Albuquerque, New Mexico 87102

Suite 105

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1	A P P E A R A N C E S					
2	FOR APPLICANT DEVON ENERGY PRODUCTION COMPANY, L.P.:					
3	JAMES G. BRUCE, ESQ.					
4	P.O. Box 1056 Santa Fe, New Mexico 87504 (505)982-2043					
· 5	jamesbruc@aol.com					
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7		INDE	X			
8	CASE NUMBER 15273 CALLED					
10	DEVON ENERGY PRODUCTION COMPANY, L.P. CASE-IN-CHIEF:					
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12	WITNESS JOE HAMMO	ND		•		
13	Mr. Bruce	DIRECT 5	REDIRECT	FURTHER		
14						
15	Examiner Jones	CROSS 11	RECROSS	FURTHER		
16						
17	WITNESS CURT McKINNEY					
18	Mr. Bruce	DIRECT 15	REDIRECT	FURTHER		
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20	Examiner Jones	CROSS 22	RECROSS	FURTHER		
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PAUL BACA PROFESSIONAL COURT REPORTERS 500 FOURTH STREET NW - SUITE 105, ALBUQUERQUE, NM 87102

- 1 JOE HAMMOND
- 2 having been first sworn under oath, was questioned and
- 3 testified as follows:
- 4 DIRECT EXAMINATION
- 5 BY MR. BRUCE:
- 6 Q. Would you please state your name and city of
- 7 residence.
- 8 A. Joe Hammond, H-a-m-m-o-n-d, Edmond, Oklahoma.
- 9 Q. Who do you work for and in what capacity?
- 10 A. I work for Devon Energy Production Company LP as
- 11 a landman.
- 12 Q. As a landman.
- Have you previously testified before the
- 14 Division?
- 15 A. I have, but it's probably been ten or twelve
- 16 years since I've been here.
- 17 Q. Were your credentials as an expert landman
- 18 accepted as a matter of record?
- 19 A. Yes, they were.
- Q. And are you familiar with the land matters
- 21 involved in this application?
- 22 A. Yes, I am.
- 23 MR. BRUCE: Mr. Examiner, I tender
- 24 Mr. Hammond as an expert petroleum landman.
- 25 EXAMINER JONES: He is so qualified.

- 1 Q. Mr. Hammond, could you identify Exhibit 1 for the
- 2 examiner.
- 3 (Devon Energy Production Company, L.P.
- 4 Exhibit 1 introduced and identified.)
- 5 A. Exhibit 1 is a C-102 highlighting the north half
- of the south half of section 10, 19 south, 31 east, Eddy
- 7 County, New Mexico. And this is the project area that
- 8 we wish to pool.
- 9 Q. And what is the name of the well and the
- 10 formation being pooled?
- 11 A. It is the Hadar 10 Fed Com 3H Well. And the
- 12 formation is Bone Spring.
- Q. And the well's surface location and terminus is
- 14 given on the C-102, is it not?
- 15 A. Yes, it is.
- 16 Q. Will the producing interval of the well bore be
- 17 orthodox?
- 18 A. It will.
- 19 Q. Who do you seek to pool?
- 20 A. I seek to pool Occidental Permian LP and Enduro
- 21 Operating LLC.
- Q. And looking at page 2 of Exhibit 1, does that set
- 23 forth the various working interest ownership in the well
- 24 unit?
- 25 A. It does. For Occidental -- what I call "Oxy" --

- 1 they own 12-1/2 percent working interest. And then for
- 2 Enduro, they own 25 percent working interest.
- 3 (Devon Energy Production Company, L.P.
- 4 Exhibit 2 introduced and identified.)
- 5 O. What is Exhibit 2?
- 6 A. Exhibit 2 contains the letters that I sent to the
- 7 parties being pooled, that are proposing the well. And
- 8 they're dated December 30th, 2014.
- 9 Q. And was there a follow-up letter?
- 10 A. Yes, there was. The follow-up letter provided
- 11 them with the joint operating agreement.
- 12 Q. Have you had contact with Enduro and Oxy other
- 13 than these letters?
- 14 A. Yes. For Enduro, I've had three or four phone
- 15 calls, probably six or seven e-mails. And the last
- 16 correspondence that they provided me was that they had
- 17 received the forced pooling notice and they would not be
- 18 participating.
- 19 Q. What about Oxy?
- 20 A. Again, a couple of calls to Oxy and about eight
- 21 e-mails. Oxy has indicated they will not be
- 22 participating. We are talking to them about a possible
- 23 farm-out. But at this present date, there's no terms
- 24 that we have been able to agree on.
- Q. If you do come to terms with Oxy, will you notify

