

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

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

ORIGINAL

CASE 15401

APPLICATION OF APACHE CORPORATION FOR  
APPROVAL OF THE FIRE EAGLE STATE SAN ANDRES  
EXPLORATORY UNIT, LEA COUNTY, NEW MEXICO

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

December 3, 2015

Santa Fe, New Mexico

BEFORE: MICHAEL McMILLAN, CHIEF EXAMINER  
WILLIAM V. JONES, EXAMINER  
GABRIEL WADE, LEGAL EXAMINER

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This matter came on for hearing before the  
New Mexico Oil Conservation Division, Michael McMILLAN,  
Chief Examiner, William V. Jones, Examiner, and Gabriel  
Wade, Legal Examiner, on December 3, 2015, at the New  
Mexico Energy, Minerals, and Natural Resources  
Department, Wendell Chino Building, 1220 South St.  
Francis Drive, Porter Hall, Room 102, Santa Fe, New  
Mexico.

REPORTED BY: ELLEN H. ALLANIC  
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A P P E A R A N C E S

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I N D E X

CASE NUMBER 15401 CALLED

APACHE CORPORATION  
 CASE-IN-CHIEF:

WITNESS LACI LAWRENCE

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1 WITNESS ADAM ANDERSON

2

3 By Ms. Bradfute

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1 (Time noted 10:37 a.m.)

2 EXAMINER McMILLAN: I would like to call the  
3 hearing back to order. I call case 15401, Application  
4 Of Apache Corporation For Approval of the Fire Eagle  
5 State San Andres Exploratory Unit, Lea County, New  
6 Mexico.

7 Call for appearances.

8 MS. BRADFUTE: Mr. Examiner, Jennifer  
9 Bradfute with the Modrall Sperling Firm, representing  
10 Apache Corporation.

11 EXAMINER McMILLAN: Any other appearances?

12 MS. KESSLER: Jordan Kessler from Holland  
13 and Hart on behalf of COG Operating, LLC.

14 And, Mr. Examiner, I would just like to note  
15 at the outset that COG is withdrawing its objection to  
16 this application.

17 EXAMINER McMILLAN: Okay.

18 MR. WADE: So you will not be presenting any  
19 testimony --

20 MS. KESSLER: No testimony and no evidence  
21 and we will not be cross-examining witnesses.

22 MS. BRADFUTE: Mr. Examiner, Apache and COG  
23 have reached an agreement concerning this application.

24 EXAMINER JONES: Will the unit boundaries be  
25 changed?

1 MS. BRADFUTE: No, they will not. They  
2 agreed to their original unit boundaries in their  
3 original application.

4 We have two witnesses that we would like to  
5 call today.

6 EXAMINER McMILLAN: Yes. Please stand and  
7 be sworn in.

8 (WHEREUPON, the presenting witnesses  
9 were administered the oath.)

10 MS. BRADFUTE: And I would like to call my  
11 first witness.

12 LACI LAWRENCE  
13 having been first duly sworn, was examined and testified  
14 as follows:

15 DIRECT EXAMINATION

16 BY MS. BRADFUTE:

17 Q. Would you please state your name for the record.

18 A. Laci Lawrence.

19 Q. And Ms. Lawrence, who do you work for and in what  
20 capacity?

21 A. I work for Apache Corporation in Midland as a  
22 landman for Lea County.

23 Q. And what are your responsibilities as a landman  
24 in Lea County for Apache?

25 A. Basically, whatever they need done in Lea County.

1 In this particular instance, we're unitizing.

2 Q. Have you previously testified before the  
3 Division?

4 A. Yes.

5 Q. And were your credentials as a landman accepted  
6 and made a part of the record?

7 A. Yes.

8 Q. Are you familiar with the application that has  
9 been filed by Apache in this case?

10 A. Yes.

11 Q. And are you familiar with the status of the lands  
12 that are included in the unit area that are the subject  
13 of the application?

