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

APPLICATION OF DEVON ENERGY PRODUCTION COMPANY, LP, FOR SPECIAL POOL RULES FOR THE BRINNINSTOOL-BONE SPRING POOL, LEA COUNTY, NEW MEXICO. Case 15438

APPLICATION OF DEVON ENERGY PRODUCTION COMPANY, LP, FOR SPECIAL POOL RULES FOR THE TRIPLE X-BONE SPRING POOL, LEA COUNTY, NEW MEXICO. Case 15439

APPLICATION OF DEVON ENERGY PRODUCTION COMPANY, LP, FOR SPECIAL POOL RULES FOR THE CRUZ-BONE SPRING POOL, LEA COUNTY, NEW MEXICO. Case 15440

REPORTER'S TRANSCRIPT OF PROCEEDINGS
EXAMINER HEARING
FEBRUARY 4, 2016
Santa Fe, New Mexico

BEFORE: WILLIAM V. JONES, CHIEF EXAMINER
SCOTT DAWSON, EXAMINER
DAVID BROOKS, COUNSEL FOR THE OCD

This matter came on for hearing before the New Mexico Oil Conservation Division, William V. Jones, Chief Examiner, Scott Dawson, Examiner, and David Brooks, Counsel for the OCD, on February 4, 2016, 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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I N D E X

CASE NUMBERS 15438, 15439, and 15440 CALLED

DEVON ENERGY PRODUCTION COMPANY, LP
CASE-IN-CHIEF:

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(Time noted 8:36 a.m.)

EXAMINER JONES: Mr. Bruce, I apologize. I hadn't asked if you were ready to proceed with the three cases from Devon.

MR. BRUCE: I am.

EXAMINER JONES: Okay. Should they be called separately?

MR. BRUCE: Together.

EXAMINER JONES: Together.

At this time we are going to call cases 15437, 15438, and 15439 -- I'm sorry. I retract that.

We are calling cases 15438, 15439, and 15440. Each case is the application of Devon Energy Production Company, LP, for special pool rules.

Case 15438 is for the Brinninstool-Bone Spring Pool in Lea County, New Mexico. Case 15439 is for the Triple X-Bone Spring Pool, Lea County, New Mexico. Case 15440 is for the Cruz-Bone Spring Pool, Lea County, New Mexico.

In each case, call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce from Santa Fe representing the applicant. I have three witnesses.

MR. FELDEWERT: Mr. Examiner, Michael Feldewert with the Santa Fe office of Holland and Hart

appearing on behalf of COG Operating, LLC, in case No. 15439. And I have no witnesses here today.

EXAMINER JONES: Any other appearances?

(No response.)

EXAMINER JONES: Will the witnesses please stand and be sworn in.

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

EXAMINER JONES: Mr. Bruce, go ahead.

CAROL GLASS

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By MR. BRUCE:

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

A. My name is Carol Glass. I am from Oklahoma City, Oklahoma.

Q. Who do you work for and in what capacity?

A. I am a landman at Devon Energy.

Q. And have you previously testified before the Division?

A. No, I have not.

Q. Would you please describe your educational and employment background for the Examiner.

A. I graduated from the University of Oklahoma in 1980 with a bachelor's degree in petroleum land management.

I was employed as a landman at Oxy from 1980 through 1997. And from 1997 through 2014, I worked for various oil and gas companies as a landman.

I have been employed at Devon since January of 2015.

Q. And does your area of responsibility at Devon include this portion of southeast New Mexico?

A. Yes, it does.

Q. And are you familiar with the land matters involved in these applications?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Ms. Glass as an expert petroleum landman.

EXAMINER JONES: Any objections? Any objections, Mr. Feldewert?

MR. FELDEWERT: No.

EXAMINER JONES: Ms. Glass is qualified as an expert in petroleum land matters.

Q. Could you please identify Exhibit 1 for Mr. Examiner.

A. Exhibit 1 is a Midland Map Company land plat, highlighting the acreage of the three pools for which

we're seeking special pool rules. And the second page is the legal description of each of those pools.

Q. Could you please identify Exhibit 2.

A. Exhibit 2 sets forth the special rules which Devon seeks for all three pools. Devon is requesting a standard oil spacing and proration unit of 320 acres of horizontal wells; wells to be located no closer than 330 feet from the exterior boundary of each unit and with interior setbacks of 10 feet from the quarter, quarter section line.

We are also requesting special depth bracket allowables of 6,400 barrels of oil per day for a standard well unit and a GOR of 5,000 cubic feet of gas per barrel of oil.

Q. And the other witnesses will discuss the reason for these special pool rules, including multiple wells in a well unit, correct?

A. Correct.

Q. What are Exhibits 3, 4, and 6?

A. We were required to give notice of the applications to operators of active Bone Spring wells within a mile of each of these pools.

Exhibit 3 pertains to the Brinninstool pool. Exhibit 4 pertains to the Triple X pool. And Exhibit 5 pertains to the Cruz pool.

Q. And what are Exhibit 6 and 7?

A. We operate the Black Mamba wells in section 15 of 23 south and 33 east. We also operate the Thistle Unit. The names listed on Exhibit 6 are the royalty owners and overriding royalty owners of the Black Mamba wells. And on Exhibit 7 are the working interest owners, royalty owners, and overriding royalty owners in the Thistle unit.

