STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

22 January 1986

EXAMINER HEARING

IN THE MATTER OF:

Application of Frank Boyce, d/b/a Sure Energy for special pool rules, and assignment of a discovery allowable, Eddy County, New Mexico.	CASE 8814

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: William F. Carr
Attorney at Law
CAMPBELL & BLACK P. A.
P. O. Box 2208
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

MR. STOGNER: Call next Case Number 8814.

MR. TAYLOR: The application of Frank Boyce, doing business as Sure Energy, for special pool rules and assignment of a discovery allowable, Eddy County, New Mexico.

MR. CARR: May it please the examiner, my name is William F. Carr, with the law firm Campbell & Black, P. A., of Santa Fe. We represent Sure Energy and I have one witness who needs to be sworn.

MR. STOGNER: Are there any other appearances in this matter?

Will the witness please stand and be sworn?

(Witness sworn.)

MR. CARR: Mr. Stogner, the information we now have on the wells involved indicate that the discovery allowable is no longer necessary and therefore we request that that portion of the case be dismissed.

MR. STOGNER: Mr. Carr, the -- the portion of the application seeking discovery allowable, that is the only portion you wish to dismiss --

MR. CARR: That's right.

MR. STOGNER: -- at this time?

Okay, so you're only here today seeking a -- seeking the special pool rules, those being a provision for a special gas/oil ratio limitation?

MR. CARR: That's correct.

MR. STOGNER: Is there any other special pool rules to be considered?

MR. CARR: No, that's it.

MR. STOGNER: Okay, thank you, Mr. Carr.

DANIEL S. NUTTER,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Would you state your full name and place of residence?

A My name is Dan Nutter. I live in Santa Fe, New Mexico.

Q Mr. Nutter, by whom are you employed and in what capacity?

A I'm a consulting petroleum engineer.

I've been employed by Mr. Frank Boyce, d/b/a Sure Energy, in this particular case.

Q Have you previously testified before this Division and had your credentials as a petroleum engineer accepted and made a matter of record?

A Yes, I have.

Q Are you familiar with the application filed in this case on behalf of Mr. Boyce and Sure Energy?

A I am.

Q Are you familiar with the subject area and the wells that have been drilled in that area?

A Yes, sir, I am.

MR. CARR: Are the witness' qualifications acceptable?

MR. STOGNER: Yes, Mr. Nutter is so qualified.

Q Mr. Nutter, would you please state what Sure Energy seeks in this application?

A Sure Energy seeks the promulgation of special pool rules for the Outpost-Delaware Pool.

The pool rules that we're particularly seeking would be a special GOR limit for the pool because the Delaware formation in this area does produce with a high ratio and in order to make the wells economic a ratio in excess of the statewide 2000-to-1 is necessary.

Q Have you prepared exhibits for introduction in this case?

A I have.

Q Would you refer to what's been marked as Sure Exhibit Number One, identify this and review it for Mr. Stogner?

A Exhibit Number One is a plat of the area around -- in and around Section 25, Township 19 South, Range 28 East, of Eddy County, New Mexico.

In the center of the plat is Section 25 and portions of the offsetting sections are also shown.

This pool was created by Division Order No. R-8065 in Case Number 8740, and was -- the creation was effective November the 1st of 1985.

The discovery well for the pool was Sure Energy's Connie State Well No. 1, which is shown on the plat in the southwest quarter of the northeast quarter of Section 25.

The pool limits are outlined in red on the exhibit and comprise the northeast quarter of the section.

The discovery well was spudded on August the 12th of 1985, completed in the Delaware on August the 24th of 1985, with a total depth of 3500 feet. It has plugged back total depth of 3472 and perforations in the Dela-

ware formation from 3336 to 3351 feet.

The initial potential on the well was reported as being 130 barrels of oil a day and 100 MCF of gas, for a gas/oil ratio of 769, and 141 barrels of water per day. This fell off very rapidly, however.

Connie State Well No. 2, which is east of that and located in Unit H of Section 25 was spudded November the 23rd and completed December the 16th of 1985. Its total depth is 3500 feet; plugged back total depth of 3300.

Perforations in the Delaware in the No. 2 Well are from 3159 to 3248 feet.

The IP was reported as being 79 barrels of oil per day, 795 -- 99 MCF of gas, for a GOR of 10,116; also 80 barrels of water per day were produced.

