BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 20, 1967
EXAMINER HEARING

IN THE MATTER OF:

Application of Coastal States Gas Producing Company for special pool rules, Lea County, New Mexico.

Case No. 3701

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: We'll call Case 3701.

MR. HATCH: Case 3701, Application of Coastal States Gas Producing Company for special pool rules, Lea County, New Mexico.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, and Christy, appearing on behalf of the Coastal States Gas Producing Company. We have two witnesses and several exhibits which I will have identified. I'd like to have Jack and Mr. Zinke both sworn.

(Witnesses sworn.)

(Whereupon, Applicant's Exhibits Numbered 1 through 9, inclusive, were marked for identification.)

ROBERT ZINKE

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name.

A Robert Zinke.

MR. NUTTER: How do you spell that, please?

A Z-i-n-k-e.

Q Where do you reside?

A Midland, Texas.

Q By whom are you employed?

A I am employed for Coastal States in Midland, Texas.

Q In what capacity?

A As a Senior Geologist.

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

A No, I have not.

Q Are you a graduate geologist?

A Yes, I am.

Q What school did you graduate from?

A Missouri School of Mines in Rolla, Missouri.

Q Of what year?

A In 1951.

Q Have you practiced your profession since graduation?

A That, I have.

Q Have you been employed by other companies?

A Yes. I have been employed by several oil companies in Midland.

Q How long have you been employed by Coastal States?

A Two years, approximately two years.

Q Are you familiar with Coastal States operations in New Mexico?

A Yes, I am.

Q Are you familiar with their operations in the Baum area?

A Yes, I am.

Q Are you familiar with the application that's been filed by Coastal States in this case?

A Yes, I am.

Q What is Coastal States seeking to accomplish by this application?

A To drill wells on a hundred sixty acre spacing, to do this for economic reasons.

Q And to obtain special field rules?

A Yes, special field rules for the Baum Pool.

Q Have you made a study of all the wells and the logs of the wells that have been drilled in this area?

A Yes, I have.

Q Refer to Coastal States Exhibit 1 and explain what this is and what it shows.

A This is a regional map showing, first of all, the different fields across most of Lea County, Texas, and on into the other surrounding counties, and there are three areas circled.

The two orange areas are: one area in Township 9 south, Range 34 east, the Vada Pool out of the Bough "C" line and the other orange circle in Township 14 south, Range 34 east in the Saunders East Pool from the Permo Penn Line, and then the yellow circle, which circles the Baum Pool,

giving the location of the Baum with relationship to the Vada and the East Saunders Pool.

Q Are these three pools all producing from the same formations?

A Yes.

Q Have they adopted special field rules for the other two pools that you mentioned?

A There are, to my knowledge, field rules of a hundred sixty acre spacing for both these pools.

Q Now, refer to your Exhibit 2 and explain what this shows.

A This is a subsurface map contoured on the top of the Permo Penn line and it shows the structures that the various pools in the area of the Baum Pool, the size and relationship of these structures to the Baum Pool. It also has a line of cross-section drawn from the Baum Pool over to the East Saunders Pool, the relationship of the size of structure of the Baum Pool to the East Saunders Pool and to the Saunders Pool itself, and the Lazy J Pool.

Q The line which you have mentioned, showing the cross-section, refers to another exhibit which will be introduced later?

A Right.

Q Did you prepare this structural map?

A Yes, I did.

Q Was it prepared under your direction?

A Yes, it was. I prepared it.

Q Is Coastal States acreage indicated in yellow?

A Yes, Coastal States acreage, the holdings, the present holdings are indicated in yellow.

Q What was the initial test well that was drilled in the area, in the Baum area?

A It was the Coastal States Number 6-1 State, and it is located nineteen eighty feet from the east line, six sixty feet from the north line of Section 6, Township 14 south, Range 33 east.

Q Is that well completed as a producer?

A Yes, it is.

Q Was it the original producer in the area?

A No, it is the third producer in the Baum Pool area.

Q What was the first one?

A The discovery well was the Champlin Number 1, Federal -- Featherstone Federal, located six sixty from the south and east of Section 6, and the second producer was the Featherstone -- Champlin Number 2, Featherstone Federal, and it is located twenty-three ten from the north and west of Section 6.

