

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:)

CASE NO. 13,289

IN THE MATTER OF CASE 13,289 BEING)
REOPENED PURSUANT TO THE PROVISIONS)
OF DIVISION ORDER NUMBER R-12,203,)
WHICH ORDER PROMULGATED TEMPORARY)
SPECIAL POOL RULES FOR THE SOUTHEAST)
HAT MESA-DELAWARE POOL IN LEA COUNTY,)
NEW MEXICO)

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: RICHARD EZEANYIM, Hearing Examiner

October 6th, 2005

Santa Fe, New Mexico

2005 OCT 20 AM 9 07

This matter came on for hearing before the New Mexico Oil Conservation Division, RICHARD EZEANYIM, Hearing Examiner, on Thursday, October 6th, 2005, 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.

* * *

I N D E X

October 6th, 2005
 Examiner Hearing
 CASE NO. 13,289

	PAGE
APPEARANCES	3
APPLICANT'S WITNESS:	
<u>RANDAL MAXWELL</u> (Engineer)	
Direct Examination by Mr. Carr	5
Examination by Examiner Ezeanyim	17
REPORTER'S CERTIFICATE	21

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E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	7	17
Exhibit 2	10	17
Exhibit 3	11	17
Exhibit 4	12	17
Exhibit 5	14	17

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A P P E A R A N C E S

FOR THE DIVISION:

GAIL MacQUESTEN
Deputy General Counsel
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Santa Fe, New Mexico 87505

FOR SAMSON RESOURCES COMPANY:

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

* * *

1 WHEREUPON, the following proceedings were had at
2 8:48 a.m.:

3 EXAMINER EZEANYIM: At this point I call Case
4 Number 13,289. This is the Application of Samson Resources
5 -- reopened case pursuant to the provisions of Division
6 Order Number R-12,203, which order promulgated temporary
7 special pool rules for the Southeast Hat Mesa-Delaware Pool
8 in Lea County.

9 Call for appearances.

10 MR. CARR: May it please the Examiner, my name is
11 William F. Carr with the Santa Fe office of Holland and
12 Hart, L.L.P. We represent Samson Resources Company in this
13 matter, and I have one witness who needs to be sworn.

14 EXAMINER EZEANYIM: Are there any other
15 appearances?

16 Okay, may the witness stand to be sworn?

17 (Thereupon, the witness was sworn.)

18 MR. CARR: May it please the Examiner, a year ago
19 Samson Resources came before the Division and sought an
20 order establishing special pool rules for the Southeast Hat
21 Mesa Pool, and that application was granted. The case was
22 to be reopened in September of this year, but it didn't get
23 on the docket until today. But I have an engineering
24 witness who I will present to share with you the data that
25 we've obtained in the last year related to the information

1 we had before, and request that the rules be made
2 permanent. And my witness is Randy Maxwell.

3 EXAMINER EZEANYIM: Go ahead, Mr. Carr.

4 RANDAL MAXWELL,

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

7 DIRECT EXAMINATION

8 BY MR. CARR:

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

10 A. Randal Maxwell.

11 Q. Where do you reside?

12 A. Jenks, Oklahoma.

13 Q. Mr. Maxwell, by whom are you employed?

14 A. Samson Resources Company.

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

17 A. I'm the regulatory engineer for Samson.

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

20 A. No, I have not.

21 Q. Could you summarize your educational background
22 for Mr. Ezeanyim?

23 A. I have a bachelor of science of engineering
24 physics with a specialty in petroleum engineering from the
25 University of Tulsa. I graduated in 1981.

1 Q. Since graduation, what has your work experience
2 entailed?

3 A. Over the past 24 years I've spent 19 years doing
4 reservoir engineering for a variety of firms throughout
5 Oklahoma.

