

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

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

ORIGINAL

APPLICATION OF DEVON ENERGY
PRODUCTION COMPANY, L.P. FOR
A SPECIAL PROJECT ALLOWABLE,
LEA COUNTY, NEW MEXICO.

CASE NO. 15198

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

September 18, 2014

Santa Fe, New Mexico

BEFORE: RICHARD EZEANYIM, CHIEF EXAMINER

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This matter came on for hearing before the
New Mexico Oil Conservation Division, Richard Ezeanyim,
Chief Examiner, on Thursday, September 18, 2014, 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.

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APPEARANCES

FOR APPLICANT DEVON ENERGY PRODUCTION COMPANY, L.P.:

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1 (9:08 a.m.)

2 EXAMINER EZEANYIM: Proceeding further here
3 on page 2, Case Number 15198, application of Devon
4 Energy Production Company, L.P. for a special project
5 allowable, Lea County, New Mexico.

6 Call for appearances.

7 MR. BRUCE: Mr. Examiner, Jim Bruce of
8 Santa Fe representing the Applicant. I have three
9 witnesses.

10 EXAMINER EZEANYIM: Any other appearances?

11 MS. MUNDS-DRY: Good morning, Mr. Examiner.
12 Ocean Munds-Dry for COG Operating, LLC, and we have no
13 witnesses.

14 EXAMINER EZEANYIM: Any other appearances?

15 Okay. All the witnesses, please state your
16 name to be sworn, please.

17 MR. MORA: Pedro Mora, reservoir engineer,
18 Devon Energy.

19 EXAMINER EZEANYIM: What's your name?

20 MR. MORA: Pedro Mora.

21 EXAMINER EZEANYIM: Okay.

22 MR. WALKER: Samuel Walker, landman, Devon
23 Energy.

24 MR. BURNS: Steve Burns, geologist, Devon
25 Energy.

1 (Mr. Mora sworn; Mr. Walker and Mr. Burns
2 previously sworn.)

3 EXAMINER EZEANYIM: Counsel, you may
4 proceed.

5 SAMUEL WALKER,
6 after having been previously sworn under oath, was
7 questioned and testified as follows:

8 DIRECT EXAMINATION

9 BY MR. BRUCE:

10 Q. Okay. Mr. Walker --

11 MR. BRUCE: Mr. Examiner, if the record
12 could reflect Mr. Walker was previously sworn?

13 EXAMINER EZEANYIM: Sure. He's still under
14 oath.

15 Q. (BY MR. BRUCE) Mr. Walker, are you familiar
16 with the land matters involved in this case?

17 A. I am.

18 Q. Just briefly what does Exhibit 1 show?

19 A. Exhibit 1 shows an outline highlighted of
20 Section 32, and this is the section that we are seeking
21 to increase the pool allowable for.

22 Q. And this is in 24 South, 32 East?

23 A. Yes.

24 Q. And this is right in that Cotton Draw area that
25 the previous case involved, correct?

1 A. Yes.

2 Q. There are some wells located on here -- you're
3 here today seeking an allowable increase in the Bone
4 Spring Formation?

5 A. Yes.

6 Q. And will the geologist and the engineer go into
7 more detail on that?

8 A. Yes, they will.

9 Q. There are three wells noted that are partially
10 located at least on Section 32. Are those Bone Spring
11 wells?

12 A. No, they are not.

13 Q. So the Bone Spring has not been developed in
14 Section 32 as yet?

15 A. No.

16 Q. And did Devon notify all either working
17 interest owners or operators within one mile of Section
18 32?

19 A. Yes, we did.

20 Q. And if you look at Exhibit 2, turn back a few
21 pages, there is a list of certain operators. Did you
22 check on the names of operators in the pool, and is that
23 the list you gave me?

24 A. Yes.

25 MR. BRUCE: Mr. Examiner, what didn't show

1 up -- notice was -- actual notice was given to everyone.
2 If you look at the final page, Millennium Energy has not
3 picked up its notice, which was sent to Louisiana -- or
4 arrived in Louisiana on September 2nd.

5 Q. (BY MR. BRUCE) But, Mr. Walker, is this the
6 valid address you have to Millennium Energy in
7 Mandeville, Louisiana?

8 A. Yes, it is.

9 MR. BRUCE: And one other thing,
10 Mr. Examiner. OGX Resources has conveyed its interest
11 to COG Operating. And they did not receive notice, but
12 Ms. Munds-Dry agreed to waive notice to COG, and they're
13 here today.

14 EXAMINER EZEANYIM: May I ask why they
15 didn't get notice?

16 MR. BRUCE: I would have. The owner of OGX
17 wrote to me and said, We conveyed this to COG, but it
18 was -- I received it after the 20-day notice period. So
19 I contacted Ms. Munds-Dry, and she agreed to waive the
20 notice -- the written notice.