Q When was the Champlin Well completed?

A Approximately 1955.

Q Is it producing considerable water at the present time?

A Yes, it's producing fifty percent water.

Q When was your last well completed in this area?

A Coastal States well?

Q Yes.

A It was completed -- I do not have the exact date.

MR. JACK R. McGRAW: The first of December.

A It would be the first of December.

Q Is that well capable of making it's allowable at the present time?

A Yes, it is.

Q What is the potential of the well?

A The well was initially potentialed for a hundred and sixty barrels of oil and six hundred forty barrels of water and was repotentialed at a later date for three hundred sixty barrels of oil and six hundred forty barrels of water.

Q Is Coastal States engaged in any additional operations at the present time?

A Yes, they are, at the present time, drilling below seven thousand feet on their Number 1-32 State Well in Section 32, Township 13 south, Range 33 east.

Q What is the depth of the formation in which you are

producing the Baum formation?

A It's at ninety-nine seven to ninety-nine seventeen.

Q When do you anticipate your next well will be completed?

A It should be completed right after the first of the year. There is another Coastal States well that is in testing. It was a reentry and redrilling from eight thousand feet to the Permo Penn Pay through the same Champlin Number 2, Featherstone Federal, which is located twenty-three ten from the south -- no, from the north and west of Section 6. It's the Coastal States 6-1 Federal.

Q Is there anything else that you would like to testify to with respect to Exhibit 2?

A No.

Q Now, refer to your Exhibit Number 3 and explain what this shows.

A This is a cross-section. It has an index map. It goes from Coastal States Number 6-1 State, east to the Texas Company Number 8-1 -- "A-T" Number 1 in the southeast part of Section 10, Township 14 south, Range 33 east, through the David Faskin No. 1 Tidewater State in Section 13, Township 14 south, Range 33 east on to the discovery, the Kern County No. 1 State, located nineteen eighty from the south and west of Section 17, fourteen south, thirty-four east.

This cross-section was made to show the correlation of the Permo Penn Pay in the Baum Pool across through the Saunders Pool into the East Saunders Pool showing the complex of the Permo Penn line and indicating that the Baum Pool is producing from the same Permo Penn line as the East Saunders Pool.

Q Does this also indicate that the characteristics of the producing formation in each pool is substantially the same?

A Approximately the same, yes. The East Saunders does not produce as much water as the Baum Pool does.

Q What is your pay thickness as shown by this cross-section?

A The pay thickness in the Coastal States 6-1 State is approximately nine to ten feet, and in the Kern County Number 1 State, in the East Saunders Pool, it is approximately fifteen feet thick. The perforations are over a much wider range, but the porosity is approximately the same.

Q How does this thickness of pay compare with the thickness of pay in the intervening wells between these two pools that are shown on this cross-section?

A The thickness of pay in the Baum Pool is approximately nine to ten feet. The overall thickness in the Saunders Pool is approximately forty to fifty feet, and this is in comparison

to the Saunders Pool.

Q In other words, you've got a thinner pay section in this area than they have in the main Saunders Pool?

A That's right, and the Saunders Pool is a larger structure.

Q What about the porosity and permeability as shown in the cross-section of the logs?

A The porosity and the permeability are well developed in all of the pools, except the Lazy J probably has some weak porosity and the permeability developments, but the East Saunders has very good permeability and porosity developments than the Saunders Pool does and, also, the Baum Pool.

Q Do you have anything else that you would like to testify to with respect to Exhibit 3?

A No, I do not.

MR. HINKLE: We would offer Exhibits 1, 2, and 3.

MR. NUTTER: Exhibits 1, through 3 will be admitted into evidence.

(Whereupon, Applicant's Exhibits number 1, 2, and 3 were admitted into evidence.)

MR. HINKLE: I'd like to call Mr. Jack McGraw.

MR. NUTTER: I'd like to ask Mr. Zinke a couple of questions.

MR. HINKLE: Oh, excuse me.

MR. NUTTER: Does anyone have any questions of Mr. Zinke?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Zinke, this pool has, by the Commission, been classified as a Wolfcamp Pool; however, you keep referring to it as a Permo Penn. Now, is it down in that twilight zone between the Lower Wolfcamp and the Upper Pennsylvanian, and it can't be well defined as a Wolfcamp or can it be defined as a Wolfcamp?

