearances.

7 MS. BRADFUTE: Mr. Examiner, Jennifer  
8 Bradfute, with the Modrall Sperling Law Firm, on behalf  
9 of Apache Corporation.

10 EXAMINER JONES: Any other appearances, or  
11 does anybody know of any other appearances?

12 MS. BRADFUTE: Mr. Examiner, I have two  
13 witnesses who will testify. And this is an application  
14 that was filed prior to the adoption of the new  
15 horizontal wells. Both matters are applications filed  
16 prior to the new rules.

17 EXAMINER BROOKS: So they're under the old  
18 rule?

19 MS. BRADFUTE: They are.

20 EXAMINER JONES: Will the witnesses please  
21 stand and the court reporter please swear the witnesses?

22 (Ms. Stretcher and Mr. Muncy sworn.)

23 MS. BRADFUTE: I'd like to call my first  
24 witness.

25

1 LACI STRETCHER,

2 after having been first duly sworn under oath, was  
3 questioned and testified as follows:

4 DIRECT EXAMINATION

5 BY MS. BRADFUTE:

6 Q. Good morning. Could you please state your name  
7 for the record?

8 A. Laci Stretcher.

9 Q. And, Ms. Stretcher, who do you work for?

10 A. Apache Corporation.

11 Q. And what is your position at Apache?

12 A. I'm a landman.

13 Q. And what are your responsibilities as a landman  
14 for Apache?

15 A. I work on the New Mexico side, and I basically  
16 prepare for development in New Mexico, preparing for  
17 drilling and really any responsibilities related to  
18 that.

19 Q. Have you previously testified before the  
20 Division?

21 A. Yes.

22 Q. And were your credentials accepted and made a  
23 matter of record?

24 A. Yes.

25 Q. Does your area of responsibility for Apache

1 include Eddy County?

2 A. Yes.

3 Q. And are you familiar with the applications that  
4 have been filed by Apache in Case Numbers 16289 and  
5 16290?

6 A. Yes.

7 Q. Are you familiar with the status of the lands  
8 which are the subject matter of these applications?

9 A. Yes.

10 MS. BRADFUTE: I'd like to tender  
11 Ms. Stretcher as an expert witness in petroleum land  
12 matters.

13 EXAMINER JONES: She is so qualified as an  
14 expert in petroleum land matters.

15 Q. (BY MS. BRADFUTE) Could you please turn to  
16 Exhibit 1? Exhibit 1 has two different letter tabs  
17 behind it. I want to first look at 1A in the packet in  
18 front of you. Ms. Stretcher, could you please identify  
19 what this document is?

20 A. Yes. It is Apache's application to pool the  
21 south half of the north half of Section 21, Township 19  
22 South, Range 28 East, in Eddy County. We seek to  
23 horizontally drill the Palmillo 21 State Com #227H to  
24 test the Bone Spring Formation.

25 Q. And Apache is seeking to create a 160-acre

1 non- -- or standard spacing and proration -- nonstandard  
2 spacing and proration unit, correct?

3 A. Yes.

4 Q. Okay. Thank you.

5 Could you please turn to Tab B of this  
6 exhibit, and could you please identify what this  
7 document is?

8 A. This document is Apache's application to  
9 compulsory pool the north half of the north half of  
10 Section 21, Township 19 South, Range 28 East, Eddy  
11 County, New Mexico to form a 160-acre proration unit.  
12 We will drill the Palmillo 21 State Com #228H to test  
13 the Bone Spring Formation.

14 Q. Thank you.

15 And does Apache seek to create a 160-acre  
16 nonstandard spacing and proration unit in this  
17 application?

18 A. Yes.

19 Q. And if you could please look -- I put in front  
20 of everyone two C-102s. These C-102 forms were just  
21 recently prepared by Apache; is that correct?

