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

ORIGINAL

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

AMENDED APPLICATION OF YATES PETROLEUM CORPORATION FOR THE ADOPTION OF SPECIAL POOL RULES, LEA COUNTY, NEW MEXICO

CASE NO. 14338

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: RICHARD EZEANYIM, Presiding Examiner
TERRY G. WARNELL, Technical Examiner
DAVID K. BROOKS, Legal Examiner

July 9, 2009

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, RICHARD EZEANYIM, Presiding Examiner, DAVID K. BROOKS, Legal Examiner, and TERRY G. WARNELL, Technical Examiner, on Thursday, July 9, 2009, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: Jacqueline R. Lujan, CCR #91
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A P P E A R A N C E S

FOR THE APPLICANT:

HOLLAND & HART
William F. Carr, Esq.
110 North Guadalupe, Suite 1
Santa Fe, New Mexico 87501

MR. EZEANYIM: Okay. Therefore, this leaves us with two cases on the docket, and I think what we are going to do is take the easier one and then have the last one -- the contested one last.

On page 5, Case Number 14338, this is Amended Application of Yates Petroleum Corporation for the Adoption of Special Pool Rules, Lea County, New Mexico. Call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe office of Holland & Hart, LLP. We represent Yates Petroleum Corpcration in this matter, and I have one witness.

MR. EZEANYIM: Any other appearances?

May the witness stand and state your name to be sworn, please.

MR. BARNETT: J.O. Barnett.

(The witness was sworn.)

MR. EZEANYIM: Mr. Carr, you may proceed.

MR. CARR: Thank you, Mr. Examiner.

J.O. BARNETT

Having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your full name for the record, please.

A. J.O. Barnett.
Q. Mr. Barnett, where do you reside?
A. In Artesia, New Mexico.
Q. By whom are you employed?
A. Yates Petroleum.
Q. What is your position with Yates Petroleum?
A. I'm a reservoir engineer.
Q. Have you previously testified before the Oil Conservation Division and had your credentials as an expert in reservoir engineering accepted and made a matter of record?
A. Yes, sir.
Q. Have you previously testified before Mr. Ezeanyim?
A. No, sir.
Q. Would you review your educational background and your work experience for the Examiners?
A. I went to Colorado School of Mines, got a bachelor's degree in petroleum engineering, got out in 1999. After that I went to work for Schlumberger, most of the time working overseas as a field engineer but also as a reservoir engineer for their GEO Quest Division. In 2007 I moved to Artesia and became a reservoir engineer for Yates.
Q. Are you familiar with the application that has

been filed in this case for Yates Petroleum Corporation?

A. Yes, sir.

Q. And are you familiar with the development of the Upper Pennsylvania Formation in the general area of the Llano Upper Pennsylvania pool?

A. Yes, sir.

Q. Have you made an engineering study of the Upper Pennsylvania or Canyon Formation in the area of interest?

A. Yes, sir.

Q. Are you prepared to share the results of your work with Mr. Ezeanyim?

A. I am.

MR. CARR: Mr. Examiner, we tender Mr. Barnett as an expert in reservoir engineering.

MR. EZEANYIM: Mr. Barnett, have you attempted to get your certification as a professional engineer?

THE WITNESS: No, sir.

MR. EZEANYIM: All right.

MR. CARR: That's a suggestion maybe he should; right?

MR. EZEANYIM: I'm not suggesting that.

Q. (By Mr. Carr) Mr. Barnett, would you briefly summarize what Yates Petroleum Corporation seeks with

this application?

A. We're seeking special pool rules for this Llano upper Penn oil pool, and we're really -- we're looking for provisions for an 80-acre oil well spacing unit and proration unit, with the wells to be no closer than 330 from any of the boundaries within the unit, spacing unit.

Q. When was this pool created?

A. The pool was actually created back in 1966 by Order R-30-433.

Q. And what are the current boundaries of the pool?

A. The current boundaries are the northeast quarter of Section 31 and the northwest quarter of Section 32, within 11 South, Range 35 East, Lea County.