This well, too, fell off very rapidly and these are the only two Delaware wells in the area.

If you'll look at the other wells that have been indicated on the exhibit, in Section 24 to the north there's one well which is a gas well in the Upper Pennsylvanian.

In the extreme northwest quarter northwest quarter of Section 25 is a well that is now plugged and abandoned, which produced from the Queen formation.

Immediately west of Connie State No. 1 is

a deep Morrow gas well.

Further to the west of that well is an Upper Pennsylvanian gas well and in Unit M of Section 25 is an Upper Pennsylvanian gas well. There's also an Upper Pennsylvanian gas well in Section 36 to the south of the previously mentioned well.

And to the east of Connie State Well No. 2 is an Atoka gas well.

There has been no other Delaware completion made in the area except for the two wells that are the subject of this hearing today.

Q Would you now go to Sure Energy Exhibit Number Two and review this for Mr. Stogner?

A Okay. Sure Energy No. 2, Exhibit Number Two, is a plat showing the production from the Connie State Well No. 1 from the first of production.

Now I didn't have day-by-day production for the months of August, September, and October, so I've got the average for the month.

During August Connie State Well No. 1 produced for seven days. So even though it had that high potential the average production for the month of August was 29 barrels per day for the seven days that it was on stream.

In the month of September the 30-day average was 18 barrels a day. This demonstrates the rapid

drop from the initial potential that the well experienced.

In October the average production was 32 barrels per day because -- for a 31-day month, because the well was put on a pump at that time.

Now proceeding into November and December we have five-day averages because if we plotted each one of the days it would just be like a shotgun blast and have so many points on there you -- it -- it would be confusing.

So we do have five-day averages.

You'll see that the first two five-day periods the well produced an average of 12 barrels a day.

Then some work was done on the well and it increased in the third five-day period to 19.

The pump was changed in the fourth five-day period and it reached a high there of 26 barrels per day and then fell off again.

Now, these production figures only go to the sixteenth, through the 16th day of December, because at that time the No. 2 Well was brought on and I do not have separate production figures for No. 1 and No. 2, so in plotting production for No. 1 I only took it to the 16th day of December.

So there's a hiatus there from the December 16th -- December 17th, when the No. 2 came on, until the last six points, which are in January of 1986.

Q Mr. Nutter, there are three points in a cluster for January at about 20 barrels a day. Could you explain those, please?

A Yes, sir, I can. These points that are shown in January are points that were obtained by 24-hour individual tests that were taken on the Connie State No. 1, and as you will see later in another exhibit, these tests were taken at different producing rates and the ideal producing rate appears to be in the area of the three clustered test points. They are 20, 20, and 21 barrels per day in that little cluster of three points.

Q Are you readya to go to the next exhibit, Mr. Nutter?

A Yes, sir.

Q Would you go to Exhibit Number Three, which is the test data on the Connie State No. 1 and review this for the examiner?

A Okay. The Connie State No. 1 was tested for several days individually, as was the Connie State No. 2 Well.

The tests were taken with the well on pump but with surface chokes at -- set at different openings.

The first test was with a 12/64th inch choke and the well only produced 10 barrels of oil, 20

barrels of water, and 260 MCF of gas. This gave the well a gas/oil ratio at that choke size of 26,000-to-1.

The choke was changed then for the second day's test to 16/64ths, and the production was identical. So there was no change going from 12/64ths to 16/64ths.

The third test day shows that the well was produced with a 24/64ths inch choke and the oil production came up to 20 barrels per day, 25 barrels of water, and 270 MCF of gas. There the GOR was determined to be 13,500-to-1.

The fourth test that's shown in wide open, 64/64ths, that's a full one-inch opening, and the well produced 21 barrels of oil, 25 barrels of water, and 280 MCF of gas. Now that's slightly more gas than we made the previous size choke at 24/64ths, but the extra barrel of oil has caused the gas/oil ratio to go from 13,500 in the previous test to 13,333-to-1. This the best test that could be obtained on the well, and this appears to be the lowest GOR that can be produced from this well at the present time.

Q Would you now go to Exhibit Number Four?

A Exhibit Number Four is the same data only these are the tests that were conducted on the Connie State Well No. 2.

You'll note that at 12/64ths the well made 11 barrels of oil per day. It made 35 barrels of water

and 407 MCF of gas. This gave it a ratio of 37,000-to-1.