14 A. Yes.

15 MS. BRADFUTE: Mr. Examiner, I would like to  
16 tender Ms. Lawrence as an expert in petroleum land  
17 matters.

18 EXAMINER McMILLAN: So qualified.

19 Q. Ms. Lawrence, could you please turn to what has  
20 been marked as Exhibit No. 1 in the exhibit notebook.

21 A. Okay.

22 Q. What is Exhibit No. 1?

23 A. This is Apache's application for approval from  
24 the NMOCD for the Fire Eagle State San Andres Unit in  
25 Lea County.

1 Q. And would you please explain what Apache is  
2 specifically seeking in the application?

3 A. We are seeking approval from the OCD to unitize  
4 3,360 acres in Lea County. Our plans are to develop the  
5 San Andres horizontally.

6 Q. And could you please turn to what has been marked  
7 as Exhibit No. 2. What is Exhibit No. 2?

8 A. Exhibit 2 is the state form for an exploratory  
9 unit. We didn't change anything in the unit. And this  
10 was approved by the State Land Office preliminarily so  
11 that we could come before you.

12 Q. And in this unit agreement, are only state lands  
13 going to be included within the unit?

14 A. Yes. The unit is 100 percent state minerals and  
15 100 percent Apache leasehold.

16 Q. And has Apache had an opportunity to meet with  
17 the State Land Office to discuss this particular unit?

18 A. Yes. We met twice with them. The first time we  
19 brought in a large block of acreage. I work with Pete  
20 Martinez. He's the unit person at the State Land  
21 Office. And they requested that we split the acreage  
22 into two units, so we did that.

23 And we went back for the second visit at the  
24 State Land Office. We met with their engineering and  
25 geology team. And they identified 80 acres as stranded.

1           If you are looking at Exhibit A in the unit  
2 agreement, it is tract 20 that the State Land Office  
3 specifically asked for us to bring in. It's right after  
4 the acknowledgement pages. It's that very first --

5           So tract 20 was an 80-acre state lease owned by  
6 Yates Petroleum. And if you are looking at our unit  
7 agreement, it still shows Yates as the owner. But we  
8 have since acquired that 80 acres, so it's now Apache.

9           So Yates will not have to ratify the agreement.  
10 Apache owns that 80 acres 100 percent, and it is within  
11 the unit boundaries.

12          Q. And will Apache be the only working interest  
13 owner within the unit?

14          A. Yes.

15          Q. If you can please turn to what has been marked as  
16 Exhibit 3. What is this exhibit?

17          A. Exhibit 3 is the preliminary approval from the  
18 State Land Office. The Commissioner signed off on it.

19          Q. And are you seeking to have the unit designated  
20 as a project area under the Division's rules to  
21 facilitate horizontal development?

22          A. Yes.

23          Q. And does the agreement, the unit agreement, in  
24 Exhibit 2 provide for the development of both horizontal  
25 and vertical wells?

1 A. Yes, it does.

2 Q. And if you could please turn back to Exhibit 2,  
3 the unit agreement. What are the depths that are being  
4 unitized under the form agreement?

5 A. I will be reading from page 4 of 18 at the top,  
6 Unitized Substances, All oil, gas, natural gas, and  
7 associated fluid hydrocarbons in the San Andres  
8 Formation, the correlative interval of which is  
9 identified between the log depths of 4,243 feet and  
10 5,643 feet in the compensated neutron gamma ray log  
11 formulated by Schlumberger on the Gainer 22 No. 1 well,  
12 located in Section 22, Township 10 South, Range 36 East  
13 in Lea County.

14 Q. And what is the target formation that Apache is  
15 seeking to develop?

16 A. The San Andres Formation.

17 Q. And does the unit agreement contain an Exhibit A  
18 which provides an outline of the proposed unit areas?

19 A. Yes, it does. And it's page 11.

20 Q. And I believe you already kind of explained part  
21 of that unit area.

22 A. Yes.

23 (Increase of Ambient Noise.)

24 Q. And is there an Exhibit B to the unit agreement  
25 which shows ownership by tract?

1           A. Yes. Exhibit B shows -- it is going to be page  
2 12 and following. The first column shows the tract  
3 number. The second is the description of lands. The  
4 third, acreage. The fourth is the serial number and  
5 expiration date of the state lease.