Q. And, of course, Devon isn't listed but Devon is a working interest owner?

A. Correct.

Q. Were all of these interest owners notified of this hearing?

A. Yes, they were. Exhibit 8 is an affidavit stating so.

Q. And have you had contact with any of the interest owners other than the notice letter?

A. Yes. I received phone calls from a landman at Oxy and a landman at Murchison. They've had questions but no objections.

MR. BRUCE: And, Mr. Examiner, Exhibit 9 is superfluous at this point. But I had not received one green card back -- the one from Endurance Resources -- until yesterday. So I made this an exhibit simply to show that I had mailed it to the OCD approved address on

the operator list.

Q. Were Exhibits 1 through 8 prepared by you or under your supervision or compiled from company business records?

A. Yes.

Q. And is the granting of these applications in the interest of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 1 through 9.

MR. FELDEWERT: I have no objection.

EXAMINER JONES: Exhibits 1 through 9 are admitted.

(Devon Energy Production Company, L.P., Exhibits 1 through 9 were offered and admitted.)

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

MR. FELDEWERT: Mr. Examiner, I have no questions.

EXAMINER JONES: Mr. Dawson.

EXAMINATION BY EXAMINER DAWSON

EXAMINER DAWSON: In looking at Exhibit 3, 4, and 5, some of those -- it looks like that was highlighted, some of the wells in these exhibits. What

is the highlight for?

THE WITNESS: The highlights were duplicate notifications, because the fields overlap.

EXAMINER DAWSON: Okay.

THE WITNESS: Or the pools overlap.

EXAMINER DAWSON: Okay. I have no further questions. Thank you.

EXAMINER JONES: Mr. Brooks.

MR. BROOKS: No questions.

EXAMINATION BY EXAMINER JONES

EXAMINER JONES: Well, I guess, Ms. Glass, I would ask about the existing wells in these pools.

You said something that -- they are not on the exhibits, are they? There's no existing wells in these pools -- or are there? -- vertical wells or horizontal wells?

THE WITNESS: There are wells in each of the pools, yes.

EXAMINER JONES: Okay. So any horizontal wells?

THE WITNESS: Yes. We drilled the Black Mamba wells and we also drilled some horizontal wells in the Thistle unit.

EXAMINER JONES: So the Thistle unit would be in which pool?

THE WITNESS: They are in the Triple X.
MR. BRUCE: Right. I believe one of them is placed in the Cruz pool.
THE WITNESS: The Cruz, yes. Sorry.
MR. BRUCE: Immediately south of the Queen.
EXAMINER JONES: Are they producing, already been completed?
THE WITNESS: We are in the process of completing those now.
EXAMINER JONES: Okay. So the date this would happen, are you looking for a date forward? It's easier for us --
THE WITNESS: Oh, yes.
EXAMINER JONES: It's hard for us to go back in time...
MR. BRUCE: As quickly as possible. I would imagine, if they're completing them now, March 1 would be a prospective date.
EXAMINER JONES: I had made promises to you earlier, and I --
MR. BRUCE: I wasn't going to raise that.
EXAMINER JONES: Well, I wouldn't mind. But you shouldn't have to wait long. But these existing wells, are they spaced on 160s?
THE WITNESS: Yes.

EXAMINER JONES: So you would want them to be re-spaced on 320?

THE WITNESS: Yes.

EXAMINER JONES: And the vertical well rules for these pools --

MR. BRUCE: We would leave those in place I think for...

EXAMINER JONES: Even the allowable?

MR. BRUCE: Well, the allowable doesn't matter. But, certainly, we don't want existing vertical wells -- or it's up to the operators.

We don't want existing -- other horizontal wells re-spaced unless they seek -- unless the operators seek that, just so that their equities aren't adversely affected.

EXAMINER JONES: Other operators with wells within a mile around the pools?

MR. BRUCE: Yes.

EXAMINER JONES: So does Devon own and operate all the -- at least operate all the wells within these three pools?

THE WITNESS: Well, there are other operators.

EXAMINER JONES: There are other operators.

MR. BRUCE: We will have some maps showing

the Devon wells in this area.

EXAMINER JONES: Okay. And is this -- these pools are all Bone Spring pools?

THE WITNESS: Yes, sir.

EXAMINER JONES: That means from the top of the Bone Spring to the bottom is the pool designated pool thickness or pool top and bottom?

THE WITNESS: No, that is my understanding.

EXAMINER JONES: Are they all formally based on some type well, each one of these three pools, or they just mention Bone Spring?

THE WITNESS: The existing pools?

EXAMINER JONES: Yes. I can find that out.

MR. BRUCE: They cover the entire Bone Spring. They are not limited as to the depth or --

EXAMINER JONES: They just say "Bone Spring"?

MR. BRUCE: And the applications contain the order numbers.

EXAMINER JONES: Okay. The questions you got from Oxy -- which is your old company --

THE WITNESS: Yes.

EXAMINER JONES: And Murchison, the landman questions, are you willing to talk about those?