A One of the reasons, for making this cross-section, was to show that it definitely was the same correlative zone as the Permo Penn, and I would classify it as the Permo Penn, rather than the Wolfcamp. It's a term used to describe this transition zone between the Wolfcamp and the Pennsylvanian, where it's very questionable whether it is Wolfcamp or Pennsylvanian.

Q There is that twilight zone, though. I realize that.

A That's right.

Q Now, what has the Commission designated as the formation name for the Saunders and the East Saunders?

A Permo Penn.

Q Permo Penn.

A And, I believe, the Baum Pool is also Permo Penn

as this cross-section shows.

Q Rather than Wolfcamp, really.

A Yes. Of course, the geologists would argue one way or the other about this. I think it's Permo Penn from the correlations.

Q Now, geologically, do you have anything to indicate here that you've got sufficient permeability to drain a hundred and sixty acres?

A I believe that the samples indicate real good porosity and the Drillstem Test data, which will be on one of the later exhibits, also indicates this through very good pressures.

Q Now, I was having a little bit of difficulty following you there on some of these wells on your Exhibit Number 2, Mr. Zinke.

Now, you stated that the discovery well for the area was the Champlin Well down in the southeast, southeast of 6.

A That's right.

Q And is this the well that you said is presently making about fifty percent water?

A Yes, this well is producing -- I'll find out approximately what it is making, production wise.

Q I'd like the I. P. on it too, if you've got that there.

A It's on Exhibits-- this well was completed flowing for two hundred seven barrels of oil per day, plus twelve percent salt water, and we have some field production, it's total production, but it is producing -- it has produced approximately eight to nine hundred barrels of oil per month and a little bit more up to nine hundred to a thousand barrels of water per month.

Q And, that is about what it's making now?

A Recently, it was approximately a year ago or fourteen months ago, it was reworked and it's producing approximately eleven hundred barrels of oil and about twelve hundred barrels of salt water per month on a standard Beam pump.

Did I answer that question?

Q Yes, sir. Now, you said that the second well drilled in the area was the well that's identified there with the minus fifty-five hundred.

A That's right. It's twenty-three ten from the north and west line of the section.

Q Now, this well is shown to be abandoned now. Is this the one you said is being redrilled?

A Well, it's the one that's been redrilled and tested

by Coastal as of now.

Q Did it produce from this same interval?

A Yes, it did.

Q And what was its production history?

A I do not have the initial potential on it.

MR. HINKLE: Our next witness will go into that in a little more detail.

A It's produced thirty-nine thousand barrels of oil and was abandoned, I believe for the same reason of the water problem.

Q And then the third well that was drilled was your 6-1?

A That's right, into the same pay zone.

Q And it's potential was one sixty barrels of oil and four sixty barrels of water?

A Six forty barrels of water.

Q Six forty. What was the difference there between that first potential and that repotential? How come you went from one hundred and sixty barrels of oil to three sixty?

A Well, the engineers told me that their pumping equipment, this is a Kobe pump situation, that they had to rework their pump and put it back to pumping again, and it did improve their oil production.

Q And has it held up, this three sixty, as far as --

A I'm not qualified to testify exactly what the well is making. The engineers can.

MR. NUTTER: I believe that's all, Mr. Zinke. You may be excused. Thank you.

(Witness excused.)

MR. HINKLE: I'd like to call Jack McGraw.

JACK R. McGRAW

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence and by whom you are employed.

A Jack McGraw. I work for Coastal States Gas Producing Company in Midland, Texas as a petroleum engineer.

Q What is your official position with the company?

A Divisional Petroleum Engineer.

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

A Yes, sir, I have.

Q Your qualifications as a petroleum engineer are a matter of record?

A Yes, sir.

Q Are you familiar with Coastal States' operations in New Mexico?

A Yes, sir, I am.

Q And in the Baum Permo Penn Pool?

A Yes, sir.

Q You made a study of all the wells in that area?

A Yes, sir.

Q Of the logs and of the production data and all the information available?

A Yes, sir.

Q Have you prepared certain exhibits for introduction in this case or were they prepared under your direction?

A Yes, sir, I have.

Q Refer to Exhibit 4 and explain what it shows.