6 Q. Are you a registered professional engineer?

7 A. Yes, sir, I am, in the State of Oklahoma.

8 Q. And are you the engineer with Samson responsible
9 for the area that is the subject of this case?

10 A. Yes, I am.

11 Q. Are you familiar with the status of the Southeast
12 Hat Mesa-Delaware Pool?

13 A. Yes, I am.

14 MR. CARR: May it please the Examiner, we tender
15 Mr. Maxwell as an expert witness in reservoir engineering.

16 EXAMINER EZEANYIM: Mr. Maxwell is so qualified.

17 Q. (By Mr. Carr) Could you briefly summarize for
18 Mr. Ezeanyim what it is that Samson Resources Company seeks
19 with this Application?

20 A. Temporary special pool rules and regulations were
21 adopted for this Southeast Hat Mesa Pool in September 2nd
22 of 2004. Samson now seeks to have those temporary pool
23 rules adopted as permanent.

24 Q. Mr. Maxwell, when was this pool created?

25 A. The pool was created January 1, 2003, by Order

1 Number R-11,886.

2 Q. And what are the current pool boundaries for this
3 pool?

4 A. The pool currently covers lots 9, 10, 15 and 16
5 of Township 21 South, Range 32 East, Section 2.

6 Q. Would you refer to what has been marked for
7 identification as Samson Resources Company Exhibit Number
8 1, identify this exhibit and then review the information on
9 the exhibit for the Examiner?

10 A. This is a well data plat showing the area around
11 the Southeast Hat Mesa Pool. It includes for reference the
12 main Hat Mesa Pool to the north and west of the Southeast
13 Hat Mesa Pool. Southeast Hat Mesa Pool is outlined with
14 the blue line that you see on the east half of Section 2.

15 Q. This shows the initial well, the -- or the
16 subject well, actually, the Minis Number 1?

17 A. That is correct, the Minis Number 1 Federal --
18 the Minis 2 Federal Number 1 is in the southeast portion of
19 the pool as denoted on the plat.

20 Q. You've also indicated other Delaware production
21 in the area?

22 A. Yes, the Delaware production is identified by the
23 orange circles with the green dots in the center.

24 Q. Is the Minis Federal Well Number 1 the only well
25 producing from this common source of supply?

1 A. Yes, it is.

2 Q. And it is the only well in the southeast Hat Mesa
3 Delaware Pool; is that not true?

4 A. That is correct.

5 Q. And what is the current status of this well?

6 A. Currently the well is pumping. We've been having
7 a little bit of problem with the artificial lift, but the
8 well continues to produce at the limit that we can get the
9 artificial lift to work.

10 Q. This was the discovery well for the pool, was it
11 not?

12 A. That is correct, it was the discovery well for
13 the pool. It was completed in the spring of 2002,
14 perforated around 7900 feet.

15 Q. And what cum production have you obtained to
16 date?

17 A. Through the end of August, the cumulative
18 production has been 252,567 barrels of oil and 112,030 MCF
19 of gas.

20 EXAMINER EZEANYIM: Can you repeat that number?

21 THE WITNESS: Oil or gas or both?

22 EXAMINER EZEANYIM: Both.

23 THE WITNESS: Oil cumulative 252,567 barrels --

24 EXAMINER EZEANYIM: And --

25 THE WITNESS: -- and gas is 112,030 MCF.

1 Q. (By Mr. Carr) And those figures are through
2 August?

3 A. Through the end of August, correct.

4 EXAMINER EZEANYIM: August of this year.

5 THE WITNESS: Of this year, yes, ma'am -- yes,
6 sir.

7 EXAMINER EZEANYIM: Okay.

8 Q. (By Mr. Carr) Mr. Maxwell, the special pool
9 rules provide for 160-acre spacing?

10 A. That is correct.

11 Q. And what is the depth bracket allowable for a
12 well at 160 --

13 A. Depth bracket allowable for a well at that depth
14 is 427 barrels of oil per day.

15 EXAMINER EZEANYIM: Under the order, 12,203?

16 MR. CARR: Right.

17 THE WITNESS: That is correct.

18 Q. (By Mr. Carr) If, in fact, these rules were
19 rescinded, what would the spacing for this well be?

20 A. The spacing would be returned to 40 acres.

21 Q. And what would the depth bracket allowable be at
22 on 40 acres?

23 A. The depth bracket allowable for that depth would
24 be 187 barrels of oil per day.

25 Q. Was a discovery allowable initially assigned to

1 this well?