- 1 the Division so that they would not be deemed pooled
- 2 under the pooling order?
- 3 A. Yes, I will.
- 4 Q. In your opinion, has Devon made a good faith
- 5 effort to obtain the voluntary joinder of the interest
- 6 owners in the well?
- 7 A. Yes.
- 8 (Devon Energy Production Company, L.P.
- 9 Exhibit 3 introduced and identified.)
- 10 Q. Could you identify Exhibit 3 and discuss the cost
- 11 of the proposed well?
- 12 A. Exhibit 3 is the AFE that was provided to the
- 13 parties being pooled. And it indicates an estimated dry
- 14 hole cost of \$3,459,000 and an estimated completion cost
- 15 of \$7,694,006.
- 16 Q. And are these costs in line with the cost of
- 17 horizontal wells drilled to this depth in this area of
- 18 New Mexico?
- 19 A. Yes, they are.
- 20 Q. Do you request that Devon be appointed operator
- 21 of the well?
- 22 A. Yes, I do.
- Q. And is there a recommendation for the amounts
- 24 which Devon should be paid for their supervision and
- 25 administrative expenses?

- 1 A. Yes. It is \$7,500 per month for a drilling well
- 2 and \$750 per month for a producing well?
- 3 Q. And are these amounts equivalent to those
- 4 normally charged by Devon and other operators in this
- 5 area for wells of this depth?
- 6 A. Yes, they are.
- 7 Q. And do you request that the rates be adjusted
- 8 periodically as provided by the Copas accounting
- 9 procedure?
- 10 A. Yes, I do.
- 11 Q. And do you request the maximum cost plus 200
- 12 percent risk charge of interest owner non-consents to
- 13 the well?
- 14 A. Yes.
- Q. And were Enduro and Oxy notified of this hearing?
- 16 A. Yes, they were.
- 17 Q. And is that reflected in Exhibit 4 of my
- 18 affidavit of notice?
- 19 (Devon Energy Production Company, L.P.
- 20 Exhibit 4 introduced and identified.)
- 21 A. Yes, it is.
- 22 O. And what is Exhibit 5?
- 23 (Devon Energy Production Company, L.P.
- 24 Exhibit 5 introduced and identified.)
- 25 A. Exhibit 5 is a list of the offsetting operators

- 1 or owners.
- Q. And were the offsets, other than Devon, given
- 3 notice of this hearing?
- 4 A. Yes, they were.
- 5 (Devon Energy Production Company, L.P.
- 6 Exhibit 6 introduced and identified.)
- 7 Q. And is that reflected in Exhibit 6?
- 8 A. Yes, it is.
- 9 Q. Were Exhibits 1 through 6 either prepared by you
- or under your supervisor or compiled from company
- ll business records?
- 12 A. Yes, they were.
- 13 Q. In your opinion, is the granting of this
- 14 application in the interest of conservation and the
- 15 prevention of waste?
- 16 A. Yes, it is.
- 17 MR. BRUCE: Mr. Examiner, I move the
- 18 admission of Exhibits of 1 through 6.
- 19 EXAMINER MARKS: I just have a question on
- 20 the -- if you've reached an agreement with Oxy, would
- 21 you advise the other working interests of that?
- 22 It seems that it may -- that Exhibit 2 would
- 23 change. Would the other persons reflected in Exhibit 2,
- 24 would they be advised of that?
- 25 THE WITNESS: The other -- I am not sure I

- 1 understand your question. But the other parties are
- 2 not covered under a prior JOA so there is no need to
- 3 pool them. And so Oxy and Enduro were the only two
- 4 parties not covered under some previous agreement of
- 5 some sort.
- 6 EXAMINER JONES: So your farm-out would not
- 7 include terms that would skew the other interests in the
- 8 other tracts?
- 9 THE WITNESS: No, no. Does that answer your
- 10 question?
- 11 EXAMINER MARKS: Yes.
- 12 EXAMINER JONES: Exhibits 1 through 6 will
- 13 be admitted.
- 14 (Devon Energy Production Company, L.P.
- Exhibits 1 through 6 were admitted into
- 16 evidence.)
- MR. BRUCE: I have no further questions for
- 18 Mr. Hammond.
- 19 CROSS-EXAMINATION BY EXAMINER JONES
- 20 EXAMINER JONES: This Exhibit 1 has got --
- 21 the second page -- I get confused by colors -- that
- 22 yellow, is that Devon? Everybody uses yellow as their
- 23 personal --
- 24 THE WITNESS: If you look to the left side
- 25 there, the darker orange color is what is called held by

