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:

APPLICATION OF DEVON ENERGY PRODUCTION COMPANY, L.P., FOR SPECIAL POOL RULES AND REGULATIONS FOR THE NORTHEAST RED LAKE GLORIETA-YESO POOL AND CANCELLATION OF OVERPRODUCTION, EDDY COUNTY, NEW MEXICO

CASE NO. 13,185

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: WILLIAM V. JONES, JR., Hearing Examiner

February 5th, 2004

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, WILLIAM V. JONES, JR., Hearing Examiner, on Thursday, February 5th, 2004, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

February 5th, 2004
Examiner Hearing
CASE NO. 13,185

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A P P E A R A N C E S

FOR THE APPLICANT:

JAMES G. BRUCE
Attorney at Law
P.O. Box 1056
Santa Fe, New Mexico 87504

* * *

WHEREUPON, the following proceedings were had at 8:30 a.m.:

EXAMINER JONES: Okay, let's call Case 13,185, Application of Devon Energy Production Company, L.P., for special pool rules and regulations for the Northeast Red Lake Glorieta-Yeso Pool and cancellation of overproduction, Eddy County, New Mexico.

Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, representing the Applicant. I have three witnesses to be sworn.

EXAMINER JONES: Any other appearances?

Will the witnesses please stand to be sworn?

(Thereupon, the witnesses were sworn.)

MEG MUHLINGHAUSE,

the witness herein, after having been first duly sworn upon her oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence for the record?

A. My name is Meg Muhlinghause and I live in Edmond, Oklahoma.

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

A. I work as a land advisor for Devon Energy

Corporation.
Q. And have you previously testified before the Division as a landman?
A. Yes, I have.
Q. And were your credentials as an expert accepted as a matter of record?
A. Yes, they were.
Q. And are you familiar with the land matters involved in this Application?
A. I am.
MR. BRUCE: Mr. Examiner, I'd tender Ms. Muhlinghause as an expert petroleum landman.
EXAMINER JONES: Ms. Muhlinghause is qualified as an expert petroleum landman.
Q. (By Mr. Bruce) Would you go to our first exhibit, Number 1, and describe the pool involved in this case?
A. Exhibit 1 is a land plat of part of Township 17 South, 27 East, and adjoining acreage. I'll wait for you to -- Highlighted in the pink or red is the Northeast Red Lake Glorieta-Yeso Pool, covering parts of 17 South, 27 East; 18 South, 27 East; and 17 South, 28 East. This is the pool we're here for today.
The north half of Section 35 was recently added to this pool since the time of our Application, so I have

filled it in there, but in our Application it was not included at that time.

Also highlighted in yellow is the Red Lake Glorieta-Yeso Pool.

Q. Okay. What is the blue line on the map?

A. That is the area within one mile of the northeast Red Lake Glorieta-Yeso Pool. For notice purposes, we determined the Glorieta-Yeso operators within that boundary.

Q. And who are those operators?

A. Besides Devon, they are Marbob Energy Corporation, Mack Energy Corporation, SDX Resources and BP America.

Q. And was notice of this case given to these operators?

A. Yes, and Exhibit 3 contains the notice materials.

Q. Okay. Now, have any of these operators objected to the Application?

A. No objections have been expressed, and Exhibit 2 is a letter from Marbob supporting our Application.

Q. Now, what special pool rules did Devon seek in this Application?

A. We requested an allowable of 300 barrels of oil per day and a gas-oil ratio of 4000 to 1 in our Application. However, we've come to the conclusion that we just need an increase in the oil production to 300 barrels of oil per day. We can leave the GOR as it is at 2000.

Q. Okay, so we can dismiss that portion of the Application requesting a higher GOR?

A. Correct.

Q. Okay. What is the current daily allowable, oil allowable, in this pool?

A. The allowable is 80 barrels of oil per day, and the GOR is 2000 to 1.

Q. Will Devon's geologist and engineer talk about the reasons for the allowable increase?

A. Yes.

Q. How has Devon been developing this Glorieta-Yeso Pool?

A. We've been drilling to Glorieta-Yeso wells in each 40-acre well unit, in a northeast-to-southwest orientation. This has been the case except in a few situations where other circumstances have prohibited us from following this pattern.

Q. Okay. And will some exhibits be submitted later that will kind of --

A. -- show that, yes.

Q. -- show that?

Now, Devon also requests cancellation of overproduction in one well unit. What is that well unit?

A. The northeast quarter of the southwest quarter of Section 35 in 17 South, 27 East contains the Logan "35" Fed Well Number 5, completed in February, 2001, and the Logan "35" Fed Well Number 6, completed in June, 1999. The well unit has produced just under 268,000 barrels of oil and 574,000 MMCF.

Q. As of what date is that, approximately? August, 2003.

A. I just -- I'm not sure. I believe so, yeah.

Q. Okay, will some data be submitted --

A. Yes --

Q. Okay.

A. -- yes.

Q. And what is your estimate -- or what is Devon's estimate of the overproduction?

A. We calculate that it is overproduced in oil by just over 141,000 barrels of oil and 321 MMCF of gas.

Q. How did it get overproduced?

A. The previous round of Yeso wells, drilled in 1999 through 2001, were drilled with two wells per 40-acre proration unit. It appears that some wells came on making above allowables but quickly fell off to a rate in compliance with the existing field rules. The Logan "35" 5 and Number 6 were placed on production and apparently never fell off.