6           The fifth is the royalty and percentage. The  
7 sixth is the lessee of record. And in this particular  
8 unit, we have lessees of record that are not Apache.  
9 And so they will need to ratify the agreement.

10           We have spoken with all of those parties, and  
11 they are all on board to sign and ratify if the OCD  
12 approves.

13           The last two columns are the overriding royalty  
14 and percentage numbers, and then the working interest  
15 owner -- or the working interest owners and the  
16 percentage.

17           Q. And the unit is a voluntary exploratory unit,  
18 correct?

19           A. Yes.

20           Q. Are there any overriding royalty interests in the  
21 state leases that are being unitized?

22           A. Yes.

23           Q. And did Apache provide notices concerning the  
24 unit agreement to those overriding royalty interest  
25 owners?

1       A. Yes. Notice was provided to all. There were I  
2 think five total that we didn't get the green cards back  
3 on, three of which are from older tracts. And so we  
4 published notices for those three parties.

5               Their names were David Butler, David Burgard and  
6 Southwest Royalties. And we published those for notice  
7 for hearing. The other two parties were Providence  
8 Minerals and Headington Royalty. And both of those  
9 parties are lessees of record that have already agreed  
10 to ratify the unit agreement.

11       Q. And I just want to clarify. I do believe we have  
12 a green card for Providence Minerals.

13       A. Sorry.

14       Q. Please turn to what has been marked as  
15 Exhibit 10. And could you please identify that exhibit  
16 for the Hearing Examiners.

17       A. Yes. Exhibit 10 is the waiver from Headington  
18 Energy. This is to show that although they did not  
19 receive the official packet in the mail, they were in  
20 correspondence with us before -- I guess at the end of  
21 August.

22               And they're on board, they will ratify the  
23 agreement. And this is just their waiver that says they  
24 are on board with our unitization.

25       Q. Are there any timing restrictions which could

1 impact the development of the unit?

2 A. Yes. This is prime prairie chicken area. There  
3 is actually an active lek, which is their breeding  
4 grounds. That's right where we want to drill one of our  
5 wells.

6 So from March 1st through June 15th, we can't  
7 have 24-hour drilling operations. So we would ask --  
8 just as you-all did and we appreciate your expedited  
9 ruling on our other unit -- if we could also have an  
10 expedited review of this unit as well.

11 Q. And is there a 60-day deadline for you to begin  
12 drilling after the unit agreement is approved?

13 A. Yes. So as soon as -- if the OCD approves, we  
14 will take it back to the State Land Office for the  
15 Commissioner's final approval.

16 And then we have 60 days from the date of the  
17 unit agreement to get out there and drill.

18 Q. And when approximately does prairie chicken  
19 season start?

20 A. It starts on March 1st. This well is on the rig  
21 schedule for about the middle of January. We plan on  
22 drilling it right after the Pacifico well, which was the  
23 unit that you-all previously reviewed and approved.

24 Q. Could you please turn to what has been marked as  
25 Exhibit No. 4. And could you please explain what this

1 exhibit is to the Hearing Examiners.

2 A. It is the affidavit from Brian Wood of Permits  
3 West. He is the person that helped prepare notices and  
4 send them out. And he is the one that put together all  
5 the green cards.

6 Q. And if you look at the last page of this exhibit,  
7 is an affidavit of publication included for the parties  
8 who Apache received undelivered notices for?

9 A. Okay. Yes.

10 Q. Ms. Lawrence, were Exhibits 1 through 4 and  
11 Exhibit 10 prepared by you or compiled under your  
12 direction and supervision?

13 A. Yes.

14 MS. BRADFUTE: Mr. Hearing Examiner, I would  
15 like to move that Exhibits 1 through 4 and Exhibit 10 be  
16 admitted into evidence.

17 EXAMINER McMILLAN: Exhibits 1 through 4 and  
18 Exhibit 10 may now be accepted as part of the record.

19 (Apache Corporation Exhibits 1 through 4 and  
20 Exhibit 10 were offered and admitted.)

