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 SAMSON RESOURCES COMPANY FOR SPECIAL POOL RULES FOR THE SOUTHEAST HAT MESA-DELAWARE POOL, LEA COUNTY, NEW MEXICO

CASE NO. 13,289

ORIGINAL

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REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

June 24th, 2004

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, June 24th, 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

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Examiner Hearing
CASE NO. 13,289

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A P P E A R A N C E S

FOR THE APPLICANT:

HOLLAND & HART, L.L.P., and CAMPBELL & CARR
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P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 10:28 a.m.:

EXAMINER CATANACH: Call Case 13,289, the Application of Samson Resources Company for special pool rules for the southeast Hat Mesa-Delaware Pool, 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 and Hart, L.L.P. We represent Samson Resources Company in this matter, and I have one witness.

EXAMINER CATANACH: Additional appearances?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin. I'm appearing this morning on behalf of Mr. Gene Gallegos, doing business as Pro NM Energy, Inc.

MR. CARR: Mr. Kellahin, this is not the Coleman case. I know you're anxious, but you're going to have to wait.

MR. KELLAHIN: Oops.

EXAMINER CATANACH: Okay.

MR. KELLAHIN: I promise to do better next time.

EXAMINER CATANACH: Okay, no additional appearances. Will the witness --

MR. CARR: He got the e-mail on the black coat,

but he missed the rest of it.

EXAMINER CATANACH: Will the witness please stand?

(Thereupon, the witness was sworn.)

RAYMOND L. TAYLOR,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. Raymond L. Taylor.

Q. Mr. Taylor, where do you reside?

A. Tulsa, Oklahoma.

Q. By whom are you employed?

A. Samson Resources Company.

Q. And what is your position with Samson Resources Company?

A. I'm a reservoir engineer.

Q. Have you previously testified before the New Mexico Oil Conservation Division?

A. No, I have not.

Q. Could you summarize your educational background for Mr. Catanach and then review your work experience?

A. Certainly. I received a bachelor of science degree in petroleum engineering from the University of

Missouri, Rolla, in 1974, and I have been employed in production and reservoir engineering capacities by various firms over the last 29 years.

Q. Have you previously testified in other states?

A. Yes, approximately 12 other states.

Q. And in all those cases as an expert in reservoir engineering?

A. Or in production engineering, yes.

Q. Are you familiar with the Application filed in this case on behalf of Samson?

A. Yes, I am.

Q. And are you familiar with the status of the lands in the area of the Southeast Hat Mesa-Delaware Pool?

A. Yes, I am.

MR. CARR: We tender Mr. Taylor as an expert witness in reservoir engineering.

EXAMINER CATANACH: Mr. Taylor is so qualified.

Q. (By Mr. Carr) Could you briefly summarize for Mr. Catanach what it is that Samson Resources seeks with this Application?

A. Yes, Samson is seeking the adoption of special pool rules and regulations for the Southeast Hat Mesa-Delaware Pool that would include 160-acre spacing on a temporary basis.

Q. When was this pool created?

A. The pool was created in January of 2003 by Order Number R-11,886.

Q. Mr. Taylor, let's go to what has been marked as Samson Resources Exhibit Number 1. I would ask you to identify that and then review the information shown thereon.

A. Certainly. Exhibit 1 is a plat that demonstrates the general area. There are quite a few wells depicted on the plat. Delaware producers are depicted in a pinkish color, I'll call it.

There are three principal field areas that are depicted on the plat. Up in the northwest portion, that is Hat Mesa-Delaware Pool.

In the south central portion of the plat there is a single well which is South Hat Mesa.

And then over toward the eastern portion of the plat there is a single well, the Samson Resources Minis 2 Federal Number 1. That is Southeast Hat Mesa Pool.

Q. Could you describe for Mr. Catanach the pool boundaries as defined by the Oil Conservation Division?

A. Yes. First of all, Section 2, like all of the sections along the northern boundary of Township 21 South, Range 32 East, are corrective sections. They're very much oversize sections. Section 2 is approximately 956 acres in size. It's a normal-size section on the south end of it,

and it's composed of lots on the north end of it. The pool is currently defined as Lots 9, 10, 15 and 16 of Section 2.

Q. Basically what we have is a pool boundary comprised of approximately 160 acres surrounding the Minis Federal Well Number 1?

A. That's correct, it would be the southeastern 160-acre approximate portion of the north end of Section 2.

Q. Are there any other Delaware wells completed within one mile of these pool boundaries?

A. No, there are not.

Q. This exhibit shows other wells in the area, and in fairly close proximity to the Minis Number 1. Do these wells penetrate the Delaware but do not produce from that horizon? Is that what we're looking at?