THE WITNESS: They were just questioning the

purpose of this. And I would explain to them, we were seeking the increased allowable and the larger size unit so we would have more flexibility in placing the laterals.

EXAMINER JONES: Yes.

THE WITNESS: And their question, the landman from Murchison specifically asked about the distance rules, the setback rules. And I explained to her that we would still be required to be 330 feet from the outer boundary, the 10-foot rule applied to the quarter, quarter section. And she was fine with that.

EXAMINER JONES: For the surface hole location?

THE WITNESS: Yes, sir.

EXAMINER JONES: So you formally have in here and advertised for 330-feet setbacks?

THE WITNESS: From the outside boundary.

EXAMINER JONES: Even though some of the well density testimony in previous hearings for Devon mentioned optimal six wells per section -- which I don't -- I am sure that will come later -- but that would be 440 setbacks, so you still want the flexibility of the 330 setbacks?

THE WITNESS: Yes.

EXAMINER JONES: For what reason?

THE WITNESS: For the proper distance.

EXAMINER JONES: But you still want the flexibility of 330 setbacks from the boundaries of the perimeter of the spacing unit, the proposed spacing unit. Is that for flexibility in maybe even more than six wells per section in the future? Or are you not going to worry about spacing them exactly 440, 880, like that?

MR. BRUCE: However, we're talking about the 10 feet is, you know, if you want to drill a well more or less down the center, 320 acres. And the geologist will have some exhibits showing how they plan on drilling and spacing the wells apart.

EXAMINER JONES: I see that argument. That's a very good argument. But if there are six wells per section, that works out to 440, 440 from the perimeter; 880 from each well in order to be optimal with your spacing the wells.

MR. BRUCE: I think the geologist can point out what they're looking at.

EXAMINER JONES: You still want the 330?

THE WITNESS: Yes.

EXAMINER JONES: Okay. Thanks a lot.

Mr. Bruce, go ahead.

STEVEN SCHWEGAL

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By MR. BRUCE:

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

A. Steven Schwegal.

Q. And where do you reside?

A. Edmond, Oklahoma.

Q. Who do you work for and in what capacity?

A. Devon Energy. I am a geologist.

Q. Have you previously testified before the Division?

A. No.

Q. Could you summarize your educational and employment background for the Examiner?

A. I have a master's degree in geology from the University of Nebraska. I graduated in 1981.

I started with Phillips Petroleum. Then worked for 32 years and eight months with Phillips, and, then, ConocoPhillips.

And then I retired from there and moved to Oklahoma City and started with Devon. And I have been there three years.

Q. And at Devon, does your area of responsibility cover this portion of southeast New Mexico?

A. Yes.

Q. And are you familiar with the geology involved in these applications?

A. Yes.

MR. BRUCE: Mr. Examiner, I tender Mr. Schwegal an expert petroleum geologist.

MR. FELDEWERT: No objection.

EXAMINER JONES: He is so qualified.

Q. What is Exhibit 10, Mr. Schwegal?

A. It is a stratigraphic column illustrating the various prospective intervals in the Thistle unit. And it shows an average of the depths within the unit.

There's also prospectivity deeper in the Wolfcamp. But we are not here to talk about that today, is what I am told.

Q. And what is Exhibit 11?

A. That is an outline of the Devon acreage. The yellow is operated by Devon. Sections 3, 9, and 10 are operated by other operators. And the little well tracts you see are the Second Bone Spring wells that have been drilled and some additional ones that are planned to the north and the south end of Thistle.

Q. And what does Exhibit 12 show?

A. That is what I'm told is a gun barrel plot. That shows the proposed, planned, and actually existing wells that have been drilled. Just an example on the far west side of Thistle in sections 28 and 33, they are planned for two-mile laterals halfway across then mile-and-a-half laterals on the east side of the section.

Q. And does this give an idea of, say, how in the Second Bone Spring you would place wells?

A. Right.

And it also shows, you know, spacing tests are still ongoing in other formations. So your question earlier about six wells per section, we don't really know the resolution of that yet.

EXAMINER JONES: Okay.

Q. Okay. And even though we are not here for it, there's also potential in the multiple wells in the Wolfcamp?

A. That's correct, yes.

Q. Your next two exhibits, one is for the Black Mamba wells and one is the Thistle unit.

Could you please run through that and discuss the geology in both of these areas.

A. Sure. The Black Mamba and Tiapan sections are at the very north end of the Thistle unit. We conducted a

spacing test. The geologist previous to me apparently liked snakes, because he named everything after snakes. So you will hear those names.

The cross section shows the tests of 7, 8, and 9 Black Mamba wells.

We tested two wells in the lower Second Bone Spring and then one well in the upper portion of the Second Bone Spring sand.

And then the next one is -- the thickness using 8 percent porosity cutoff. And you can see the thick trend pretty much right across Thistle acreage. The warmer colors are the thicks; the cooler colors are the thins.

And, then, finally, on the last one, you can see the structural configuration of the area. The Thistle unit lies in a structural low just on the west side of the Bell Lake fault system.