Teams overseeing this area changed. There was another team overseeing this area, and in the change this was an oversight.

Right after these wells were drilled, quite simply, this fell through the cracks, I assume because production was reported as a whole, but I really don't know for sure.

The current team responsible for this area started evaluating this area for more drilling and noticed the overproduction, brought it into compliance, and here we are trying to rectify the situation.

Q. Okay, when you say brought it into compliance, you mean that the current production from that well unit is at the 80-barrel-a-day allowable?

A. Yes, yes.

Q. But it still has the overproduction that you mentioned?

A. Yes. And additionally, we've drilled around this well unit, and our reservoir engineer will testify that we believe no damage was done to the reservoir.

Q. Okay. Now, was Devon ever contacted by the Artesia District Office regarding the overproduction from these two wells?

A. No, they were not.

Q. And I think you said basically the reason you're requesting cancellation of overproduction is that the engineer can show that the reservoir was not damaged?

A. Correct.

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

A. Yes, they were.

Q. And in your opinion, is the granting of Devon's Application in the interests of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd move the admission of Devon Exhibits 1 through 3.

EXAMINER JONES: Exhibits 1 through 3 will be admitted to evidence.

EXAMINATION

BY EXAMINER JONES:

Q. Ms. Muhlinghause, the ownership in this 40-acre tract, can you tell me who owns all of the revenue interest?

A. Devon is the working interest owner, and there are a few overriding royalty interest owners. I don't have the specific names. This whole area is covered by several federal leases, and there is pretty similar ownership throughout. It's either Devon or Devon and another

operator or the other operators that I've listed below.
Q. So there's Devon plus some -- is the --
A. But in this particular well unit, yes, it is just Devon.
Q. Devon is all of the working interest in this --
A. Yes, sir.
Q. -- and the operator? And as far as your burdens go, you have the federal lease --
A. The federal burdens and --
Q. -- federal burdens and --
A. -- several overriding royalty interest owners.
Q. What about in the surrounding 40-acre tracts? Who would be the operator?
A. Devon.
Q. Devon.
A. Uh-huh.
Q. And who would be -- Do they have identical ownership in the surrounding 40-acre tracts?
A. To the west it is Devon, to the 40-acre tract directly to the west it is Devon.
Q. Okay.
A. And directly to the north it is Devon and OXY.
Q. Okay.
A. They have a working interest. And our reservoir engineer will testify as to a well we just recently drilled

with OXY.

MR. BRUCE: Mr. Examiner, if you'd like, we can get some of that data and submit it after the hearing, just so you can see some of the common interests.

EXAMINER JONES: Okay, that's where I was coming at.

MR. BRUCE: We don't have that with us today. Devon does have title opinions, and we can get that.

THE WITNESS: We can provide it for you.

Q. (By Examiner Jones) Okay, and did OXY get notified? You notified SDX and Marbob and who else?

A. No, they were --

MR. BRUCE: No, we did not notify --

EXAMINER JONES: But they're part of the ownership?

MR. BRUCE: They are -- and Ms. Muhlinghause can correct me, but in a lot of these wells out there it's either Devon is the working interest owner or Devon and OXY are the working interest owners.

EXAMINER JONES: Okay.

THE WITNESS: Correct, but Devon is the operator.

EXAMINER JONES: Operator.

THE WITNESS: Correct.

EXAMINER JONES: So OXY knows everything that you're doing, as far as the production. They should be following it, because they have an interest in it.

MR. BRUCE: Yeah.

EXAMINER JONES: Okay, maybe you can -- All the surrounding 40-acre tracts, let me know the --

THE WITNESS: Okay.

EXAMINER JONES: -- the ownership breakdown, and the 40-acre tract we're talking about. This is the first case like this I've seen, so this is what I would think of to ask.

But you're --

MR. BRUCE: And Mr. Examiner, I believe Ms. Muhlinghause -- We will get that data for you, but as far as the royalty owner, it's basically all federal --

THE WITNESS: It is, all federal.

MR. BRUCE: In this area.

EXAMINER JONES: It's basically one-eighth royalty?

MR. BRUCE: Yeah, it's basically --

THE WITNESS: Yes.

MR. BRUCE: These are old federal leases that date back to the 1920s --

EXAMINER JONES: Oh, okay.

MR. BRUCE: -- and those old federal leases generally covered four sections. So that's why a lot of the overriding royalty ownership is common, because they

descend from that single federal lease way back when.
EXAMINER JONES: Okay.
MR. BRUCE: But we will get you that data.
EXAMINER JONES: And you're asking to go from 80 for a 40-acre tract up to 300, right?
THE WITNESS: Barrels of oil, yes.
EXAMINER JONES: Barrels of oil per day, okay.
If this happened, what other 40-acre tracts could be -- I guess the reservoir engineer will probably talk about that?
THE WITNESS: Correct.
MR. BRUCE: I think our next two witnesses would be better to testify about that.
EXAMINER JONES: Okay, thank you very much.

<u>SHELDON ANDREW STIRLING</u>,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name for the record?
A. My name is Sheldon Andrew Stirling, and I live in Oklahoma City, Oklahoma.
Q. Stirling is spelled with two i's?
A. Yes, S-t-i-r-l-i-n-g.
Q. Who do you work for and in what capacity?

