BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 28, 1971

EXAMINER HEARING

IN THE MATTER OF:

Application of Pennzoil United, Inc., for the creation of a new pool and promulgation of special pool rules, Roosevelt County, New Mexico.

Case No. ~~2526~~ 4526

BEFORE: Elvin A. Utz, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. UTZ: Case 4526.

MR. HATCH: Case 4526, application of Pennzoil United, Incorporated, for the creation of a new pool and promulgation of special pool rules, Roosevelt County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for the applicant.

I have one witness I'd like to have sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 3 were marked for identification.)

B. C. SINCLAIR

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A B. C. Sinclair.

Q By whom are you employed and in what position, Mr. Sinclair?

A Pennsoil United, Incorporated, as a petroleum engineer.

Q Have you testified before the Oil Conservation Commission or one of its examiners and made your qualifications

as an engineer a matter of record?

A Yes, sir.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes sir, they are.

Q (By Mr. Kellahin) Mr. Sinclair, are you familiar with the application of Pennzoil United, Incorporated, in Case Number 4526?

A Yes sir, I am.

Q Briefly, what's proposed by the applicant in this case?

A We would like to have the Commission create a new pool for the production of gas from the San Andres formation and to promulgate field rules, special rules for this pool, with provision for 320-acre spacing.

Q Now, referring to what has been marked as the Applicant's Exhibit Number One, would you identify that exhibit and discuss the information shown on it?

A Yes, this is a structure map showing the location of the Pennzoil United Superior State Number One Well in Section 8, Township 7 South, Range 35 East.

Also shown on the map are the locations of other wells in this general area that penetrated the San Andres formation. The wells colored in orange are San Andres gas wells, and the wells colored in green are some recently

drilled Wolfcamp zone wells.

MR. UTZ: They look interested. I thought they might want to look at that.

MR. KELLIHAN: Anybody want to look?

A You need another copy? The contours on the map are drawn on the top of the San Andres Pi Marker, which is a well-recognized geological marker on the San Andres formation, and the contours show the general structure of the San Andres reservoir that we are dealing with today.

The San Andres gas wells in the southeast corner of the map are in the Todd upper and San Andres gas pool. This reservoir began production in early 1964, and based on a pressure -- bottomhole pressure taken at the Franklin, Aston and Fair Texaco Federal Number One Well in Section 27, the original bottomhole pressure in this reservior was 1256 pounds.

The San Andres gas well shown up north of this area in Section 9 is a well drilled by Cactus Drilling Company in November of 1966. This is the Kewanee State Number Two Well, and it was completed from the upper portion of the San Andres for a calculated open flow potential of 2.1 million cubic feet per day. The perforations in this well are 4181 to 4208.

The Pennzoil Superior State Number One Well was completed on February the 5th, 1971. The perforations in

this well are 4231 to 4261, and after the well was treated with 11,000 gallons of acid, it flowed at a rate of 2.472 million cubic feet per day with a flowing pressure of 900 pounds, and had an open flow potential of five million cubic feet per day.

The bottomhole pressure in the Pennzoil well was 1277 pounds, which is slightly higher than the original pressure reported down in the Todd Upper San Andres pool.

The Todd Upper San Andres pool is virtually depleted. It's still producing, but the production is very low, and the wells down -- several of the wells have been shut in due to depletion, and the few that are producing are producing at low rates.

And the fact that the Pennzoil well came in at above original pressure for this pool indicates separation of the two areas. Also, the structure indicated there is a structural low indicated between the two areas, again indicating separation.

The three northernmost wells shown in the Todd Upper San Andres pool have all performed as edge wells. The Featherstone Federal Number One Well in Section 23 made only twenty-nine million cubic feet of gas before it depleted.

The McClellan Federal Number One, 22 well -- in

Section 22 made only seventy-nine million cubic feet of gas before it depleted.

MR. UTZ: How much?

A Seventy-nine. And the Franklin, Aston and Fair -- well, the McClellan Federal Number One on the northeast quarter of Section 28 made 370 million cubic feet of gas before it depleted.

All the other wells, gas wells shown in the Todd Upper San Andres pool there made from eight hundred million to over a billion and a half cubic feet of gas, and most of them are still producing. So this indicates that those three first wells I mentioned are definitely edge wells, and it appears that an edge was reached in the development of this reservoir.

Q (By Mr. Kellahin) Now, is it your opinion that the well in -- you stated that your Pennzoil well in Section 8 is in a separate common source of supply from the Todd Pool?

A Yes.

Q In your opinion, is it also in a separate common source of supply from the Kewanee or Cactus well in Section 9?

A Yes sir, it is.

Q What do you base that on?