Q. And one thing, on the cross section you have, the well -- the leftmost well looks like it's down in the Third Bone Spring, too --

A. Yes. Those are vertical wells just to illustrate where the tops tie into the horizontal wells that were drilled.

Q. But the well is not completed in the Second and the Third Bone Spring?

A. No, no. That is projected in. I see what you are saying. That is projected in.

Q. At the final page of the exhibit is the structure and then -- is the -- just looking at the Black Mamba acreage, are the Bone Spring zones continuous across this area?

A. Yes, they are.

Q. And let's move on to Exhibit 14, which is more concentrated on the Thistle. Would you run through that, please.

A. Sure. We have chosen four wells to illustrate the continuous nature of the sands across the acreage of the Thistle unit 596443, and the C Snake 35 1H, which is just off the east edge of the acreage but shows the continuous nature of the sediments.

The first slide is a structure map, just zoomed in from the previous map. Essentially, it's the same structure map. And you can see that we are in a structural low.

The four wells are shown. 49H is in the northwest. And then 64 is to the east of it. 43, to the southwest. And the C Snake well is to the east, just off the Thistle unit.

The next map again is a zoom in of the map we just looked at as far as the thickness map. And you see

that within the Thistle unit the Second Bone Spring lower sand is thick and continuous across the acreage.

I put -- there's two cross sections as examples. One of those you saw already, are the Black Mamba wells -- the first one is the cross section location. Sorry.

And then the same cross section you saw previously. And then the last cross section is three wells that were recently drilled as a stacked lateral in the far east side of the Thistle unit.

We tested the lower First Bone Spring siltstone and what we called the Leonard C, which is the lowermost siltstone in the Leonard or Avalon.

And then the Leonard B is the mid siltstone within the interval. And we've already tested that with the Thistle unit 66H. And that well has been flowing since September.

And we have not yet drilled a well in the uppermost siltstone in the Leonard.

Q. In looking at your exhibits, virtually all the Bone Spring wells out here are stand-up wells, not only Devon's but other operators, correct?

A. (Nodding head.)

Q. So from a geologic standpoint, does it make sense to build stand-ups in this area?

A. Yes.
Q. Were exhibits 10 through 14 prepared by you or under your supervision?
A. Yes.
Q. And in your opinion is the granting of this application in the interests of conservation and the prevention of waste?
A. Yes.
MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 10 through 14.
EXAMINER JONES: Any objection, Mr. Feldewert, to Exhibits 10 through 14?
MR. FELDEWERT: No.
EXAMINER JONES: Exhibits 10 through 14 are admitted.
(Devon Energy Production Company, L.P., Exhibits 10 through 14 were offered and admitted.)
EXAMINER JONES: Okay. Mr. Dawson.
EXAMINATION BY EXAMINER DAWSON
EXAMINER DAWSON: Mr. Schwegal, on the stand-up wells -- in looking at this map on Exhibit 11, it looks like all of them are stand-ups. Have there been any lay-down or east, west --
THE WITNESS: Not drilled by Devon.
EXAMINER DAWSON: But by other operators?

THE WITNESS: Yes.
EXAMINER DAWSON: And you looked at the results of those wells?
THE WITNESS: Yes.
EXAMINER DAWSON: And they don't compare to the north, south or south --
THE WITNESS: That's right, yes. Other operators appear to have changed their minds and are now going north, south.
EXAMINER DAWSON: So, apparently, the north, south is the preferred direction as you said before.
THE WITNESS: That's correct.
EXAMINER DAWSON: On your well in Exhibit No. 14, the last page --
THE WITNESS: Uh-huh.
EXAMINER DAWSON: On the well, it has the I guess you would call it a triple lateral?
THE WITNESS: Okay.
EXAMINER DAWSON: The second one from the right-hand side on the cross section?
THE WITNESS: Yes.
EXAMINER DAWSON: Did they test those zones?
THE WITNESS: No. They're recent wells. They have not yet been tested. They are still awaiting completion.

EXAMINER DAWSON: Are they planning on trying to commingle those?

THE WITNESS: I don't know that for sure. I would expect since it's Bone Spring, they will flow them into the same tank, but I don't know that for sure.

EXAMINER DAWSON: That's one of the more recent wells drilled?

THE WITNESS: Right.

EXAMINER DAWSON: And the one on the left-hand side, the Thistle unit -- it's kind of hard to read.

THE WITNESS: 66.

EXAMINER DAWSON: 66H?

THE WITNESS: Right.

EXAMINER DAWSON: Is that well producing?

THE WITNESS: Since early September.

EXAMINER DAWSON: Do you have an idea how much that's producing --

THE WITNESS: About 120,000 barrels.

EXAMINER DAWSON: 120,000 barrels. Do you have a daily rate on that?

THE WITNESS: I don't. I think it is still flowing at about 500 barrels a day.

EXAMINER DAWSON: So that is a fairly recent well, too?

THE WITNESS: Yes, it is. Right.

EXAMINER DAWSON: Okay. That's all the questions I have. Thank you.

THE WITNESS: Okay.

EXAMINER JONES: Mr. Brooks.

EXAMINER BROOKS: No questions.

EXAMINER JONES: Let me know if you have some later.

MR. BROOKS: I will.

EXAMINATION BY EXAMINER JONES

EXAMINER JONES: Mr. Schwegal, so where did you work with Phillips? What areas of the country?