Q. What are the current vertical limits of the pool?

A. The current limits are the Cisco Canyon and the Strawn formations, and that -- in 2004 that was contracted back to those formations.

Q. And currently what rules govern the pool?

A. It's state-wide rules for a 40-acre oil well, 330 setbacks.

Q. Mr. Barnett, how many wells are currently producing from this pool?

A. Currently, there's only our Reba BNU State Com #5 Well. It's within this Llano Upper Penn oil pool.

Q. So we have one well in the pool?

A. That's right.

Q. Why is Yates seeking special rules for the pool?

A. From what I'll show you later is that the well will drain in excess of 40 acres, and it will drain 80 acres consistently, and that's what we're after, so there's no waste.

Q. When was this well drilled?

A. The well was originally drilled in '91 by Kerr-McGee. It was State 32 #1, and it was a Devonian oil well test. They didn't find anything. Subsequently, the well was plugged and abandoned. And Yates re-entered it back in October of '08 actually as an Atoka gas test. But it didn't find any gas there, so we moved up and it was completed in the canyon.

Q. Would you refer to what has been marked as Yates Petroleum Corporation Exhibit Number 1 and identify that for the Examiners?

A. This is just the Well Location and Acreage Dedication Plat. It shows where the well is located at 2,300 feet from the south line and 1,650 feet from the west line of Section 32 in 11 South, 35 East.

Q. This well will be in the standard location; will it not?

A. Yes, sir.

Q. In fact, it is in the standard location?

A. That's right. It's set back 340 from that north boundary of that 40-acre spacing unit and 330 from the western boundary.

Q. It is actually outside but immediately offsetting the pool boundaries for the Llano Upper Penn pool?

A. Yes, sir. That's right.

Q. Could you identify what has been marked Yates Exhibit Number 2?

A. This is just our ownership map, and all it really signifies is -- in yellow -- is all of Yates' acreage in the immediate area. And I've outlined in red here the boudaries of this Llano Upper Penn oil pool. You can see there in Section 32 where the Well 5 is, and that's our Reba #5 Well, just right south of the pool boundary.

Q. And Yates owns all acreage in the pool and all offsetting acreage?

A. Yes, sir.

Q. Let's look at Exhibit Number 3. What does this show us?

A. This is kind of to show the relationship between this Llano Penn oil pool and the other Penn oil pools in the immediate area. And kind of what I've got highlighted here is this little circle in red that indicates the two wells that -- or one that had been in the pool and the -- our well, the Reba 5. On here I've just got the perforation intervals marked in subsea depths.

If you look to the west here in green, I've circled the Four Lakes Penn oil pool, which is a -- has 80-acre spacing within the said pool. I've got the upper most perf and the bottom most perforation of this Cisco Canyon Upper Penn marked to show this, you know, relative to our Llano Penn pool.

MR. EZEANYIM: Excuse me. On that green circle, it's an 80-acre. What order approved that 80 acres? Do you remember the order that approved that?

MR. CARR: Mr. Examiner, I can provide those orders. I don't think we have them here right now, but I'll be glad to submit the orders after the hearing for both of the pools.

MR. EZEANYIM: That would be interesting to get that order.

MR. CARR: Okay.

A. Right south of that pool is the Ranger Lake

Penn oil pool. Again, it's 80-acre spaced, and I've got the upper most perf marked within the pool and the deepest perf marked, again, to show that they're all relative.

Q. (By Mr. Carr) Mr. Barnett, if we look at this exhibit and we look at, say, the Four Lakes Penn oil pool, the one in the northwestern part of the plat, do you have the perforations? You have a number of wells, only one active and a number that are now inactive. The perforations 5,690 to 6,523, does that mean that there are no wells perforated in that pool above 5,690?

A. That's right.

Q. And none below 6,523?

A. That's right. And the same for that Ranger Lake pool.

Q. Are there any other Upper Penn pools in the area shown on this plat?

A. No, sir.

Q. So all pools in this area are, if your application is approved, developed on 80-acre spacing?

A. That's right.

MR. EZEANYIM: What do you do with other wells that are not active? Are they plugged and abandoned?