21 EXAMINER EZEANYIM: But COG's the operator
22 in Section 32, right?

23 MR. BRUCE: In the -- within a one-mile
24 area.

25 EXAMINER EZEANYIM: Within one mile. Okay.

1 Well, you guys tell me. Is that appropriate under the
2 Oil and Gas Act? Is it appropriate? Because I'm not a
3 lawyer, so I don't know, because you are supposed to
4 give notice to COG. That's the rule. So if the
5 attorney for COG said it's okay, does that, you know,
6 satisfy the requirements of the Oil and Gas Act?

7 MR. BRUCE: I believe it does,
8 Mr. Examiner, because Mr. Brooks always said that if
9 somebody has entered an appearance in the case, they've
10 agreed to waive notice.

11 EXAMINER EZEANYIM: Okay. I'm thinking it
12 was. I have to protect myself, because I'm not an
13 attorney. I don't want to do something that is not in
14 compliance with the Oil and Gas Act, because you're
15 supposed to give notice.

16 MR. BRUCE: There are a ton of COG people
17 here. They can leap up and hit me over the head, maybe
18 (laughter).

19 EXAMINER EZEANYIM: I'm just trying to look
20 at this from my standpoint. It's okay. We can proceed
21 with this case.

22 MS. MUNDS-DRY: Mr. Examiner, we really
23 have no objection, and we did waive the notice for
24 Devon. So we appreciate you checking on that, but we're
25 okay.

1 EXAMINER EZEANYIM: Okay. I'm just doing
2 my job. Interesting. Okay. Yeah.

3 You may proceed.

4 MR. BRUCE: Really that's all I have.

5 Q. (BY MR. BRUCE) Were Exhibits 1 and 2 prepared
6 by you or compiled from company business records,
7 Mr. Walker?

8 A. Yes, they were.

9 MR. BRUCE: Mr. Examiner, I'd move the
10 admission of Exhibits 1 and 2.

11 EXAMINER EZEANYIM: Exhibits 1 and 2 are
12 admitted.

13 Do you have any objection? You say you
14 are --

15 MS. MUNDS-DRY: No objection.

16 EXAMINER EZEANYIM: No objection. Good.
17 Exhibits 1 and 2 are admitted.

18 (Devon Energy Production Company, L.P.
19 Exhibit Numbers 1 and 2 were offered and
20 admitted into evidence.)

21 EXAMINER EZEANYIM: I have no questions for
22 you. You may step down.

23 Call your next witness.

24 MR. BRUCE: Call Mr. Burns to the stand
25 again.

1 A. It is.

2 Q. And looking at Section 32, there are three well
3 pads, more or less, shown at the bottom of Section 32.
4 You plan to drill your Bone Spring wells north-south?

5 A. That's correct.

6 Q. And you plan to minimize surface use with
7 drilling them more or less from the same pad, two wells?

8 A. Two wells from a pad, that's correct.

9 Q. And so our initial plan -- and I believe the
10 engineer will have more on this -- is to drill six Bone
11 Spring wells in Section 32?

12 A. Yes.

13 Q. Will they all test the same Bone Spring zone?

14 A. Yes.

15 Q. And is that the 2nd Bone Spring?

16 A. It is.

17 Q. And do you have a cross section for
18 presentation to the Examiner?

19 A. That's Exhibit Number 5.

20 Q. And could you talk about that?

21 A. The cross-section line is shown on Exhibit
22 Number 4. The cross section covers three wells starting
23 in Section 30, into Section 29 and into Section 32. And
24 what it shows is the base of the 2nd Bone Spring sand
25 interval, top of the 3rd Bone Spring lime, and then a

1 middle marker that I have chosen within the 2nd Bone
2 Spring. The isopach map that is Exhibit Number 4 is
3 constructed from the values that I acquired between
4 those two intervals.

5 Q. And in looking at the 2nd Bone Spring that
6 you're going to test, what is the approximate vertical
7 depth of that zone -- true vertical depth?

8 A. I believe it's about 10,5.

9 EXAMINER EZEANYIM: In the Bone Spring? Is
10 that in the Bone Spring?

11 THE WITNESS: In the Bone Spring. The
12 interval that -- our landing interval -- and to be
13 honest -- I don't recall offhand, but as I recall,
14 generally in the area, our targets are at about 10,500
15 or 10,700.

16 Q. (BY MR. BRUCE) Now, is that the measured depth
17 or vertical depth?

18 A. That is the vertical depth, TVD. Is that not
19 consistent with --

20 Q. I don't remember.

21 A. It's in that range.

22 CROSS-EXAMINATION

23 BY EXAMINER EZEANYIM:

24 Q. You know, when I look at -- what sand are you'
25 getting in the Bone Spring?

1 A. I'm sorry?

2 Q. What sand? This is the Bone Spring Formation.

3 A. 2nd.

4 Q. 2nd Bone Spring. You know, because some of
5 them are maybe -- some of them are up to 10,005. I
6 mean, I always see them at 7,000 to 8,000.