22 A. Yes.

23 Q. And I want to look at the C-102 form for the  
24 Palmillo State Com 227H well.

25 A. Okay.

1 Q. Has a pool and a pool code been identified for  
2 this well?

3 A. Yes.

4 Q. And could you please identify what those are?

5 A. The pool name is the Palmillo; Bone Spring,  
6 Southwest, and the pool code is 96413.

7 Q. Okay. And could you please describe where this  
8 well is going located, the first perforation and the  
9 last perforation for the well?

10 A. The 227H has a surface-hole location 1,715 feet  
11 from the north line, 370 feet from the west line, and a  
12 bottom-hole location of 1,886 feet from the north line  
13 and 50 feet from the east line.

14 Q. And will the location of this well comply with  
15 the setback requirements for the pool that's been  
16 identified?

17 A. Yes.

18 Q. And has Apache notified the affected parties of  
19 its request to create a nonstandard proration unit for  
20 this well?

21 A. Yes.

22 MS. BRADFUTE: And I'd like to mark this as  
23 Exhibit 10.

24 EXAMINER JONES: Both of them?

25 MS. BRADFUTE: Yes. We'll include both as

1 Exhibit 10. Thank you.

2 Q. (BY MS. BRADFUTE) And could you please look at  
3 the C-102 form that's been prepared?

4 A. Okay.

5 Q. Is this the C-102 form for the 228H well?

6 A. Yes.

7 Q. And is this well going to develop the same  
8 pool?

9 A. Yes.

10 Q. And could you please identify the first and  
11 last perforation points for this well?

12 A. The 228H well will be 755 feet from the north  
13 line, 360 feet from the west line, and the bottom-hole  
14 location will be 380 feet from the north line and 50  
15 feet from the east line.

16 Q. And will this well comply with the Division  
17 setback requirements?

18 A. Yes.

19 Q. And has Apache also notified the affected  
20 parties of its request to create a nonstandard proration  
21 unit for the 228H well?

22 A. Yes.

23 Q. Ms. Stretcher, could you please turn to what's  
24 been marked as Exhibit 3 in the packet in front of you?

25 A. Okay.



1 Q. And could you please identify what the first  
2 page of this exhibit shows?

3 A. So the first page is a lease tract map of the  
4 Palmillo 21 State Com 227H well. You can see it  
5 consists of four 40-acre tracts, and they're all state  
6 leases. Ownership is listed by tract, so you can see  
7 the royalty, working interest and overriding royalty  
8 interest tied to each tract. And when you flip the  
9 page, it is the combined ownership across the entire  
10 160-acre tract.

11 Q. Okay. And which interest does Apache seek to  
12 pool in its application?

13 A. We seek to pool all uncommitted interests at  
14 this time.

15 Q. And looking at the first page of Exhibit Number  
16 3, you've identified overriding royalty interest owners,  
17 as well as working interest owners, correct?

18 A. Yes.

19 Q. Does Apache also seek to pool overriding  
20 royalty interest owners of this well?

21 A. Yes.

22 Q. I want to turn to the third page of this  
23 exhibit. Does this document contain a lease tract map  
24 for the 228H well?

25 A. Yes.

1 Q. And which interest does Apache seek to pool for  
2 the 228H well?

3 A. All uncommitted interests.

4 Q. And has Apache likewise identified overriding  
5 royalty interests in this exhibit it seeks to pool?

6 A. Yes.

7 Q. And can you turn to the last page of this  
8 exhibit and explain what this document shows to the  
9 examiner?

10 A. This is very similar to the 227H. This is the  
11 228H's lease tract map that shows all 40-acre tracts  
12 that are committed to the entire 160-acre proration, and  
13 this shows total ownership within that 160 acres.

14 Q. Could you please summarize for the examiner  
15 what efforts Apache has made to obtain voluntary joinder  
16 of the interests for both of these wells?

17 A. We sent out proposals in May, and we've gone  
18 back and forth with several of the parties. The working  
19 interest owners in these tracts are Concho, Marathon and  
20 EOG. We've developed multiple sections in this township  
21 and range, and it's pretty much all the same working  
22 interest owners, so lots of back-and-forth discussing  
23 what kind of development we're looking at here. We  
24 recently sent them proposals for the 3rd Bone Spring  
25 wells that we would drill after these wells, which are

1 2nd Bone Spring wells. And so all the parties are well  
2 aware of what we're doing out here.