THE WITNESS: Yes, sir.

MR. EZEANYIM: They are all plugged and abandoned?

THE WITNESS: Yes, sir.

Q. (By Mr. Carr) It's a fairly old area?

A. Yeah. That Rambouillet #1 was drilled in 1965. So, I mean, that kind of dates how old these pools are.

Q. Let's go to the two log sections, Exhibits 4 and 5, your neutron density log and then your lateral log. Could you explain what they show?

A. These are the original well logs from the Kerr-McGee's State 32 Number 1. And the idea is just to show that on the density neutron, we perforated the two -- two little streaks of porosity, and the same thing for the lateral log. It's just to show the resistivity across the perforated interval.

Q. And you've shown that on the third page of each exhibit?

A. Yes, sir. That's on the third page. The first page is just the log header, and the second page really just denotes the scale across the log. And the third page, in red I've got marked the perforated interval, and you can see where the geologist has highlighted the -- on the neutron density log has highlighted or colored in the porosity streaks there in

red.

MR. EZEANYIM: Which well is this?

THE WITNESS: This is Kerr-McGee's State 32 #1, which is the original wellbore for our re-entry, the Reba #5.

Q. This is the producing well?

A. Yes, this is our producing well.

MR. EZEANYIM: Okay. Now you plugged back?

THE WITNESS: That's right, to the upper --

Q. (By Mr. Carr) Mr. Barnett, what is Yates Exhibit Number 6?

A. Number 6 is just the daily production from this Reba well.

Q. Can you explain the color coding and what this shows?

A. Okay. This is a semi log plat of the daily production, and the green squares here show the oil volumes that were produced on a daily basis. You move down, you can see the -- in blue, blue circles -- the water production from the well. And below that is the maroon. The maroon triangles are the daily gas production. And, finally, up at the top, the red crosses are the GOR.

MR. EZEANYIM: I'm kind of color blind. Could you repeat what you said?

THE WITNESS: The squares are the oil production in barrels per day. There's also a legend up in the top right corner. The circles are water production. The triangles are the daily gas production, and the crosses denote the GOR.

MR. EZEANYIM: Okay.

THE WITNESS: This just shows that I've taken this daily production to get a decline -- to do a decline curve analysis on the well to come up with an EUR. This just shows that it comes up with 43 -- roughly 43-and-a-half thousand barrels of production.

Q. (By Mr. Carr) That's your total production from the well?

A. Yes, sir.

Q. How is Exhibit 7 different?

A. Exhibit 7, it's just the same -- exact same thing, except on a monthly basis to show the production and the decline throughout the life of the well. It shows that over the next 12 years that the well will make 43,000 barrels.

Q. Let's go now to Exhibit Number 8, your drainage calculation. I'll ask you to explain the input factors and then the calculation, how you got to this

drainage area.

A. The first thing I'll start off with is I assumed that this is a solution gas drive oil reservoir.

MR. EZEANYIM: I wanted to ask you what is the type of reservoir? Solution drive?

THE WITNESS: Yes, sir. And based off of that, I just looked in Craft and Hawkins to come up with the volumetric calculations for a solution gas drive reservoir. I also looked in McCain to get an estimate for the initial oil formation volume factor. I'll just kind of -- after that set, I'll just kind of run down from the top to the bottom.

The first set of parameters are really the inputs for Archie's water saturation equation. And this is just a lime, so I used the standard formula. I've got the water resistivity here taken from a water sample. I've also estimated the bottom hole pressure and temperature.

And the next is the height I'm using for this, and this is 16 feet of perforated interval. The porosity is 4 percent, which I took off of the logs. And next is the water saturation, which I used -- as I said before, I used Archie's equation and the resistivity off of the lateral log to come up with 45 percent water saturation. The solution gas/oil ratio I took from the first day of

production at 693 cubic feet per barrel.

MR. EZEANYIM: To get all of these factors, did you assume those factors?

THE WITNESS: Yes, sir.

MR. EZEANYIM: You just assumed them; right?