7 A. Oh, no. We're in the -- we're in the middle of
8 the Basin here almost, and so, you know, those numbers
9 are more to the north, up in Eddy County. And I'll give
10 you an example from our background. The Parkway area, I
11 think our TVD is up there about 8,500.

12 Q. There is nothing wrong with it, but it's
13 interesting to know --

14 A. Yeah.

15 Q. -- that some of them are 10,5.

16 A. Yeah. We're getting -- we're getting fairly
17 deep.

18 Q. Okay. Since we are here, there is one thing.
19 Let me ask you on that Section 31. You are drilling
20 south to north or north to south?

21 A. I'm sorry?

22 Q. On Section 31, those are planned wells. I see
23 three pads there, right? You are drilling south to
24 north, right?

25 A. We are drilling south to north. That's

1 correct.

2 Q. Yeah. But when you were asked, Are you
3 drilling north to south, you said yes.

4 A. Ah. I'm sorry.

5 Q. So I was confused. Because I see the pad
6 starting from the south. So I want to correct that.

7 A. Yes. That is correct.

8 CONTINUED DIRECT EXAMINATION

9 BY MR. BRUCE:

10 Q. Now, in looking back at Section -- or at
11 Exhibit 4, Mr. Burns, are the wells on here a
12 combination, again, of Bone Spring and Delaware wells?

13 A. Yes. There are a number of Delaware wells in
14 here. We've drilled several Delaware wells down into --
15 you know, starting in Section 32, into Section 5,
16 mile-and-a-half laterals. There are a couple, I
17 believe, COG wells over in Section 1 that are -- I'm
18 sorry -- Section 31 that are actually Bone Spring wells.
19 So there's a fair amount of activity. We intend to
20 drill a couple of Bone Spring wells in Section 33 in the
21 west half. So there is a lot of activity in this area.

22 Q. Because there will be six wells in the 2nd Bone
23 Spring, might some of the locations be unorthodox?

24 A. Yes.

25 Q. That is one of the reasons why you're doing

1 this program, to test the well density?

2 A. That's correct.

3 Q. And I believe -- this is, again, in the Cotton
4 Draw area where I think in the -- in the pooling area,
5 you just testified, there is data which indicates that
6 north to south or south to north is the proper way to
7 develop the Bone Spring interval?

8 A. Just off of -- Exhibit 4. To the south and
9 west is where we drilled our, again, Cotton Draw Unit
10 218H and 202H, which we took some hole coring at 218H.
11 We did microseismic in both wells. We had an extensive
12 logging suite. So we've done quite a bit of science to
13 set the stage to begin to determine what the actual
14 density of our well should be in this formation.

15 Q. Were Exhibits 3, 4 and 5 prepared by you?

16 A. Yes.

17 Q. And in your opinion, is the granting of this
18 application in the interest of conservation and the
19 prevention of waste?

20 A. Yes.

21 MR. BRUCE: Mr. Examiner, I'd move the
22 admission of Exhibits 3, 4 and 5.

23 EXAMINER EZEANYIM: Any objection?

24 MS. MUNDS-DRY: No objection.

25 EXAMINER EZEANYIM: Exhibits 3, 4 and 5

1 will be admitted.

2 (Devon Energy Production Company, L.P.
3 Exhibit Numbers 3, 4 and 5 were offered and
4 admitted into evidence.)

5 MR. BRUCE: And I have no further questions
6 of the witness, Mr. Examiner.

7 EXAMINER EZEANYIM: Okay. Very good.

8 RE CROSS EXAMINATION

9 BY EXAMINER EZEANYIM:

10 Q. I really don't have -- I wanted to clarify
11 certain things. Let's go back to that -- let me
12 understand what you are trying to do in this Section 31.
13 We just expanded the North Paduca in Sections 5 and 6,
14 but have you drilled anywhere in Section 31? Have you
15 drilled any --

16 MR. BRUCE: 32, Mr. Examiner. 32.

17 THE WITNESS: We have not drilled any in
18 Section 31.

19 EXAMINER EZEANYIM: Oh, that's right.

20 Q. (BY EXAMINER EZEANYIM) What did you say? No
21 well?

22 A. No. Just no Bone Spring well.

23 Q. No Bone Spring well?

24 A. Correct.

25 Q. You are trying to drill a Bone Spring well in

1 about -- in that section?

2 A. And we want a virgin section to put these six
3 wells into.

4 Q. I'm not going to ask you a question why you
5 want to -- because there must be -- I'm not going to ask
6 that question.

7 He (indicating) is going to answer that
8 question.

9 First of all -- well, maybe I will hash it
10 out with the engineer. He is going to testify.

11 It appears to me that most of the wells are
12 going north-south. When I look at this (indicating),
13 your isopach, I don't see any way I can go east-west.
14 Is there any way I can? There is not really?

15 A. And, again, that's a fair statement. You could
16 go east-west.

17 The data that we acquired, again, on the
18 218 -- the Cotton Draw Unit 218H and the 202H from the
19 microseismic work that we did would indicate that the
20 fracture orientation from the fracks themselves would be
21 approximately north, 30 degrees east. So by drilling
22 north-south, we set that up to be the correct direction.