A Exhibit 4 is a graph showing the production history of the subject field. This graph shows that the discovery well, the Champlin Featherstone Federal Number 1, was completed in May of 1955 and that it has continued to produce to the present time. This particular well has a cumulative oil recovery of a hundred and fifteen thousand barrels and a water recovery of a hundred and thirty thousand barrels. The graph also shows that the Champlin Featherstone Federal Number 2 was completed in August of 1956 and produced until January of 1959. It recovered approximately 39,374 barrels of oil and approximately 136,000 barrels of water.

The Champlin Featherstone Federal 1-A located in the northeast quarter of the northwest quarter of Section 7, 14 south, 33 east, was drilled and then plugged and abandoned in January of '56. No completion attempt was made on this well. The well was later converted to a salt water disposal well and is used for that purpose at this time.

The Coastal States Number 6, State 6 Number 1 well, was completed in November of 1967, and is presently capable of producing 361 barrels of oil per day and 735 barrels of water per day for the gas-oil ratio of twelve hundred and eighty-eight.

Coastal States has recently reentered the Champlin Featherstone Federal Number 2 and are now testing for commercial production.

Q Is that the well that is located in the southeast of the northwest quarter of Section 6?

A Yes, sir. Coastal's production is not shown on this graph since the well was completed too late to actually have a monthly production figure as reported to the Oil Conservation Commission; and, of course, we're now drilling our State 32 Number 1, which is located in the northwest quarter of the southwest quarter of Section 32.

Q Is there anything else concerning Exhibit Number 4

that you would like to testify to?

A Well, it indicates the nature of the reservoir in that it produces at least fifty percent water, and has, throughout the life of the reservoir. It also shows that as the oil rate is increased, the water rate increases, also, and at a faster rate. This is, of course, true of our well, also, the new one.

Q Now, refer to Coastal States' Exhibit Number 5 and explain what that shows.

A Exhibit Number 5 is a graph of the bottom hole pressure versus cumulative production for the field. This graph shows that the initial bottom hole pressure in the field was thirty-four sixty-five as recorded on a D. S. T. from the Champlin Featherstone Federal Number 1 in May of 1955. The D. S. T. on the Featherstone Federal 1-A in January of '56 recorded a bottom hole pressure of twenty-seven fifty-eight. However, this was not a fully built-up pressure, and it's not shown on this graph.

In July of '56, the Featherstone Federal Number 2 recorded a bottom hole pressure of thirty-one sixteen and that is shown as the second point on the graph.

The Coastal States' State 6 Number 1 was Drillstem tested in November of 1967 and found to have a bottom hole pressure of thirty ninety-one. An observation of the

latter two charts indicate that they are at or near the static reservoir pressure.

Q What does this drop in pressure of the last well that was completed indicate or intend to show?

A Well, it tends to indicate that after a recovery of approximately a hundred and sixty thousand barrels of oil from the reservoir and a like amount of water, the pressure has been lowered to thirty ninety-one from thirty-four sixty-five.

Q Does that indicate drainage factor of a wide area?

A Yes, sir, it would. It would indicate quite a bit in excess of a hundred and sixty acre drainage.

Q It also indicates that all these wells are producing from the same pool formation?

A Yes, sir, from the same porous zone.

Q Now, refer to Exhibit 6 and explain what this shows.

A Exhibit 6, it's a cross-section through the Baum Field, showing all the completions are dry holes that have been drilled in the immediate area of the Baum Field. Shown in yellow on the cross-section is the Baum zone or the zone that has contributed the oil that has been recovered to date from the reservoir. This is the main pay zone, in other words. And, you can see from the logs that it is very

thin, and in our State 6 Number 1, it's just about nine feet.

Now, it shows to be thicker over to the east; however, that particular well was a dry hole and although the logs indicate the pay to be thicker, it was evidently too tight to produce.

The Champlin Featherstone Federal Number 1 is shown as the second log from the left, and their pay zone is also very thin. The well on the far left is the Champlin Featherstone Federal Number 1-A and a completion attempt was not made and, by log, you can see why in this particular zone. It was only a foot or two.

Q Do you have any other remarks with respect to Exhibit Number 6?

A Only that this does show that these zones are correlative from well to well and as the pressure information indicated.

