

BEFORE THE
Oil Conservation Commission
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 964

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
605 SIMMS BUILDING
TELEPHONE 3-6691
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
October 14, 1955

IN THE MATTER OF:

CASE 964

Northwestern New Mexico Nomenclature case calling for
the following creation and extensions of pools:

- (a) Extension of the Aztec-Fruitland Pool Boundary
in San Juan County, New Mexico, to include
therein:

TOWNSHIP 29 NORTH, RANGE 11 WEST
Section 26: NE/4

- (b) Extension of the Fulcher Kutz-Pictured Cliffs
Pool in San Juan County, New Mexico, to in-
clude therein:

TOWNSHIP 29 NORTH, RANGE 12 WEST
Section 3: SW/4
TOWNSHIP 27 NORTH, RANGE 9 WEST
Section 21: S/2, NE/4

- (c) Extension of the South Blanco-Pictured Cliffs
Pool in San Juan County, New Mexico, to in-
clude therein:

TOWNSHIP 26 NORTH, RANGE 7 WEST
Section 25: NE/4

- (d) Extension of the West Kutz-Pictured Cliffs
Pool in San Juan County, New Mexico, to in-
clude therein:

TOWNSHIP 27 NORTH, RANGE 10 WEST
Section 34: SW/4

- (e) Creation of a new pool in Rio Arriba County,
New Mexico, classified as a gas pool for
Pictured Cliffs production, designated as the
Tapicito-Pictured Cliffs Pool, and described
as:

TOWNSHIP 26 NORTH, RANGE 4 WEST
Section 9: NE/4
Section 10: W/2
Section 13: SW/4
Section 14: S/2
Section 15: all
Section 16: SE/4
Section 22: NE/4
Section 23: W/2, NE/4

BEFORE: Mr. E. S. (Johnny) Walker
Mr. William B. Macey.

TRANSCRIPT OF HEARING

MR. MACEY: The next case is 964. Okay.

ELVIS A. UTZ,

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

DIRECT EXAMINATION

BY MR. KITTS:

Q State your name and position, please.

A Elvis A. Utz, Engineer, Oil Conservation Commission.

Q Are you familiar, Mr. Utz, with case No. 964?

A Yes, I am.

Q Paragraph (a) recommends the extension of the Aztec-Fruitland Pool boundary; state what that recommendation is and the basis for it?

A T29N, R11W, NE/4 Section 26, recommend this be made an extension to the present Aztec-Fruitland Pool on the basis of a well drilled and capable of producing known as the Basin Natural Gas Corporation's No. 2 Sullivan in the NE/4 Section 26, 29N, 11W, which well had an IP of 2863 MCF per day; shut-in pressure 638 pounds in twelve days.

Q All right. In paragraph (b), there is a recommendation for extension of the Fulcher Kutz-Pictured Cliffs Pool in San Juan County; state the recommendation and the basis for it.

A That the Fulcher Kutz-Pictured Cliffs Pool be extended as follows: Township 29N Range 12W, SW/4 Section 3; this extension is based on the Anderson-Prichard Oil Corporation No. 1 Greer, SW/4

Section 3, which had an IP of 2,050 MCF; shut-in pressure of 810 pounds in 7 days; recommended further is the extension in 27N R9W of Section 21, S/2, NE/4.

MR. MACEY: Pardon me. Which one are you on?

A Second part of "B".

MR. MACEY: Okay, this extension is recommended on the basis of three wells?

A Yes, this is recommended on the basis of three wells capable of producing, which are as follows: J. Glenn Turner No. 4-21 Cleveland, SW/4 21, 27N, 9W, with an IP of 2,774 MCF, shut-in pressure of 632 pounds in 17 days; J. Glenn Turner No. 2-21 Cleveland, SE/4, Section 21, 27N, 9W, with an IP of 2,094 MCF per day; shut-in pressure of 606 pounds in 9 days; and the J. Glenn Turner No. 1-21 Cleveland, NE/4 Section 21, 27N, 9W, which had an IP of 1,788 MCF per day; shut-in pressure 604 pounds in 10 days.

Q Passing on to Paragraph (c), explain the recommendation contained therein.

A This is a recommendation for the extension of the South Blanco-Pictured Cliffs Pool which is as follows: T 26N, R7 W, NE/4 of Section 25. This extension is based on a well capable of producing known as the Candado Production Company No. 10 Candado, NE/4, Section 25, 26N, 7W, which has an IP of 1,732 MCF per day, shut-in pressure of 833 pounds in 28 days.

Q All right. Passing on to Paragraph (d), explain what the recommendation is there and the basis for it.

A This is an extension recommended for the West Kutz-Pictured Cliffs Pool, extension to be as follows: T27 N, R10 W, SW/4 Section 34; this extension is based on the John P. Wiedemer No. 2 McAdams in

the SW/4 Section 34, 27N, 10W, which had an IP of 250 MCF per day, shut-in pressure 470 pounds in seven days.

Q In paragraph (i), --

MR. MACEY: Pardon me, aren't they going to plug that well?

A If they are I haven't heard anything about it.

MR. MACEY: That, I think, is the one they told me they were going to plug, it's pretty sorry.

A That's right.

MR. MACEY: I'm almost positive he said the Fulcher Kutz, but this must be the one. He said we had something advertised in an area where he said he was going to plug the well.

A Maybe we better.

Q Why don't we find out and if they are going to plug the well, then you --

MR. MACEY: Forget about that portion if they are going to, and if they are not going to plug it, go ahead and make the exception.

Q Mr. Utz, in Paragraph (e), there is a recommendation of a new pool in Rio Arriba County --

A Off the record a minute.

(Discussion off the record.)

MR. MACEY: For the purpose of the Record, Southern Union Gas Company filed an application involving the portion of the area advertised under Section (e) in this hearing; they have filed an application for not only this area, but a larger area and creation of a pool and the creation of drilling and proration units and, in order to prevent any conflict between the two cases, I suggest that we continue this case, this portion of the case, to next month and consolidate it with the Southern Union's.

A Has that got a case number?

MR. MACEY: Yes, but I didn't bring it with me. I can't remember what it is, but if you want to, we will let the record show that we will supply the case number into the hearing. I can't remember what the case number is. Do you have an exhibit?

A Yes, sir.

Q You have prepared this exhibit, Mr. Utz?

A Yes, sir, I have.

Q It incorporates the recommendations you have made?

A That is correct. The exhibit also contains the portion which is continued with the notation that it is continued.

Q Now, this is exhibit no. 1? A Yes, sir.

MR. KITTS: We offer it as Commission's Exhibit 1 in the case of 964.

MR. MACEY: Without objection it will be received.

Any more questions of the witness? No questions of the witness, the witness is excused. The case is taken under advisement.

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I, THURMAN J. MOODY, Court Reporter, do hereby certify that the foregoing and attached transcript of Proceedings was taken before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, and is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand, this, the 31st day of October, 1955.