23 Q. Of course most of those wells -- who is
24 drilling most of those wells? They haven't been drilled
25 at all. To look at that, there are a lot of things

1 going on there.

2 A. I think these are -- and, you know, I don't
3 know the answer, but I'll -- I'll give you an answer
4 anyway. COG is active over here (indicating). All of
5 this down in this area (indicating) is Devon generated.
6 Section 33 is Devon generated. I honestly don't know
7 who is up in Section 29, if that's COG or Cimarex or
8 someone else.

9 Q. Okay. Very good. No problem.

10 Are those the -- those two numbers, 31 and
11 32, you told me how you generated those, which is
12 interesting. Could you repeat how you got those numbers
13 on 31 and 32?

14 A. What I told you was between those two
15 boundaries, we used a gamma ray cutoff. I believe I was
16 somewhere around 65. I used an 8 percent porosity
17 cutoff, and that's a density porosity cutoff. And I
18 also used a resistivity cutoff. I didn't want anything
19 higher than 15 ohms included in my net base.

20 Q. Okay. I understand. Okay.

21 Okay. Now, let me ask this question: In
22 Case Number 15196, we just expanded that pool, and this
23 is, I guess, into that. You are not going to produce
24 from -- because this -- when I add it up, I wonder why
25 you don't add in Section 32.

1 MR. BRUCE: Well, but the prior cases were
2 Delaware, and this is Bone Spring.

3 EXAMINER EZEANYIM: Oh, okay.

4 MR. BRUCE: But I will check on Section 32
5 and the others again with respect to --

6 EXAMINER EZEANYIM: That's documented.
7 Okay. Very good.

8 No further questions. You may step down.

9 THE WITNESS: Thank you.

10 EXAMINER EZEANYIM: Call your next witness.

11 PEDRO MORA,

12 after having been previously sworn under oath, was
13 questioned and testified as follows:

14 DIRECT EXAMINATION

15 BY MR. BRUCE:

16 Q. Will you please state your name and city of
17 residence?

18 A. Pedro Mora, Edmond, Oklahoma.

19 Q. And who do you work for and in what capacity?

20 A. I work with Devon Energy as a reservoir
21 engineer.

22 Q. Have you previously testified before the
23 Division?

24 A. No, first time.

25 Q. Would you please summarize your educational and

1 employment background for the Examiner?

2 A. Okay. I'm a petroleum engineer, graduated 2001
3 from the Centro University in Venezuela. I've been
4 working as a reservoir engineer for the last 14 years in
5 different reservoir category section programs and also
6 doing basic reservoir engineer. I'm presently working
7 in Devon, in the IRC endeavor. It's a section program
8 for Devon. I've been working around the world,
9 experience in Nigeria for two years, experience in the
10 Middle East for four years, working in Kuwait. Also
11 working with BP for the last three years. I just joined
12 Devon this year. So mainly my experience is in
13 reservoir engineering the whole time.

14 Q. And are you familiar with the engineering
15 involved in this application?

16 A. Yes, I am.

17 Q. And have you made a study which -- of the
18 potential benefits of the interval drilling in the Bone
19 Spring for the Examiner?

20 A. Yes.

21 MR. BRUCE: Mr. Examiner, I tender
22 Mr. Mora as an expert reservoir engineer.

23 EXAMINER EZEANYIM: Any objection?

24 MS. MUNDS-DRY: No objection.

25 EXAMINER EZEANYIM: Are you a registered

1 engineer?

2 THE WITNESS: Sorry?

3 EXAMINER EZEANYIM: Are you registered?

4 THE WITNESS: No.

5 EXAMINER EZEANYIM: When you worked in
6 Nigeria, who did you work with?

7 THE WITNESS: With ENI.

8 EXAMINER EZEANYIM: Who?

9 THE WITNESS: ENI, Nigerian Agip Oil
10 Company.

11 EXAMINER EZEANYIM: Okay. You did
12 reservoir engineering?

13 THE WITNESS: Yes. I was working in two
14 fields, Benibeyo Field and Idu Field.

15 EXAMINER EZEANYIM: Your qualifications are
16 accepted.

17 Q. (BY MR. BRUCE) Mr. Mora, you have one
18 exhibit -- a package of exhibits, and rather me getting
19 in the way, why don't you discuss what Devon is seeking
20 to do in this application and run through the exhibits
21 and explain to the Examiner why you think this
22 application should be granted.

23 A. Okay. So this is just a preparation that we
24 just prepared for management. I'm going to page by page
25 explain what we did and what are the conclusions of that

1 study.

2 So the objective on page 2 is to try to
3 recognize the well spacing to maximize recovery and
4 economics for the 2nd Bone Spring sand and also
5 implement a pilot to understand and to test the concept.