Q Now refer to Exhibit Number 7 and explain what that exhibit shows.

A Exhibit Number 7 shows the reservoir data that was used in order to calculate the expected recovery on a per well basis, using well spacing of forty, eighty and one hundred and sixty acres. A porosity value of nine percent was determined from log analysis, using Coastal States State 6 Number 1 Well. A water saturation of thirty-eight

percent was also determined from logs. Formation volume factor of 1.45 was arrived at from correlations published by M. D. Standing. A recovery factor of thirty-five percent was estimated from observation of the performance in some of the older fields producing from this same zone; namely, the Inbe-Penn, North Bagley Penn, Vada and others. A net pay of nine feet was determined from logs.

The oil in place is calculated to be twenty-six hundred and ninety barrels per acre in the vicinity of the Coastal States' State 6 Number 1. The estimated recoverable reserves are nine hundred forty-two barrels per forty acres, seventy-five thousand five hundred barrels per eighty acres, and one hundred fifty-one thousand barrels per one hundred sixty acres.

Q Now, refer to Exhibit Number 8 and explain this exhibit.

A Exhibit Number 8 shows the economics that can be expected by developing the field on forty, eighty or one hundred sixty acre spacing. This exhibit shows that the net income would be a dollar ninety-four per barrel. This, of course, also shows that our gross income is three eleven per barrel, trucking charges, eleven cents. Our mineral interest is .8125. Our operating cost

and taxes are estimated to be fifty cents per barrel throughout the life of the reservoir, and this gives our net working interest income of a dollar ninety-four per barrel.

This does not include any income for gas sales. No gas market is available at this time; however, we anticipate that it will become available in the near future. It is estimated that the gas income will approximately equal the cost to dispose of the produced water. Disposal costs have not been included in the estimated fifty cents per barrel operating cost. And, if a pipeline connection is obtained for the field, some improvement will be seen in this economic projection, possibly eight or nine cents a barrel.

Q What do you estimate the cost of drilling a well in this area?

A The cost to drill and complete our State 6 Number 1 was one hundred eighty thousand dollars. We feel that it will cost this much to drill and complete additional wells in the field.

Q That would be, in your opinion, the average cost of drilling a well?

A Yes, sir, it is. And, when you consider the excessive cost to lift this amount of fluid, Kobe equipment is rather expensive.

Q What will this result in, then, as far as forty, eighty, and a hundred and sixty acre spacing is concerned?

A Well, it, of course, shows you do not receive a pay out of forty or eighty acres. However, on one hundred sixty acres, a pay out is achieved and a fairly satisfactory rate of return is shown due to the high rate, initial rate, of the wells.

In other words, if they make a hundred -- three hundred fifty or sixty barrels of oil a day, they will show a pretty good rate of return on the invested capital.

Q Now, from your study of this area and all the wells and all the information available, have you formed any opinion as to whether one well will affect it, whether it will efficiently drain as much or more than one hundred sixty acres?

A Yes, I feel that they will. In studying the area in general, comparable production and other fields in that pay zone, they have very higher total fluid recoveries. It's not unusual for wells in this area to recover in the neighborhood of a million barrels of total fluid and, of course, with nine feet of pay and nine percent porosity, that's just about all the space there is under a hundred and sixty acres. So, it indicates that they do drain in excess of this.

Q Now, Coastal States in this case, by it's application, is proposing special field rules.

A Yes.

Q Do you have any suggestions as to the type of field rules that you would like?

A We are requesting field rules somewhat similar to those recently granted for the Vada Penn Pool. The principal difference is that we're requesting a 6.77 proportional factor for the one hundred sixty acre proration units, which will yield a total allowable of three hundred and seventy-eight barrels of oil per day at the November basic allowable rate. This is the normal proportional factor for one hundred sixty acre spacing as published by the New Mexico Oil Conservation Commission.

We are requesting that these rules be temporary rules for a period of one year, in which time we can gather the necessary information to prove whether or not they will drain one hundred sixty acres.

Q And the fact that you are drilling another well and in the process of completing a well, all will add to this information?

A Yes, we feel that by this time next year, there will be a lot more information available in this area.

Q Do you have any suggestions as to the rules?

A Yes, we have.