THE WITNESS: Here, there, and everywhere. I started in Houston, went to Bartlesville, went overseas, back to Bartlesville. And then they drug me back to Houston. And I'm glad to be in Oklahoma City now.

EXAMINER JONES: And I heard when there was a struggle between Bartlesville and Houston with Phillips.

THE WITNESS: That's for sure.

EXAMINER JONES: You mentioned the Leonard. Is that what you are calling the -- what some people call the Avalon?

THE WITNESS: Right. It's the same.

EXAMINER JONES: Okay. So the optimum well length out here; north, south is the way to drill, but how about well length?

THE WITNESS: For the three that you see on the last picture, those are all mile-and-a-half laterals. We also just recently drilled a two-mile lateral, knowing that the COG wells look really good just offset to that.

And so we are still trying to figure that out. But we think mile-and-a-half and even, perhaps, two-mile laterals will be best.

EXAMINER JONES: Do you talk to the geologist with COG?

THE WITNESS: I have not.

EXAMINER JONES: And a number of horizons was in the Bone Spring that you're looking at?

THE WITNESS: You can see on the gun barrel plat that there's -- we're still not sure if the First Bone Spring is going to have one or two landings.

It's 450 feet thick in total. So there may be two landings in the First Bone Spring.

We have tested the sandier section, and that well -- I can't remember the cum on that one. Sorry.

The lower one is the one -- the 94H that has

not yet been completed. And then we've tested the Leonard B, the Leonard C, and not yet tested the Leonard A. So there's at least three zones in the Leonard or the Avalon.

EXAMINER JONES: Okay. So it's possible you might drill several wells in the Leonard and the -- is your main target the Avalon?

THE WITNESS: That is my main target, yes.

EXAMINER JONES: Okay.

THE WITNESS: The Second Bone Spring, we've drilled a lot of wells already. So we're kind of at the end, except in the very north and the very south where we still have potential to drill the upper and the lower. But for the most part, the main part of Thistle, the Second Bone Spring has been drilled.

EXAMINER JONES: Okay. What about gas versus oil out here? Are you -- you probably looked at all the vertical wells; are they completed in the carbonate -- those vertical wells?

THE WITNESS: In the Leonard.

EXAMINER JONES: In the whole Bone Spring, any of the Bone Spring wells?

THE WITNESS: I don't believe there's any Bone Spring completions within Devon acreage within the Bone Spring. Most of those are deep Morrow wells, Atoka

wells, Strawn wells.

EXAMINER JONES: So you have logs?

THE WITNESS: We have logs, yes.

EXAMINER JONES: Are you seeing gas on those logs?

THE WITNESS: All the time.

EXAMINER JONES: So are you seeing crossover on your porosity logs?

THE WITNESS: No. We don't normally see crossover on the porosity logs.

EXAMINER JONES: But you're seeing an oil effect --

THE WITNESS: The 66H is a really good well, so we are pretty happy with what we see in the Leonard so far.

I know that EOG has drilled actively to the south. COG has drilled actively to the west. So we are pretty comfortable that the Leonard is going to be a good formation to drill.

EXAMINER JONES: But are you -- the wells -- you are asking for a higher -- a limiting GOR. So I am just wondering, geologically and log analysis-wise, if you are seeing that gas.

THE WITNESS: It starts off more oily and then the gas comes up as time goes on.

EXAMINER JONES: Okay. So a typical solution in gas drive type?

THE WITNESS: Seems like.

EXAMINER JONES: Does the gas come up really fast and the oil totally go away?

THE WITNESS: I think that is an engineering question, if we could do that.

EXAMINER JONES: Yeah. And what about the pools in the Bone Spring in this area, are there records of special pool rules asking for increased GOR?

MR. BRUCE: I didn't find any in this area.

EXAMINER JONES: And what's your -- the main wells you're looking at here, for example, wells in the Bone Spring for horizontals, is that the Black Mamba and --

THE WITNESS: In the Second Bone Spring, it's the Black Mamba wells, right.

EXAMINER JONES: Okay. So do you have any opinion on -- you are not asking for a well density deal here; you are just asking for an increased allowable? But, geologically, you support everything that's being asked for in these places?

THE WITNESS: Yes.

EXAMINER JONES: Thank you. Mr. Bruce.

JARON LANG

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

By MR. BRUCE:

Q. Will you please state your name for the record.

A. Jaron Lang.

Q. And where do you reside?

A. In Edmond, Oklahoma.

Q. Who do you work for and in what capacity?

A. Devon Energy as a reservoir engineer.

Q. Have you previously testified before the Division?

A. Not in the state of New Mexico.

Q. Could you please summarize your educational and employment background.

A. I graduated from the University of Oklahoma with a bachelor's in petroleum engineering. And I previously worked for Continental Resources for approximately six and a half years.

And I have since been with Devon since that time. And I am a Registered Professional Engineer in the state of Oklahoma.

Q. Does your area of responsibility at Devon include this portion of southeast New Mexico?

A. Yes.

Q. And are you familiar with the reservoir engineering matters involved in these cases?

A. Yes, yes.

MR. BRUCE: Mr. Examiner, I tender Mr. Lang as an expert reservoir engineer.