A. I'm employed by Devon Energy. I'm a senior geologist assigned to the Permian Basin District of the Western Division.

Q. Have you previously testified before the Division?

A. No.

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

A. I earned a bachelor of science degree in geology from Oklahoma State University in 1995. I also earned a master of science in geology, also from Oklahoma State University, in 1998. I've been employed as a geologist with Devon Energy since July of 1998.

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

A. Yes.

Q. And are you familiar with the geology involved in this Application?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Stirling as an expert petroleum geologist.

EXAMINER JONES: Mr. Stirling is qualified as an expert geologist, petroleum geologist.

Q. (By Mr. Bruce) Would you identify your Exhibit 4 for the Examiner and discuss its contents?

A. Exhibit 4 is a production map showing Glorieta and Yeso completions in Sections 34 and 35 of Township 17 South, Range 27 East, and Section 2 of Township 18 South, Range 27 East.

In addition to the Glorieta-Yeso wells, there are numerous shallow wells in this area. Wells deeper than 3000 feet total depth are shown with black symbols, with black well-name text, and the wells shallower than 3000 feet total depth are shown as grayed-out well symbols.

The line of cross-section, A-A', corresponds to Exhibit 5, which I'll discuss in a moment.

The Glorieta-Yeso producers are indicated by a brown circle. The initial oil production rate, the current oil production rate, the date of Glorieta-Yeso completion and the cumulative oil production are located south of each brown circle.

Q. Now, this exhibit doesn't cover the entire pool, but Section 34 and Section 35 at this point are the heart of this pool, are they not?

A. That's correct, yes.

Q. Okay. Would you move on to your Exhibit 5, the cross-section, and discuss the pool in a little more detail?

A. Exhibit 5 is a west-to-east structural cross-section. The cross-section includes wells in Sections 34 and 35, Township 17 South, Range 27 East. The cross-section shows the Glorieta formation and the upper 700 to 800 feet of the Yeso formation.

In this area oil is produced from porous dolomite in the upper 300 to 600 feet of the Yeso formation, as well as the lowermost Glorieta formation. Production is from numerous individual porosity zones. These zones are highlighted in red on the cross-section, using cutoffs of less than 50 API units gamma ray and greater than 6-percent density porosity. Perforations in these wells are shown in green in the depth track of the logs.

These porosity zones occur within the same gross interval -- that is, the upper 300 to 600 feet of the Yeso formation -- However, the individual porosity zones are laterally discontinuous and are not correlated from well to well.

Q. Now, a couple of the wells we're here for today regarding the overproduction are on this cross-section, are they not, Mr. Stirling?

A. That's correct, wells number 4 and 5 on the cross-section are the Logan "35" Federal Number 6 and the Logan "35" Federal Number 5.

Q. And the engineer is going to discuss this a little bit, but maybe you can get into it too. The Number 6 is the best well in the pool, is it not, as far as production goes, has produced the most oil?

A. I don't remember which, if it was the 5 or the 6. It's one of those two wells.

Q. Okay, but looking at your cross-section, those wells don't look any better geologically than other wells in the pool?

A. That's correct, on the logs they don't, they don't look --

Q. So you can't tell anything --

A. -- any better --

Q. -- from just looking at the --

A. That's correct, and I'll try to talk about that in the next exhibit --

Q. Okay --

A. -- it's the geologic map.

Q. -- let's go into your Exhibit 6. Would you identify that, please?

A. Exhibit 6 is a geologic map with the top subsea Glorieta structural contours in Gray and the Glorieta-Yeso net porosity isopach contours in brown. The criteria for the porosity isopach are the same used on the cross-section, that is, less than 50 API units gamma ray and greater than 6-percent density porosity.

Structural elevation and isopach values are shown next to the wellspots in their corresponding colors, brown for porosity and gray for structure. The net Glorieta-Yeso porosity ranges from 51 feet to almost 200 feet, and there's no correlation between net porosity and production.

Q. Could you point out a couple of wells that show that?

A. Sure, sure. For example, the Logan "35" Federal Number 6 has 51 feet of net porosity, which is actually the lowest in the area. However, this well had a peak rate of 311 barrels per day and has an EUR of 201,000 barrels of oil.

And we can compare this well to the Eagle "35" L Number 3. This well has 97 feet of net porosity, yet this well has a peak rate of 84 barrels per day and an EUR of 48,000 barrels of oil.

So these two wells have similar structural position. The "35" Federal Number 6 Glorieta top is at positive 667 feet above sea level. The top Glorieta in the "35" L Number 3 is at positive 659, so these have eight feet of structural difference, so they're pretty similar.

The "35" L has nearly twice the net porosity, nevertheless it has a lower -- significantly lower peak rate and a significantly lower EUR, so that shows how the porosity doesn't necessarily correspond to the production rate or the EUR.

Q. Same thing with the structure?

A. That's and some examples for -- structurally, we can compare the "35" M Federal Number 13 and the OD Federal Number 1.

Q. Where is that, the OD --

A. The OD Federal Number 1 is in the southwest of the southwest of Section 34.

Q. Okay, so it's the OD Federal Number 1 Harbold; is that the one you're --

A. Actually, those well names run together. It's just called the OD Federal Number 1.

Q. Okay.

A. And the --

Q. Well, so you can see quite a large structural difference between those two wells?

A. That's correct, the "35" M Federal 13 has a structural elevation of 659 feet above sea level and has 98 feet of net porosity. This well had a peak rate of 110 barrels of oil and an EUR of 47,000 barrels of oil.