BEFORE THE
Oil Conservation Commission
SANTA FE, NEW MEXICO
November 16, 1955

IN THE MATTER OF:

CASE NO. 964 and 977

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
605 SIMMS BUILDING
TELEPHONE 3-6691
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 16, 1955

IN THE MATTER OF:

Northwestern New Mexico nomenclature case
calling for the following creation:

(e) Creation of a new pool in Rio Arriba
County, New Mexico, classified as a gas pool
for Pictured Cliffs production, designated
as the Tapicito-Pictured Cliffs Pool, and
described as:

Township 26 North, Range 4 West

Section 9: NE/4
Section 10: W/2
Section 13: SW/4
Section 14: S/2
Section 15: All
Section 16: SE/4
Section 22: NE/4
Section 23: W/2, NE/4

Case 964

IN THE MATTER OF:

Application of Southern Union Gas Company
for an order creating the Tapicito-Pictured
Cliffs Gas Pool in Rio Arriba County, New
Mexico, and for the temporary establishment
of 320 acre drilling units within the pool
to cover the following described area:

Township 25 North, Range 3 West

All of Sections 4 and 5

Township 26 North, Range 3 West

All of Sections 19, 29, 30 and 32

Township 26 North, Range 4 West

Section 3: S/2
Section 4: S/2
All of Sections 9 and 10
Section 11: S/2
All of Sections 13, 14, 15 and 16
Section 21: E/2
All of Sections 22, 23 and 24
Section 25: E/2

Case 977

Furthermore, applicant desires to have 320 acre
drilling units established within the pool
boundaries and adjacent area within two miles
of the pool boundaries and also desires pool
rules pertaining to the location of wells.

BEFORE:

Honorable John F. Simms, Jr.
Mr. E. S. (Johnny) Walker
Mr. William B. Macey

TRANSCRIPT OF HEARING

MR. MACEY: The next case on the docket is Case 977.

MR. GRENIER: A. S. Grenier, appearing on behalf of Southern Union Gas Company. We have one witness to be sworn.

A. M. WEIDERKHER,
called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

By MR. GRENIER:

Q Mr. Weiderkher, will you state your name for the record?

A A. M. Weiderkher.

Q By whom are you employed?

A Southern Union Gas Company.

Q In Dallas, Texas?

A Right.

Q In what capacity?

A Manager of Exploration Department.

Q Have you previously testified before this Commission as an expert witness?

A Yes, I have.

MR. GRENIER: Are the witness' qualifications acceptable?

MR. MACEY: They are.

Q In this case, No. 977, Mr. Weiderkher, will you tell us briefly what is proposed or involved?

A Yes, in Case 977 Southern Union Gas Company is asking that a Pictured Cliff field to be known as the Tapicito-Pictured Cliffs be designated, as set forth in our application, and that a temporary order providing for 320 acre drilling units as well as a spacing order be written by this Commission.

Q Have you had a map prepared under your supervision which indicates the proposed pool outline, Mr. Weiderkher?

A Yes, I have.

Q Do you have some copies of that we can give to the Commission?

A I do.

MR. GRENIER: We would like to have one of these marked for identification as Southern Union Gas Company's No. 1.

(Southern Union Gas Company's Exhibit No. 1 marked for identification.)

MR. MACEY: Before you go any further, this case is consolidated with Case 964?

MR. GRENIER: Yes, I believe the Commission started a similar proceeding in regard to this pool in 964.

MR. MACEY: I think the record should show a consolidation of Cases 964 and 977.

MR. GRENIER: Yes. All testimony is to be presented in the two cases consolidated for hearing. That was a nomenclature proceeding, I think it was paragraph (e) of that case from last month.

MR. MACEY: That is correct.

Q How, on this map, Mr. Weiderkher, have the proposed pool outlines been indicated?

A The proposed field outline is that enclosed within the red border.

Q Within that area, how many wells have been drilled today?

A Sixteen wells have been drilled.

Q How many of these are producing wells currently capable of production?

A None of the wells are producing, due to the pipeline, but fifteen of the wells are capable of producing.

Q There is one in what status?

A A well located in the southeast quarter of Section 13, 26, 4 known as S. U. G. 1-C Jicarilla well is temporarily abandoned. We would like to say that the well was initially drilled through the Pictured pipe set on top of Pictured Cliff, and cemented, and when we drilled the cement we did not get a good job; we had water from the coal section above, along with some gas. We squeezed off the water and at this time we squeezed off the gas. Even after fracing we were not able to appreciably increase its capacity.

MR. MACEY: Where is that well located?

A Southeast quarter of Section 11, 26, 4.

Q Just to identify the area covered by this map, would you state that please?

A You mean the entire area?

Q Yes. What townships are portrayed here and in what county are these lands located?

A Actually, we have part of Township 25, 26, 27 North, Ranges 3, 4, 5, 6 West, all in Rio Arriba County, New Mexico.

Q That is the area shown by the map. The red outlined area does not embrace all that acreage?

A That is correct.

Q What is Southern Union Gas Company's leasehold interest in the red outlined area, that is to say, the proposed pool limits?

A We have an undivided one-half interest in 11 and a half sections, and a full interest in one-quarter of a section within the pool boundary.

Q Have you made any studies, Mr. Weiderkher, to determine whether or not this proposed pool is inter-connected with any of the other Pictured Cliff pools of the San Juan Basin?

A Yes, I have. We have prepared, or I had prepared under my supervision some cross sections. You will note on Exhibit 1 AA prime, BB prime and CC prime. Actually I have prepared three cross-sections showing the sand development within the pool boundary and the sand disappearing, so to speak, outside the pool boundary.

MR. GRENIER: Let's get this distributed. These would be Southern Union's 2, 3 and 4.

(Southern Union Gas Company's Exhibits
2, 3 and 4 marked for identification.)

Q Now the locations of the wells which are indicated on these three cross-sections, Exhibits 2 through 4, are they indicated on the map, Exhibit No. 1?

A Yes, they are. Actually Exhibit 2, which is the cross-section AA prime, starts with Southern Union Gas Company's No. 1-G Jicarilla well located in Section 1, - 26, - 5, goes down through the 1-E well in Section 16, 26, 4, the 1-A well in Section 23, 26, 4, and the 2-D well located in Section 29, 26, 3.

Q Referring to that particular AA prime line, describe what the log showed as portrayed on Exhibit 2, if you will.

A The 1-G well located here was cored and tested in the Pictured

Cliffs sand, this is actually where the Pictured Cliff sand is supposed to be, and there is some extremely hard type non-productive sand present in this particular well. Going on to the southeast, we run into the other three wells actually completed as commercial producers. This exhibit tends to show that somewhere between the 1-E well and the 1-G well there is a pinchout of the productive Pictured Cliff sand which would separate that from any Pictured Cliff production to the northwest.

Q That 1-G well is without the limits of the proposed pool boundaries, is that correct?

A Yes, it is. It was non-commercial in the Pictured Cliffs. The well is shown on our exhibit as a producer and producing from the Mesa Verde.