Q Refer to Exhibit 9.

A We have a copy typed up that varies only slightly

from the field rules that were granted in the Vada Penn field, mainly in the well spacing. We would like to limit the location of new wells to either the northwest quarter or the southeast quarter of a governmental quarter quarter section or lot. This is so that a new well cannot crowd an existing well in the field. It would have to be located some distance from it.

Q Now, Exhibit 9 is a copy of the rules which Coastal States is proposing.

A That is right.

Q Is there anything else that you desire to bring to the attention of the Commission?

A We do have waiver letters that we received from offset operators in the field that you might want to read into the record.

MR. HINKLE: I have a letter from Champlin under date of December 16, 1967. "This is to inform you that Champlin does not intend to be at the hearing scheduled for December 20th in Santa Fe, nor do we intend to object to the application." That letter is addressed to the Oil Conservation Commission. I assume that you have that in the record.

There's another letter under date of December 8th, 1967. "Gentlemen: Attached is Coastal States' application for special field rules for the Baum Wolfcamp Pool situated

in 14, 38, requesting one hundred sixty acre spacing proration units. We would appreciate very much your supporting us in this hearing. If you are in agreement, please sign at the bottom of this page and return to Coastal States." And, it is signed and approved by M. W. J. Producing Company on December 13, 1967.

There's another letter in the same form addressed to W. F. Lawless under date of December 8th, which has been approved by Mr. Lawless as indicating there is no objection.

Another letter in the same form to Cabot Corporation, which was returned and approved by Cabot Corporation on December 11, '67.

Would you like to see these?

MR. NUTTER: They were read into the record. I think that should be sufficient, unless you have copies.

Q (By Mr. Hinkle) Now, in your opinion, will the establishment of special field rules in this field, including one hundred sixty acre spacing, one hundred sixty acre allowables, prevent the economic loss caused by the drilling of unnecessary wells?

A Yes, sir.

Q And, will this otherwise prevent waste and protect correlative rights?

A Yes, sir.

Q Do you have anything else you would like to present?

A I don't believe I do.

MR. HINKLE: We would like to offer in evidence Exhibits 4 to 9, inclusive.

MR. NUTTER: Coastal States' Exhibits 4 through 9 will be admitted into evidence.

(Whereupon, Applicant's Exhibits 4 through 9, inclusive, were admitted into evidence.)

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. McGraw, I missed a couple of figures as you were reciting those. Now, you mentioned that the well which you are presently redrilling has produced thirty-nine thousand barrels of oil in it's first line.

A Yes.

Q And, how much water?

A One hundred and thirty-six thousand barrels.

Q So it exceeded that fifty-fifty water cut, then?

A Yes, sir, it certainly did.

Q About three or four to one?

A Yes, sir.

Q How about this other well, the original Champlin Federal well in the southeast, southeast of 6? What has

been it's total cumulative production of oil and water?

A A hundred and fifteen thousand barrels of oil and a hundred and thirty thousand barrels of water.

Q Now, this water that's produced is interstitial or connate water. It's not a Baum water drive or an edge water drive or anything like that?

A It's certainly not a water drive.

Q It's typical Pennsylvanian connate water situation?

A Yes, sir.

Q Now, looking at this production decline curve, Exhibit Number 4, we see that apparently the Featherstone Number 1 had a very marked decline during the years '55 and '56 because the pool production went down until that Number Two well was completed. Do you know what they did then to arrest that decline, what brought that well back up?

A This is mainly pumping problems. As you can see, the number one well has never been produced at a very high rate. Now, when the number two well first came on, it came on at, obviously from the total field production, a hundred barrels a day or so or nearly three thousand barrels a month and maybe four; whereas, the number one well, it's maximum rate has been on the order of less than one thousand barrels a month and so, on the number two well, they were moving more fluid and getting more oil and more water. A

lot more water is shown.

Q But, it didn't last long?

A It didn't last long, again, mainly because of their inability to keep their pumping equipment operating.

Q What was that Number Two well pumped with, a Beam pump?

A Yes, sir.

Q And, you mentioned that the Number One is still on a Beam pump.

A It still is. Now, they tried a Kobe pump on the Number One Well. The production increase over in '66 is a result of installation of Kobe pumping equipment.