The choke size was increased to 16/64ths. The production came up from 11 to 12 barrels per day, 40 barrels of water. Gas came down to 370 MCF. So we had a ratio of 30,833-to-1.

The next day the choke was changed to 24/64ths and oil production came up to 15 barrels a day and 40 barrels of water. Gas production also came up to 410 but the GOR was still coming down and is now at 27,333-to-1.

The fourth choke opening of 64/64ths, again a full inch, and this time the oil production came up to the maximum that we can expect from this well at this time of 34 barrels of oil per day and 74 barrels of water. Gas was produced at the rate of 400 MCF and the gas/oil ratio is calculated to be 11,765-to-1. This again we think is the ideal setting for this parpticular well.

Q Now what conclusion can you reach about the most efficient way to produce these wells?

A Well, the most efficient way appears to be pumping these wells with the -- the operator has experimented. He's tried lowering the pump, raising the pump, setting -- changing pump size, changing choke sizes at the surface, and all sorts of manipulations, and it appears to be that with the conditions in the reservoir what they are, that these ratios which would be 11,765-to-1 and 13,333-to-

1, are the best that can be achieved at this time.

It is expected, however, that gas/oil ratios will increase with time. So that is the reason we're seeking a 20,000-to-1 ratio.

Q And no matter what is done, the gas/oil ratios obtained are in excess of what is authorized under the statewide rules.

A 2000-to-1 would be the statewide rule and if the 2000-to-1 were applicable in this case, these wells would be heavily penalized. They're not making a great deal of oil but the oil would be penalized way down below what they can make if the 2000-to-1 were applicable, applied in this case.

Q What would be the oil allowable in that pool?

A The oil allowable is 80 barrels per day.

Q And the gas production that would be authorized?

A Would be 160 MCF per day, so you can see that the No. 3 -- from Exhibit Number Three, the No. 1 Connie will make 280 as opposed to a limitation of of 160 MCF per day.

The Connie No. 2 on its best test made 400 MCF per day as applied to an allowable limit under the statewide ratio of 160.

So that's -- it would be allowed to produce less than half of what it can produce and the oil production also would come down to less than half.

Q Now, Mr. Nutter, would it be possible for the operator to open additional zones in these wells thereby increasing the oil production and resulting in a corresponding reduction or a lowering of the gas/oil ratio?

A Yes. The logs look like there are additional zones to be opened in the wells; however, this would not lower the ratio because these logs also indicate that those stringers that are up there also contain gas. So while you may be able to increase the production from the well of oil, you'd probably increase the production of gas from the well even more so than you would the oil production and the ratios would be even higher.

So this gas probably will be -- these other stringers probably will be left shut in for the time being.

Q Now what exactly is the gas/oil ratio that's being sought in this case?

A 20,000-to-1.

Q If this gas/oil ratio was established for the pool, do you believe it would result in the premature dissipation of reservoir energy?

A No, not in this case because these are

free gas stringers in here. They're not necessarily associated with the oil itself. There are stringers in the Delaware, as anyone knows, that produce gas and then there are oil stringers with gas, also.

Q Are you prepared to make a recommendation as to the effective date for these rules?

A I believe that since the wells have been producing with a high ratio since their inception, that the order should be retroactive back to date of first production or at least until November the 1st of 1985, when the pool was created.

Q In your opinion would granting this application be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?

A Yes, it will, because if the operator has a higher GOR limit, he plans to do additional drilling. He's got a vast amount of acreage in the area and does want to do some additional drilling but he can't under the present GOR limitations.

Q Mr. Nutter, were Exhibits One through Four prepared by you?

A They were.

MR. CARR: At this time, Mr. Stogner, we would offer into evidence Sure Exhibits One through Four.

MR. STOGNER: Exhibits One through Four will be admitted into evidence.

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

CROSS EXAMINATION

BY MR. STOGNER:

Q Mr. Nutter, you said the Delaware was made up of various free gas stringers.

A Yes, sir.

Q What are the nature -- are the characteristics of these stringers?

A Well, some of them are free gas. Some of them are oil with gas in them, and you know, it's been known to happen that the Delaware blows out; if you're not careful you can run into a little high pressure stringer in there that will blow the well out while drilling, and that's what I think we've got here. We've got some little individual high pressure -- or some little individual gas stringers. Some of them do have some pretty fair pressures on them, also.