Q What are the wells that are shown on cross-section BB prime as outlined on Exhibit No. 3?

A The Southern Union Jicarilla 1-H located in Section 20, 26, 4, the 1-A which was used, Section 23, 26, 4 and the 2-D, the same one as used before. Actually this is more or less an east-west cross-section but showing in the Southern Union 1-H a dry hole in the Pictured Cliff, showing a pinchout of the sand in about the same manner as it was pinched out in the northwest. It also occurs on the west side of the proposed field.

Q As to cross-section CC prime shown on Exhibit 4, what are the wells involved in that cross-section and what are your findings?

A In cross-section CC prime, it begins with Southern Union Gas Company's Jicarilla 2-K well located in Section 11, 25, 5 which well, if not presently, will be located in the South Blanco-Pictured Cliff field showing a good development of sand within that

well which made some twenty million feet of gas. Then going to the northeast the 3-K Jicarilla located in Section 1, 25, 5 with a much poorer sand section, which well made about two million feet of gas instead of twenty million as the offset well; and going over to Section 27, 26, 4 the Jicarilla 1-F which was dry in the Pictured Verde Cliffs was completed in the Mesa / and going into the main body of the Pictured Cliff, of the Tapicito Pictured Cliff field, showing the 1-A well, Section 23, 26, 4 and 4-A well, Section 14, 26, 4, this being a southwest--northwest cross-section to show separation between the proposed Tapicito field and the South Blanco field line to the west and southwest.

Q Based upon these studies, have you reached any conclusion as to whether this pool is then inter-connected with any of the previously designated Pictured Cliff pools in the San Juan Basin?

A From this study and with the three dry holes separating this proposed Tapicito field with the South Blanco-Pictured Cliff field, the only Pictured Cliff field in the general vicinity, I would say that there's very little, if any, likelihood that these two fields would be connected.

Q In other words, all the evidence that you have to date indicates that they are not connected?

A Yes, it does. We drilled four dry holes in the area trying to find out where the field went and it played out on us.

Q Have you made any studies, Mr. Weiderkher, to determine what the recoverable reserves may be in this proposed field area?

A Yes, I have. Southern Union cored three wells in its drilling program in the area, and only one of the three that we cored was productive, but using core analysis from that particular well --

Q (Interrupting) Which well?

A Southern Union Gas Company's 1-E Jicarilla located in Section 16, 26, 4. Using the data from core analysis and the average field pressure within the area, I have calculated that the in-place gas amounts to approximately 344 m.c.f. per acre foot.

Q What were the factors that went to make up that estimate? From your core analysis what was the average porosity through the pay zone?

A 16.7 percent.

Q Connate water content?

A 42 percent.

Q The sand thickness?

A It was not used in this, it is used in the final reserve. Pressure is the only other factor.

Q What was the shutin pressure?

A 1,090 pounds.

Q That gave you, then, 344 m.c.f per acre foot?

A Right.

Q What did you do to determine the sand thickness in making your estimates?

A Well, I used the actual productive sand from core analysis on this well and then comparing that to electric log, I was able to average out the productive sand on the other wells within the area.

Q What did you find the average sand thickness to be, net sand thickness?

A Somewhere in the vicinity of 23 to 25 feet.

Q Working from your estimate of total reserves per acre foot,

what did you then arrive at as your estimate of total reserves under an average 320-acre tract in this proposed pool?

A 2,540,000,000 feet.

Q Again on a 320-acre tract basis, what do you estimate to be the recoverable reserves?

A I estimate we will probably withdraw gas down to a 250 pound pressure, which would give us a recoverable reserve of 1,960,000,000 feet of gas.

Q Have you made any studies to determine how long it will take to recover this recoverable reserve of 1,960,000,000 feet?

A When you start to determine how long it is going to take to recover any reserves, you have to know at what rate the wells will produce and, secondly, what rate will the pipeline take the gas, which entails an estimate of what line pressures will be prevailing or prevalent during the life of the wells. Actually, these particular wells have a capacity presently, the average well has a capacity in excess of 1,000,000 feet of gas a day. If these wells were produced at full capacity, they would recover their gas in far less than twenty years. Actually, we in the pipeline business try to figure on getting the gas from any particular area in about twenty years and our take should be proportionate to that.

Q If the line pressure were to be lowered so as to keep it generally at about half of the then existing shutin pressure, would these wells still be able to produce their recoverable reserves in the twenty-year period?

A Yes, they will.

Q You said that you found an average deliverability of these wells of a million a day. Did you come to any more exact figure

than that?

A Yes, actually what I did was to take the three-hour initial potentials of the various wells, add them up, and I came out with an average initial potential of 6.8 million feet per day, which would give a deliverability based on 18 percent factor of 1,224,000 cubic feet per day.

Q Where did that 18 percent factor come from?

A That is pretty well standard, a standard factor used in the San Juan Basin for Pictured Cliff wells. Actually, over a long period of time we have found that the wells will produce approximately 18 percent of their three-hour initial potential.

Q Has that been made use of by the Commission?

A Yes, it has.

Q For what purpose?

A In determining deliverables prior to an actual deliverability test.

Q For proration purposes?

A Right.

Q In the other pools?

A Right.

Q In comparison to the other westerly Pictured Cliff producing areas, have you made any studies to determine how hard these wells are going to have to be pulled in order to be taking at a comparable rate of withdrawal in relation to recoverable reserves per acre?

A Yes, I have. I checked the New Mexico Engineer Committee Report showing gas production for all Pictured Cliff pools in the month of January of this year, and the month of July. I find that during the month of January the South Blanco-Pictured Cliff wells

averaged 7,000,000 feet per month, which was the highest average per well of any field. In July that same field was still high with an average of 5.4 million per month. The average for all Pictured Cliff fields runs somewhere in the vicinity of three and a half to four million feet per month. Now the other Pictured Cliff fields have a recoverable reserve per acre of approximately the same amount of gas, which would mean that if we were to produce these wells on 320 acres and recover approximately equal percentages of the reserves, we would have to pull these wells at a rate of about twice the average of the other fields, which would mean that we would only have to produce around 10,000,000 per month per well.

Q In other words, the recoverable reserves for 160 acres in the other areas are about how much, Mr. Weiderkher?

A Somewhere in the vicinity of a billion feet per 160-acre unit.

Q Thank you. Are you saying then that we would then have to produce about 10,000,000 feet per month in order to be producing from the same rate from one of these 320-acre tracts, as the other Pictured Cliff areas are being produced in relation to reserves?

A That is correct, on an average.

Q What is the proportion between that 5,000,000 feet a month for the other Pictured Cliff areas and the deliverable capacity of the wells in that area, what percentage of the deliverable capacity are they having to put out to deliver at the rate of 5,000,000 a month?

A From the latest calculations, it appears that the average Pictured Cliff wells are producing at approximately 65 percent of capacity.

Q In order to be taking 10,000,000 per month from the wells in this area, what percentage of capacity would that mean?

A About thirty percent of capacity.