MR. FELDEWERT: No objection.

EXAMINER JONES: He is so qualified.

Q. Mr. Lang, could you identify Exhibit 15 for the Examiner and discuss its contents.

A. Page 1 of Exhibit 15 is a summary of what we are asking for. The current maximum allowable for some of these pools is 320 barrels of oil per day for a 40-acre unit with a maximum GOR of 2,000 standard cubic feet per stock tank barrel.

We are requesting an allowable to increase to 6,400 barrels of oil per 320, which equates to 800 barrels per day on a 40-acre spacing. And also a GOR increase to 5,000 standard cubic feet per stock tank barrel.

This increased allowable will allow for the development of multiple stack pay zones and an increased well density within the separate prospective horizons.

An increased well density will allow for optimum project economics and maximize resource recovery.

Some numerical modeling techniques were used in predicting the production rates for each of the downspacing scenarios to justify.

Q. Mr. Lang, the heading on it is "Thistle Allowable" in this area; the general area within Devon is known as the Thistle area -- is that correct?

A. Correct. That's how we refer to it internally.

Q. Okay.

A. Page 2 is similar to the previous gun barrel diagram that you previously saw, except this one is sliced down to the Bone Spring only. And so what it shows is our current plan based on a six-well-per-section spacing.

And in there it shows, as the blue dots, our initial plan tests that we have been referring to, the Thistle stacked pays, the Leonards in the First Bone. And then, also, the Black Mambo three-well density test in the Second Bone Spring.

All the red dots show the future anticipated plans if those tests are successful.

Q. But if these zones test out the way you hope they do, there could be over 30 wells in a section?

A. Correct. So this is our current plan at six wells. You also previously saw our increased spacing from there, 8, 10, and multiple horizons that could

also...

Q. Okay.

A. Page 3 shows a little bit of the results, historical results for the area. The left-hand graph shows wells that were drilled on a one-mile basis with 160-acre spacing. And you can see over time. And these are all single wells.

You can see over time, we've increased the initial production rates to getting to the point of almost exceeding the allowable on their own basis as single wells.

The right-hand graph shows the GOR produced over time for that same set of wells. And you can see that over time the production results have increased or gained efficiency, and over time, the GORs have also increased exceeding the 2,000 standard cubic feet per stock tank barrel allowable.

Q. That's not anomalous in the Bone Spring?

A. Correct, correct.

Page 4 goes into a little bit about the economics behind our density tests. The left-hand graph shows the well density versus the reverses as you go from four-wells-per-section spacing down to eight -- or up to eight.

You can see that our incremental per well EUR is

decreasing as we downspace those wells. But the incremental total EUR for the section increases, so total recovery should be going up as we increase the wells that we drill.

The right-hand graph shows the well density versus economics. So, again, as you drill more wells, your expected rate of return goes down because of your lower EURs and lower production per well.

But your overall total unit MPV is increasing. And, currently, based on commodity prices and our capital scenarios that we're currently running, we are looking at an optimal of six-wells-per-section spacing.

Q. Could you summarize your findings?

A. The last page summarizes the potential development in multiple landing zones within the Bone Spring interval supports the need for an increased allowable.

In addition, the downspace development within each horizon also provides justification for the necessity to increase the allowable.

Current analysis suggests the optimal well density at six wells per section based on net present value.

The potential to realize a 20 to 30 percent

increase in the total reserves is there, depending on the spacing test successfulness.

And we are requesting the current allowable and GOR limit will help maximize the recovery and the economics of the sections.

Q. And even at 6,400 barrels of oil per day, you are getting good results from these wells; however, the proposed wells -- potentially over 30 wells per section -- will be developed over time, correct?

A. Correct.

Q. And so you think at this point 6,500 barrels of oil per day would be adequate?

A. Correct, yes. That is based on developing three wells simultaneously at the same time.

EXAMINER JONES: Okay.

Q. Was Exhibit 15 prepared by you?

A. Yes.

Q. And in your opinion is the granting of this application in the interests of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibit 15.

EXAMINER JONES: Any objection?

MR. FELDEWERT: No objection.

EXAMINER JONES: Exhibit 15 is admitted.

(Devon Energy Production Company, L.P., Exhibit 15 was offered and admitted.)

EXAMINER JONES: Mr. Dawson.

EXAMINATION BY EXAMINER DAWSON

EXAMINER DAWSON: Mr. Lang, are you -- is Devon currently -- are they drilling two-mile laterals?

THE WITNESS: Yes. We currently have the one two-mile Leonard test in the Thistle unit that we are working on completing as we speak, so we drilled it. And so -- we don't have production from a two-mile lateral in the Thistle area yet.

EXAMINER DAWSON: The mile-and-a-halves, what's the initial production rates on those mile-and-a-halves, just generally?

THE WITNESS: We've only had one to date. And I think the initial rate, daily rate, was 12- or 1,300 a day.

EXAMINER DAWSON: How did you get to 6,400?