3 Q. Thank you.

4 Did Apache send out well-proposal letters  
5 for the 227H and 228H wells?

6 A. Yes.

7 Q. Could you please turn to Exhibit 4? Is this  
8 the well-proposal letter that was sent out for the 227H  
9 well?

10 A. Yes.

11 Q. And looking at the third page of this well  
12 proposal letter, does it provide an election to choose  
13 whether or not to participate in the well?

14 A. Yes.

15 Q. And along with this well-proposal letter, did  
16 Apache also send out an AFE?

17 A. Yes.

18 Q. If you could please flip just a few pages  
19 within the exhibit, is that AFE included within this  
20 exhibit?

21 A. Yes.

22 Q. And does that AFE identify cost for drilling,  
23 completing and equipping the 227H well?

24 A. Yes.

25 Q. Could you please identify what those costs are?

1           A.     The dry-hole costs for the 227H well are  
2     \$2,161,000; completion costs of 2,984,700; facility  
3     costs of the 603,000. And that's a total well cost of  
4     \$5,748,700.

5           Q.     Could you please next turn to Exhibit Number 5?  
6     Does Exhibit Number 5 contain the well-proposal letter  
7     for the 228H well?

8           A.     Yes.

9           Q.     And looking at the third page of this exhibit,  
10    does Apache provide the election to opt into this well?

11          A.     Yes.

12          Q.     And along with this well-proposal letter, did  
13    Apache also send out an AFE for the 228H well?

14          A.     Yes.

15          Q.     And if you turn to -- if you flip about three  
16    pages, I think you'll come to that AFE within the  
17    exhibit. In this AFE, did Apache provide cost estimates  
18    for drilling, completing and equipping the 228H well?

19          A.     Yes.

20          Q.     Could you please identify what those are?

21          A.     The costs for the 228H are, for dry hole,  
22    \$2,161,000; completion costs of \$2,984,700; equipping of  
23    \$603,000; and a total well cost of \$5,748,700.

24          Q.     Are the cost estimates that Apache has provided  
25    for both of these wells in line with the cost to drill

1 other horizontal wells to these depths and these lengths  
2 within this area of New Mexico?

3 A. Yes.

4 Q. In your opinion, who should be appointed as the  
5 operator of these wells?

6 A. Apache Corporation.

7 Q. Do you have a recommendation for the amount  
8 which Apache should be paid for supervision and  
9 administrative expenses?

10 A. Yes, 7,000 for drilling and 700 for a producing  
11 well.

12 Q. And are those amounts equivalent to the amounts  
13 charged by other operators for wells drilled to similar  
14 lengths?

15 A. Yes.

16 Q. Do you request that these rates be adjusted  
17 periodically as provided for under the COPAS accounting  
18 procedure?

19 A. Yes.

20 Q. And does Apache request a maximum cost plus 200  
21 percent risk charge if any pooled working interest owner  
22 fails to pay its share for the cost of drilling,  
23 completing and equipping the wells?

24 A. Yes.

25 Q. Were the parties who you're seeking to pool

1 notified of this hearing?

2 A. Yes.

3 Q. If you could please turn to Exhibit 6 and  
4 Exhibit 6 has a Tab A and Tab B. I want to first look  
5 at Tab A. Does Tab A contain an affidavit prepared by  
6 Apache's counsel confirming that notice was provided to  
7 affected parties?

8 A. Yes.

9 Q. Is that for both cases?

10 A. Yes.

11 Q. If you could now turn to Tab B, does Tab B  
12 contain the documentation confirming such notice was  
13 provided?

14 A. Yes.

15 Q. And if you turn to the third page of this  
16 exhibit, is there a spreadsheet with a blue top -- a  
17 blue bar on the top confirming that mailings were  
18 delivered to every party listed other than two mailings  
19 that were sent to Apache entities?