Q So that these wells relative to deliverable capacity would only have to be pulled about half as hard in order to be producing at the same rate in proportion to unit reserves, is that correct?

A That is right.

Q How much do the wells cost to drill and complete in this area, Mr. Weiderkher?

A Oh, from thirty-five to forty thousand dollars.

Q What has been the average cost of Pictured Cliffs wells in the other producing areas, in the Pictured Cliff areas?

A Our average cost runs between twenty and twenty-two thousand.

Q Why is the cost so much higher in the one instance than the other?

A We are talking about approximately twice the depth and, of course, we are 10⁴ miles from the nearest supply house and back up in the mountains a little bit, and the over-all costs are increased when you get that far away from your home base.

Q Within the pool limits as recommended by Southern Union in this case, how many 320-acre drilling locations would there be?

A It seems to me like there would have been thirty-five.

Q So that if this were spaced on the same 160-acre basis as the other Pictured Cliff pools in the San Juan Basin, how many extra wells would have to be drilled to bring it up to a full development program?

A Thirty-five.

Q Taking an average cost of \$40,000 for those wells, how much

of additional investment would that represent?

A \$1,400,000.

Q That is an investment which would be saved if it were drilled on 320 as opposed to 160?

A That is correct. Let me finish that. This \$1,400,000 additional money that would have to be spent is only on the assumption that we have outlined the total extent of the field. It is our personal opinion that future development will increase the size of the field and every increase means additional unnecessary amounts of money expended if we have to drill on 160 acres.

Q You said, Mr. Weiderkher, that this area had not yet had a pipeline connection. What is in store as respects this pool in that regard?

A Southern Union is in the process of laying a line to the area at the present time. It is my understanding that the contractor is setting up camp and proceeding with his line. I know that the contract has been let.

Q So that would mean a probable start of actual takes about when?

A We are hoping to be able to start taking gas before the first of January.

Q As to the wells within the area which are not Southern Union wells, or the portion of production which is not Southern Union production, what price is contemplated to be paid?

A Our present contracts call for twelve cents a thousand or Mesa Verde price.

Q How does that compare with the price being paid in the other Pictured Cliffs area of the Basin?

A The other Pictured Cliffs gas areas are receiving ten cents a thousand.

Q There are some exceptions, but that is true --

A (Interrupting) With one exception.

Q -- in most of the older areas?

A Right.

Q Why the price differential?

A These wells have sufficient pressure to be put into our main line without compression, and therefore we can pay a higher price for it.

Q Let's summarize, if we may, the recommendations which you are making to the Commission in this case. First, as to field boundaries, are you recommending that the entire area shown in red be included within the pool limits?

A Yes, and I would like to call the Commission's attention to the fact that a well has been completed by Magnolia Petroleum Company in the southwest quarter of Section 7, 26, 3. This well was completed subsequent to the time that we had prepared our exhibits and had sent in our notice for hearing. The Commission might desire to increase the field boundary to include this well. We would recommend that if the Commission feels that they should do so, that they also include the south half of Section 12, 26, 4, the south half of Section 7 and all of Section 18, 26, 3.

Q You mentioned previously this temporarily abandoned well in Section 13 of 26, 4 --

A Section 11 it should have been.

Q Section 11?

A Right.

Q Do you feel that, despite the present status of the well, it is appropriate to include that well's drilling site within the pool?

A Yes, I do. The sand section is there, it was simply a matter of mechanical trouble in completion, not a lack of sand development.

Q You also are recommending 320-acre spacing in this case, is that correct?

A That is right. 320-acre drilling spacing to be in force for one year. At this time we would like to recommend that any wells drilled within two miles of the field boundary be spaced in accordance with this order. Also we would like to recommend that the wells be located in the southwest and northeast quarters of the sections where new wells are to be drilled. It is known that some wells have already been drilled that do not conform to this particular pattern. We would like to see that they are granted an exemption and where one well has been drilled in a section that did not conform to this pattern, we suggest that the second well drilled should be in a catty-corner direction from the presently drilled well. The reason we ask that the wells be located in the southwest and northeast quarters is primarily due to the fact that we believe the area will be productive of Mesa Verde gas, that is, the Mesa Verde spacing pattern, and at some date we might want to twin or dual these wells and of course in that event, if the wells are on the same location, it means less pipeline for us.

Q Going back into the various parts of that recommendation again, why 320 acres? Do you feel that a well on 320-acre unit can economically and efficiently drain that much acreage in this area?

A Certainly do from the present information. The deliverable

capacity of the well certainly indicates that the wells would drain 320 acres. It's a fact that if they won't, we can always go back in and redrill additional wells. A year's time will give us a chance to produce the wells and to get an idea of what the capacities are and what area they might drain. We can't undo drilling; we can't go back to a contractor and say "We want our money back, I drilled the well in the wrong place. I didn't need it." We can always go in and drill additional wells. It appears that we would be spending a lot of unnecessary money to drill on 160 until we know definitely that 160 is necessary. We may find down the years that it would be necessary to do that. Right now it doesn't appear that is the case.

Q You mentioned a one-year period, I believe, as the length of time that is asked for in this temporary order?

A Yes, at the end of one year, I believe Southern Union would be in a position to come back and present a little more information as to the capacity of the wells to drain 320 acres. We will know about the size of the field and the area to be included. During this year's period of time we will collect quite a lot of additional information. You can't get a whole lot of information until you get some production.

Q While we are waiting to get that information, why is even a temporary order necessary in this? Why shouldn't we just let it go until we really know the answer?

A If you wait until we know the answer, you have waited too long in a lot of instances. A good example might be the West Kutz field. Once you start some people drilling on 320 and some people drilling on 160, it is a little bit hard sometime to get them changed.

I would also, though, like to point out here that the Commission has set a precedent in southeast New Mexico of allowing for 160 and 80 and 120 and 640 acre drilling units within the same pool. Why it's good in southeast and not good in the northwest, I haven't been able to decide. In case we do have to have a standard drilling unit within any given field, I think we ought to set one initially and then change it if necessary. Let's don't say, "Just drill them any way you want to and we will decide what's right later."

Q You have included a recommendation that these rules be applicable both to the red outlined area and also within an area surrounding that, within a distance of two miles. Is that in accordance with the Commission's normal pattern of its spacing orders, the two-mile feature?

A Normally the Commission says any well drilled within a mile of any known field will be drilled in accordance with the rules and regulations of that field. We are asking for two miles, since we don't have presently enough information to exactly delineate the field.

Q Do you feel that the fact this is a temporary order makes the two-mile limit more appropriate than it would be if it were a permanent type order?

A I certainly do.

MR. GRENIER: We have no further testimony at this time, although we might wish to make a closing statement. We would like to have Southern Union's Exhibits 1 through 4 admitted in evidence.

MR. MACEY: Without objection they will be received. Any questions of the witness?

MR. SILVER: Caswell Silver. I represent two wells in the

proposed unit 160 acres. Before I can decide whether it would be good or bad for me, I would like to ask the witness some questions.