21 MS. BRADFUTE: And that concludes my  
22 questioning of this witness.

23 MR. WADE: I have one question.

24 EXAMINER McMILLAN: Go ahead.

25 EXAMINATION BY MR. WADE

1 MR. WADE: Going to Exhibit 10, the waiver  
2 from Headington Royalty and Headington Energy Partners,  
3 there's obviously a signature there, do you know who  
4 signed this?

5 THE WITNESS: Yes. It is Clayton Sporich.  
6 He's the general counsel for Headington.

7 MR. WADE: Those are all the questions that  
8 I have.

9 EXAMINER McMILLAN: I want to make sure the  
10 overrides were notified of the hearing.

11 THE WITNESS: Yes, sir.

12 MS. BRADFUTE: Yes, they were.

13 There were -- there were undelivered for a  
14 couple of overrides, which are included in Exhibit 4.  
15 And they were listed. They were named in the  
16 publication, and the affidavit of publication was --  
17 well, the publication ran on October 29th.

18 EXAMINER McMILLAN: Okay. Do you have any  
19 questions?

20 EXAMINER JONES: I have a couple.

21 EXAMINATION BY EXAMINER JONES

22 EXAMINER JONES: The south half of nine is  
23 kind of an open spot between the two units?

24 THE WITNESS: Yes.

25 EXAMINER JONES: I thought there was some

1 testimony last time that that was included, but is that  
2 not correct?

3 THE WITNESS: No. If we want to turn back  
4 to page 11 of Exhibit 2, that's going to show the unit  
5 boundaries.

6 Section 9, the south half that you are  
7 talking about, this was specifically addressed when we  
8 spoke with the State Land Office. It's a producing Com  
9 that is 320 acres operated by Aspen Operating, who  
10 actually also has interest in our Fire Eagle Unit.

11 The State Land Office determined that that  
12 was not stranded acreage, because it is producing from  
13 the Morrow Formation.

14 MS. BRADFUTE: Ms. Lawrence, does that  
15 communication agreement go to all depths in the south  
16 half of section 9?

17 THE WITNESS: It is communitized as to the  
18 Morrow. Sorry. I drew a blank there for a second. The  
19 Commissioner doesn't like large units. That was our  
20 first meeting that we went in. And so to bring in an  
21 additional 320 acres, we would need to justify bringing  
22 that in.

23 Our current plan is to start off drilling  
24 mile-and-a-half laterals. And so if you -- if you are  
25 looking at the section 4 that's above it and then down

1 into the north half of section 9, that's going to be a  
2 perfect place for us to drill our mile-and-a-half  
3 laterals.

4 We will also be drilling mile-and-a-halves in  
5 the eastern portion of section 3 and 10. And then we  
6 will be doing mile laterals on the western portions of 3  
7 and 30. And then mile laterals here in sections 2 and  
8 11.

9 And all of that is, of course, subject to  
10 State Land Office approval. We will have to go through  
11 our development plan with them and justify what we want  
12 to do. But, like I said, the State Land Office was on  
13 board with us excluding the south half of section 9.

14 EXAMINER JONES: So Apache is the operator  
15 of that well --

16 THE WITNESS: In section 9, no. That's  
17 Aspen Operating.

18 EXAMINER JONES: Okay. And Aspen Operating,  
19 were they notified at all of this?

20 THE WITNESS: So Aspen Operating and Rubicon  
21 are brother and sister companies. James Nutall is their  
22 landman. When you call in he covers both company  
23 issues. And so he was one of the original people that  
24 we spoke to and provided proper notice to. So he  
25 understood what we were doing out here and that we were

1 excluding section 9.

2 And so there has been no issue of notice  
3 being provided to them. And they also -- Rubicon has to  
4 ratify our unit agreement. To just further show that  
5 they're on board with it, will need to sign it and they  
6 have said that they would.

7 EXAMINER JONES: What about the southeast of  
8 10?

9 THE WITNESS: So the southeast of 10 is the  
10 160 acres that Concho brought to our attention at the  
11 last hearing. We've since resolved issues there.