2 A. Yes, January of 2003 the Division assigned a
3 discovery allowable of 35,465 barrels of oil that could be
4 produced over a two-year period.

5 Q. And what did that do to the effective authorized
6 production rate?

7 A. It effectively increased the daily allowable of
8 the well to 241 barrels of oil per day.

9 Q. Would you just identify what is marked Samson
10 Exhibit Number 2?

11 A. Samson Exhibit Number 2 is the Order Number
12 R-12,203, which is the order that awarded the temporary
13 field -- or temporary special pool rules to the Southeast
14 Hat Mesa-Delaware Pool.

15 Q. I'd like to now direct your testimony to the
16 production information on the Minis 2 Federal Number 1
17 well, and I would direct your attention to what has been
18 marked Exhibit Number 3, which is a table of actual
19 production. Would you review that for the Examiner?

20 A. This is a table of actual oil and gas production
21 from the well.

22 EXAMINER EZEANYIM: Exhibit Number 3 -- I don't
23 have it.

24 THE WITNESS: Exhibit Number 3 was following
25 Exhibit Number 4.

1 EXAMINER EZEANYIM: Oh, okay, yeah. It was
2 misplaced, okay.

3 MR. CARR: We're just trying to keep everybody on
4 their toes this morning.

5 EXAMINER EZEANYIM: Okay, yeah. Okay, go ahead.

6 THE WITNESS: Exhibit Number 3 is a table of the
7 actual oil and gas production from the Minis 2 Federal
8 Number 1 well. It shows the monthly production, the oil
9 allowable, the oil status for the month, and then the
10 cumulative status throughout the life of the well.

11 Q. (By Mr. Carr) Now, if we look at the production
12 from the well, the well is on lift; is that right?

13 A. That is correct.

14 Q. And are you experiencing problems with that?

15 A. We have experienced intermittent problems with
16 the lift since earlier this year, maybe December of last
17 year, that has artificially restricted the production from
18 this well.

19 Q. What were the production rates during the month
20 of September?

21 A. During the month of September, the data that I
22 had available had a maximum daily rate of 279 barrels of
23 oil per day. During the portion of September for which I
24 had data, the well averaged 200 barrels of oil per day.

25 Q. And you're not currently curtailing production

1 from the well?

2 A. Correct.

3 Q. What are your plans for dealing with this current
4 problem?

5 A. Hopefully, we will get the problems with the
6 artificial lift squared away and we can bring the well back
7 to capacity.

8 Q. Let's go to Exhibit Number 4. Would you identify
9 that, please?

10 A. Exhibit Number 4 is a production decline curve of
11 the Minis 2 Federal Number 1 well. It shows with green
12 diamonds and the thin lines attaching those the actual
13 production from the well. The solid blue -- or solid green
14 thicker line is the projected forecast oil rate. The red
15 square dots with the thin line show the actual gas
16 production. And then the thicker solid red line shows the
17 forecast gas production.

18 Q. What is the ultimate recovery -- the oil ultimate
19 recovery that you're projecting for this well?

20 A. Ultimate recovery is approximately 760,000
21 barrels of oil.

22 EXAMINER EZEANYIM: Actual production? Is that
23 the EUR?

24 THE WITNESS: EUR, correct, estimated ultimate
25 recovery.

1 EXAMINER EZEANYIM: It's what?

2 THE WITNESS: 760,000 barrels of oil,
3 approximately.

4 EXAMINER EZEANYIM: It's one of the questions --
5 Let me write it down here. Seven hundred and what?

6 THE WITNESS: 760,000 barrels.

7 EXAMINER EZEANYIM: Okay.

8 Q. (By Mr. Carr) Mr. Maxwell, the temporary pool
9 rules provide for a depth bracket allowable of 427 barrels
10 of oil per day. If you're able to get the lift problems
11 worked out, will the well be able to produce at this rate?