The OD Federal Number 1 has 108 feet of net porosity, so it's similar in net pay to the "35" 13, however it has a structural elevation of 712 feet above sea level. And this well had a peak rate of 91 barrels of oil and an EUR of 50,000 barrels of oil.

So these two wells have similar net porosity, but they have 53 feet of structural difference. However, they still have similar peak rates and EUR.

Q. Okay. In short, it's hard to predict how a well is going to perform just by looking at the structure and net porosity?

A. That's correct.

Q. Okay. Were Exhibits 4 through 6 prepared by you or under your supervision?

A. Yes.

Q. And in your opinion is the granting of Devon's Application in the interest of conservation and the prevention of waste?

A. Yes.

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

EXAMINER JONES: Exhibits 4, 5 and 6 are admitted to evidence.

EXAMINATION

BY EXAMINER JONES:

Q. Mr. Stirling, you just used a 6-percent density cutoff?

A. Excuse me?

Q. 6-percent density cutoff?

A. Yeah -- actually two criteria. First was less than 50 API units on the gamma-ray, so clean gamma-ray, and a 6-percent density porosity cutoff.

Q. But you're running a neutron log also?

A. Yes, we did, but not every well had a neutron density log that I looked at, so I just used the density log.

Q. So they were all open-hole logs you had on these -- available on these wells? I mean --

A. Yes, that's correct.

Q. -- it's kind of unusual that you always have a bunch of open-hole logs. Sometimes you have to use cased-hole logs --

A. Right.

Q. -- and relate them to the open hole and go from there --

A. Right.

Q. So -- And you're showing a lot of the resistivity on these cross-sections too. Did you use that for some reason on your net-pay calculation?

A. No, I did not.

Q. Okay. What can you tell by looking at it? Are some of them wet in the lower part?

A. We have not bee able to determine whether an individual zone would be wet or produce water-free from log analysis.

Q. What about their water production? How does that turn out? Do they make a lot of water?

A. The wells make some water, yes.

Q. So it sounds like you have a fracture situation going on out here, where your drainage may not be perfectly radial and you may have some linear drainage, in other words, oblong drainage units or something.

A. Okay.

Q. Can you tell any fractures from looking at these logs, or your mud logs, for instance, when you drill through here?

A. I can't interpret fractures from these logs on this cross-section. We have seen some fractures on some FMI logs.

Q. Oh, you're running FMI logs?

A. We have run some FMI logs.

Q. And interpreted them through the whole section?

A. We have interpreted, yes, through --

Q. Okay.

A. -- through the entire section of the logs that we have run.

Q. Okay. Do you think two wells per 40 acres is optimum development out here, geologically speaking?

A. Yes.

Q. Okay. No denser than that, you don't think any more wells should be drilled?

A. Well, I'm not sure exactly if we should go denser than that. I know our reservoir engineer is going to speak more to that, but --

Q. About the economics, okay. But your point here is that you can do a lot of mapping, and you've got a reservoir, some point of a reservoir here, but you can't predict exactly which wells are going to be good or not?

A. That's correct.

Q. Okay. Okay, in your opinion why are these two wells the best in the field?

A. I don't know.

Q. Okay, okay. Well, that's an honest answer.

You don't know where else you would drill to get some good wells either?

A. Well, we've offset -- Last year we offset the "35" 5 and the "35" 6 in three directions, hoping to encounter similar production, and have not. These wells, the "35" 5 and the "35" 6, are anomalous wells.

Q. Okay, that's what I was going to talk to the reservoir engineer about also, but -- So you're saying you did try to circle these wells in three directions, but what about the other direction? Was that already drilled?

A. Yes, there were already wells drilled to the south of these that --

Q. And it wasn't as good?

A. Not as good as the "35" 5 or the "35" 6, but I'm not sure the order in which those were drilled, the "35" 5 or the "35" 6. In other words, I didn't drill the wells to the south of the "35" 5 or the "35" 6. I drilled the "35" Federal 3 and the "35" Federal 12, which offset those wells to the north and to the east --

Q. Okay.

A. -- so... Pardon me, the north and to the west.

Q. Okay. Have you looked in other -- beyond this 40-acre tract, have you looked at -- have you found any other wells that are this good, or capable of producing this good? In other words, have you talked to Marbob or anybody else, and they have said if we increase this allowable, well, they can crank some of their wells up also?

A. No, I haven't had any discussions like that. And I haven't heard of any wells as good as these two wells.

Q. In the whole pool?

A. That's correct.

Q. Okay. I can't think of what else. Anything else you would like to add about this that you haven't already said?

A. No.

EXAMINER JONES: Okay. Well, thanks a lot, Mr. Stirling.

MR. BRUCE: And Mr. Examiner, the engineer will have some data for you on when the wells were drilled and how they've performed.

EXAMINER JONES: Okay.

JIM SMITH,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. My name is Jim Smith. I live in Oklahoma City, Oklahoma.

Q. And what is your job?

A. I work for Devon Energy Corporation. My position is supervisor of the reservoir engineering group for the Permian Basin district.

Q. Have you previously testified here?

A. No, I have not.

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

A. I have a bachelor's and master's degree in petroleum engineering from the University of Kansas, I'm a registered professional engineer in the State of Oklahoma, and I have over 26 years' experience as a petroleum engineer.