THE WITNESS: Well, I assumed the cementation and saturation coefficients, but the water resistivity was measured.

MR. EZEANYIM: I'm just talking about the A, M, and N.

THE WITNESS: Yes, sir, I assumed these.

MR. EZEANYIM: Okay. Go ahead.

A. The API gravity and the gas gravity were measured from samples, oil and gas samples. As I said before, the initial oil formation volume factor I took from McCain Figure 11-9. And using the solution gas/oil ratio and the gravities and the bottom hole temperatures, come up with the initial oil formation volume factor. As well, I estimated the formation volume factor at abandonment, and I also had to assume the abandonment gas saturation since this is a solution gas drive reservoir.

The EUR I took from the decline curve analysis, and I used the Craft and Hawkins equation to come up with the oil volume for stock tank barrels per

acre foot and backed out the drainage area of 86 acres. As well, I had to assume a recovery factor in all of this. I just assumed 20 percent, which is probably a little bit optimistic, kind of -- how do I put it? That might be a little bit high. You know, it might be more along the lines of 15 percent. And if it was, I mean, all that would do is show a bigger drainage area.

And as well, I tried to run some sensitivities on this to see, based on my assumptions, if I changed my assumptions, what kind of areas would it drain, and it showed between 66 acres and 116 acres. So the way I was thinking is either way, this will drain an 80-acre spacing unit, which won't show any waste.

Q. Mr. Barnett, what conclusions can you reach from your study?

A. This well can accurately drain and efficiently drain 80 acres.

Q. Do you believe that 80-acre spacing is appropriate for this pool?

A. I do.

Q. Does Yates plan to drill additional wells in this immediate area?

A. We've got one other well permitted in this area. It's the #6.

Q. Where is that?

A. It's just to the north. It's in the southwest quarter of the northwest.

Q. Of Section 32?

A. Of Section 32.

Q. Would a 43,000 barrel recovery even economically support development on 40-acre spacing?

A. No.

Q. Is it your recommendation that special pool rules be adopted that provide for 80-acre spacing in this pool?

A. Yes, sir.

Q. Is Exhibit Number 9 an affidavit confirming that notice of the application has been provided in accordance with the rules of the Division?

A. Yes, sir. This affidavit shows that we -- well, Yates is the only operator within the said pool. We hold all the mineral interests in this area. So we -- honestly, we didn't have to notify anybody, but as a courtesy, we notified the Commission of Public Lands.

Q. This is a State tract?

A. Yes, sir.

Q. Does this affidavit also contain the affidavit of publication from the Lovington Leader?

A. That's right.

Q. In your opinion, will approval of this

application be in the best interest of conservation and the prevention of waste and the protection of correlative rights?

A. Yes, sir.

Q. Were Exhibits 1 through 9 compiled by you or compiled under your direction?

A. Yes, sir.

MR. CARR: May it please the Examiner, at this time I would move the admission into evidence of Yates Exhibits 1 through 9.

MR. EZEANYIM: Yates Exhibits 1 through 9 will be admitted.

(Exhibits 1 through 9 were admitted.)

MR. CARR: That concludes my direct examination of Mr. Barnett.

MR. EZEANYIM: Thank you.

MR. BROOKS: I have no questions.

EXAMINATION

BY MR. WARNELL:

Q. Mr. Barnett, I noticed on your logs there, do you have plans of opening up some more of that well? There's a couple of zones there, it looks to me like. I'm surprised they didn't perforate the surface.

A. Yes, sir. Originally, this wasn't the perforations that we were going to complete, and they did

talk about coming up to the -- a little higher and below, and testing that, as well, but I can't say how soon that will be. I mean -- but we have talked about that.

Q. You didn't recommend that? You didn't miss these --

A. No. That's right.

MR. WARNELL: No more questions.