CROSS EXAMINATION

By MR. SILVER:

Q Will Southern Union Gas be willing to give a limited one-year contract gathering to wells in the unit, terminating at the will of the other operators during the period of this one-year trial?

A You want to bring the gas to us? We wouldn't go after it for that kind of deal. We can't afford to lay a pipeline for that one-year supply of gas.

Q Will you take it if we bring the gas to you?

A That is not something that I have anything to do with. I am not in the gas purchase section. I think we would, we generally have. We certainly would not go after gas on the one-year basis. We couldn't pay out the pipeline in that length of time.

Q Do you recommend any compensation in allowable to operators and royalty owners agreeing to 320-acre spacing during the one-year test?

A I don't believe I understand the question. We have no proration and the allowable will be based simply on what can be produced. I don't know that I understand the question.

Q As I understand, you have asked for no proration?

A There is no production. We can't prorate until we get production. We have had no production and I don't think there is any basis for prorationing yet.

Q If any future Oil and Gas Commission sees fit to prorate production in the area, would you recommend any compensation in

allowable per well?

A If the State decides to prorate gas in the area, Southern Union is going to recommend that we use 320 acres as the standard proration unit.

Q At the present time it is my understanding that the State Oil and Gas Commission allows 25 percent on the basis of acreage and 75 percent on the basis of well potential within the unit, prorationed unit areas. Do you have any plans or recommendations for a change in that formula or an increase in the event that 320-acre spacing is sustained?

A That particular formula is used not only in Pictured Cliffs, but Mesa Verde where 320-acre spacing is in effect. We are not arguing proration, but Southern Union opposed that when it was presented initially and we would not concur with it again.

MR. SILVER: If the Commission pleases, on the basis of the respondent's answers I would like to state our position in the matter. May I do so?

MR. MACEY: You can make your statement later if you want to.

MR. SILVER: I am Caswell Silver, representing Caswell Silver. I own the wells in that Section 4 and 5, part interest. Mr. Florence here also owns part interest in those wells, representing all of Section 4 and the east half of Section 5 put in the unit, and approximately 3400 surrounding acres not in the unit.

MR. MACEY: Anyone else have a question of the witness?
Mr. Utz.

By MR. UTZ:

Q Mr. Weiderkher, I notice that in regard to shutin pressures in the area that you have recommended to be called the Tapicito Pools,

that there are variations of as much as 65 pounds. Is it your opinion that even though these variations exist, this is one common source of supply?

A Yes. I think you will find the pressures were taken at various times, some of the wells were oil fraced on completions, part of them were never completely cleaned; as evidence of that, one of the wells was used for gas drilling, a Pictured Cliff well, and when the Pictured well was cored it showed 20 percent residual oil in the cores, where the oil had infiltrated in the cores of the new well. You will get quite a variation in pressure until such time as the wells have been produced and cleaned. At the end of that time I think your shutin pressures will be comparable. I don't think you have true shutin pressures at the present time.

Q Do you think that any of the shutin pressures are stabilized pressures?

A That, I suspect some of them are, but I would hesitate to say which ones. I don't know exactly the length of time on all those tests. I would say it would take somewhere in the area of thirty days to stabilize pressure down there.

Q You believe thirty days will stabilize?

A Yes, the capacity is such that I think they would stabilize pretty much in thirty days.

Q Other than the fact that deliverability, estimated deliverability of these wells are above average for Pictured Cliff wells in the Basin, do you have any data that would indicate that these wells will actually drain 320 acres?

A Actually we do not have any information and won't have until such time as we get production. I think we can say that we know one

well in the area had a natural initial potential of in excess of 3,000,000 feet of gas, which would indicate pretty good permeability and that is your factor with regard to drainage. I would say the fact that we have vertical fracturing as shown from our core analysis and the average permeability as shown from core analysis would indicate that the wells should be able to drain the 320 acres. We can only get conclusive proof with regards to that after some production history.

Q Would you be willing to submit to some sort of an interference test for the area during the trial period?

A We propose to run some tests to that effect if our request is granted.

Q By shutin in one well?

A Shutting in one well and producing the offset wells, watching the pressures to see if there is interference.

Q Would you have any suggestion as to what well that you would run the test on?

A We would prefer to get one somewhere in the middle of the field. I had in mind somewhere over in the vicinity of, probably the 2-E well that's located in the southwest of 15.

Q You think your 1-A well would be a good well to shut in?

A The 1-A well? You won't be producing, you won't be surrounding it by production, it will take a longer period of time to get results. You would get better results by shutting in your 2-E and watching it, because there you are producing from all sides and it will take a lesser shutin period, keep it off the lesser length of time.

Q Your 1-E is considerably closer to 2-E than the 5-E would

be to the 1-A?

A If you take the circular pattern of drainage from 2-E to 1-E, you will find that is in excess of 320 acres.

Q I didn't get the permeability that you gave.

A I didn't give it. Average permeability on Southern Union 1-E for the 223 productive feet was 6.2 ~~million~~ milidarcies with seven feet of that having vertical fractures. Much of that had permeabilities in the range of 15, 18, 2, 29, 10, 18, and most all of it in excess of one million milidarcies which is the average Pictured Cliff production is less than one million

Q Is this permeability above average for the Pictured Cliffs in San Juan Basin, would you say?

A It is from the core analysis that I have seen, yes.

Q I am inclined to agree.

MR. UTZ: I believe that is all I have.

MR. MACEY: Anyone else have a question?

By MR. SILVERS:

Q I got in late, I am sorry if I asked you a question. Did you give reserves, calculated reserves figures in that area?

A Yes, I did. Approximately two and a half million feet per 320-acre unit.

MR. SILVERS: Thank you.

By MR. MANKIN:

Q You indicated the reserves in this particular area to be spaced in Tapicito somewhat comparable to reserves in other Pictured Cliffs areas, did you not?

A That is right.

Q You also indicated that depth was approximately twice the

depth of many other Pictured Cliff pools?

A That is right.

Q Your cost is not twice as much, but it certainly is greater?

A It is nearly twice as much. We average twenty-two to twenty-three on the others and between thirty-five and forty here, so it is at least 80 percent additional cost.

Q In your recommended spacing of the wells in the northeast and southwest and of cross-spacing wells that have already been drilled within a section, you will find that you are going to have as much as three and four wells clustered around a section corner, is that correct?

A You are going to find that in a very few, I think one instance maybe. That always occurs when you don't have spacing pattern set until the field is well along in development. It's happened in the Blanco Field, for instance, where part of the Blanco Field is one pattern and one is in another one.

Q In other words, in the southeast end of the area to be spaced, on your pattern you will have four wells surrounding one corner, is that correct?

A Yes, that is a bad section there. There is one there and there will be one other one.

Q You have two other places where there will be three wells around a section corner, which will amount to 160?

A It amounts to that, as far as the location of the wells, assuming that the wells are going to drain the entire area, you still have so many productive acres and so many wells. There will be drainage and counter-drainage, there always is in any production. It's bad that those things occur, but you can't help them after they

have already taken place.