Q. How long have you been with Devon?

A. A little over three years.
Q. Okay. Does your area of responsibility at Devon include southeast New Mexico?
A. Yes, it does.
Q. And are you familiar with the reservoir engineering matters involved in this case?
A. Yes, I am.
MR. BRUCE: Mr. Examiner, I tender Mr. Smith as an expert reservoir engineer.
EXAMINER JONES: Mr. Smith, where else did you work besides Devon?
THE WITNESS: Sir, the list is long. I worked for ARCO and spent some time working the Permian Basin with ARCO. I worked for Fina, spent basically all of my time with Fina working the Permian Basin, and then worked Kerr-McGee, some time in the Permian Basin with Kerr-McGee, and then Marathon Oil and now Devon. So this is my fifth company now.
EXAMINER JONES: Okay. Well, you can certainly qualify as an expert petroleum engineer.
Q. (By Mr. Bruce) Mr. Smith, could you identify Devon's Exhibit 7 and go through that for the Examiner?
A. Yes, my first exhibit, Exhibit 7, is just an area map showing the locations of the Northeast Red Lake Glorieta-Yeso Pool, which is the subject of the hearing

today, along with two other pools in the area, the Empire-Yeso Pool and the Empire East-Yeso Pool. Below each pool on this exhibit is also a graph showing the poolwide production data.

And Exhibit 8 is just a table showing the general reservoir data for the Northeast Red Lake Glorieta-Yeso Pool.

Just some of the aspects of our pool and the other pools, just to summarize briefly, all three pools show similar production characteristics, they both exhibit depletion drive characteristic of a solution gas drive reservoir, their decline rates are similar, ranging from 8 to 10 percent per year on the oil and anywhere from 4 to 11 percent on the gas. Initial GORs in each of these pools was in the range of 1000 to 2000, and they've increased slowly over time to the range of 2000 to 3000. The GOR is increasing naturally from pressure depletion, which is typical again for these solution gas drive types of reservoirs.

The two Empire pools have been developed on anywhere from two to four wells per 40 acres. As you can see from the map there, they're drilled on considerably tighter spacing than our pool.

All three of the pools were discovered in 1997 and 1998, and as I said before, you now, there's been less development to date in our pool. We're working on that, though, right now.

One other point to be made on this Exhibit 7, you can't just see automatically from the production curves, but the two Empire pools are producing at considerably higher rates, both on an overall basis and on a per-well basis.

Q. And let's reiterate something that Mr. Stirling was asked by the Examiner. Devon at this point is drilling two wells per 40; is that correct?

A. That's correct.

Q. But over to the east in the Empire pools there are -- in many of them, there are three and four wells per well unit --

A. That's correct.

Q. -- at this time?

A. Yes, sir.

Q. So they were developed at a higher rate, or shall we say have been more fully developed than the Northeast Red Lake Pool?

A. That's correct.

Q. Okay. What are the lives of these wells?

A. These wells have been on production about five or six years, and they're expected to continue producing another 25 to 30 years.

Q. Okay. Next, let's move on to your Exhibit 9. What does that depict?

A. Exhibit 9 is a graph depicting initial GORs versus time in the Red Lake, for the Northeast Red Lake Pool. As the graph shows, the GORs have not changed significantly over time. This would be an indication that reservoir energy has not been negatively affected by the wells drilled to date.

I just want to point out too that there's three anomalously high GORs you see there, from wells that came on in the year 2000. All three of those are extremely poor wells and really should not be considered representative of the overall unit performance.

Q. Okay, let's go on to your Exhibit 10, and let's spend a little time with this one, just to show Devon's plan of development, but what does Exhibit 10 show?

A. Exhibit 10 is a plat of estimated ultimate recoveries and estimated ultimate drainage areas for wells in the Northeast Red Lake Pool. The number on the left, the green number, is the estimated ultimate recovery in oil, in MBOs, and the number on the right in red is the gas EUR in MMCFs.

The pool itself is highlighted in the red cross-hach that you see on the exhibit, and Devon's acreage is indicated in yellow. All the existing Yeso wells are marked with the green dots.

And from this plat you can also see our development plan, indicated by the blank circles on the map, which is -- as has been stated before, is to drill two wells per 40-acre tract, generally where possible located in the northwest corners of each quarter-quarter section.

Q. Okay. How did Devon arrive at the EURs?

A. We used decline curve analysis on an individual well basis to come up with the EURs.

Q. And what are typical recoveries in this pool?

A. Wells in this pool recover, on average, 40,000 to 50,000 barrels per well, and that comes out to an average drainage area of about 12 acres.

Q. Okay. There are a few wells that are on the edge of the reservoir, are there not?

A. Yes, yes, and those wells are going to have considerably poorer recoveries and considerably lower drainage areas.

Q. Okay. Now, let's take your next two exhibits together, 11 and 12. What are these exhibits, Mr. Smith?

A. Exhibit 11 lists all the wells in the pool, with their date of completion, the peak rate, the current rate, cumulative production, estimated ultimate recovery and, for the Devon wells, the estimated drainage are.

And Exhibit 12 summarizes some of the data from

Exhibit 11 and also summarizes our request.

The wells are listed by operator and then in reverse chronological order on Exhibit 11, and the wells highlighted in yellow are the Devon-operated wells. And if you look closer, the first eight of those wells are the wells which were drilled by Devon and completed in the year 2003.

You can see, if you look at those eight wells that were drilled in 2003, that these IPs, on average, are as good as the previous wells. The average is around 100 barrels per day IP for all of the wells. This is -- Again, it's another indication that the new wells have not been affected by the existing producers out there.