20 A. Yes.

21 Q. I apologize. My assistant was a little zealous  
22 in sending out the notices.

23 A. We did receive them, though. Yes.

24 Q. So notice has been received by all the parties  
25 you're seeking to pool?

1           A.    Yes.

2           Q.    Were Exhibits 1 through 6 prepared by you or  
3 under your supervision or compiled from company business  
4 records?

5           A.    Yes.

6           Q.    And, Ms. Stretcher, in your opinion, is the  
7 granting of these applications within the interest of  
8 conservation and the prevention of waste?

9           A.    Yes.

10                   MS. BRADFUTE:  I'd like to move Exhibits 1  
11 through 6 into the record.

12                   EXAMINER JONES:  Exhibits 1 through 6 are  
13 admitted?

14                           (Apache Corporation Exhibit Numbers 1  
15 through 6 are offered and admitted into  
16 evidence.)

17                   MS. BRADFUTE:  That concludes my questions.

18                           CROSS-EXAMINATION

19 BY EXAMINER BROOKS:

20           Q.    When you say all uncommitted interests and  
21 there is no designation one way or the other on the  
22 exhibits, all the interests are uncommitted?

23           A.    At this point, yes.  But I feel, similar to  
24 what was done in the other sections, we'll get something  
25 in place right before we spud the well.

1 Q. And that includes COG and -- let's see. COG  
2 and Concho both have a working interest separated out?

3 A. Yes, sir.

4 Q. I was thinking it was COG and EOG. EOG's got  
5 an interest also?

6 A. Uh-huh.

7 Q. So the large interests, then, are Apache --  
8 Apache, Marathon -- no, no. Yeah. Marathon is in  
9 there. Apache has 25, plus. Marathon has 19, plus.  
10 EOG has -- EOG's is a small -- they have 3 percent. COG  
11 has 22, and Concho's got a little bit of that. So the  
12 big ones are Apache, Marathon, EOG and Concho?

13 A. Yes.

14 Q. But EOG's pretty small.

15 But you say all of those -- you're asking  
16 all of those be pooled?

17 A. Yes, sir.

18 Q. Okay. Except for Apache? Despite what you  
19 said earlier, you're not asking to pool yourselves?

20 MS. BRADFUTE: They are not asking to pool  
21 themselves (laughter).

22 CROSS-EXAMINATION

23 BY EXAMINER JONES:

24 Q. ZPZ Delaware, that's Apache also, right?

25 A. Yes, sir.



1 Q. So why are they separate?

2 A. Something to do with our title when we got it  
3 from BP, I believe.

4 Q. From BP?

5 A. Uh-huh.

6 Q. Okay. That's -- BP's kind of been on the  
7 rocks, so to speak, for a while.

8 Okay. So ZPZ -- is it -- do you just wear  
9 different hats depending on -- does ZPZ have a guy in a  
10 suit that represents them?

11 A. It's the same. It's the same. Yeah, it's all  
12 the same.

13 Q. Same people?

14 A. Uh-huh.

15 Q. And Nestegg is Ray Miller; is that right?

16 MS. BRADFUTE: That is correct.

17 Q. (BY EXAMINER JONES) Okay. And there are four  
18 State of New Mexico leases. That Tract 4 is an old one,  
19 I guess.

20 A. Yeah. I think it's 1922. It's a huge lease  
21 that covers thousands of acres.

22 Q. Okay. Wow.

23 A. Yeah.

24 Q. So basically it's X00648, then, basically?

25 A. Uh-huh.

1 Q. And no assignment? You didn't list an  
2 assignment, if it was assigned here?

3 A. No. I didn't list the assignment numbers on  
4 this. No, sir.

5 Q. But you do have the split-out of the tracts?

6 A. Yes. It's on the first page of each. Uh-huh.

7 Q. And how did Apache obtain interest in this  
8 area?

9 A. I think BP was the big acquisition for this  
10 acreage. And, like I said, in this township and range,  
11 you've seen us in here in Section 26, which is right  
12 next door, and then we also drilled up 14 and 15, a lot  
13 of similar ownership across this township and range,  
14 similar parties.