Q Do you have any recommendation as to the spacing for topographical conditions for the leeway you might have?

A We would recommend that you would use the same one as used in the other Pictured Cliff fields.

Q You did not make any such recommendation?

A We weren't making any recommendations along that line, simply intended to state that the general Pictured Cliff rules with the exception of the drilling unit be used, casing program and all other phases of it.

Q Would you be willing for at least three months interference tests on these wells shut in?

A Yes.

Q At least that period of time?

A Right. We will agree.

MR. MANKIN: That is all.

MR. MACEY: Anyone else have a question of the witness?

MR. GRENIER: I have a couple of questions on re-direct. I think these will give a little broader picture. They will help clarify the total picture.

MR. MACEY: Okay, go ahead.

RE-DIRECT EXAMINATION

By MR. GRENIER:

Q Mr. Weiderkher, is the development that has been had within this area to date anything like complete at this time, or is there any further drilling to be done?

A No, there's still a lot of development to be done within the present boundaries of the known field. We don't know what is

going to happen outside that field. There is a lot of additional development to take place.

Q This is not a static or fully developed situation?

A Certainly not.

Q Does Southern Union have any development plans for 1956 or the remainder of this year?

A Southern Union has already been approached or has already approached one of its partners, Aztec Oil and Gas, and received their tentative approval to drill four additional wells, we also have a partner, Humble, and we haven't talked to them but plan some additional wells with them during the coming year.

Q What is the character of the underlying ownership here of this area, Mr. Weiderkher?

A Well, with the exception of two sections it's all Indian lands, Jicarilla tribal Indians.

Q Is all of Township 26 North, Ranges 3 and 4 West tribal Indian land?

A I believe it is.

Q So that it is only the two sections down in 25 North, 3 West that are not on the Indian lands?

A That is within the present field boundaries, yes.

Q Yes. What is the character of the ownership down in 25 North, 3 West?

A 25, 3 is composed of both Federal and Fee lands.

Q In what approximate proportions?

A About, oh, I would say 80 to 90 percent Federal.

Q That's for the township as a whole and without specific regard to this immediate area?

A That is correct.

MR. MACEY: Anyone else have a question? Mr. Mankin.

RE-CROSS EXAMINATION

By MR. MANKIN:

Q In regard to this being Federal lands, the Southern Union Gas Company has not requested that the wells be drilled on 160, have they?

A No, they have not.

Q They have made no recommendation as to spacing?

A As far as I know, they have not.

MR. MACEY: Anyone else have a question of the witness? Mr. Weiderkher, will you briefly, for me, give me the data that you used in calculation of your reserve estimate?

A Yes, I used the core analysis from Southern Union Jicarilla 1-E, which gave 16.7 percent porosity, 42 percent connate water, 23 feet of net pay. I used 1,090 pounds top hole shutin pressure. We have some other core analyses that give approximately the same results. Their water is a little lower, their porosity is a little lower, and feet about the same, and you come up with about the same reserve, but actually I used the 1-E, the good well that we completed.

MR. MACEY: You arrived at a two and a half million feet of reserve in place?

A Right.

MR. MACEY: Your reserve down to 250 pounds was 1960?

A 1960, that is correct.

MR. MACEY: I am not too sure, you may have testified to this, but what is the status of your No. 3-A Jicarilla well in Section 14, the southeast quarter of 14?

A That is a location that was staked in the wrong place, and we just abandoned the location.

MR. MACEY: Never been drilled?

A No, sir, it has not.

MR. MACEY: Are there any dry holes other than your No. 1-C well within the outline of your proposed pool?

A No, there are not.

MR. MACEY: Can you tell me what the yellow coloration on your cross-sections represents?

A That represents the gross Pictured Cliffs sand development whether it be productive development or not, but it is the Pictured Cliffs sand development, your productive sand. You can tell that readily from your resistivity and s. p. curves of your electric logs.

MR. MACEY: You averaged your net pay at twenty-three to twenty-five feet?

A Based on the Jicarilla 1-E well which was cored.

MR. MACEY: In that well you had approximately fifty feet gross, is that correct?

A Yes.

MR. UTZ: Is that fifty feet?

A About that. We cored, we cored from thirty-four to thirty-four fifty-four and that was all sand.

MR. MACEY: Can you furnish us with a copy of the core analysis?

A Yes, I can.

MR. MACEY: You don't have to give us that one.

A It is all right. I have some others on the dry holes if you want them. The sand is there, but they are non-productive.

MR. MACEY: Anyone else with a question?

By MR. MANKIN:

Q The other two wells, were they dry holes?

A The 1-B well that was cored actually located in Section 26 outside the field limits, the 1-G well up in Section 1, 26, 5 was cored.

Q What was the last one you mentioned?

A 1-G, located in Section 1, 26, 5.

MR. MANKIN: Thank you.

MR. MACEY: Mr. Weiderkher, there is an El Paso Natural Gas in 11, 24, Section 1. You examined that well to determine whether or not the pool might possibly go in that direction?

A I brought the log with me and I don't doubt a bit that the field will extend in a northwest direction to include that well, but we don't have enough proof to include it.

MR. MACEY: The well isn't in any pool at the present time?

A So far as I know, but I think there is Pictured Cliff gas there.

MR. MACEY: Must be, the initial potential on it.

A I show it completed in the Mesa Verde, according to mine, but it is Pictured from 3720 to 3760 in the log.

MR. MACEY: Anyone else have a question of the witness? If not, the witness may be excused.

(Witness excused.)

MR. MACEY: Does anyone have any further testimony in this case?

MR. SILVERS: I would like to have one of the owners on the stand to state his position.

MR. MACEY: All right.

M. J. F L O R A N C E,

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

DIRECT EXAMINATION

By MR. SILVERS:

Q What is your name?

A M. J. Florance.

Q How long have you been operating in the San Juan Basin?

A Since the winter of '45.

Q I believe you drilled the first four modern wells in the Blanco Field, outside of the Huntington Park No. 1 which was drilled in '29, is that correct, that started the San Juan Basin in the Mesa Verde?

A Correct.

Q You are an interest owner in some 107,000 acres in the San Juan Basin?

A More or less.

Q You have a direct ownership as a producer in Sections 4 and 5, specifically the Gunsite 1 Florance and the Gunsite 2 Florance in this proposed Tapicito unit?

A I do.

Q What was your average cost of the wells in that field?

A Right at \$10 a foot.

Q Then Southern Union's testimony that the cost lay between \$35,000 and \$40,000 per well was correct?

A Correct.

Q You have had reserve figures furnished you which substantially

substantiated the reserves calculated by Southern Union?

A I have.

Q Do you feel that because of the higher cost of the wells, there must be some relief afforded producers in that area?

A I do.

Q Do you have any other suggestions or possible means of facilitating this, other than the increase in well spacing?