A The -- on correllative -- on the lack of

correllative correllation between the two zones. The Kewanee State Number Two is completed in the upper portion of the San Andres and the Pennzoil Superior State is completed on the lower section, and there is a well-known anti-hydrate bed that separates these two zones that has been used down in the Todd field as a vertical separation between the two pools there.

Q In your opinion, is this anti-hydrate section an effective barrier to prevent communication between the two zones?

A Yes, sir.

Q So it would actually create physically a separate pool?

A Yes, sir.

Q Referring to what has been marked as Exhibit Number Two, would you identify that exhibit, please?

A Yes, Exhibit Two is a tabulation of the average reservoir properties for the Pennzoil Superior State Number One Well. Perhaps the most significant property there is the permeability of ten millidorcies average and the analysis of these properties in comparison with other San Andres gas reservoirs in the area.

An analysis of the production tests conducted on the Superior State Number One all indicate that this well is capable of efficiently draining in excess of 320 acres

per well.

Q Are there other San Andres gas pools based -- in this area based on 320-acre spacing?

A Yes sir, the Todd Upper San Andres gas pool is on 320-acre spacing. There is a Todd Lower San Andres pool that is an associated oil and gas reservoir, and the gas portion of this reservoir is on 320-acre spacing, and the Bluett San Andres pool is an associated pool, and the gas cap of it is on 320-acre spacing.

Q Now, have you made a study of the economics of drilling on 160 acres versus 320 acres --

A Yes, sir, I have.

Q -- in this area?

A Yes, sir.

Q Referring to what has been marked as Exhibit Number Two -- Three, would you discuss that exhibit?

A Yes, this exhibit compares the economics for 160-acre spacing versus 320 acre spacing. The reserves shown are volumetric calculations of the reserves from the Superior State Number One Well. However, these reserves are substantiated by a performance of wells in other San Andres gas pools in this area.

The slightly higher reserves have been assigned to two wells on 160-acre spacing as compared to the one well on 320-acre spacing.

Total revenue of $134,250.00 has been stated for two wells on 160-acre spacing, and total revenue of $118,460.00 is stated for one well on 320-acre spacing. This is after royalty and severance taxes are deducted.

It is estimated that it will cost sixty-two thousand dollars to drill, complete and equip a well in this reservoir, and operating costs are estimated at three hundred dollars per well per month.

This gives total expense of $152,800.00 for 160-acre spacing and $80,000.00 for 320-acre spacing. This results in a net loss of 160-acre spacing of $18,550.00, and a net profit of $38,460.00 under 320-acre spacing.

Q Now --

A The --

Q Excuse me, go ahead.

A The profitability, or the profit investment ratio of .62 and the average rate of return of 12.4 per cent are just barely adequate to justify developing the reservoir on 320-acre spacing, and it would certainly be Pennzoil's requirement that we see some performance out of this one well before we can -- that would show some reserves we estimate are correct before we could attempt to develop this reservoir further.

Q How did you arrive at your reserves in this tabulation?

A These were volumetrically calculated based on the net earnings and porousity and water substance that have developed in our Superior State Well, and I did say that other oil and gas wells that are on 320-acre spacing have produced reserves in this range, which seems to substantiate the figures.

Q Now, would a one year's period of time give you sufficient date to learn more about the reserves on the basis of pressure and production?

A Yes sir, we could probably learn this in a few months after the well was put on production,and we are in the process of negotiating a sale for this gas now.

Q And what you are asking for here are temporary rules for 320-acre spacing, is that correct?

A Yes, sir.

Q Now --

A That's right.

Q What figure did you use for your gas price on this calculation?

A The gas price is 10.3 cents, 10.34 cents per cubic foot.

Q That's somewhat lower than the price of gas in other areas, is it not?

A Yes, it's a fairly low price.

Q Why is that?

A This gas has a -- about a twenty-one per cent inert content. It contains carbon dioxide and nitrogen, and this results in a lower price than you would normally expect for the gas.

Q But that is the price you would get for this gas?

A This is the price that we are negotiating for. A price has not been established. We hope it will be this good. It could be a little more or a little less. The FPC will have a hand in this, as we are negotiating with the purchaser.

Q Now, do you have any specific recommendations as to the pool rules that you would recommend?

A We would recommend thatthe 320-acre spacing rule be the same as the state-wide 320-acre spacing rule, that is, the well is located 1980 feet from an end boundary and 660 feet from an inside boundary, and no closer than 330 feet to any quarter-quarter section line, and that any half section be established as a spacing unit.

Q Between north, south, east or west?

A Yes, sir.

Q And do you have a proposed name for the pool?

A We would suggest the Northwest Todd San Andres Gas Pool.

Q Were Exhibits One, Two and Three prepared by you or

under your supervision?

A Yes sir, they were.

Q All right.

MR. KELLIHAN: At this time, I would like to offer in evidence Exhibits One, Two and Three.