15 Q. Is it common ownership up and down in this Bone  
16 Spring interval?

17 A. For the depths, yes, sir, it's common.

18 Q. Okay. So above -- is it a different owner  
19 above the Bone Spring besides just --

20 A. I think the way it works is below the San  
21 Andres down to the base of the Morrow is the trunk of  
22 ownership we're dealing with.

23 Q. Is Apache?

24 A. Uh-huh.

25 Q. Are you the surface land person also?

1           A.    I'm not, but I can let you know that --

2           Q.    Answer questions?

3           A.    -- this is -- the State Land Office is surface,  
4 and there are some grazing leases on this. And our  
5 surface landman is working both with the grazing lessees  
6 and the State Land Office.

7           Q.    The wells are shown as a straight line from  
8 bottom -- from the surface location to the bottom-hole  
9 location, but is that true, or is it just that they're  
10 going -- they're going to basically go parallel to the  
11 spacing unit boundary?

12          A.    It looks like from the C-102s that they slant  
13 just a little bit to the south on the 227 as it goes  
14 across. And then on the 228, it looks like it starts  
15 sort of in the middle of that -- of the northwest --  
16 northwest-northwest quarter, and then tilts just a  
17 little to the north.

18          Q.    You don't think it's going to jog up and then  
19 go straight along the lease line just because of the --

20                   MS. BRADFUTE: Mr. Jones, there may be  
21 additional information on that.

22                   EXAMINER JONES: Okay. I'm sure he's got  
23 an exhibit on that.

24                   MR. MUNCY: No. We just got these staked  
25 this week. We do not have a directional survey plan.

1     Pretty much the well paths will be pretty much a  
2     straight line from the bottom-hole location, and then  
3     they'll be back-build and swing up to the surface-hole  
4     location.

5                   EXAMINER JONES:   Okay.   You probably do  
6     these a lot in Texas when you do the wells.   Or how do  
7     you call them?   Oblique wells?

8                   EXAMINER BROOKS:   Oblique wells.

9                   EXAMINER JONES:   I'll get it right.

10           Q.     (BY EXAMINER JONES) So the same four tracts are  
11     in both -- in other words, the same state leases are --

12           A.     There's a little bit of a different --

13           Q.     I should look before I ask.

14           A.     I believe in 227H, Tract 2 is the State of New  
15     Mexico NMB09189, and that is the only one that's also  
16     not in the 228H well.

17           Q.     Okay.

18           A.     But all the same royalty across the leases.

19           Q.     Thanks very much.

20                   RECROSS EXAMINATION

21     BY EXAMINER BROOKS:

22           Q.     Now, you testified that the bottom-hole  
23     locations were 50 feet from the line; is that right?

24           A.     That's the -- yes, the bottom-hole location.  
25     The last take point is 100 feet from that line.

1           Q.    Okay.  So did you original propose them that  
2   way, or are you going to need to modify it because this  
3   is under the old rule, and we're going under the new  
4   rule for the setbacks?

5                   MS. BRADFUTE:  We did not provide any  
6   footages in the applications.

7                   EXAMINER BROOKS:  Okay.

8                   MS. BRADFUTE:  Yes.

9                   EXAMINER BROOKS:  Very good.  So you can  
10  drill it now and it's legal now?

11                   MS. BRADFUTE:  Yes.  Yes.

12                   EXAMINER BROOKS:  Okay.  Thank you.

13                   EXAMINER JONES:  Okay.  And the court  
14  reporter has these marked as Exhibit 10?

15                   MS. BRADFUTE:  Yes.  And I would also like  
16  to tender Exhibit 10 into the record.  I don't believe I  
17  did that.

18                   EXAMINER JONES:  Exhibit 10 is admitted.  
19                   (Apache Corporation Exhibit Number 10 is  
20                   offered and admitted into evidence.)