A An increase in the allowable, when and if it comes under proration, of approximately 150 percent of a well that is drilled to a quarter-section spacing.

GOVERNOR SIMMS: I think they can't hear you.

A If they put us on 320 acre spacings, I think we should be allowed to sell at least one and a half as much gas as we do out of a quarter-section.

Q What I interpret your statement to mean, that you anticipate or recommend an increase of approximately 50 percent of gas sales from a well spaced on 320 acres over what gas sales would amount to on 160-acre spacing, is that correct?

A I do.

Q Do you have any other solution which might be applied to this problem?

A Of course an increase in price would always help.

Q What increase in price would you anticipate, although it is beyond the jurisdiction of the Board to regulate price, according to the division? What increase in price do you think would be a fair increase to allow for the additional increase?

A I don't believe my thoughts would carry much weight.

Q I would like to have it in the testimony, as bearing a re-

lationship as to the burden of the additional cost of these deeper wells placed on the operator.

A We should get one and a half times as much money or sell as much as one and a half times as much gas.

Q Would you go along with Southern Union --

A (Interrupting) I would.

Q -- on their spacing?

A Yes.

Q Would you impose the condition that they be required to take gas on the short-term one year contract for anybody who brought the gas to them, to their gathering line?

A The only reason that I have any doubt about signing up with a long-term contract is the five to six hundred pound deliverability, I don't know, yet.

Q Then if I may bring that out --

A (Interrupting) I am afraid of putting Pictured Cliffs against 600 pounds to deliver one and a half times, which we should be entitled to.

Q If I may bring that out, the currently proffered gathering of Southern Union anticipates Mesa Verde gathering line pressure, whereas most Pictured Cliff production is delivered to a Pictured Cliff line, which carries approximately half the pressure that the proffered line can offer in the Tapicito area, is that correct?

A That is correct.

Q Am I to understand that you question that the testing of these wells against 500 pound line would be sufficient to tell what the long-range performance of these wells might be against the normal 200 pound line?

A No, I am just a little bit leery about tying up my production on a long-term period under that contract.

Q Do you feel that if Southern Union, who is offering to make the test and also has control of the gathering systems in the area, that you should be allowed to participate in the sales which would come about under this unit, but with the privilege of terminating such sales at the conclusion of the test, if you deliver the gas to Southern Union at the gathering point, at their gathering line at no cost to them?

A I think we should have the protection of the Oil Conservation Commission in determining whether or not we can deliver enough and we are entitled to 150 percent for putting twice the acreage. I am in no position to say whether the well will deliver it against that pressure. I am afraid it won't.

Q You are now in the process of making some back pressure flow tests on your wells, are you not?

A Yes.

Q I neglected to find out if they made any. Did Southern Union make any?

MR. WEIDERKHER: We didn't bring that out. We did run two tests, one on the 1-E and one on the 3-K, which is not in this field but in the same type of reservoir, but they indicate that the wells will deliver at 18 percent of their initial potential into a line pressure equal to one-half of the shutin pressure. Our estimate of deliverables are based on deliverability into a line pressure of one-half of the shutin pressure, which in this case would be somewhere in the vicinity of 550 pounds.

Q Mr. Florance, do you have in the record everything you want

to state about the matter at this time?

A I believe so.

MR. SILVERS: Thank you.

CROSS EXAMINATION

By MR. GRENIER:

Q Mr. Florance, would you be willing to sign a long-term contract if the purchaser were willing to agree to take at 200 per cent on a unit basis, as compared to what is being taken in the other areas, and to lower the pressure in gathering system to such extent as might be required from time to time to enable it to do so?

A Yes.

MR. GRENIER: That is all.

MR. MACEY: Anyone else have a question of the witness?

Mr. Mankin.

By MR. MANKIN:

Q You speak of this as a unit?

A Yes.

Q However, Southern Union acreage may be a unit, but yours, there is no proposal that your acreage be included in any such unit? It is a spaced area rather than a unit, is it not?

A It is a spacing area, yes.

Q It is not a unit in the true term?

A Yes.

MR. GRENIER: I was speaking of a spacing unit.

MR. MANKIN: He spoke of a unit.

MR. SILVERS: One other thing. You noted the variation in wellhead pressure on a shutin wellhead pressure on our wells. We

think that may be due on our particular wells to a slight leak, very slight, around the head, which we corrected but wasn't corrected during the seven-day period, may account for the difference in stabilized pressure at the end of the seven days. There was a slight leak in the ring.

MR. MACEY: Anyone else have a question of the witness? If not, the witness may be excused.

(Witness excused.)

MR. MACEY: Anyone have anything further in this case, any statements?

MR. HINKLE: Clarence Hinkle, representing the Humble Oil and Refining Company. Mr. Weiderkher testified that they had a half-interest in 11 and a half sections in this particular area. The Humble has the other undivided half-interest, and are slightly interested in this problem. We would like to go on record as concurring in the position taken by Southern Union and request the Commission to enter an order in this case setting up 320-acre spacing, temporary order setting up 320-acre spacing in the area.

MR. GURLEY: Do you concur with the two-mile extension?

MR. HINKLE: Yes.

MR. MACEY: Anyone else?

MR. DAVIS: Quilman Davis, representing Aztec Oil and Gas. Aztec owns an undivided one-half interest in approximately eight sections in the designated Tapicito Field. We concur in the testimony and the position of Southern Union in this case and strongly urge the Commission to adopt a temporary order for one year to give all the operators in the area an opportunity to observe and determine what the field will be.

MR. SMITH: On behalf of Stanolind Oil and Gas Company, we have some acreage that will be affected by the two-mile extension. We would like to state for the record that the extension of two miles is satisfactory and we have no objection to it. We would also like to concur in the application of Southern Union for 320-acre spacing units in this area.

MR. ABBOTT: W. G. Abbott. Needless to say, Amerada Petroleum Corporation concurs with the Southern Union testimony and urges the Commission to adopt 320-acre drilling units for this proposed pool unit.

MR. HOY: George Hoy, representing Conger Oil Corporation. We are the sole owner and operator of two gas wells in the proposed Tapicito Field. We plan immediate additional drilling within the area. We wish to concur with all the recommendations of the Southern Union Gas Company.

MR. WOODRUFF: Norman Woodruff, El Paso Natural Gas Company. El Paso Natural Gas is the owner of property and the operator of the 27, 4 unit immediately north of the area involved. With the two-mile extension limit then we will fall under the provisions of the rules proposed by Southern Union. Our studies of the Pictured Cliffs in the area cause us to concur with Southern Union as to the likelihood of this being a separate pool from the other designated Pictured Cliff pools. We are privileged in the area we operate to develop on 320-acre spacing. We would concur that 320 is appropriate and would sincerely urge the Commission that no other spacing pattern be applied in this area which would affect the properties which El Paso has a privilege of developing on 320. We think it is unnecessary to drill on 160 to determine the nature of a pool. We think it would

be unnecessary to go to the expenditure of 160-acre spacing to develop this area and evaluate it.