THE WITNESS: It was based on -- so if we took our type curves as they are and using three-wells-per-section development, simultaneous development, and over time, say, we came back every two years and developed three wells at a time every two years and we took the peak of that -- and that was our

basis for developing the 3,200 number, so the 3,200 per 160, and then we doubled that for --

EXAMINER DAWSON: 320s?

THE WITNESS: Yes.

EXAMINER DAWSON: Do you anticipate that some of these wells will be stacked laterals?

THE WITNESS: Yes. We have drilled the Thistle three-well set currently and it's still in the completion stage as stacked laterals. That is depicted on page 2.

EXAMINER DAWSON: So the Third Bone Spring, you don't have any plans to complete any wells in the Third Bone Spring at this point?

THE WITNESS: Yes, correct, correct -- in this specific area.

EXAMINER DAWSON: Have you looked at, I guess, some of the other operators drilling two-mile laterals.

THE WITNESS: Yes.

EXAMINER DAWSON: And so you have been watching their production on those?

THE WITNESS: Yes.

EXAMINER DAWSON: Does that appear to be effective and those wells produce better you think?

THE WITNESS: There is a multiplier on

production because you are accessing more reservoir. It goes into an economic driver if you know you're drilling less vertical section per lateral. And so your economics are proving to be a little bit better.

We have -- outside of this area, we drilled another two-mile Leonard and another one-and-a-half-mile Leonard, so we have a few other long lateral tests.

EXAMINER DAWSON: Do you anticipate that you will be drilling more two-mile laterals?

THE WITNESS: We anticipate as much as possible trying to optimize lateral length where possible to enhance the economics.

EXAMINER DAWSON: That's all the questions I have. Thank you.

EXAMINER JONES: Mr. Brooks.

MR. BROOKS: Yes.

EXAMINATION BY MR. BROOKS

MR. BROOKS: I would assume the optimal lateral length depends on various factors that are specific to a formation; would that be accurate?

THE WITNESS: That's correct.

MR. BROOKS: Are there a lot of places where two-mile laterals would be preferable to one-mile laterals or is this unique to this area?

THE WITNESS: I do not feel it's unique to

this area. You know, like I said, we are currently still evaluating lateral length across the board for the various formations. And so we have not settled on an optimal lateral length in this area.

MR. BROOKS: Okay. Thank you.

EXAMINATION BY EXAMINER JONES

EXAMINER JONES: Well, it looks like you talked to the other engineers. You have a team that you all kind of share information in New Mexico on these allowable cases? The previous engineer that came up, I think, he was the simulator guy --

THE WITNESS: Pedro.

EXAMINER JONES: Pedro. You and he worked together on this?

THE WITNESS: Yes. Pedro, he works on a different area but inside the Delaware Basin.

EXAMINER JONES: Okay. The top of reservoirs out here, I mean the map shows three different pools. And is there differences in these pools, tops of reservoir? Are they close enough together that you think they're -- are they volatile oil reservoirs?

THE WITNESS: (Witness gesturing.)

EXAMINER JONES: They're just gassy oil reservoirs? They're not -- there's not a chance they're

gas wells?

THE WITNESS: That is correct.

EXAMINER JONES: And the drive mechanism for all of them?

THE WITNESS: You know, we are determining that, you know, as a solution gas drive. It's not a water drive.

EXAMINER JONES: But they are not going to be rate sensitive?

THE WITNESS: Correct, as it stands right now. We are doing an analysis on our flow-backs in determining what's the best optimally -- seeing if changing anything on rate affects us at all. So we are still kind of evaluating that -- if there's any optimization we can do there on that point. And it all depends. It's different for each horizon. All this analysis is ongoing.

EXAMINER JONES: So it's ongoing.

How about the frac jobs; are they rate sensitive as far as damaging your frac job if you pull it too fast initially?

THE WITNESS: The flow-back portion?

EXAMINER JONES: Yes.

THE WITNESS: We've currently taken the stance of being more conservative, not only just because

of reservoir damage, you know, potential out there, but, also, gas takeaway constraints and concerns, so not wanting to overload the surface constraints that we have out there. So a couple of different things working both sides.

EXAMINER JONES: Do you use sand control in your fracs to control sand flow-back?

THE WITNESS: A special sort of prop-up of some sort?

EXAMINER JONES: Tail prop-up with some sort of net stuff that keeps it from flowing back?

THE WITNESS: Net stuff? You mean resin coated?

EXAMINER JONES: Yes, resin coated. People call it different things.

THE WITNESS: Different areas have different things. We have a different -- historically, there was some resin going in. And then we switched to doing straight sand, all sand jobs. And then I think we've trickled some resin coat back in, depending on where it is in the formation.

So, again, all things -- since there's multiple horizons being tested, there's a lot of different completion techniques being evaluated.

EXAMINER JONES: What's the biggest size

sand you use?

THE WITNESS: There's 30, 50 and 10, 20, 40.

EXAMINER JONES: Okay.

What are you looking at to make the wells better? Are you looking at maybe some special logs on them to figure out where to perf or are you just doing the stage perfs all along the length of the well?

THE WITNESS: Currently, we are working those analyses, too, of entered points per stage and how many stages and spacing and things of that nature.

Again, we haven't settled them, optimal design, because, as you can see, across these areas, we are testing different horizons. And some areas, it's our first time to test. So we haven't quite settled on, Here's the answer across the board.