21                   MS. BRADFUTE:  Okay.  Thank you.

22                   THE WITNESS:  Thank you.

23                   MS. BRADFUTE:  I'd like to call my second  
24  witness.

25

1 MIKE MUNCY,

2 after having been previously sworn under oath, was  
3 questioned and testified as follows:

4 DIRECT EXAMINATION

5 BY MS. BRADFUTE:

6 Q. Could you please state your name for the  
7 record?

8 A. Mike Muncy.

9 Q. Mr. Muncy, who do you work for?

10 A. For Apache Corporation.

11 Q. And what is your position at Apache?

12 A. I am a geologist.

13 Q. And what are your responsibilities as a  
14 geologist?

15 A. I evaluate subsurface data to generate  
16 exploitable drilling prospects.

17 Q. And have you previously testified before the  
18 Division?

19 A. Yes, I have.

20 Q. And were your credentials accepted and made  
21 part of the record?

22 A. Yes, they were.

23 Q. Are you familiar with the applications that  
24 have been filed by Apache in these matters?

25 A. Yes.

1 Q. And are you familiar with the status of the  
2 lands which are the subject matter of these  
3 applications?

4 A. Yes.

5 Q. Are you familiar with the drilling plans for  
6 both of the wells?

7 A. Yes.

8 Q. And have you conducted a geologic study of the  
9 area embracing the proposed spacing units for the wells?

10 A. Yes, I have.

11 MS. BRADFUTE: I'd like to tender Mr. Muncy  
12 as an expert witness in geology matters.

13 EXAMINER JONES: He's so qualified.

14 Q. (BY MS. BRADFUTE) Could you please identify the  
15 targeted interval for both the 227H and the 228H wells?

16 A. That is the 2nd Bone Spring Sand of the Bone  
17 Spring Formation.

18 Q. And, Mr. Muncy, if you could please turn to  
19 Exhibit 7 in the packet in front of you, could you  
20 please identify what this document is?

21 A. This is a structure map on the top of the 3rd  
22 Bone Spring Carbonate, which is the base of the 2nd Bone  
23 Spring Sand. Each one of the squares is a section.  
24 Highlighted in green is the north half of Section 21  
25 labeled "228H" and the "227H" showing which quarter

1 section they are drilling. The cross section we'll show  
2 in Exhibit 8 is labeled A to A prime going west to east.  
3 And the contour interval is 20 feet, and we observed a  
4 structure that is increasing in depth as we go to the  
5 southeast.

6 Q. And, Mr. Muncy, when you prepared this  
7 structure map, did you notice any impediments that would  
8 interfere with horizontal development?

9 A. No, I did not.

10 Q. And you mentioned that you had prepared a cross  
11 section, correct?

12 A. Yes.

13 Q. Could you please turn to Exhibit 8? Is this  
14 the cross section that was prepared?

15 A. Yes, it was.

16 Q. Could you please walk through this exhibit for  
17 the examiners?

18 A. This is a stratigraphic cross section, A to A  
19 prime, going from west to east, the datum on top of the  
20 3rd Bone Spring Carbonate. What I'm showing is 1,000  
21 feet above, 1,500 feet below. I have the tops labeled  
22 the top of the 3rd Bone Spring Sand, 3rd Bone Spring  
23 Carbonate, top of the 3rd Bone Spring Sand and top of  
24 the Wolfcamp.

25 On track one, I'm showing gamma ray; track



1 two, resistivity; and track three, neutron porosity and  
2 bulk density. On the blue arrows is my target interval  
3 for the 2nd Bone Spring Sand, and, additionally, I have  
4 included the 3rd Bone Spring target interval. We see a  
5 thickness of over 200 feet for the 2nd Bone Spring Sand  
6 and over 400 feet for the 3rd Bone Spring Sand.