6 So on page 3, we have the location of the
7 area study. We have the Cotton Draw Unit just circled
8 down in the map. And we selected four wells in that
9 area that have a good history for more than one year and
10 also that have a good pressure data associated with
11 those wells and also wells that are economic. So those
12 wells are the Cotton Draw Unit 125H, the Cotton Draw
13 Unit 164H, the Snapping 10 Fed 3H, and the Trionyx 6 Fed
14 8H.

15 So on page 4, we have the location of the
16 pilot, and we just select that specific Section 32
17 because it's undeveloped in the 2nd Bone Spring. It's
18 an inspect [sic] section. We -- as we see in the
19 previous exhibit, the geology looks really good, with a
20 good net base, and the partner is also interested to do
21 that.

22 On page 5, we have the history of those
23 four wells. We have the water, the oil and the gas
24 production for the four wells mentioned before. That's
25 pages 5 and 6. We can see that those wells produced, at

1 the beginning, close to 1,000 barrels a day of oil.
2 Those wells are really prolific for the area, and we
3 used those to try to do a rate transient analysis and
4 evaluate, do a match using Fekete Harmony, a software
5 that we have at Devon, to try to do a forecast and see
6 how much ultimate reserve we can get from those wells.

7 So on page 7, we have the Plan Timeline for
8 that pilot. We would like to start that pilot in
9 December 2014. As Mr. Burns mentioned before, we are
10 planning to drill six wells from three pads. We are
11 going to bring two rigs to drill pad one and pad two in
12 month one and two of the project, when we start the
13 project. So it should be December and January.

14 Then we'll complete and frack pad two and
15 one consecutively. So we are going to frack first the
16 pad two. We are going to restrict the choke flowback on
17 pad two during the frack of pad one. Then in months
18 three and five, we will drill the pad three after we
19 finish fracking the pad two. This is to avoid any kind
20 of bashing effects in those six wells.

21 Of course, we need to have some time to get
22 the water to do those frack jobs, and we need also to
23 test this frack and flow from one of the pads. And we
24 are going to have downhole pressure monitoring to
25 evaluate if there is any bashing or communication

1 between those frack jobs.

2 So when we go to page 8, that's the table
3 that explains all the results. We run different rate
4 transient analysis for those four wells. Then we group
5 those wells and make an average. And that average was
6 the one used to make the forecast and estimate how much
7 NPV we can get as a group for the Section 32 or for the
8 section in the Cotton Draw Unit, for the Cotton Draw
9 area.

10 So as we can see in the table on page 8,
11 when we have six wells per section, we got the best NPV
12 with a 10 percent discount rate. We can get
13 \$3.4 million per section, and also we can increment the
14 reserves per section close to 37 percent. So that's
15 really showing that we are just leaving some oil behind
16 with the actual well spacing, with the four wells per
17 section. We run all those cases at a time. And we did
18 some sensitivity analysis, and we figured out that we
19 can get more EUR per well than the one that is just
20 mentioned, with the well configuration.

21 So if you see this field here, the bottom,
22 you can see on the first line our NPV for growth is just
23 growing, filled with which [sic] a maximum of six wells
24 per section.

25 Then we have in the yellow -- that's the

1 second one. We can increment the -- per section, and
2 then also we can see that -- we can also increase a
3 little more that reserve, but start to be less economic
4 for using oil economic analysis. So that's why we
5 decided that six wells per section is the optimum well
6 spacing.

7 We can see that the -- in the green line,
8 that's the next one, the rate of return per group. We
9 also use that as a decision-maker parameter. We can see
10 that -- that -- this particular flat, so our rate of
11 return is not really affected. Still we reached seven
12 or eight wells. So using four, five and six, we get a
13 similar rate of return, but much better NPV.

14 And the last line is the one that --
15 sorry. Not the last one. The second from the bottom to
16 the top is the reserves section, and you can see that
17 that could be incremented with just adding more wells
18 per section, but as I mentioned before, the one that
19 shows the better economic results is the six wells per
20 section.

21 And the last one is EUR per well, and the
22 EUR per well is almost similar in all the cases. So the
23 variations are really minimal.

24 So in page 9, we have like a presume of the
25 numerical water flow that we did. We used all the

1 geology that we have available for the area. We used
2 the core that we have close to the area, that situating
3 well. We used also the microseismic that
4 Mr. Burns mentioned before, the 218 and the 202. We
5 also have some saturation logs that we used.

6 So on the reservoir side, we have some
7 deficits [sic], some CVTs that we also used to make
8 more wells -- and from the operation, we got the --
9 preparation of the completion -- so you've seen all of
10 these parameters.

11 We did a history match for pressure, for
12 oil, for gas and our water, and then using that history
13 match, we make a forecast to evaluate how much the
14 ultimate reserves are in any specific well.