EXAMINER JONES: Do you work with the completions engineers?

THE WITNESS: Yes. I am settled more on the execution side of the completion engineers. So the modeling and stuff is handled by a different group of people that are modeling and doing those kinds of --

EXAMINER JONES: Modeling the frac job, the (inaudible) analysis and everything?

THE WITNESS: (Nodding head up and down.)

EXAMINER JONES: But do you think -- is it

5,000 you are asking for limiting GOR?

THE WITNESS: That is correct.

EXAMINER JONES: And that looks reasonable at this time?

THE WITNESS: Yes.

EXAMINER JONES: Consistent with what you have been asking for in other words?

THE WITNESS: Yes. There's a lot of signal tests and we've seen offset operators that have developed the Leonard, a little bit farther along in developing the Leonard. And so we've seen some of their wells going towards those rates.

And our 66 that we spoke about, I think you have an initial GOR of 2,000. So, you know, we are already starting at a higher point than some of our historical --

EXAMINER JONES: I guess one of the big issues here is increasing the allowable per acre, I should say, or per 40 acres for horizontal -- basically, we are talking about horizontal well rules here, correct?

THE WITNESS: Uh-huh.

EXAMINER JONES: With increased allowable?

MR. BRUCE: Right.

EXAMINER JONES: But we are ignoring the

vertical wells allowable?

MR. BRUCE: Frankly, I didn't think of that, Mr. Examiner. But allowing vertical wells, 800 barrels for a 40-acre well, we have no issue with that.

EXAMINER JONES: You think procedurally it would have to be advertised and see if anybody would object -- most people wouldn't object to an increased allowable. I don't think I've ever seen it happen before.

MR. BROOKS: Well, I haven't read the implications, so I don't know what was asked for. And I can't comment on whether -- what can be done with that red --

EXAMINER JONES: I am sure you two -- you got a nice team you work on. Do you talk to Paul Kautz in Hobbs? He's the geologist there.

MR. BRUCE: I know members have spoken with him before. I am not sure if Mr. Lang has.

EXAMINER JONES: I think Mr. Bruce knows who I am talking about. He's got some opinions on the nomenclature out here. He probably calls it the Avalon instead of the Leonard. But that's between you guys and him. Do you see any issues of your shallower wells in the Bone Spring being invaded by disposal wells in the

Delaware?

THE WITNESS: Currently, we have the Delaware prospective in the Thistle area, so as it stands right now we are trying to avoid any disposal into the Delaware formation itself, because of the prospective nature.

EXAMINER JONES: Okay. The Brushy Canyon mainly.

THE WITNESS: (Nodding head up and down.)

EXAMINER JONES: Okay. I think -- I don't have any more questions, pending the question about whether we can address the vertical well allowables or not with an order in this case.

MR. BRUCE: I mean, if you want, we can re-advertise that. I don't foresee anybody objecting to anything here.

MR. BROOKS: If it was not asked for in the application, I don't think it can be granted technically correctly without re-advertising. As a practical matter, I would be surprised -- like you, I would be surprised if anyone objected.

MR. BRUCE: It's whatever the Division wants. You know, it will take a few weeks to get an order out.

EXAMINER JONES: I was hoping not, it

wouldn't take long at all, but everybody has hopes on their workload.

MR. BRUCE: Yeah, most of the vertical well allowables out here are 320 barrels a day.

EXAMINER JONES: Okay. That's a pretty good allowable for a vertical well.

How long would it take you to re-advertise, just to match the vertical, the 40-acre allowable with this --

MR. BRUCE: March 3rd.

MR. BROOKS: That would be four weeks from today, right?

MR. BRUCE: Yes.

EXAMINER JONES: Is that acceptable to you guys?

MR. BRUCE: We don't see a problem with it.

EXAMINER JONES: Okay. Maybe two years ago it wouldn't be acceptable, but now it changed.

We are going to then continue these cases until -- all three cases until March the 3rd. And thank you all for coming up here. I appreciate it.

THE WITNESS: Thank you very much.

EXAMINER JONES: Case 15438, 15439, and 15430 are continued until --

EXAMINER DAWSON: -440.

EXAMINER JONES: Sorry -- and case 15440 are continued until March the 3rd.

EXAMINER JONES: Let's take a ten-minute break and we'll come back.

(Time noted 9:32 a.m.)

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

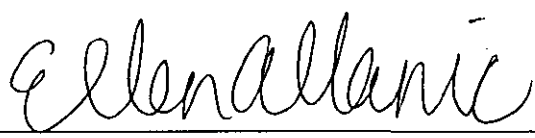
_____, Examiner
Oil Conservation Division

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

REPORTER'S CERTIFICATE

I, ELLEN H. ALLANIC, New Mexico Reporter CCR No. 100, DO HEREBY CERTIFY that on Thursday, February 4, 2016, the proceedings in the above-captioned matter were taken before me, that I did report in stenographic shorthand the proceedings set forth herein, and the foregoing pages are a true and correct transcription to the best of my ability and control.

I FURTHER CERTIFY that I am neither employed by nor related to nor contracted with (unless excepted by 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.



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