7 Q. And what does this cross section tell you about  
8 the acreage that Apache seeks to develop?

9 A. The 2nd Bone Spring Sand is continuous, and our  
10 target interval is present through the entire section.

11 Q. And could you please next turn to Exhibit  
12 Number 9 in the packet in front of you? Could you  
13 please identify what this document is?

14 A. Yeah. This is a SoPh map using a porosity  
15 cutoff of 4 percent and a water saturation of 75 percent  
16 calculated from using parameters observed from our  
17 sidewall core in Section 14. Labeled on the wells is  
18 how much feet for our hydrocarbon pore volume, and what  
19 we observe is around 12. It goes from 10 to 13, 14 feet  
20 of oil in the north half of this section and very  
21 similar to where we've drilled in Section 15. Those are  
22 our 2nd Bone Spring horizontal wells, similar thickness.

23 Q. Mr. Muncy, what conclusions have you drawn from  
24 your geologic study of the area?

25 A. The reservoir is present throughout the

1 section. The horizontal drilling is the best way to  
2 drain both of the tracts, and we expect to produce  
3 pretty good wells out here, high rate of return.

4 Q. And will each quarter-quarter section for the  
5 wells be productive within the 2nd Bone Spring Sand?

6 A. Yes, they will.

7 Q. And will each tract, each quarter-quarter  
8 section, contribute approximately equally to the  
9 production of each well?

10 A. Yes.

11 Q. In your opinion, would granting Apache's  
12 applications be in the best interest of conservation,  
13 the prevention of waste and the protection of  
14 correlative rights?

15 A. Yes.

16 Q. And were Exhibits 7 through 9 prepared by you?

17 A. Yes, they were.

18 MS. BRADFUTE: I'd like to tender the  
19 admission of Exhibits 7 through 9 into the record.

20 EXAMINER JONES: Exhibits 7, 8 and 9 are  
21 admitted.

22 (Apache Corporation Exhibit Numbers 7  
23 through 9 are offered and admitted into  
24 evidence.)

25 MS. BRADFUTE: That concludes my questions.

1 EXAMINER BROOKS: I don't have any  
2 questions.

3 CROSS-EXAMINATION

4 BY EXAMINER JONES:

5 Q. This 75 percent water saturation, is it true  
6 then that you're getting -- does that -- does that  
7 significantly narrow down your gross interval by cutting  
8 out stuff that is over 75 percent?

9 A. Yes. Working with our petrophysicist, we kind  
10 of -- instead of using the standard 60 percent cutoff,  
11 we increased it because of the -- we're dealing with the  
12 low-resistivity pay. I'm sure you've heard. The  
13 petrophysics in the Bone Spring is very, very  
14 challenging. So we feel this gives us a more accurate  
15 representation of oil -- oil in the area.

16 Q. Did that help you determine the target  
17 interval, not just the reserves --

18 A. Oh, yes. Uh-huh. Yeah. I don't have it on  
19 the cross section, but where we had the target pick,  
20 that's usually the higher porosity, more oil-filled  
21 interval.

22 Q. This is a sand, so there is a porosity  
23 versus -- do you have any core data?

24 A. Yeah. Over in -- right -- you can see on the  
25 edge of the map. In Section 15, crossing over into

1 Section 14, we have a pilot hole there that we took  
2 sidewall core through the 2nd and 3rd Bone Spring Sand  
3 and the 1st Bone Spring.

4 Q. Okay. Your porosities -- I don't know. You  
5 get a few points for porosity, I guess. Did they -- you  
6 can -- you can relate pore porosity to log porosity that  
7 way. Or is that not quite so good because of the  
8 sidewall cores?

9 A. You know, it's not exactly --

10 Q. Nobody lets you do a hole core?

11 A. -- a one-to-one relationship, but, you know,  
12 we're dealing with microdarcy perm here, so it's  
13 microdarcy. So horizontal drilling and fracking is the  
14 only way to drain this reservoir.