15 So doing that we also figured out that in
16 the borders of 160-acre spacing, that is the actual four
17 wells per section spacing, we were leaving a lot of
18 initial oil saturation in the borders. So we are not
19 draining the whole section using four wells per section.
20 And also we figured out that the pressures in that
21 border were really close to the initial pressure. So we
22 have initial pressure, close to initial pressure, and we
23 have initial saturations in the border that is telling
24 us 160 acres is not draining the complete section.

25 So in page 10, as a conclusion, we can take

1 from the story that we have an estimate stimulator [sic]
2 reservoir volume less than 35 acres for all the wells
3 evaluated. We have a high remaining residue oil
4 saturation using the current spacing. We need to do a
5 proration down-spacing program or infill program for
6 Section 32. We conclude that the ultimate well density
7 is six wells per section based on the NPV, a ten percent
8 discount, and we can increase the total reserve per
9 section between 30 and 40 percent.

10 Q. Mr. Mora, looking at that final number, if
11 you're increasing the total reserves by drilling the
12 infill wells, not wasting any infill pressure?

13 A. No. No. We are optimizing the drainage in the
14 section.

15 Q. And as you said, several of these -- a number
16 of the wells you're using as examples came in quite a
17 bit over 1,000 barrels a day. So do you believe,
18 especially with adding in extra wells, that an increase
19 in the allowable is necessary so that you can adequately
20 test your theory?

21 A. Yes, I believe that.

22 Q. And was Exhibit 6 prepared by you?

23 A. Yes, it was.

24 Q. And in your opinion, is the granting of this
25 application in the interest of conservation and the

1 prevention of waste?

2 A. Yes, it is.

3 MR. BRUCE: Mr. Examiner, I'd move the
4 admission of Exhibit 6.

5 EXAMINER EZEANYIM: Any objection?

6 MS. MUNDS-DRY: No objection.

7 EXAMINER EZEANYIM: Exhibit 6 will be
8 admitted.

9 (Devon Energy Production Company, L.P.
10 Exhibit Number 6 was offered and admitted
11 into evidence.)

12 MR. BRUCE: I have no further questions of
13 the witness.

14 EXAMINER EZEANYIM: Thank you.

15 CROSS-EXAMINATION

16 BY EXAMINER EZEANYIM:

17 Q. Before we go to the question, what type of
18 reservoir are we talking about here? You are not --
19 what type of well did you use to do all this analysis?

20 A. This is a black oil reservoir.

21 Q. Yeah? What type of oil -- what type of
22 mechanism in the reservoir?

23 A. This is a solution gas drive mechanism.

24 Q. Solution gas drive mechanism. Okay.

25 Do you know what the reservoir pressure is

1 initially?

2 A. Yeah.

3 Q. And then do you know what the bubble point is?

4 A. Yes. We have some PVTs in the area, and we
5 used those PVTs to --

6 Q. You have what? PVT?

7 A. Yeah. We have PVT flowbacks, and we used those
8 PVTs to get a bubble-point pressure. And the initial
9 pressure shows from the deficits.

10 Q. And this is -- if you go to page 3 of your
11 analysis, those are the wells, CDU 125H, 164H, and the
12 Snapping 10 Fed 3H and the Trionyx 6 Federal 8H. They
13 are producing from what pool?

14 A. They are producing 2nd Bone Spring in the
15 Cotton Draw area.

16 Q. In the what?

17 A. In the Cotton Draw area, in the 2nd Bone
18 Spring.

19 Q. Okay. Okay. Cotton Draw. Okay.

20 A. So we assumed that those were all -- units, had
21 similar properties, reservoir properties and also PVT
22 properties as the wells that we are planning to drill in
23 Section 32.

24 Q. Okay. Yeah. I'm glad you ran PVTs.

25 What is the typical operation there?

1 A. 6,100 psi initially, but it will depend if you
2 go south or north.

3 Q. Okay. And the bubble point, what is that?

4 A. It's around 4,000 psi.

5 Q. And most of these solution gas drives, they
6 don't have initial gas cap?

7 A. No, they don't.

8 Q. No gas [sic] drive?

9 A. No.

10 Q. When you do the PVT, did you have the chemical
11 composition of this fluid?

12 A. Yes. Yes, we have.

13 Q. Now, you used that to do that RTA analysis?

14 A. Yes, I did.

15 Q. Okay. Your RTA analysis, you're trying to get
16 your estimate of ultimate recovery?

17 A. That's correct.

18 Q. Okay. Very good.

19 In doing that -- let's go back to -- if I
20 can find it. Okay. Page --

21 A. You're talking about the well flow?

22 Q. I'm talking about the -- drive is?

23 A. That's page 8.

24 Q. Page 10?

25 A. Page 8. The table?

1 Q. Yes. Okay. Yeah, here it is. Okay. That's
2 interesting. How did you obtain your rate of return?

3 A. We used Peep as our economic analysis to --

4 Q. You used what?

5 A. Peep.

6 Q. Okay. Peep. Is there a model?

7 A. Peep is a software that we use as reservoir
8 engineers to do economical analysis.

9 So we -- what -- what normally we include
10 in Peep is the cost of the well, the operational cost,
11 and we run some economics with certain parameters. Like
12 I mentioned before, we use the 10 percent rate of
13 discount. And then using our type Q productions of oil,
14 gas and water, we just came with a rate of return and an
15 NPV value for a specific well.