- 1 production.
- 2 EXAMINER JONES: HBP?
- 3 THE WITNESS: Yes. And then the yellow is
- 4 not held by production but has a lease term on it.
- 5 EXAMINER JONES: Are those all four
- 6 different, separate federal leases?
- 7 THE WITNESS: No. That is where we would
- 8 look at the C-102.
- 9 EXAMINER JONES: So there are three leases
- 10 there?
- 11 THE WITNESS: Yes -- I believe there's two
- 12 leases. There is 128832 and 98186.
- 13 EXAMINER JONES: 128832, and then 055493 on
- 14 the right north half southeast quarter; is that correct?
- MR. BRUCE: Yes, that's correct.
- 16 THE WITNESS: Yes.
- 17 EXAMINER JONES: So you are dealing with the
- 18 feds here now?
- 19 THE WITNESS: Yes.
- 20 EXAMINER JONES: All the land is leased and
- 21 it's all federal?
- THE WITNESS: Yes, it is.
- 23 EXAMINER JONES: And it's three different
- 24 tracts. Well, the Bone Spring, your C-102s say nothing
- 25 about splitting the vertical Bone Spring or that pool.

- 1 You didn't say what pool it is, did you?
- THE WITNESS: It's West Lusk.
- 3 EXAMINER JONES: It's the Lusk Bone Spring?
- 4 MR. BRUCE: West Lusk.
- 5 THE WITNESS: Or Lusk West.
- 6 EXAMINER JONES: Okay. Any special pool
- 7 rules with that pool?
- MR. BRUCE: I looked and I didn't find any.
- 9 There are for the West Bone Spring but not for the West
- 10 Lusk.
- 11 EXAMINER JONES: So you're pooling the whole
- 12 vertical section of the pool?
- 13 THE WITNESS: Yes, we are.
- 14 EXAMINER JONES: The AFE, from back in
- 15 December, is it going to change any? Did the cost come
- 16 down for you guys?
- 17 THE WITNESS: Again, this was guite a while
- 18 back, and I can tell you -- I don't have numbers but I
- 19 can tell you that our cost structure is declining.
- 20 EXAMINER JONES: Do you think that would
- 21 influence Oxy's decision to participate, they just don't
- 22 have the money or something?
- THE WITNESS: I will tell you that they
- 24 asked us if there was any way that we could delay the
- 25 well until prices come back up. And our answer was no.

- The Enduro, can you say one more time. I'm
- 19 getting older.
- THE WITNESS: Yes. Enduro Operating LLC, I
- 21 had not dealt with them before till this time.
- 22 EXAMINER JONES: But they haven't signed
- 23 your --
- 24 THE WITNESS: They have indicated to me they
- 25 have no desire to participate and would be going under

- 1 the pooling once we got it done.
- And, again, they -- I think they are a small
- 3 company. I don't know too much about them.
- 4 EXAMINER JONES: If you had an AMI with some
- 5 of these people, would the AMI terms include
- 6 participating in wells automatically or would you still
- 7 have to propose the wells to each party?
- 8 THE WITNESS: It would depend on the terms
- 9 of the AMI. But, normally, I would want to have the
- 10 option on each one.
- 11 EXAMINER JONES: Okay, okay.
- 12 You do have another witness, don't you?
- MR. BRUCE: I do, yes.
- 14 EXAMINER JONES: Thank you very much.
- 15 CURT McKINNEY
- 16 having been first duly sworn, was questioned and
- 17 testified as follows:
- 18 DIRECT EXAMINATION
- 19 BY MR. BRUCE:
- 20 Q. Would you, please, state your name and city of
- 21 residence.
- 22 A. My name is Curt McKinney, and I live in Edmond,
- 23 Oklahoma.
- Q. And who do you work for and in what capacity?
- 25 A. I work for Devon Energy Corporation as petroleum