Q. Okay. Now, do the results from the recently completed wells confirm that drainage is less than 20 acres per well?

A. Yes, they do.

Q. Does this data also confirm the geology which shows that there are numerous zones in this pool which do not correlate from well to well?

A. Yes.

Q. Now, what do you conclude from the data? And I think some of your conclusions are set forth on Exhibit 12, but would you go through those, please?

A. Yes, yes. Just to summarize, again, the information that's on Exhibit 11, that's kind of in that first section on Exhibit 12. What we did was, we looked at 20 type development wells in the area, and these were wells that had normal completions. We had to deepen a couple wells out there, and we found that just due to the mechanical restrictions we were not able to get a good stimulation in the Yeso and were not able to get a good completion, and so we've excluded those from our overall analysis here, and we've also excluded the poor edge wells.

But if you take the wells that had good completions that were in the main part of the field, there were 20 of these wells. Our average drainage area for these 20 wells was 12 acres. The average initial rate for all of these 20 wells was 117 barrels of oil per day and 200 MCF per day of gas.

So if we had two of these wells per 20-acre tract, they would have a combined unit rate of about 234 barrels of oil per day and 400 MCF per day of gas.

In addition, we looked at which wells out of these 20 had initial rates greater than 80 barrels of oil per day by themselves and found that 13 of those 20 wells, or 65 percent of them, had initial rates greater than 80 barrels per day.

The average for those 13 wells was 143 barrels of oil per day and 234 MCF per day of gas, so if we drilled two wells like that per 40-acre tract they would have a combined rate of 286 barrels of oil per day and 468 MCF per day.

And just a final point. There again, this Logan "35" Federal 6 well that we have talked about and will talk about a little bit more, it had the highest initial rate of all the wells at 311 barrels per day.

Just to continue on with that, the -- really the compelling evidence is that all but one of the wells out here drains considerably less than 20 acres. So we feel like there's been -- for the most part, there's been no drainage offsetting by the wells that have been drilled out here. We've seen no signs of interference from well to well, and I've got some information later on that I'll discuss that further with. We've seen no sign of interference from well to well, based on the results of our newer wells, and we feel very strongly that the reservoir performance would not suffer from a higher allowable out here.

The other aspects of this that I'm going to talk about here are summarized again in Exhibit 12. Our current allowable, as we've said before, is 80 barrels of oil per day and a GOR of 2000 for each 40-acre spacing unit. That 2000 GOR translates to an equivalent gas allowable of 160 MCF per day. What we're requesting here is again a 300-

barrel-of-oil-per-day allowable for each 40-acre spacing unit. The 2000-to-1 GOR is equivalent to a gas allowable of 600 MCF per day.

And again, just kind of the overall conclusions here. To fully develop the Glorieta-Yeso within the Northeast Red Lake Pool, the producing wells need to be drilled on at least 20-acre spacing. And I can talk more about ultimately what we might think we want to do out there, but considering that most of the wells that Devon has drilled to date have had initial rates greater than 80 barrels of oil per day, the recommended allowable should reflect the actual production rates encountered and allow us to continue developing the Glorieta-Yeso on 20-acre spacing.

The requested allowable of 300 barrels of oil per day plus the 2000-to-1 GOR will allow economic and full development of the Glorieta and Yeso reserves, and it will not result in waste of reservoir energy nor reduce the ultimate recovery of oil from the reservoir, and the ability to further develop the Glorieta-Yeso will help prevent waste and protect correlative rights.

We have been constrained some in our recent drilling program by the allowable, in terms of not being able to drill a second well on a 40-acre tract, as we've recognized the allowable issue and have come into compliance with it. It has certainly restricted our drilling plans, even to go to 20-acre spacing in a lot of areas.

Q. Mr. Smith, looking at Exhibit 11, one final thing. The yellow highlighted wells are all Devon wells; is that correct?

A. That's correct.

Q. And the eight or so wells at the top are the wells that were drilled in 2003, the most recent wells?

A. That's correct.

Q. If you look at the data, does that show that those wells are worse than the wells drilled earlier, or are they better or the same?

A. It shows that on average they're very similar, roughly the same as wells that were drilled prior to that time period.

Q. Okay, so they haven't been affected -- the most recent wells haven't been affected by the prior production from the other wells?

A. That's correct. And as we talk about the one tract in particular that's at issue here with respect to overproduction, we have some more information that will illustrate that.

Q. Okay. And again, the next item we're here for today is requesting the cancellation of overproduction.

Again, just for the Examiner, on Exhibit 11 which two wells are involved in the overproduction?

A. That would be the Logan Federal "35" Number 5, which is about the tenth well down in the yellow-highlighted area, and also the Logan "35" Federal 6, which is the second from the bottom in that yellow-highlighted area.

Q. What are the EURs and the drainage areas of these wells?

A. The ultimate recovery for the Logan "35" Number 6 well is 201,000 barrels of oil, which represents a drainage area of 62 acres.

Q. And what about the Number 5?

A. On the Number 5 well, the ultimate recovery estimated is 116,000 barrels of oil, and the drainage area for that is 15 acres.

Q. So even though it's got a good recovery, the Number 5 well does not have an anomalous drainage area?

A. That's correct.

Q. Okay. Let's move on to your Exhibit 13 next. What production overage has accumulated from the Number 5 and 6 wells?

A. Exhibit 13, as you said, lists the production from these two wells. The overage for the two wells is 141,000 barrels of oil and 321 MMCF of gas.