12 If we go back to our original plan, which  
13 is -- we have our permitted well, the first well that's  
14 right here on the east half of the east half of section  
15 3 and section 10. So if you just look at that little  
16 tract right there, that's where we are drilling our  
17 first well.

18 So it's a mile-and-a-half lateral. This  
19 acreage, the 160, was not identified by the State Land  
20 Office as stranded acreage. It's HPB, by a well that's  
21 in the northwest quarter here that's also operated by  
22 Aspen.

23 You know, when we met at the last hearing  
24 and Concho brought this 160 to our attention, we went  
25 straight over to the State Land Office and spoke with

1 Pete Martinez about, you know, what are our options  
2 here, do we amend unit boundaries, do we not.

3 And he said if you've already permitted a  
4 one-and-a-half-mile lateral and then you go back to the  
5 State Land Office and say, Hey, we want to bring in the  
6 160 here, if you don't plan on developing it, the  
7 Commissioner will not approve amended unit boundaries.  
8 We are not going to allow you to bring in acreage that  
9 you don't plan on drilling.

10 So that is why we left the unit boundaries  
11 as they are right here. We have since acquired that  
12 acreage from Concho.

13 What we plan on doing, section 15 down here  
14 to the south, that's a state lease as well that's  
15 directly below it. It is currently owned by Yates, who,  
16 you know, we picked up the 80 acres from in another part  
17 of this unit.

18 And so our plans are, if we get out there  
19 and drill this first well and it is successful, we like  
20 what we see, then we will go about picking up that  
21 additional acreage in section 15 to develop that  
22 further.

23 EXAMINER JONES: So where did the name Fire  
24 Eagle come from?

25 THE WITNESS: It's a beer. It is a Texas

1 beer.

2 EXAMINER JONES: And you have already  
3 drilled your first obligation well; is that correct?

4 THE WITNESS: No, sir. We have to get the  
5 unit approved before we can drill our first well.

6 EXAMINER JONES: But that one is going to be  
7 the Party Gold 10 State 1H; is that right?

8 THE WITNESS: It should be the Fire Eagle  
9 State San Andres unit number 1H, but we can't name it a  
10 unit well until we have approval from the OCD and the  
11 State Land Office.

12 So we will file a sundry with the unit name  
13 once we --

14 EXAMINER JONES: So it already has an API  
15 number, though?

16 THE WITNESS: Yes, sir.

17 EXAMINER JONES: I don't have any more  
18 questions. Jordan, do you want to ask a question?

19 MS. KESSLER: No questions, Mr. Examiner.

20 EXAMINER McMILLAN: Thank you very much.

21 MS. BRADFUTE: I would like to call my  
22 second witness.

23 EXAMINER McMILLAN: Thank you.

24 ADAM ANDERSON

25 having been first duly sworn, was examined and testified

1 as follows:

2 DIRECT EXAMINATION

3 BY MS. BRADFUTE:

4 Q. Please state your name for the record.

5 A. Adam Anderson.

6 Q. Mr. Anderson, who do you work for?

7 A. Apache Corporation.

8 Q. And in what capacity do you work for Apache?

9 A. I am a geologist over the northwest shelf.

10 Q. And, Mr. Anderson, have you previously testified  
11 before the Division?

12 A. Yes, I have.

13 Q. And were your credentials accepted and made a  
14 part of the record?

15 A. Yes.

16 Q. Are you familiar with the application that has  
17 been filed by Apache in this case?

18 A. Yes.

19 Q. And are you familiar with the status of the lands  
20 that are included in the unit area that are the subject  
21 of the application?

22 A. Yes.

23 Q. Have you conducted a geologic study of the San  
24 Andres Formation underlying the unit area that is the  
25 subject of the application?

1 A. Yes, I have.

2 Q. And have you prepared some exhibits as part of  
3 your study?

4 A. Yes.

5 MS. BRADFUTE: Mr. Examiner, I would like to  
6 move that Mr. Anderson is admitted as an expert witness  
7 in geological matters.