A. Yes, most of the wells in the immediate area, and in particular, in Section 2, are Morrow producers. There is one well in the western portion of Section 2 that was a Morrow producer, and I believe it's being produced from what is now considered or called the Strawn.

Q. What is the current status of the Minis Federal Well Number 1?

A. The Minis Federal -- the Minis 2 Federal Number 1 is the discovery well for the pool. It was completed in the spring of 2002, and it is perforated in the Delaware from 7910 feet to 7920 feet.

Q. What rules currently govern this particular well?

A. The general Rules of the Division govern operations of the well, which would be 40-acre spacing, and the resultant depth bracket allowable would be 187 barrels per day.

Q. Was a discovery allowable actually assigned to this well?

A. Yes, it was, in January of 2003 the Division assigned a discovery allowable of 35,465 barrels to be produced over a two-year period.

Q. And what is the effective allowable that results from the assignment of this discovery allowable?

A. That would raise the effective allowable to 241 barrels per day, from the 187 barrel-a-day depth bracket allowable.

Q. Okay, let's go to Samson Resources Company Exhibit Number 2. Would you identify and review this?

A. Exhibit Number 2 is a tabular display of the production and allowable status for the Minis 2 Federal Number 1. Of course the first column on the left-hand portion of the exhibit, it just lists the various months that the well has produced since March of 2002.

The next column to the right is oil production in barrels per month. I would note that the production is actual production through April of 2004. The May volume

listed there is an estimated volume, based upon field estimates of production during that month.

Moving onward, the next column would be allowable, once again in barrels per month.

Moving to the right of that, we would have an oil status column, which is merely the variation between oil production and allowable for a given month.

And then there is a cum status allowable, which is the accumulation of that oil status column on a totaling basis as you proceed downward through time.

The right-hand portion of the exhibit deals with gas production and of course gas allowable, based upon the 2000-to-1 limiting GOR. Gas production on this well was such that it has not ever approached any monthly allowable. From a cumulative status on an oil basis right now through May of 2004, we're estimating that the well is underproduced by about 11,400 barrels.

Q. Are you currently curtailing production from the well?

A. Yes, there is -- we are currently attempting to maintain the 241-barrel-a-day allowable as prescribed by the Division.

Q. Mr. Taylor, let's go to Exhibit Number 3, the rate-time plot. Would you review this for Mr. Catanach?

A. Certainly. Rate 3 [*sic*] is a traditional rate-

time plot for oil and gas production for the Minis 2 Federal Number 1 well, and it also has a projection of future production.

Oil is listed in barrels per month. Those are the little crosses, if you will, listed on the right side of the plot. Gas production are the little boxes connected by a line, once again on the right side of the plot.

There's a line that goes upward vertically through the plot that is the demarcation line between historical production and, to the right of that line, is a projection of future production.

If you look at the data train in the upper right-hand portion of the exhibit, it lists various decline parameters. In this particular case, I've attempted to project production on up through the end of June of 2004, and at this particular time I was looking at a potential cum, about 187,000 barrels. This projection of production would result in an ultimate recovery, which is listed on the data train as "Ultimate (M)" of about 945,000 barrels.

Q. Now, what Samson seeks will result in a depth bracket allowable of 427 barrels a day. In your opinion, can the Minis 2 Federal Number 1 well produce at these rates?

A. Yes, we're confident the well can produce at that rate.

Q. Have you recently worked on the well?

A. We have worked on the well during the month of June, which was a little bit later than we thought perhaps we would, and we've revised the lift equipment on the well and we're currently attempting to return production to its prior levels and then obviously increase production from there.

Q. In addition to this decline curve analysis, have you tried to simulate the well's performance?

A. Yes, the decline curve in and of itself is not definitive, because obviously the well is currently experiencing no decline.

So what we did was attempt to simulate the reservoir, and I'll characterize this as a conceptual simulation. And I'm characterizing it in that manner, that although we've provided a geologic description to the simulator of the reservoir itself, we have no precise determinations of permeability, relative permeability, PVT data that type of thing.

We've had to make assumptions and utilize correlations in the simulation to run it, and we are history-matching production data, which is not the ideal condition that you would like to simulate and have confidence in the results of the simulation, but I think it's a reasonable approximation of what the reservoir might

be able to do in the future. And that simulation is indicating that -- a recovery from this Minis 2 Federal Number 1 well approaching a million barrels is not unreasonable.