16 Q. Let's see if I agree with what you said. In
17 your demonstration here, if you look at all these
18 present value calculations, four wells, five wells, then
19 the -- if you have six wells, that will perform better
20 than everybody, right?

21 A. That's correct.

22 Q. And that's illustrated in your diagram.

23 What is -- what is the axis on the right,
24 the y-axis? What is that? 0 to 70? What is in there?

25 A. That's a percentage.

1 Q. Oh. Is that percent?

2 A. Yes.

3 Q. Percent recovery?

4 A. It could be incremental reserves percentage or
5 rate of return percentage, too. It's two values that
6 are going there.

7 Q. You know, the y-axis on the right --

8 A. Yes.

9 Q. -- it's percentage of what?

10 A. There is two things going there. The rate of
11 the return per group, this is a percentage. That's the
12 green line.

13 Q. Okay.

14 A. And the other one is incremental reserves
15 percentage. So it's two curves using that axis. And
16 you can see that's incremental reserves per section.
17 It's just going up. That's the line that has the --
18 it's the yellow line, and it just continues growing, the
19 incremental reserve per section. The problem is that we
20 reached our maximum NPV value, so that's why we decided
21 six wells per section helped.

22 Q. Okay. Very good.

23 And then I'm going to ask you a question
24 now. This is typical for Section 32, right?

25 A. Yes.

1 Q. You can't put this to any other section?

2 A. That's correct. That's -- that's what we are
3 trying to do with this.

4 Q. Because you might find that four wells will do
5 the job, right?

6 A. Yeah. Correct.

7 Q. But in this case especially, you elected
8 Section 32. Six wells is the optimal?

9 A. Yes.

10 Q. From the study?

11 A. That's correct.

12 Q. Doesn't mean I can only drill -- I can drill
13 eight wells there.

14 A. Correct.

15 Q. Because the Horizontal Well Rule doesn't have a
16 limit on the number of wells.

17 A. Correct.

18 Q. So it depends on where you do this.

19 A. That's correct. And it also depends on your
20 economics.

21 Q. Yeah. I have to trust that what -- what is
22 this company? Devon?

23 A. Devon, yes.

24 Q. -- what this company is doing with the Peep to
25 get their oil out -- excuse me -- is correct. So if I

1 assume that all is correct, then six wells per section
2 is only Section 32. I can't go to Section 31 and drill
3 six wells.

4 A. Yeah. Well, that totally was -- mainly was
5 created for the whole area, so we used four wells that
6 are not in Section 32. So our pilot is to be planned in
7 Section 32, but our plan is that if this pilot works, we
8 are going to extend for the whole Cotton Draw Unit or
9 Cotton Draw area all -- all -- do six wells per section
10 spacing. That is our plan.

11 Q. Okay. And we are looking at -- this is
12 Delaware, isn't it? Delaware Formation or Bone Spring?
13 Bone Spring?

14 MR. BRUCE: Bone Spring.

15 EXAMINER EZEANYIM: Bone spring.

16 Do you know what the depth bracket
17 allowable is?

18 MR. BRUCE: Mr. Examiner, that gets to a
19 question you asked. Of course this is the problem with
20 attorneys and landmen preparing the applications. I
21 think when we looked at it originally, we thought that
22 depth bracket allowable was 230, and so the 690 was just
23 a tripling of that number just to give some cushion for
24 the full development of that.

25 EXAMINER EZEANYIM: Okay. You just

1 answered my question, because I'm trying to get why you
2 are asking for 690.

3 MR. BRUCE: And it was partly because of
4 the really good results in some of these offset wells,
5 but also because of adding two additional wells. And
6 perhaps Mr. Burns could answer this also. It would
7 apply to the whole Delaware, and there is always a
8 potential of 3rd Bone Spring development out there, too,
9 I believe.

10 EXAMINER EZEANYIM: I have no -- this
11 company did a good job by doing the PVT analysis because
12 you did it well. I think Devon is reliable, so maybe
13 your arithmetic -- I'm going to have to accept it.

14 But there is no way to drill in Section 32.
15 You just want to do a project, and then you want the
16 allowable in three parts so you can perform that
17 analysis, right?

18 MR. BRUCE: That's correct, Mr. Examiner.

19 EXAMINER EZEANYIM: Okay. How long do you
20 want to be given to do that?

21 MR. BRUCE: And I was just going to ask a
22 couple of questions of Mr. Mora.

23 REDIRECT EXAMINATION

24 BY MR. BRUCE:

25 Q. Based on page 7 of your exhibit, providing you

1 get all the permitting done and the wells drilled, I
2 would presume by next summer you will have all the wells
3 drilled and completed?