8 EXAMINER McMILLAN: So qualified.

9 Q. Please turn to what has been marked as Exhibit 5.  
10 Please explain what this exhibit is to the Hearing  
11 Examiners.

12 A. This exhibit shows the San Andres within our unit  
13 boundary. You see the top of the San Andres at about  
14 4250, and the top of the Glorieta down at 5640. The pay  
15 interval that we'll be going after has the designated  
16 pay top, pay base, so around 4920 to 5060. It varies  
17 between 150 to 200 feet in this unit.

18 Q. Could you please turn to what's been marked as  
19 Exhibit No. 6.

20 A. (Witness complies.)

21 Q. Please explain what this exhibit is to the  
22 Hearing Examiners.

23 A. This shows -- this is a structure map on top of  
24 that pay interval. We can see the structure going from  
25 northeast to southwest, dipping to the southeast.

1 Q. And does the San Andres Formation extend fairly  
2 continuously across the unitized lands?

3 A. Yes, it does.

4 Q. And could you please explain the characteristics  
5 of the San Andres Formation within this acreage?

6 A. Yes. As I mentioned, it goes -- strikes  
7 northeast to southwest, dipping to the southeast at  
8 about 40 feet per mile. It's pretty gentle -- slightly  
9 dipping, so there is no structural variability that we  
10 need to look out for here.

11 Q. And are there any faults, pinch-outs, geological  
12 impediments within the unit area?

13 A. No, there isn't.

14 Q. Did you prepare a cross section of logs to  
15 determine the relative thickness and porosity of the  
16 target formation?

17 A. Yes, I have.

18 Q. And could you please turn to what has been marked  
19 as Exhibits No. 8 and 9. Are those the logs that you  
20 prepared for the unit area?

21 A. Yes, they are.

22 Q. And could you please explain to the Hearing  
23 Examiners what is included in Exhibit 8?

24 A. This cross section goes from west to east, is  
25 marked A to A Prime. You can see the pay interval is

1 marked at the top and bottom.

2 And within the pay interval, you can see the  
3 variability in the San Andres. As you move to the west,  
4 it gets thicker and average porosity. As you move to  
5 the east -- as you move to the west, then it becomes  
6 more intermittent and lower overall porosity.

7 Q. Could you please turn to Exhibit 9 and explain to  
8 the Hearing Examiners what that exhibit contains.

9 A. Similar cross section, but going north to south.  
10 Here you can see the variability again. The difference  
11 here is they're both in north and south, the porosity  
12 things, and it becomes more intermittent.

13 Q. Please turn back to what has been marked as  
14 Exhibit 7.

15 A. (Witness complies.)

16 Q. And could you please explain what this map  
17 depicts.

18 A. It is a map showing the SoPhiH of the pay  
19 interval in the San Andres.

20 Q. And are there wells that are located on this map  
21 that are starred?

22 A. Yes, there are.

23 Q. And what are those wells?

24 A. Those are the wells with the best log suite and  
25 fully comprehensive over the San Andres. In between

1 those starred intervals, we need to use pore log data to  
2 contour around.

3 Q. And do you consider the wells included in your  
4 cross sections to be representative of the San Andres  
5 Formation within the unit area?

6 A. Yes.

7 Q. Turning back to the map in Exhibit 7, how did you  
8 calculate the average porosity oil saturation and gross  
9 pay for this map?

10 A. So to make this map, you use a porosity cutoff of  
11 6 percent, an oil saturation of 40 percent. And then  
12 that's how we calculate our net pay. And then just  
13 multiple the net pay by average porosity and average oil  
14 saturation.

15 Q. And what conclusions have you drawn from your  
16 geologic study of the area?

17 A. So the play we are going after is basically a  
18 reservoir depletion of the San Andres. And we need a  
19 certain amount of reservoir in order to have enough oil  
20 in place. That's what the SoPhiH map kind of shows. As  
21 you go to the north and west, the SoPhiH pinches out,  
22 indicating less storage of oil.