Q. Okay. Now, since when, approximately a year ago, the wells have been producing -- production has been restricted from the wells?

A. That's correct, once the team recognized the problem with being overproduced here, we did curtail the wells and bring them back into compliance on the oil.

Q. On the daily oil rate?

A. That's correct.

Q. Okay. And Devon requests that this overproduction be canceled?

A. Yes.

Q. In your opinion, would any offset well units be adversely affected by the cancellation of overproduction?

A. No.

Q. Would you identify your Exhibit 14 and discuss at least one aspect of that request?

A. Yes, Exhibit 14 is a graph showing total fluid production from several wells, first off the Number 5 and 6 wells that are at issue here, and from some of the offset wells. The Number 5 well produces the same amount of fluids as the offsets, but with a lower water cut, which is why its oil recovery is somewhat higher than the offsetting wells.

It's not structurally high. As Mr. Stirling pointed out, there's no reason that we can see from the logs, any of the interpretation work, as to why this well should be better than the others. It has typical water saturation and net pay, when compared with the other producers, and its decline is typical of offsetting wells. And again, as we mentioned earlier, its drainage area is expected to be 15 acres.

Q. So once again, it has a typical drainage area?

A. Yes.

Q. And other wells -- and maybe we should look at Exhibit 14 and Exhibit 10 together, Mr. Smith. The wells you're looking at on Exhibit 14 show to be typical wells for this pool, do they not, other than the Number 6 well?

A. That's correct.

Q. Even when they offset these two good wells?

A. That's correct.

Q. Okay. So if they exhibit typical production, would you -- Have those well units been drained?

A. No.

Q. Okay. Now, you did mention on Exhibit 14, Well Number 6 does have a higher fluid production rate, does it not?

A. Yes. Yes, that's the curve in green there. It's difficult to pick out, but it's the highest of all of those. And the Number 6 well is anomalous, as we've discussed before. It does produce more fluids than other nearby wells, but it has less net pay than the offsets. Its water saturation is typical. Again, it's not structurally high, and it has recently started to decline similar to the older wells in the pool. And as we've mentioned earlier, its drainage area is estimated to be 62 acres, based on the relatively low net pay that was given to it.

Q. And you said it has less net pay than the offsets, and that is shown on Mr. Stirling's cross-section, is it not?

A. That's correct.

Q. Okay. And once again, the Examiner asked this question of Mr. Stirling, but have you been able to determine why the Number 6 well is better than the other wells in the pool?

A. No, we have not.

Q. Despite the larger calculated drainage area for the Number 6 well, can you see any adverse effect on the offset wells?

A. No, no indication.

Q. What is Exhibit 15?

A. Exhibit 15 shows a production plot from the two wells in question here, the Logan "35" Federal Number 5 and the Logan Federal "35" Number 6. It shows their production histories, and it also shows when a particular offset well, the Eagle "35" Fed Number 3, came on production in April of 2003.

And it also shows the location and the IP down in the bottom left of the Eagle "35" Federal F Number 12, which came on this past August at 204 barrels per day.

Q. And you don't see any effect on the production of the Numbers 5 and 6 wells, do you?

A. No, when we brought the offsetting wells on we saw no impact on the production trends for the "35" 5 and the "35" 6 well. And also, as I stated a minute ago, the Eagle "35" Number 12, which was a direct north offset to these wells, came in at over 200 barrels per day.

Q. And that -- Looking at your other exhibits, that appears to be what, the third best daily rate in the pool?

A. That's correct.

Q. And that well was drilled in 2003?

A. Yes, sir, it came on in August of 2003.

Q. Okay, so about -- anywhere from what, two to four years after those two good wells had been drilled?

A. That's correct.

Q. And it still had an IP of 204 barrels a day?

A. That's correct.

Q. What does this indicate to you?

A. It indicates that despite the anomalous behavior of these wells, that their production, their drainage, has not affected offset well performance, that there's not been any kind of waste or damage of correlative rights in the pool.

Q. Were Exhibits 7 through 15 prepared by you or under your supervision?

A. Yes.

Q. And in your opinion, is the granting of Devon's Application in the interests of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd move the admission of Devon Exhibits 7 through 15.

EXAMINER JONES: Exhibits 7 through 15 will be admitted to evidence.

EXAMINATION

BY EXAMINER JONES:

Q. Mr. Smith, you've kind of hammered me down here. There's a lot of information here, and it looks like you've got a really good case. Let's -- I'll probably have to be asking questions that you probably already answered, but first of all, the reconciliation of the EUR for volumetrics versus EUR for decline curves, what did you have to -- Can you talk about a little bit of the average well, what you had to -- you know, the factors that went into your volumetrics --

A. Yes, sir.

Q. -- to match the decline curve?

A. Yes. What we did was, we used the information that Mr. Stirling had compiled from his log analysis. We actually used net-pay, porosity, water-saturation information on a well-by-well basis to calculate the size of the drainage pool around that particular well.

Q. Okay.

A. And then we used the ultimate oil recovery from the decline curve analysis to actually estimate how large of an area it was draining. There wasn't really a reconciliation between volumetrics and decline-curve analysis, it was simply using the volumetric analysis with the decline-curve ultimate recovery to determine or estimate how big the drainage area was for each well.

Q. Okay, so you varied the drainage area to match it, basically?

A. Yes, sir. The drainage area was based on the volumetric calculations and the ultimate recoveries from the decline curve analysis.