MR. UTZ: Without objection, the Exhibits One, Two and Three will be entered into the record of this case.

(Whereupon, Applican'ts Exhibits 1 through 3 were admitted in evidence.)

Q (By Mr. Kellahin) Do you have anything further, Mr. Sinclair?

A We might ask about a supporting letter from Superior. Was that received?

MR. HATCH: The Commission has received the supporting letter from Superior.

MR. KELLAHIN: That completes the presentation.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Sinclair, I'm a little confused about Exhibit Number Three. Under revenue, 160 acres, seventeen hundred million reserves?

A A Billon, seven, yes sir.

Q A billion, seven, reserves at 10.34 cents per thousand is a hundred and seventy-five thousand, seven hundred

eighty?

A Yes, sir.

Q On 320 acres, fifteen hundred million, or 1.5 billion?

A Yes, sir.

Q You got a -- less gas from 320 than you do from 160?

A Yes, sir. This is something I feel like is very reasonable and practical. We are not saying that -- that you will recover as much gas on 320-acre spacing as you would on 160 or if you drilled on 80. I mean, you would recover slightly more gas on 160. If you drilled, you would recover slightly more gas, but I am just showing you that the economics will not justify the closer spacing, even though you do recover slightly more gas.

The investment required to get that two hundred million additional is substantial, sixty-two thousand dollars just for the well, which is a whole lot more than that gas is worth.

And this is just an educated guess, Mr. Examiner. It's not a high-powered calculation at all.

MR. KELLAHIN: Your figure is based on two wells on 320 acres in your 160-acre calculation, is it not?

A It's based on two wells on the 320-acre

acre spacing, or 160-acre spacing, and one well on that same tract for 320-acre spacing.

MR. KELLIHAN: This is what two wells would produce, not what one would produce on 160 --

A What two wells would produce, that's correct. Two wells on 160-acre spacing would produce the billion, seven.

Q (By Mr. Utz) And two wells on 320?

A One well on 320 would produce the billion and a half.

Q One well?

A Yes.

Q I see; you had me going there. I couldn't figure out how you could have that 160 acres and get less gas on the --

A Well, I'm sorry I confused you.

MR. KELLAHIN: It's the same 320 acres?

A The same 320 acres with one or two wells on it.

Q (By Mr. Utz) I see; did you make any recommendation for horizontal limits?

A For the pool?

Q Yes.

A Yes -- no, sir. I would think that we plan to dedicate the west half of Section 8 to this well, and we have no desires other than this half section, if our

application is approved, to be in the pool right now.

We feel like that there may be two or three more half sections that certainly have possibility, production potential, but that remains to be determined by future development.

Q Does this well produce any condensate?

A Yes, it produced a very small amount of condensate. On Exhibit Two, I showed it produced two-tenths of a barrel per million, and this was based on a three-day test conducted by a potential purchaser. He flowed the well a a million and a half rate for three days and recovered less than a barrel of condensate in this period, and in here, as you can see, the oil gravity is rather low, and the gas reservoir is 36 degrees API.

Q Do you have any idea as to whether this deposit would be on an associated pool?

A Yes, we would like to recognize that as a possibility. The other San Andres gas pools in the area produced a low gravity oil or condensate, and of course there are some of them that have been determined to be an associated reservoir, and at least one, that Todd Upper San Andres pool, has been determined to be a gas reservoir, and I don't think anyone would say for sure right now that this well might not have -- this reservoir might not have an oil rim on it, but certainly the low amount of oil

production indicates that the gas -- it's a gas reservoir possibly with a small oil rim.

And we would like to stress that we are asking for temporary rules, and if it's determined that it's an associated reservoir by further development, that we would certainly have no objection to it being so classified.

Q Would you anticipate the gas area to be to the northwest of your well?

A Based on our map there, yes sir, we would. This appears to be --

Q If this map is correct, well, it might not be too much oil there. It might be to the southeast of your well?

A Yes sir, that's my opinion, that it's a very small oil rim, if one exists at all, in a transition to a gas reservoir to make this low gravity oil, and we will have to see how it develops to know for sure about this possibility of an oil rim.

Q And your present plans are to test this well for sometime and take a good look at it before you spend any more money drilling it?

A Yes sir, that would be correct.

MR. UTZ: Questions?

You may be excused.

(Witness excused.)

MR. UTZ: Statements?

The case will be taken under advisement.

I N D E X

EXHIBIT	MARKED	OFFERED AND ADMITTED
Applicant's 1 through 3	2	12

STATE OF NEW MEXICO)
: ss
COUNTY OF McKINLEY)

I, Jerry Martinez, Court Reporter in and for the County of McKinley, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Court Reporter

I hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. [illegible] heard by me on [illegible] 19[illegible]

Examiner
New Mexico Oil Conservation Commission