- 1 geologist.
- Q. Have you previously testified before the
- 3 Division?
- 4 A. I have.
- 5 Q. And were your credentials as a geologist accepted
- 6 as a matter of record?
- 7 A. Yes.
- Q. And does your area of responsibility at Devon
- 9 include this area of southeast New Mexico?
- 10 A. Yes.
- 11 Q. Are you familiar with the geology involved in
- 12 this case?
- 13 A. Yes.
- MR. BRUCE: Mr. Examiner, I tender
- 15 Mr. McKinney as an expert petroleum geologist.
- 16 EXAMINER JONES: He is qualified as an
- 17 expert petroleum geologist.
- 18 BY MR. BRUCE (cont'd):
- 19 Q. Mr. McKinney, what is Exhibit 7?
- 20 (Devon Energy Production Company, L.P.,
- 21 Exhibit 7 introduced and identified.)
- 22 A. It is a structure map on top of our objective
- 23 that will be drilling this Hadar 10 Fed Com 3H, 4.
- Just to briefly scroll through this. The
- 25 objective section is right in the middle of the map,

- 1 section 10. And I've highlighted with a red dash line
- 2 the producing area that would be associated with Hadar
- 3 10 Fed Com 3H. That is the north half of the south half
- 4 of 10.
- 5 And then I have approximated the planned drilling
- 6 path with a black dash line that essentially bisects
- 7 that lay-down unit across the entire section.
- 8 I've got a type log for you on the left side of
- 9 the exhibit and the structure, the Subsea structure that
- 10 is depicted on the map, you can see the point about
- 11 halfway through that log. It is a blue line. It would
- 12 be the top of the middle sand of the second Bone Spring
- 13 sand of the Bone Spring formation.
- 14 And that's where we land our wells. In fact,
- 15 every well that you see on this exhibit that has a green
- 16 dot on it was landed in that sand and they all
- 17 produce -- the wells with the green dots, they all
- 18 produce from that member of the second Bone Spring sand.
- And I also would draw your attention to the blue
- 20 line that connects three wells in the middle of the
- 21 exhibit. That is the index line for a cross-section,
- 22 which is the subsequent exhibit.
- Q. Why don't you move on to the cross-section,
- 24 Exhibit 8, and discuss that.
- 25 (Devon Energy Production Company, L.P.,

- 1 Exhibit 8 introduced and identified.)
- 2 A. All right. The cross-section, it's just a
- 3 three-well cross-section to try to demonstrate
- 4 continuity of this objective reservoir across the
- 5 subject area.
- 6 These are conventional logs, gamma ray. On the
- 7 left tract, the middle tract adjacent to the depth --
- 8 the depth is the blank white tract.
- 9 The middle tract is the resistivity tract. And
- 10. then on the right for each well is the porosity and PE,
- 11 so every well has the same.
- 12 I color filled the gamma ray tract on the left.
- 13 So where you see the gold and yellow colors, that's the
- 14 sand. And you can see by the dark blue lines that that
- is the second Bone Spring that I've highlighted on this
- 16 cross-section. We just sort of focused on that so that
- 17 you could see some level of detail.
- 18 And there are a couple of members of the second
- 19 Bone Spring sand. And I've labeled them -- it's kind of
- 20 cryptic, perhaps, if you're not used to this
- 21 nomenclature. But it is an upper sand. It is 2BSSS U.
- 22 And a middle sand, 2BSSS M.
- 23 So there are two sands in this area we seek to
- 24 produce. And we'll land our wells in the middle sand.
- 25 But I think you can see from the cross-section that that

- 1 sand -- in fact, both sands are contiguous across the
- 2 area shown in this cross-section.
- 3 Q. And they are both second Bone Spring sand?
- 4 A. Yes, that's correct.
- 5 Q. Why don't you move on to your next two exhibits,
- 6 Exhibit 9 and Exhibit 10, and discuss the detail.
- 7 (Devon Energy Production Company, L.P.,
- 8 Exhibits 9 and 10 introduced and identified.)
- 9 A. Exhibit 9 and Exhibit 10, they are very similar.
- 10 Exhibit 9 is an isopach of a porosity of the middle
- 11 sand -- which is the sand that we will land our well
- 12 in -- using a ten percent or greater cut-off for the
- 13 porosity.
- 14 Again, the cross-section index is shown and the
- other things I noted on that first exhibit. The green
- 16 dots are your producing wells from this objective.
- 17 And we can see from this exhibit that there's a
- 18 thick, as mapped, across this area, so that the lateral,
- 19 the Hadar 10 Fed Com 3H, will see approximately 30 to as
- 20 much as 60 feet of porosity across this lateral with
- 21 greater than ten percent porosity. So it's effectively
- 22 a net pay map.
- 23 And then, finally, Exhibit 10 -- not finally.
- 24 But Exhibit 10 is similar, very similar except it is the
- 25 sand immediately above it, the upper sand, which we