23 Q. And will the entirety of the unit area be  
24 developed?

25 A. Yes, it will.

1 Q. And is the entirety of the unit area believed to  
2 be productive in the San Andres Formation?

3 A. Yes.

4 Q. And will it contribute to production in a  
5 relatively equal manner?

6 A. Yes.

7 Q. Is horizontal drilling the most efficient method  
8 for developing the proposed unit?

9 A. Yes. On the map you can see the green circles  
10 are vertical San Andres wells. The edges of that field  
11 are dropping off in production overall, and it's not  
12 such that they go to water. It's just they're lower  
13 overall fluids. So as you drill a horizontal well,  
14 we're able to connect more reservoir and produce enough  
15 fluids to get an economic well.

16 Q. And will the completed intervals for the wells  
17 developed within the unit satisfy or comply with the  
18 330-foot setback requirements from the exterior  
19 boundaries of the unit?

20 A. Yes.

21 Q. Did you meet with the New Mexico State Land  
22 Office to discuss the geology and the development  
23 plan?

24 A. Yes.

25 Q. And did the State Land Office provide any input

1 into the plan?

2 A. Yes. They preferred the smaller units, allowed  
3 us to develop both units and not hold up a lot of the  
4 extra acreage.

5 Q. Did they agree that the leases could be best  
6 developed through a development plan which allows Apache  
7 to first test the San Andres Formation and then to  
8 determine the best orientation for the wells?

9 A. Yes. And we have put our first wells in  
10 locations where if east, west becomes a better  
11 direction, we are able to develop the units that way.

12 Q. And in your opinion, is the proposed unit  
13 suitable for exploratory development within the San  
14 Andres Formation?

15 A. Yes.

16 Q. Why is that?

17 A. Like I mentioned, that was to drill the  
18 horizontal wells and make the most economic wells. As a  
19 unit, we're able to lower our facility costs. And with  
20 as much water that we will produce, we need to be able  
21 to communitize as much facilities and not test each of  
22 these leases separately.

23 Q. And, in your opinion, will the approval of this  
24 unit prevent waste?

25 A. Yes. With the horizontal wells, we will be able

1 to connect all of the reservoir and produce any excess  
2 waste acreage.

3 Q. And in your opinion, will that approval of this  
4 unit protect correlative rights?

5 A. Yes.

6 Q. Were Exhibits 5 through 9 prepared by you or  
7 compiled under your direction or supervision?

8 A. Yes.

9 MS. BRADFUTE: Mr. Examiner, I would like to  
10 move that Exhibits 5 through 9 be admitted into  
11 evidence.

12 EXAMINER McMILLAN: Exhibits 5 through 9 may  
13 now be accepted as part of the record.

14 (Apache Corporation Exhibits 5 through 9  
15 were offered and admitted.)

16 MS. BRADFUTE: That's all of my questions  
17 for this witness.

18 EXAMINATION BY EXAMINER McMILLAN

19 EXAMINER McMILLAN: The first question I got  
20 is what logs suites did you use to determine 6 percent  
21 porosity? Did you use sonic logs?

22 THE WITNESS: Using neutron and density and  
23 then also sonic. So we created a cross-plot porosity  
24 using that. Corrected for dolomite.

25 EXAMINER McMILLAN: Is there any difference

1 in the porosity between the sonic and the neutron  
2 density?

3 THE WITNESS: Yes, there is some. When  
4 corrected for dolomite, you see a little bit, which we  
5 think is the vugular content porosity, which, hopefully,  
6 with these -- the frac completion will be able to  
7 connect up to.