Q. Have you calculated a drainage area for the well?

A. Yes, I have.

Q. Would you refer to Samson Exhibit Number 4, your volumetric calculation, and review that for Mr. Catanach?

A. Certainly, Exhibit Number 4 is a traditional volumetric computation of drainage area for the Minis 2 Federal Number 1 well. The input data that was used in the computation is, of course, the EUR number of 945,000 barrels brought over from the rate-versus-time plot, which is a simulation-based number.

The reservoir thickness, porosity and water saturation numbers are, of course, log-based. Oil formation volume factor is based on correlation, and that was the same that was used in the simulation, and the recovery factor of the simulator seems to indicate it's approximately 28 percent of the oil in place.

And if you make the computation of drainage area, the resultant area is approximately 216 acres.

Q. Samson is seeking the adoption of these special pool rules on a temporary basis, establishing 160 acres as the spacing pattern for this pool; is that correct?

A. That is correct.

Q. Based on your volumetric work, is it fair to say that a 160-acre spacing pattern would more closely reflect the acreage that's actually going to be drained by this well?

A. That is correct.

Q. Now, Mr. Taylor, we have not requested special well-location requirements that would require wells to be located 660 feet from the outer boundary of the dedicated acreage; is that right?

A. Yes, we would make that request.

Q. Would Samson request that the order that results from this hearing also provide for 660-foot setbacks?

A. Yes, we would.

MR. CARR: Mr. Catanach, I omitted to include that in the Application. And so, with your permission, we will file an amended application and ask that you continue the case to the second hearing in July and take the case under advisement on the record we've made here today. We're seeking a 160-acre spacing. We're also requesting 660 setbacks which are consistent with statewide rules for pools developed on 160-acre spacing.

EXAMINER CATANACH: Okay.

Q. (By Mr. Carr) Mr. Taylor, will the increased rate from this well cause any reservoir damage?

A. No, we do not anticipate any reservoir damage whatsoever. As part of the simulation program, we looked at varying production rates for the well, principally the 187 barrels a day which is the current depth bracket allowable, the 241 barrels a day which is the current discovery allowable that -- and is imposed on the well, and then also the 427 barrels a day.

We saw no -- any significant variation in ultimate recovery from those rates -- utilizing those rates as qualifiers, if you will, on the producibility of the well. The simulator seemed to indicate that the recovery would be principally the same, whatever rate you utilize to produce the well.

Q. Do you anticipate additional development of this pool?

A. There is no current plans for any additional drilling development. There is some possibility for a recompletion of one of the Morrow wells in the area, although the Morrow wells are producing commercial volumes of gas at this time, so a recompletion could be somewhat distant in time.

Q. And that would depend, probably, on the information you're going to get from the well that's the subject --

A. That's correct, we will closely monitor of the

data that we receive from the Minis 2 Federal Number 1 and see what that leads us to.

Q. Could you summarize the conclusions you've reached from your engineering study of this reservoir?

A. Yes, real brief summary, the reservoir does not appear to be rate-sensitive, and that is based upon simulation information. We are fully confident that the withdrawal rate from the well can be increased without damaging the reservoir in any way, shape or form, and that the 160-acre spacing that is requested will certainly more closely reflect the drainage are of the -- currently the single well that's producing from the pool.

Q. Mr. Taylor, is Exhibit Number 5 an affidavit that confirms that notice of this hearing was provided in accordance with Division Rules?

A. Yes.

Q. And to whom was notice provided?

A. It was provided to the Bureau of Land Management.

Q. Samson is the only Division-designated operator in the pool?

A. Yes, we are.

Q. And there are no other owners of mineral interests in that spacing unit?

A. No, there are not.

Q. Will approval of this Application be in the best

interest of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, it will.

Q. Were Samson Exhibits 1 through 5 prepared by you or compiled under your direction and supervision?

A. Yes, they were.

Q. And can you testify as to their accuracy?

A. Yes, I can.

MR. CARR: May it please the Examiner, at this time we'd move the admission into evidence of Samson Resources Company Exhibits 1 through 5.

EXAMINER CATANACH: Exhibits 1 through 5 will be admitted.

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

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Taylor, the Minis 2 Fed Number 1, it's currently producing at about what? 240?

A. About -- approximately 240 barrels per day, yes, sir.

Q. Have you guys tested it to see what it's capable of producing?

A. That is what we're in the process of right now. The well work has been ongoing over the last two weeks, and

we've just started returning the well to production after we altered the lift equipment. So no, we do not have a precise determination of capability at this time.