- 1 believe we drain also with our frack stimulation, even
- 2 though we land in the middle sand.
- And on Exhibit 10 you can see that across the
- 4 lateral, we anticipate encountering 30 to greater than
- 5 40 feet of net sand in the upper sand of the second Bone
- 6 Spring sand.
- Q. Based on Exhibits 8, 9, and 10, is the second
- 8 Bone Spring sand continuous across the well unit?
- 9 A. Yes, it is.
- 10 Q. And from a geologic standpoint, will each quarter
- 11 quartered section of the well unit contribute more or
- 12 less equally to production?
- 13 A. Yes, they should.
- 14 Q. Is there any geologic impediment to drilling a
- 15 horizontal Bone Spring well in this area?
- 16 A. No, there is not.
- 17 Q. In looking at just any one of these, but, let's
- 18 say, Exhibit 10, I notice there are both lay-down and
- 19 stand-up wells in this area. Based on production
- 20 results, does it really matter whether they are lay-down
- 21 or stand-ups?
- 22 A. We have not seen a consistent difference between
- 23 the two patterns. There's extremely good wells and then
- 24 there's poor wells for either one.
- We don't think that it's a critical factor in

- 1 drilling these wells. So we are conforming to the
- 2 pattern already established in the north half of this
- 3 section by drilling these proposed wells west to east.
- 4 Q. And, finally, what is Exhibit 11?
- 5 (Devon Energy Production Company, L.P.,
- 6 Exhibit 11 introduced and identified.)
- 7 A. That is our proposed drilling plan for this
- 8 well, the directional drilling plan for this horizontal
- 9 well.
- 10 Q. How many completion stages does Devon use in
- 11 wells of this type?
- 12 A. We are planning, I believe, on 15 stages in these
- 13 wells.
- Q. Were Exhibits 7 through 10 prepared by you or
- 15 under your supervision?
- 16 A. Yes, they were.
- 17 Q. And was Exhibit 11 simply compiled from company
- 18 business records?
- 19 A. That's correct.
- Q. And in your opinion is the granting of this
- 21 application in the interest of conservation and the
- 22 prevention of waste?
- 23 A. Yes.
- MR. BRUCE: Mr. Examiner, I move the
- 25 admission of Exhibits 7 through 11.

- 1 EXAMINER JONES: Exhibits 7 through 11 are
- 2 admitted.
- 3 (Devon Energy Production Company, L.P.,
- 4 Exhibits Exhibits 7 through 11 were
- 5 admitted into evidence.)
- 6 MR. BRUCE: I have no further questions of
- 7 Mr. McKinney.
- 8 CROSS-EXAMINATION BY EXAMINER JONES
- 9 EXAMINER JONES: You want to put your
- 10 surface hole location right on the section line there?
- 11 THE WITNESS: It's inside section 10 but it
- 12 is very close. I forgot the precise footage. It's in
- 13 the other documents.
- 14 Yes, that's correct.
- We like to set it out that way so we can
- 16 have what we find is a reasonable build rate and still
- 17 land the well so we can have stages to complete that
- 18 occur almost coincidental with the set-back, so we don't
- 19 essentially waste some of the potential pay by not
- 20 having actually penetrated the formation by that footage
- 21 position.
- 22 EXAMINER JONES: But this will be orthodox
- 23 with the completed location?
- 24 THE WITNESS: Yes. It will be within the
- 25 set-backs all the way.

- 1 EXAMINER JONES: Within a 330 set-back?
- THE WITNESS: Yes, yes.
- 3 EXAMINER JONES: If you had what you wanted,
- 4 would you go ahead and drill the well a little further
- 5 to the toe of it and frack it closer than 330, kind of
- 6 like you are doing in Texas, I believe?
- 7 THE WITNESS: Well, you know, sure we would
- 8 like to produce every piece of pay that we can, but
- 9 that's just the nature of the regulations. There is a
- 10 little strip there that you can't touch, just to protect
- 11 everybody else.
- 12 And there are cases and other operators as
- 13 well as us where we'll have longer units so we can
- 14 actually access that.
- 15 EXAMINER JONES: So you talk to them and
- 16 agree on something like that?
- 17 THE WITNESS: If you can. It's a number of
- 18 issues. But the land issue is the primary one that
- 19 makes that difficult to accomplish.
- 20 EXAMINER JONES: So you would need to work
- 21 with the landman to let him know your wants and then
- 22 they would talk to these people?
- THE WITNESS: Yes. And when you add more
- 24 parties, it becomes increasingly difficult to establish
- 25 that and so forth.