MR. MACEY: Anyone else have a statement to be made in this case?

MR. ANDERSON: John Anderson, United States Geological Survey. I would like to point out to the Commission that the area which the applicant asked to have spaced as the Tapicito Pool covers an area of 10,880 acres, of which 1280 acres in 25 North, 3 West is Federal acreage. The rest is Indian land. The two-mile extension around this Tapicito area runs to about 35,000 additional acreage, of which 23,000 are Indian, about 4200 acres are up in the 27, 4 unit. It's always been our opinion that any spacing other than that generally in use for any particular formation should be governed by the terms of the unit agreement which was approved by the Commission. The other 776 acres is down in 25, 3, which is Federal land and some privately owned land. As far as the Jicarilla Apache Indians are concerned, most of this area which the applicant has asked for 320-acre spacing on is Jicarilla land. The leases are 2560 acres, all of them are owned by six companies. At the present time there doesn't seem to be any particular problem as far as someone developing on 160 acres within the confines of the Indian Reservation, at least in the area that is covered by this application. The problem right at the present time on the Federal lands in 23, or 25 North, 3 West and certainly not in 27, 4, all of this area is covered by the application.

Now as we stated once before in the application of Amerada for 320-acre spacing, the United States Geological Survey is not opposed to wide spacing. At the same time they are opposed and the Indians

definitely are opposed to any order that is going to set aside the Jicarilla Indian Reservation as separate and distinct from the other portions of the San Juan Basin where we also have Pictured Cliff production. For these reasons, we are opposed to the issuance of the requested order.

MR. MACEY: Anyone else have a statement to make? Mr. Kellahin.

MR. KELLAHIN: Jason Kellahin, appearing for Elliott and Hall and J. F. Hickman, Jr., both of whom have acreage not within the pool as proposed, but within the two-mile extension around the pool. We are opposed to the application brought by Southern Union and concur in the statement that has just been made by Mr. Anderson. I would like further to point out to the Commission that the testimony offered here today does not support any possible conclusion that one well will efficiently and economically drain 320 acres, one of the requirements under our spacing statute. The only information having been offered on that score is on the deliverability of the well, and some scant testimony on permeability based on a core analysis from one individual well. I would like also to call the Commission's attention to the fact that aside from the pressures involved in this pool, all of the testimony offered would tend to show that the characteristics of the Pictured Cliffs gas formation underlying this area are the same as those in other Pictured Cliffs Pools, which would lead only to the conclusion that there are permeable barriers in existence which have not yet been discovered, which would further show that one well will not drain 320 acres.

In calling the Commission's attention to Exhibit No. 2 showing the location of the cross-sections, I think it clearly appears that

they have been drawn through what we might term the "fairway" of the pool, and we do not feel fairly represents or fairly portrays the characteristics of the Pictured Cliffs Pool in this particular area. The further objection which we have to the application is that even a temporary 320-acre spacing order would result in a slowing of the development in this area and would result in loss to the Indians and to others who are interested in the development here, and the pool should be treated the same as all other Pictured Cliffs Pools.

MR. MACEY: Anyone else have a statement to make in this case?

MR. GRENIER: I would like to make a closing statement.

MR. MACEY: Go ahead.

MR. GRENIER: Southern Union has presented its testimony in this case and I don't want to resummairize what our witness has already stated. I would like to say this with respect to the statements just made by Mr. Anderson and Mr. Kellahin: First, I believe the evidence rather conclusively shows that the Indian acreage here is not going to be set aside for special, unusual, and discriminatorily unfair treatment as a result of this order. That is apparent from two things. First, as hinted at by Mr. Anderson if not directly stated, there is nothing now which requires any development on 160-acre basis within the Indian Reservation, and so this Commission by entering an order for 320-acre spacing in this case won't be cutting down on any current obligations presently existing. They would merely be restating, if anything, what is now perhaps the obligation to drill in that area, although we have never been formally advised by the United States Geological Survey as to what they do regard as a fully adequate development program there. They have just apparently

gone along with us in the 320-acre pattern that we have been following to date.

Secondly, it seems to me that an extremely important aspect of this case is the fact that as testified to by Mr. Weiderkher, the wells in this area will have to be pulled only half as hard as wells in other Pictured Cliff areas, in order to be producing the same rate of take per acre of reserves as is being achieved elsewhere in the area. That is to say, this 320-acre spaced well, if pulled at the same rate in proportion to total deliverable as the other areas, will be putting out four times as much as one of the 160-acre wells, or twice as much when you consider that there is twice as much acreage to be pulled.

As to the statement of Mr. Kellahin, I think he is fully aware from his participation in such cases, of the virtual impossibility of getting any sensible approach to a problem which isn't going to hurt somebody and hurt somebody bad if an inter-connected pool before the final spacing order is entered is partially developed on 320 and partially on 160. It imposes very severe problems on this Commission as well as upon the operators. They inevitably end up in conflicting positions. We are only asking here for a one-year temporary order; at the end of that time, presumably, in the absence of further showing that the order is still justified, should be continued either temporarily or permanently, it would lapse and be of no further force and effect, and we would go back to the statewide 160-acre spacing pattern generally prevalent in this area. It seems to me that the interest in favor of this temporary order clearly outweighs the objections to it. I strongly urge the Commission to grant our application.

MR. MACEY: Does anyone else have anything in this case?
 I have a letter from Magnolia supporting Southern Union's application.
 I will give it to the reporter and let her copy it into the record.

We will take the case under advisement and adjourn to 1:30.

* * * * *

November 11, 1955

C O P Y

Re: Case No. 977 - Application of
 Southern Union Gas Co. for Designation of Certain Area as the
 Tapicito-Pictured Cliffs Gas Pool,
 Rio Arriba County, New Mexico and
 Establishment of a Temporary 320
 Acre Drilling Unit

Mr. W. B. Macey, Secretary
 New Mexico Oil Conservation Commission
 125 Mabry Hall, Capitol Building
 Santa Fe, New Mexico

Dear Mr. Macey:

I had planned on being present at the hearing in the above case and going on record in behalf of Magnolia Petroleum Company in support of this application. Other matters make it impossible for me to be present.

Will you please enter this letter in behalf of Magnolia in support of the above application, including the designation of the limits of the pool and the establishment of a temporary 320-acre spacing pattern in said pool and adjacent areas within two miles of same.

Magnolia Petroleum Company is the owner of oil and gas leases in the area to be designated as the Tapicito-Pictured Cliffs Gas Pool and producing wells thereon. We feel that the area described should be designated as a new and separate Pictured Cliffs Pool and feel that it would be to the interest of conservation and the prevention of waste and protect correlative rights to require a 320-acre drilling unit as described in the application, both in the pool itself and adjacent areas within two miles of same.

Yours very truly,

/s/ Ross Madole

cc: Mr. A. S. Grenier

STATE OF NEW MEXICO)
 : SS
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my hand and seal this 26th day of November, 1955.



Notary Public - Court Reporter

My Commission Expires:

June 19, 1959.