EXAMINATION

BY MR. EZEANYIM:

Q. Do you know what the bubble point of this wellbore is?

A. No, sir.

Q. Have you attempted to obtain one?

A. Just through correlations and looking at it, the bubble point would be initial pressure.

Q. Initial pressure?

A. Yes, sir.

Q. So immediately you perforate your bubble point?

A. Right.

Q. What are the current production rates now?

A. It's fluctating between, I'd say, 55 and 65 barrels a day of oil.

Q. Okay.

A. It hasn't, surprisingly -- I shouldn't say

surprisingly, but it hasn't shown us any decline. It's been fairly constant these last couple of months.

Q. How do you get the 43,000 barrels ultimate recovery? Is it by the decline --

A. Yes, sir. That's just until economic limit based on the monthly cost of $60 oil.

Q. So what's the initial pressure then at the bubble point?

A. It was 3,700, I believe.

Q. When I was reading through the application for this, it said you want to produce at unrestricted rates. What do you mean by unrestricted rates?

A. Our primary objective is not that. It's just the spacing unit -- you know, just looking at the production, it's an unrestricted rate of -- I don't know what it is -- for 10,000 feet, but it's probably on the order of 200 plus barrels, 230 barrels. This well will never make that. It's just going to eke out 50, 60 barrels a day.

MR. CARR: Mr. Barnett, Yates isn't seeking an exception to the depth --

THE WITNESS: No, sir, we're not.

Q. (By Mr. Ezeanyim) Where you get your fluid properties from, McCain, I don't like McCain. I wish you got it from Hawkins. That's just my personal opinion.

I'm not saying there's something wrong with that.

A. We'd honestly like to have PVT Properties. We'd like to take fluids samples and get them measured, but that's -- in a well like this, we can't really afford to do that.

Q. This case will border on the varied calculations, if it's evident that you're doing a calculation -- which I don't like to assume to take all those assumptions to arrive at what you arrived at. So it's something we have to take a look at and see what order we are going to submit or incorporate.

A. A reasonable --

Q. Yeah, reasonable. If they're reasonable and the calculations come out the way it is, I mean --

A. That's one of the reasons I tried to run a sensitivity and just see if I changed my assumptions --

Q. That was a good point to run the sensitivity.

A. -- will it actually change? But what I found is it would drain more than 40 acres either way. It looks like it could drain up to 120 acres, you know, so I mean, I think 80 is realistic within this pool.

Q. I don't know whether you are asking for this special pool rules on a permanent basis? On a temporary basis?

A. A permanent basis.

MR. CARR: I would think we would prefer on a permanent basis.

Q. (By Mr. Ezeanyim) Suppose you get it on a permanent basis and find out it's not actually doing more than the 80? I mean it's not really to your benefit to accumulate those 80 acres without draining them. Anyway, that's okay. But it depends on what the calculations say?

A. That's right. This is all calculation-based.

Q. Okay. Now, what is special pool rules? I know if you can get the 80-acre spacing that you're asking for -- say 330 from the quarter section?

A. Yes, sir.

Q. What depth are we talking about now?

A. It's roughly 10,400 feet. The perforated intervals -- the two perforated intervals of 10,396 to 10,404, and 10,408 to 10,416.

MR. EZEANYIM: Okay. Good. Anything further?

MR. CARR: That concludes our presentation.

MR. EZEANYIM: Okay.

MR. CARR: Mr. Examiner, I will today send you the orders for the 80-acre spacing.

MR. EZEANYIM: That was very important.

And then try to draft an order so I can look at it.

MR. CARR: Would you like a draft order from us?

MR. EZEANYIM: Yeah.

MR. CARR: Yes, sir. I'll provide that.

MR. EZEANYIM: Let me see what you are asking for in the pool rules when I look at this.

Okay. At this point Case Number 14338 will be taken under advisement.

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 14338 heard by me on 7/9/09.

, Examiner
Oil Conservation Division

REPORTER'S CERTIFICATE

I, JACQUELINE R. LUJAN, New Mexico CCR #91, DO HEREBY CERTIFY that on July 9, 2009, proceedings in the above captioned case were taken before me and 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.

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

WITNESS MY HAND this 22nd day of July, 2009.

Jacqueline R. Lujan

Jacqueline R. Lujan, CCR #91
Expires: 12/31/2009