- 1 EXAMINER JONES: Are you going to angle
- 2 upwards a little bit with the toe of your well, with the
- 3 heel to the toe?
- 4 THE WITNESS: I think it is going to be toe
- 5 down in this case. Because what we try to do is stay in
- 6 the formation and if the formation dips away from us,
- 7 we'll follow that dip.
- 8 Some companies always want to drill toe up.
- 9 We would like to drill toe up, but we don't see that as
- 10 a dominating factor in the performance of these wells.
- I mean, in a perfect world, we would drill them toe up.
- 12 But we have done a lot of statistical analysis of our
- 13 wells and other peoples' wells in the play to see if
- 14 that makes a really material difference. And we have
- 15 concluded that it's not the dominating factor of
- 16 performance of the wells.
- 17 EXAMINER JONES: Are you expecting a lot of
- 18 water?
- 19 THE WITNESS: Absolutely. Always. These
- 20 wells tend to make -- they tend to make three barrels of
- 21 water for every barrel of oil. That is fairly common in
- 22 this particular township. We have disposal wells.
- 23 EXAMINER JONES: Okay. What township are we
- 24 in?
- THE WITNESS: 19 South, 31 East.

- 1 EXAMINER JONES: Oh, okay. So if you get
- 2 closer to the state line, you get a lot more water then,
- 3 right?
- 4 THE WITNESS: Yes. This area behaves itself
- 5 in the second Bone Spring.
- 6 EXAMINER JONES: And how are you going to
- 7 know where you are at here? Is this all the control
- 8 you've got, is these three wells?
- 9 THE WITNESS: No, if you look at the -- for
- 10 instance, Exhibit 9, and you'll a see -- well, it is the
- 11 same color, but it is a larger font size. You can see
- 12 where I've got some control points.
- But the formation dips at a fairly mild dip,
- 14 and we've mapped it in a much larger area than this, so
- 15 we feel like we have an understanding of how predictable
- 16 it is. So we are comfortable doing it this way.
- 17 EXAMINER JONES: But your management was
- 18 okay with that 60-foot thick peak you got there and
- 19 based on the control that you got?
- THE WITNESS: I am not going to deny that
- 21 there's risk associated with it.
- 22 EXAMINER JONES: So it is risky.
- THE WITNESS: Always.
- 24 EXAMINER JONES: And even after you drill
- 25 this well, you are not going to know the different --

- 1 how this map changes, are you?
- THE WITNESS: That's correct. That's true
- 3 across the play. There is never enough data to be
- 4 totally confident of this. But that's the nature of the
- 5 play. It is the nature of a horizontal play.
- 6 EXAMINER JONES: It costs a lot more to
- 7 drill a pilot hole here?
- 8 THE WITNESS: I think we may have plans to
- 9 drill a pilot hole in either the 3H or the 4H, to try
- 10 to --
- 11 EXAMINER JONES: Okay.
- 12 THE WITNESS: -- fill out our grid and see
- 13 if it really is as we think it is. The 60 is built upon
- 14 data that I got off the map to the south and off the map
- 15 to the north, and then mapping over multiple townships
- 16 to see what these -- how these sands trend and what's
- 17 sort of the normal thickness -- excuse me -- I mean
- 18 width of these sands.
- So you can kind of get a statistical picture
- 20 of what is reasonably normal for width of the sands and
- 21 try to incorporate all of that into the maps. But
- 22 there's risk.
- 23 EXAMINER JONES: And you use the density log
- 24 for your --
- THE WITNESS: That's proved to be a fairly

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1	STATE OF NEW MEXICO)	·					
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7	REPORTER'S CEF	RTIFICATE					
8	. I, ELLEN H. ALLANIC, New	Mexico Reporter CCR					
9	No. 100, DO HEREBY CERTIFY that	on Thursday, April 16,					
10	2015, the proceedings in the ab taken before me, that I did rep	port in stenographic					
11	shorthand the proceedings set forth herein, and the foregoing pages are a true and correct transcription to the best of my ability and control.						
12	the best of my ability and cont						
13	T EUDMIND CODMING AND A						
14	I FURTHER CERTIFY that I nor related to nor contracted w	ith (unless excepted by					
15	the rules) 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.						
16		, court.					
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19	P	M. a allania					
20	ELLEN H. A	ALLANIC, CSR					
21	NM Certifi	ed Court Reporter No. 100					
22 .	License Ex	piles. 12/31/13					
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