Q. How do you know that it's capable of producing 400 and some barrels a day?

A. The simulations -- the simulation indicates that the well should have absolutely no difficulty in achieving that level of production. In fact, it probably could produce a greater volume than that.

Q. I'm not a simulation expert, but can you do simulation work when you're artificially curtailing the well like this?

A. Yes, you can. It is a well qualifier that's placed in the simulation, and in essence what it does is, the simulation is restricted by that withdrawal rate from the well. So obviously the simulator will produce at a constant rate until the reservoir is no longer able to support that rate, and then it will start to decline from that point.

Q. And you plugged into -- what number did you plug into that simulator? The four hundred and --

A. The four hundred -- as I testified earlier, actually we looked at two or three different rates. We looked at the 187-barrel-a-day rate, the 241 and also the 427, which is the depth bracket allowable for the 160-acre

spacing.

There was virtually no variation in recovery of the well, irrespective of what rate you applied to the simulator.

Q. So that was essentially the same for all three rates?

A. Right, recovery was essentially the same for all three rates, that's correct.

Q. And how do you -- Does that tell you what the decline is going to be on the well?

A. Yes, it will. In fact, if you refer back to Exhibit Number 3, which is the decline-curve plot, essentially the projection you see on that plot is what the simulator is indicating the well will do with -- in time.

As I said earlier, there is no decline on the historical data that you can work with, so obviously this is a simulation projection of future production.

Q. And this particular decline is based on which rate?

A. The decline -- if I may, if you'll look at Exhibit 3, you'll see to the right of the vertical line that goes through the plot -- that, as I said, is the demarcation between historic production and future projection of production.

Right above the 10,000-barrel-per-month line on

the log log -- log portion of the plot, you can see that there's a projection for approximately a year in duration, and that is representative of the 427-barrel-per-day rate, and approximately a year after that projection is in place, the well -- the simulator indicates that the well can no longer sustain that production rate, and it will start to decline.

Q. Okay. And there's not going to be any more wells drilled here, or did you say there was a possibility?

A. We're not currently anticipating it. There is a possibility -- There's always a possibility of drilling more wells, but we -- there are no immediate plans to do so.

Q. Is the reservoir essentially limited to this four quarter-quarter section area?

A. Utilizing the geologic or subsurface control available, it's more or less confined in Section 2, in this northern approximately 640-acre area. But of course, that's only based upon the available subsurface control.

Q. Is this a -- What type of drive? Is this solution gas?

A. It is -- I'm going to characterize it as primarily solution gas or depletion drive. I realize that 28-percent recovery of oil in place for a solution gas drive reservoir is on the very high side, but this seems to

be a very remarkable reservoir in that it's already produced a hundred and -- through -- Let me see here. Through the end of May it's already produced 167,000 barrels, and if we took this well over to Hat Mesa Reservoir proper it would be one of the very best wells over there, even on an ultimate recovery basis. So this is a very fine well.

Q. When you said you were working on the well, you're working on the lift system; is that right?

A. That's correct. It was primarily rod work and also changing out the prime mover on the pumping unit.

Q. Okay. The GOR is running about what, do you know? I assume gas production is not a problem, you don't need an increase in GOR?

A. No, sir, gas production is not a problem whatsoever. Let me just calculate the most recent GOR that I have here. In may the GOR would have only been about 267 to 1.

Q. Okay, and you're asking for 660 setbacks from the outer boundary of the --

MR. CARR: Ye, sir, of the --

EXAMINER CATANACH: -- of the unit?

MR. CARR: -- 160 spacing unit.

EXAMINER CATANACH: 330 interior or any interior?

MR. CARR: We'd like to have the spacing

requirements consistent with the statewide rule for 160-acre spacing, same interior setbacks.

EXAMINER CATANACH: I believe it's -- is it 130 or -- ? I'm going to have to look it up. It may be 130.

Q. (By Examiner Catanach) And as far as the temporary rules, do you have a time frame that you're looking at?

A. Yes, we're requesting 18-month period --

Q. 18 months.

A. -- for the temporary nature of the rules.

EXAMINER CATANACH: Okay, I think that's all I have, Mr. Carr.

MR. CARR: That concludes our presentation in this case.

THE WITNESS: Thank you.

EXAMINER CATANACH: Thank you. There being nothing further, Case Number 13,289 will be continued to July 22nd.

(Thereupon, these proceedings were concluded at 10:53 a.m.)

* * I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 13289 heard by me on June 24 2004

David K. Catanach, 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 June 30th, 2004.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2006