15 Q. Okay. So you looked at those for  
16 permeability --

17 A. Uh-huh.

18 Q. -- and there's microdarcy permeability.

19 Well, I hope you have good success out  
20 here.

21 And that 3rd Bone Spring Carbonate, there  
22 is not much porosity in it, it looks like?

23 A. No. It's extremely low porosity, very tight.

24 Q. Is that true, or has it got some kind of  
25 fractures that might crop up later and everybody will

1 start making it a target?

2 A. In other areas, I've seen people start  
3 targeting some sand members within the carbonate. In  
4 this area, it doesn't appear we have that same target.

5 Q. Okay. So you do have a few sands that --

6 A. Uh-huh. We see it more in Lea County.

7 Q. Over close to the shelf or near the basin  
8 platform?

9 A. More basinwards, yeah.

10 Q. It's certainly a thick section.

11 A. Yeah. We have experience with a 2014 well  
12 where we hit the carbonate and couldn't get a frac stage  
13 off. It's just very hard and tombstone, so we try to  
14 develop our drilling plans to avoid it at all costs.

15 Q. Okay. And your source rock is down below?

16 A. It's kind of debatable. A lot of people say  
17 the mudstones in the Bone Spring, it self-sources. I  
18 believe the Wolfcamp is also sourcing it. But, you  
19 know, we have surrounding production in the area, so,  
20 you know, the source isn't much of a risk for us in this  
21 area.

22 Q. Is there a difference in pressures as you get  
23 lower in this area?

24 A. I believe we are normally pressured in the  
25 area. We can actually get you the right number. Our

1     reservoir engineer just had a baby yesterday, so she  
2     couldn't make it.

3           Q.     Oh, wow.

4           A.     On Monday.   Excuse me.   Not --

5           Q.     They actually let reservoir engineers out of  
6     their rooms these days?

7                     (Laughter.)

8                     MS. BRADFUTE:   We hope to have children.

9                     EXAMINER JONES:   Usually when you walked in  
10    their rooms, they have cobwebs on the walls.   She knows  
11    what I'm talking about.

12                    Wow.   That's really good.

13           Q.     (BY EXAMINER JONES) I was going to ask  
14    something else, but -- oh, the direction, east-west  
15    versus north-south.

16           A.     Uh-huh.

17           Q.     Is there some science on that, or it's a land  
18    matter?

19           A.     There is science on it.   From our internal  
20    interpretations from the FMI on our pilot hole, we  
21    determined that the stress orientation is pretty much  
22    north-north-south.

23           Q.     You looked at wellbore breakouts or whatever  
24    from your FMI?

25           A.     Uh-huh.   Yeah.   And we see it in the production

1 results, too.

2 Q. Okay. Thanks very much.

3 MS. BRADFUTE: And we ask that both of  
4 these cases be taken under advisement.

5 EXAMINER JONES: Okay. 16290 and 16289 are  
6 taken under advisement.

7 (Case Numbers 16289 and 16290 conclude,  
8 10:48 a.m.)

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1 STATE OF NEW MEXICO  
2 COUNTY OF BERNALILLO  
3

4 CERTIFICATE OF COURT REPORTER

5 I, MARY C. HANKINS, Certified Court  
6 Reporter, New Mexico Certified Court Reporter No. 20,  
7 and Registered Professional Reporter, do hereby certify  
8 that I reported the foregoing proceedings in  
9 stenographic shorthand and that the foregoing pages are  
10 a true and correct transcript of those proceedings that  
11 were reduced to printed form by me to the best of my  
12 ability.

13 I FURTHER CERTIFY that the Reporter's  
14 Record of the proceedings truly and accurately reflects  
15 the exhibits, if any, offered by the respective parties.

16 I FURTHER CERTIFY that I am neither  
17 employed by nor related to any of the parties or  
18 attorneys in this case and that I have no interest in  
19 the final disposition of this case.

20 DATED THIS 23rd day of September 2018.  
21

22  
23 MARY C. HANKINS, CCR, RPR  
24 Certified Court Reporter  
25 New Mexico CCR No. 20  
Date of CCR Expiration: 12/31/2018  
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