12 A. I estimate that if the lift problems are squared
13 away, we would anticipate the well could sustain 75 percent
14 of that rate. It's questionable whether it can reach the
15 full rate, though.

16 Q. But if the pool rules are continued, then the
17 well would not be curtailed?

18 A. That is correct, the well will not be curtailed.

19 Q. If the rules are rescinded and we go to 40-acre
20 spacing, would you have to curtail production from this
21 well?

22 A. If we have to go back to the 40-acre depth
23 allowable -- depth bracket allowable, yes, the well will be
24 significantly curtailed.

25 Q. In addition to the decline curve analysis that

1 you've presented, have you tried to simulate the well's
2 performance?

3 A. Yes, we did what we call a conceptual simulation
4 of the reservoir. We have a little bit of limited
5 permeability data, we have limited relative permeability
6 data and limited PVT data, so we used standard correlations
7 to come up with good estimates for those and then refined
8 the model from that point. The results of that simulation
9 study show that three-quarters of a million barrels of
10 recovery from the well would not be unreasonable. The
11 forecast from that simulation study is what was shown on
12 Exhibit 4.

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

14 A. Yes, sir, I have.

15 Q. Is that -- your volumetric work shown on Exhibit
16 Number 5?

17 A. Yes, sir, it is.

18 Q. Would you refer to that, review the parameters
19 with the Examiner and then share the results of that work?

20 A. The data that we used in the volumetric
21 calculations are listed. The estimated ultimate recovery
22 of 761,000 barrels of oil came from this rate-versus-time
23 curve in the simulation study. The reservoir thickness of
24 20 feet --

25 EXAMINER EZEANYIM: Which exhibit are you talking

1 about? Is that Exhibit 3? Is that 3, Exhibit 3, you're
2 talking about?

3 MR. CARR: No, it's Exhibit Number 5.

4 THE WITNESS: Exhibit Number 5.

5 EXAMINER EZEANYIM: Okay. Oh, yeah. Okay, good.

6 Q. (By Mr. Carr) So your EUR was 761?

7 A. 761,000 barrels, correct.

8 Q. Okay. Now go on, please.

9 A. The reservoir thickness of 20 feet was taken from
10 well logs. The average porosity and water saturation were
11 19 percent and 32 percent. Those also came from the
12 analysis of well logs.

13 The initial oil formation volume factor of 1.283
14 reservoir barrels per stock tank barrel come from standard
15 correlations. And the recovery factor of 20 percent also
16 comes from standard industry correlations. We used the
17 Boone Toolkit to do that estimate.

18 The ultimate result of the calculation is that
19 the well will drain an area of about 244 acres.

20 Q. So this well will drain well in excess of the
21 160-acre spacing unit?

22 A. Yes, this well will drain in excess of that.

23 Q. Substantially less, though, than if we move to
24 320?

25 A. Correct.

1 Q. What does Samson seek with this Application?

2 A. Samson seeks to have the adoption of the
3 temporary special pool rules as permanent. We wish to
4 retain the 160-acre spacing, we wish to retain the standard
5 depth-allowable bracket for wells spaced on 160 acres.
6 Likewise, we seek to have the legal well locations at least
7 660 feet from the outer boundary from the dedicated
8 acreage, and that also is standard for a 160-acre spacing.

9 Q. Do you anticipate additional development in this
10 pool?

11 A. No.

12 Q. And just again state the conclusions you have
13 reached from your study of the reservoir?

14 A. We have concluded that a 160-acre spacing will
15 more closely mimic the actual recovery from the well than
16 the 40-acre spacing.

17 Q. In your opinion, will approval of this
18 Application be in the best interest of conservation, the
19 prevention of waste and the protection of correlative
20 rights?

21 A. Yes.

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

24 A. Yes.

25 MR. CARR: May it please the Examiner, at this

1 time we would move the admission into evidence of Samson
2 Resources Exhibits 1 through 5.