Q And, at that time, it went up from approximately four hundred and five hundred barrels a month up to approximately fifteen hundred?

A Yes, sir. And the water went up as is shown there.

Q But, the oil production has now declined again back down to about a thousand?

A They took it off. They couldn't make their Kobe pump work, so they went back to a Beam unit. They went back to what they had and it shows that they actually increased their ability of the well to produce, because they did not go back to the same rate they were producing before.

Q Now, your well was completed the first of December

and it's still flowing.

A No, sir. It's pumping on Kobe pump.

Q The first potential was one sixty --

A Was one sixty, yes, sir.

Q -- and then three sixty.

A Yes, sir.

Q And, that was on a Kobe.

A Yes, sir.

Q And, you mentioned that it can now produce three hundred sixty-one barrels of oil and is making seven hundred and thirty-five barrels of water.

A Seven thirty-five, that's right.

Q What do you anticipate as a result of this redrilling of this old well, recompletion in the same zone or an attempt to recomplete in another zone or what?

A Well, we're at the present time testing another zone. However, we do intend to go back to the same zone. We feel like we can make substantial amounts of oil out of that.

Q How much was that zone making when they plugged and abandoned it?

A Well, of course, as the curve shows here, it got down to where it wasn't making anything. Now, whether that was a result of pumping problems or what, I really don't know.

but we feel that we can restore the well to an economical producing rate.

Q Now, all these pressures that you have on Exhibit Number 5 are all Drillstem test pressures, aren't they?

A Yes, sir.

Q Do you have any idea what the bottom hole pressure is in any of the former wells? Was the bottom hole pressure ever taken on that Number Two Well before it was plugged and abandoned?

A No, sir. However, there was a bottom hole pressure taken on the Number One Well. Subsequent bottom hole pressure was taken on that well. I do not have that down, but it was about twenty-two hundred pounds at that time.

Q Is that on Exhibit 6 by any chance?

A No, sir, I don't believe it is.

Q About twenty-two hundred pounds on the Number One?

A Yes, sir, but the reason I don't use it and show it, it was the bottom hole pressure taken on a twelve-hour buildup or just twelve-hour shut-in period, and I'm sure that it was not a static reservoir pressure, so I did not use it.

Q Now, these bottom hole pressures that you've got here, are these final shut-in pressures or initial shut-in pressures?

A These are initial shut-in pressures after one hour

or one hour and a half of buildup -- initial shut-in.

Q I see. Then no subsequent pressure has been taken on your 6-1?

A No, sir, we are planning to do that in the very near future.

Q Have any of the wells been cored, to your knowledge?

A No, sir.

Q Are you planning to core this 132 that you're drilling now?

A No, sir.

Q Now, what, Mr. McGraw, in your opinion, substantiates the claim that a well here will drain a hundred and sixty acres or more, the decline and bottom hole pressure plus the fact that these wells have made a considerable amount of fluid and according to the calculated porosity, it would have to be coming from more than that?

A That's it. Mainly, of course, the analysis of Drillstem test information indicates that the average ability could be on the order of a hundred milli-dorsies, which is not bad for a line. So, it evidently has good to excellent permeability in the reservoir, else it couldn't give up fluids at this rate.

Q And, you used the same recovery factor in calculating your reserves under forty, eighty, a hundred and sixty recovery

regardless of the drain?

A Yes, sir, figuring on that. We're not, at this point, able to prove that we can drain that effectively, but that was what we used.

MR. NUTTER: I see. I guess that's all, Mr. McGraw. Thank you.

Do you have anything further, Mr. Hinkle?

MR. HINKLE: No. That's all.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3701? Do you want to read that into the record?

MR. HATCH: Mr. Hinkle has already read that.

MR. NUTTER: The one that we had the copy of.

MR. HATCH: Yes.

MR. NUTTER: If there's nothing further in Case 3701, we'll take the case under advisement and a fifteen minute recess.

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I N D E X

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, CHARLOTTE MACIAS, Notary Public in and for the County of Bernalillo, 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.

Witness my Hand and Seal this 6th day of January, 1968.

Charlotte Macias
NOTARY PUBLIC

My Commission Expires:
February 10, 1971.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3701 heard by me on 12/20 1967

New Mexico Oil Conservation Commission