Q. Okay, that makes a lot of sense. The well, the good well, you -- What kind of production mechanisms do you use out there? Are you flowing these wells? Obviously not, you're probably producing them with pumping units?

A. Yes, we pump the wells. The wells are drilled, they're cased through the formation, they are perforated and then sand-frac'd --

Q. Okay.

A. -- and then placed on pump.

Q. Okay, you clean them out one or two times and then put them on pump?

A. Yes.

Q. And do you have to -- You run 2-3/8 -- 2-inch tubing?

A. I'm not sure. My guess would be 2-7/8-inch tubing, but that's just a guess. That's not the area that I work.

Q. But it's usually 5-1/2 casing, though?

A. Yes.

Q. Okay, and have you run a production log on this well, good well, to see where the production is coming from?

A. No, we have not. Because they are rod-pumped, it makes it very difficult to run a production log.

Q. Yeah, you'd have to put a dual wellhead on and go down in the annulus?

A. Correct.

Q. Okay. But basically your Exhibit Number 15 shows that the wells have not been affected once you drilled the surrounding wells?

A. That's correct.

Q. Okay. And on this overage situation, how do you usually handle overage on -- You said the Artesia District Office did not catch this, and the team you had on it didn't catch it either, but what happens on a normal well that IP's more than 80 and starts producing more than 80? Does it quickly drop off and then you just balance it that way? Is that how you do it?

A. That's correct.

Q. So you go a few months sometimes on some of the other wells, over 80?

A. That's correct.

Q. Okay.

A. But then on a cumulative basis within a relatively short period of time they come into compliance on their allowables.

Q. Okay. And the difference in these two wells would be that they -- even now, after all this time, they could still produce over the 80 barrels allowable?

A. That's correct. If you look at the last full month under -- before we started curtailing, that would be December of 2002, the allowable again was 80 barrels per day, and they produced in excess of 100 barrels per day that month.

Q. Okay. Well, you've got some good wells. And as a reservoir engineer you don't think that these wells -- looking at their GOR and everything, you don't think that they reach the bubble point too much quicker than the others? Do they start out above the bubble point and then hit the bubble point and the GOR starts going up, is that -- The reservoir, you said 500 pounds, so that's probably way below bubble point?

A. That's correct.

Q. Okay.

A. Yes, sir, the wells do show -- and you can see from some of the plots, they do show an increase in GOR trend --

Q. Okay.

A. -- but you don't see anything excessive. The GOR for any solution gas drive reservoir is going to increase with time, and that's certainly what we see out here as the wells continue to produce, but we've not seen any trends that indicate an excessive increase in GOR. And again, the compelling evidence out here is the drainage areas that we're seeing for these existing wells, that we're just not going to be draining a large area that's going to damage offsetting locations.

Q. Okay. And as far as the effect on your economics of restricting to 80, did you do an economic analysis, kind of a generic, to figure out if it would be causing economic

waste to restrict them, versus to allow them to produce?
A. Yes, we've looked at the economics for these wells. They cost about $400,000 to drill and complete for the Yeso, and we need a minimum of about 55 barrels per day per well to make the economics work for us.
Q. Okay, so you probably in-house noticed an economic effect of restricting -- like these two wells, for instance, it would just extend the life of the wells if you restricted them to the 80. Do you think they would get the similar reserves if they were at 80, restricted to 80, for the well, for the 40-acre tract?
A. Yes, sir, I don't see any change in the ultimate recovery of the well, based on their allowable rates. If we produced them at lower rates, we still would arrive at the same ultimate recovery. But just due to the time value of money, there would be a point where we could not drill any additional wells without a higher allowable.
Q. What do you use for an economic limit?
A. I couldn't tell you for sure. Typically, it would be about five barrels per day, something like that.
Q. Okay, so you're handling some water along with these --
A. Yes.
Q. And where do you put the water?
A. We have an offsetting waterflood that needs

makeup water.

Q. Okay.

A. And so that's where we're taking the water right now.

Q. Okay, and this -- Are you going to waterflood this someday?

A. I don't know. Right now I don't see it as a strong waterflood candidate, but it's something that we'd continue to look at.

Q. Well, talking about the offsetting Empire field to the east there, you said it's being drilled on maybe three wells per 40 or something like that. But is the field rule for the Empire field more than 80 per 40?

MR. BRUCE: I looked that up, Mr. Examiner, and there are no special pool rules for the Empire -- both -- for either Empire pool.

Q. (By Examiner Jones) So maybe they never hit the good wells like you guys did.

A. If you look at their average production rate, it's close to 25 to 30 barrels per day per well.

Q. Okay.

A. So I can't say whether in any particular 40-acre tract -- you know, what that translates to. But I can certainly say that the average production rate currently is about 25 to 30 barrels per day, per well, in the Empire

East Pool.

EXAMINER JONES: Okay, I think we've beat this horse long enough. Thank you very much for all the production, all of you, Devon. And that's the only questions I have. Does anybody else want to add anything else?

MR. BRUCE: I don't have anything further at this time. We will give you that land data, Mr. Examiner.

EXAMINER JONES: Okay, and we're dismissing the GOR request and still maintaining the --

MR. BRUCE: That's correct.

EXAMINER JONES: Okay. With that, we'll take Case 13,185 under advisement.

(Thereupon, these proceedings were concluded at 9:30 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

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL February 6th, 2004.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2006