Q I assume that one of these stringers, this one is producing from, I assume it's only one stringer or do you have several stringers in --

A There are several in these wells.

They're perforated in -- by selective perforations, they're perforated pretty good intervals.

Q The majority of them being oil-bearing, I would assume.

A Oil and oil and gas, and then probably there's some free gas that has "snuck" in there, too, but you can't tell exactly where it's coming from.

Q There's no water associated with this production, is there?

A Yes, there is. These tests show that there is water on these wells. You'll note that the best test on the Connie No. 1 produced 21 barrels of oil and 25 barrels of water, and the Connie No. 2, it's best test was 34 barrels of oil and 74 barrels of water.

Q Does this water provide a drive mechanism?

A No, I don't believe it does in the Delaware; not here. This is connate water in here; it's not a water drive.

Q You don't feel by completing this gas, or this gas being produced at a high gas/oil ratio will deplete --

A No, because I don't believe it's a solution gas. I believe it's free gas coming from separate stringers.

Q You stated that you would like this order retroactive back to the date of the --

A Either date of first completion of the wells, which would be -- the first well was completed and put on production August the 24th of 1985.

The second well was put on production on December the 17th of 1985.

The pool was created effective November the 1st of 1985.

So the wells have actually been accumulating an overproduced status as far as casinghead gas is concerned in the Commission's records, and this would, by making the order retroactive, it would alleviate that overproduced condition of casinghead gas.

Q In this case, if an order that was put out in this case, if it did not include this retroactive -- this retroactivity that you're requesting, how would that affect your application or the wells in this application?

A It would depend on what the computer in the Commission's -- the Commission's computer did. If the Commission's computer started looking at that gas production there would be a shut-in notice issued, because the wells have overproduced the 2000-to-1 limit.

And normally that computer allows that to build up for a certain period of time before it issues those

shut-in orders, and that's why we're seeking this today, to avoid having the computer tell us to shut those wells in.

Q What would happen if these wells had to be shut in?

A Well --

Q Other than being able to produce for the shut-in time.

A That would be the worst thing that would happen. And, of course, it would -- it would put a heck of a damper on any further development in the pool.

Q Mr. Nutter, do you feel that anybody would be adversely affected with a retroactive order back to the --

A No, I don't think so, because the gas purchaser has bought the gas since it was connected, and Sure Energy is the only operator in the pool, so we're not affecting anyone else's correlative right.

I might point out that Sure has the Delaware rights in all of Section 25. They're negotiating for the Delaware rights in the section to the east. They're negotiating for the Delaware rights in the Section to the west. They've got Delaware rights in Section 24 and 36 to the north and south.

So Sure Energy is the only -- is going to be the only operator in the pool unless the pool should ex-

pand beyond those limits I've just mentioned.

Q What is the nearest Delaware Pool in this area?

A I don't even know. It's miles away, though. And since the gas has already been produced and purchased, there's no problem with the purchaser.

Q Who is the purchaser?

A Phillips Petroleum is the purchaser of this casinghead gas.

Q They also purchase the oil, is that right?

A I don't know. I don't know who buys the oil. Maybe I can tell you.

MR. CARR: Dan, they do.

A I'm advised they do. Yeah, they sure do.

Q The horizontal limits of this pool as it is to date is just the northeast quarter of the Section --

A 160 acres, the northeast quarter of the section, yes, sir.

Q Are there any other extensions and/or contractions of this pool that you know of?

A No. No, these -- this pool was designated by -- the hearing was in October and at that time the Well No. 2 had not even been spudded, so the pool was created and defined for the discovery well, the No. 1. Sub-

sequent to that the No. 2 was drilled.

We think the bulk of the pool is going to lie to the west and the pool will eventually be expanded to the west, I would imagine.

Q Thank you, Mr. Nutter.

MR. STOGNER: I have no further questions of this witness.

MR. CARR: Nothing further, Mr. Stogner.

MR. STOGNER: Are there any other questions of Mr. Nutter?

If not, he may be excused.

Is there anything further in this case, Mr. Carr?

Does anybody else have anything further in Case Number 8814?

If not, this case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8814, heard by me on 22 January 1986.

Michael E. Stogner, Examiner
Oil Conservation Division