8 EXAMINER McMILLAN: So what -- I am just  
9 curious. What will be the effective porosity in the  
10 sonic log?

11 THE WITNESS: In the sonic log itself, it's  
12 average is about 5 percent.

13 EXAMINER McMILLAN: And, by the way, what --  
14 I am just curious -- what field is the 937?

15 THE WITNESS: I am drawing a blank. I  
16 cannot remember. It is something east.

17 EXAMINER McMILLAN: It's not Sawyer East?

18 THE WITNESS: Ah, yes.

19 EXAMINER McMILLAN: Okay. So is this, more  
20 or less, the porosity, the Slaughter porosity zone?

21 THE WITNESS: Yes. And as we move this way,  
22 we are losing more and more of those porosity intervals.

23 EXAMINER McMILLAN: So it's the P1, P2, P3,  
24 whatever they call it?

25 THE WITNESS: Yes.

1 EXAMINER McMILLAN: Okay. Why wasn't the  
2 Gainer productive?

3 THE WITNESS: It was just lower overall  
4 porosity, lower interconnected porosity.

5 EXAMINER McMILLAN: So the perm was low?

6 THE WITNESS: Yes. We are looking at  
7 permeabilities around 1 to 1. And in a vertical well  
8 you are just not going to connect up enough rock to do  
9 that --

10 EXAMINER McMILLAN: (Inaudible) presents the  
11 porosity per sonic in the dolomite.

12 THE WITNESS: Yeah. It is not bad reservoir  
13 quality. It is just low enough where vertical wells  
14 just don't work.

15 EXAMINER McMILLAN: Go ahead.

16 EXAMINATION BY EXAMINER JONES

17 EXAMINER JONES: There was an explanation  
18 for the section 9 in the southeast of 10. But you are  
19 the geologist, so would you rather have those inside the  
20 unit?

21 THE WITNESS: It kind of depends. This way  
22 we are able to drill now. The southern half of 9, I  
23 believe we can drill east, west. So Aspen, if they had  
24 that acreage, they're able to develop that east, west.

25 In the southeast quarter of 10, assuming we

1 work something out with Yates, we are able to drill a  
2 mile and a half there, develop that.

3 EXAMINER JONES: So you could work something  
4 out with the operator outside the unit; you could just  
5 do a Com agreement with them?

6 THE WITNESS: Yes.

7 EXAMINER JONES: That lease -- I forgot to  
8 ask -- it was bought from Yates. Was that an assignment  
9 or -- do you know that or should I just not ask that  
10 question?

11 THE WITNESS: I do not know.

12 EXAMINER JONES: The working interest now is  
13 Apache, but the actual -- it probably was an assignment.

14 MS. BRADFUTE: I believe it is an  
15 assignment. But Ms. Lawrence would have that  
16 information.

17 EXAMINER JONES: Okay. So why did you pick  
18 the first well as to where it's at on the --

19 THE WITNESS: With the location?

20 EXAMINER JONES: -- H of 10?

21 THE WITNESS: Yeah. With that location, we  
22 only drilled a mile and a half, which we believe might  
23 be better overall economically. It was also in the  
24 center of the unit. So that if we set up our temporary  
25 facilities there, we can just make that our permanent

1 facilities.

2 EXAMINER JONES: So whose idea was it to do  
3 all this stuff?

4 THE WITNESS: Manzano had developed a  
5 similar play in Yoakum County, and we just kind of  
6 extended this to other areas.

7 EXAMINER JONES: Manzano?

8 THE WITNESS: Manzano is the name, yes.

9 EXAMINER McMILLAN: I'm familiar with the  
10 geologist. I know the geologist quite well. He is an  
11 excellent log analyst. In fact, I worked with him. I  
12 am very familiar with his work. And he does high  
13 quality work.

14 MR. WADE: I have no questions.

15 EXAMINER McMILLAN: I have no questions.  
16 Nice presentation. Thank you.

17 MS. BRADFUTE: And that concludes my  
18 presentation of witnesses that I had come in to testify.  
19 We ask that this case be taken under advisement.

20 EXAMINER McMILLAN: Case 15401 will be taken  
21 under advisement.

22 MS. BRADFUTE: Thank you.

23 EXAMINER McMILLAN: Thank you.

24 I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. \_\_\_\_\_  
25 (Time noted 11:21 a.m.)  
heard by me on December 3, 2015.

*Paul Baca*  
Examiner

1 STATE OF NEW MEXICO )  
 2 ) ss.  
 3 COUNTY OF BERNALILLO )  
 4  
 5  
 6

7 REPORTER'S CERTIFICATE

8  
 9 I, ELLEN H. ALLANIC, New Mexico Reporter CCR  
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