3 EXAMINER EZEANYIM: If there are no objections,
4 then Exhibits 1 through 5 will be admitted into evidence.

5 MR. CARR: And that concludes my direct
6 examination of Mr. Maxwell.

7 EXAMINER EZEANYIM: Okay, good testimony, I got
8 some of my questions answered from the testimony. However,
9 I still have some questions to ask you.

10 EXAMINATION

11 BY EXAMINER EZEANYIM:

12 Q. First of all, now, you stated the last one that
13 you still want to retain 160 acres and your setback
14 requirements in the temporary special pool rules? That's
15 what you need, right?

16 A. Correct.

17 Q. Okay. And now let's go back to the pumping. You
18 are currently pumping -- having a problem with the pumping.

19 A. Correct.

20 Q. What kind of problem are you having with that
21 pumping currently? I mean, you say, you know, that your
22 lift -- What's the problem with the pumping that it's not
23 working?

24 A. The operations engineer jokes that you can stand
25 by the pumping unit and get dried off by the breeze that it

1 generates, they have the pumping unit running so fast.

2 Q. Uh-huh.

3 A. We have quite a few problems with parted rods,
4 pumps that wear out relatively quickly. We have had some
5 slight scale problems that we've gone in to clean up with
6 acid treatments. Those are the specific three problems
7 that I remember.

8 Q. Okay, and you are working on it now?

9 A. Yes, sir.

10 Q. And you anticipate after you fix the problem you
11 can go -- at least 75 percent of capacity, that's your
12 testimony? Your capacity being 427, you think you can get
13 to 75 percent of that allowable --

14 A. Yes, sir, I'm expecting somewhere on the order of
15 300 to 350 barrels per day from the well.

16 Q. This is this a bubble-point reservoir?

17 A. Yes, it is a depletion drive. I am --

18 Q. Depletion drive bubble-point?

19 A. I am uncertain whether it has reached its bubble
20 point yet or not.

21 Q. That is the critical factor here, because I don't
22 know whether the reservoir is rate-sensitive. I'm going to
23 look at your production data, because -- to see if your
24 reservoir is rate-sensitive.

25 A. Now that you bring that up, looking at the

1 production data, I would estimate that it has not reached
2 the bubble-point.

3 Q. Yeah.

4 A. At that point you would anticipate the gas-oil
5 ratio to skyrocket, and we have not seen that.

6 Q. Okay, yeah. Of course, you don't want that to
7 happen?

8 A. No, we do not.

9 Q. And you leave some of the oil under the ground.
10 Okay. That could be one of the critical factors in
11 evaluating this.

12 A. Yes, Mr. Examiner.

13 Q. And you just testified that there have been no
14 other operators, no other wells, no other development in
15 this particular pool in that area. Is that your testimony?

16 A. That is correct.

17 Q. Now, how do you know that?

18 A. We have recently had a well completed in Section
19 1 by another operator, the -- COG Operating completed their
20 Minis 1 Federal Number 4 --

21 Q. Uh-huh.

22 A. -- February of this year, if I remember
23 correctly. It is perforated 1300 feet shallower than our
24 well. So while it does produce from the Delaware
25 formation, it is definitely in a different reservoir from

1 our well.

2 Q. Okay, so -- Okay, that explains.

3 You calculated the drainage area to be 244, but
4 this is going to be spaced on 160?

5 A. Yes, Mr. Examiner.

6 Q. You're going to drain more than 160?

7 MR. CARR: (Nods)

8 EXAMINER EZEANYIM: Anything further?

9 MR. CARR: No, sir, that concludes our
10 presentation.

11 EXAMINER EZEANYIM: Okay. At this point Case
12 Number 13,289 will be taken under advisement.

13 (Thereupon, these proceedings were concluded at
14 9:09 a.m.)

15 * * *

16
17 I do hereby certify that the foregoing is
18 a complete record of the proceedings in
19 the Examiner hearing of Case No. 13289
20 Heard by me on 10/6/05
21 [Signature], Examiner
22 Oil Conservation Division
23
24
25

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 October 7th, 2005.



STEVEN T. BRENNER
 CCR No. 7

My commission expires: October 16th, 2006