4 A. That's correct. We are planning that for the
5 third quarter next year we should have some results. I
6 mean, the six wells producing and some results already
7 there to evaluate that.

8 Q. So you're starting right around December 1. So
9 probably by December 1 of next year you ought to have
10 some fairly substantial --

11 A. That's correct.

12 MR. BRUCE: With that, Mr. Examiner, at
13 least -- you know, if there is going to be a time limit
14 on it, which is fine, maybe a year from December 1, or
15 at least to present results of what they did, and come
16 back and discuss it with you.

17 EXAMINER EZEANYIM: I don't want to write
18 the application. So if you don't want any time limit,
19 there is no time limit. We want to get that --

20 THE WITNESS: Exactly. I agree.

21 EXAMINER EZEANYIM: I mean, but if you want
22 a time limit, I will put a time limit.

23 MR. BRUCE: Well, what I'm going on --
24 generally, Mr. Examiner, in the past, the Division has
25 always put a year, year-and-a-half time limit on

1 allowable or pool rules changes and required the
2 operator to report back.

3 EXAMINER EZEANYIM: Okay. From my
4 experience -- if you go to that -- page 8, and you say,
5 I'm going to do that, I'm going to do this, I'm going to
6 do that, well, it depends on rig availability and other
7 logistics. You might not meet all these deadlines you
8 are going to have to have. You say, I'm going to drill,
9 you know, 12 -- December 1. You find by December 1,
10 2014 you haven't done anything. Maybe your first well
11 is drilled on December 1, 2015. I don't know.

12 Okay. We'll see if we can do that, because
13 you're not asking for any constraints?

14 MR. BRUCE: Correct.

15 EXAMINER EZEANYIM: You are just asking for
16 the project allowable?

17 MR. BRUCE: Correct.

18 EXAMINER EZEANYIM: So we are going to have
19 to decide -- we are going to have to decide how we
20 handle it. Okay. I understand now.

21 RE CROSS EXAMINATION

22 BY EXAMINER EZEANYIM:

23 Q. As for your practice, Mr. Mora -- you are Mora,
24 right?

25 A. Mora, yes.

1 Q. Okay. When you have some -- I want to ask this
2 question for general information. How long do you go
3 from the bottom hole to your first one, 6,100 to 10,000?
4 Three months? Four months? One year? How long from
5 your experience?

6 A. Well, you know, our TA [sic] amount seems to
7 show that we are reaching bubble point, because it's
8 just downhole gouges.

9 Q. Yes.

10 A. So in the downhole gouges, we are reaching that
11 after three or four months, but that's not telling us
12 that the reservoir pressure is 4,000. This is the just
13 the bottom-hole pressure.

14 Q. So at about three months, you are down to 4,000
15 psi?

16 A. Yeah.

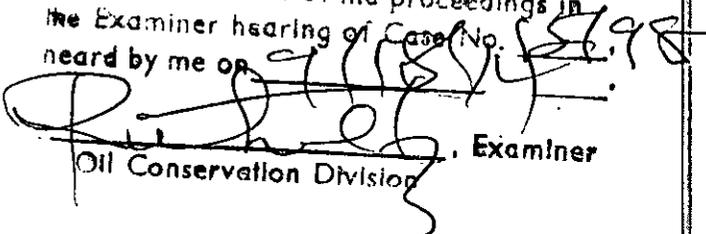
17 Q. And when you are below the bubble point, could
18 your well exceed 690 a unit, because that's where you
19 have -- that's the bubble point that we have to change
20 that drive. You know, initially, most of this will be
21 driven by connate [sic] oil or expansion. But when you
22 get to solution gas drive -- when you get to your bubble
23 point, I would like you to -- if you are telling me you
24 can see -- 69 [sic] after three months, that's
25 wonderful.

1 Okay. Thank you very much. I have no
2 further questions.

3 MR. BRUCE: Nothing further, Mr. Examiner.

4 EXAMINER EZEANYIM: At this point Case
5 Number 15198 will be taken under advisement.

6 I think we will take a ten-minute break.
7 (Case Number 15198 concludes, 9:55 a.m.;
8 break taken, 9:55 a.m. to 10:12 a.m.)
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I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 15198
heard by me on 9/15/98.

Paul Baca, Examiner
Oil Conservation Division

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1 STATE OF NEW MEXICO
2 COUNTY OF BERNALILLO

3

4 CERTIFICATE OF COURT REPORTER

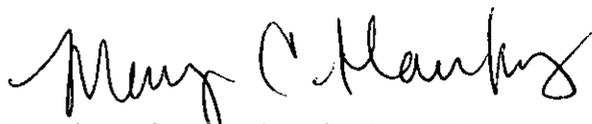
5 I, MARY C. HANKINS, New Mexico Certified
6 Court Reporter No. 20, and Registered Professional
7 Reporter, do hereby certify that I reported the
8 foregoing proceedings in stenographic shorthand and that
9 the foregoing pages are a true and correct transcript of
10 those proceedings that were reduced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

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

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

19

20



21

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