

CASE 4040: Application of CITIES
SERVICE for institution of gas
prorationing -Buffalo Valley-Penn.

Case Number

4040

Application

Transcripts.

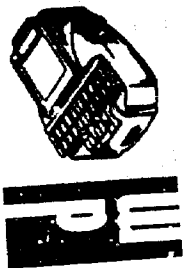
Small Exhibits

ETC.

dearnley-meier cities service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 5, 1969

EXAMINER HEARING

IN THE MATTER OF:

Application of Cities Service Oil
Company for the institution of gas
prorationing in the Buffalo Valley-
Pennsylvanian Gas Pool, Chaves County,
New Mexico.

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) Case No. 4040
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BEFORE: Daniel S. Nutter, Examiner.

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Pennsylvanian Gas Pool, Chaves County,)
New Mexico.)

Case No. 4040

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case No. 4040.

MR. HATCH: Case 4040. Application of Cities Service Oil Company for the institution of gas prorationing in the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, appearing for the applicant. I have two witnesses I would like to have sworn, please.

(Whereupon, Applicant's Exhibits 1 through 4 were marked for identification.)

(Witnesses sworn.)

VINCENT FOSTER

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Vincent Foster.

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

A City Service Oil Company, reservoir engineer.

Q You are located in Midland, Texas?

A Yes, sir.

Q Have you ever testified before the Oil Conservation Commission before?

A No, I have not.

Q For the benefit of the Examiner, would you briefly outline your education and experience as an engineer?

A I was graduated from the University of Southern California in 1951 with the Bachelor of Engineering and Petroleum Engineering and I have worked for various oil companies since that time in New Mexico primarily and West Texas as a petroleum engineer and I am now a reservoir -- classified reservoir engineer.

Q How long have you occupied your present position as reservoir engineer?

A The title, I believe, was since I went with City Service in 1965.

Q Since that time, have you had anything to do with the area involved in application in Case 4040?

A Yes, I have.

Q Is it under your supervision for the purposes of reservoir engineer?

A Yes.

Q Are the witnesses' qualifications acceptable?

MR. NUTTER: They are.

Q (By Mr. Kellahin) Mr. Foster, are you familiar with the application of City Service Oil Company in Case 4040?

A Yes.

Q Briefly, what is proposed by City Service in this application?

A To institute gas prorationing in the Buffalo Valley-Pennsylvanian Gas Pool.

Q And where is that located?

A In Chaves County. Let me see. It's in Townships 14 and 15, Ranges 27 and -- Range 27 East.

Q Now, referring to what has been marked as Exhibit No. 1 would you identify that Exhibit please?

A This is a plat showing the wells -- the completed wells in the Pennsylvanian Gas Pool.

Q How many wells have been completed in the Buffalo Valley-Pennsylvanian Gas Pool?

A Five wells have pipe line connections and there's presently another well that has been completed, but has no pipe line connection.

Q So, there are presently six wells in the pool capable of production, is that correct?

A Yes.

Q Approximately how old is this reservoir?

A The first well was completed in 1962.

Q It was shut in for a period of time?

A Until the pipe line connection was established,

yes.

Q And has there been recent development in the pool?

A In 1968 the other five wells were completed.

Q Now, referring to what has been marked as Exhibit No. 2, would you identify that Exhibit?

A This is a tabulation of the gas and condensate production for 1968.

Q That's for the five producing wells?

A The five wells connected to pipe line.

Q How many pipe lines are there in this pool?

A Presently, there are two.

Q Then, there are only two purchases available to the producer, is that correct?

A Yes.

Q Who are those producers?

A Southern Union and Phillips Petroleum.

Q And are all of the wells connected equally or

Southern Union connected to --

A Southern Union is only connected to the one City Service Betts Well and Phillips Petroleum is connected to the other four wells.

Q And then the sixth well has no connection as yet?

A Has no connection.

Q Do you know what pipe line will connect to it?

A No, sir. They are -- I believe that's out of my --

Q That's not in your department?

A I don't know that much about that.

Q With reference to Exhibit No. 2, in your opinion, has there been ratable take from the various wells in the pool?

A No.

Q And this is reflected on Exhibit No. 2, is it not?

A Yes.

Q In order to protect correlative rights of the producer, do you feel that gas prorationing is essential?

A Yes, I do.

Q And do you request the Commission to institute a gas prorationing system for the Buffalo Valley-Pennsylvanian Gas Pool?

A Yes.

Q Have the limits of the pool been substantially defined, Mr. Foster?

A No, they have not. There are dry holes in various -- on the east and west edges, primarily, but it has not really been defined.

Q As a reservoir engineer, would it be possible on the basis of the information presently available for you to calculate the reserves underlying the pool as a whole?

A No.

Q Do you have sufficient information to calculate the reserves with any degree of accuracy as to the individual tracts under the pool?

A No, we do not.

Q Were Exhibits 1 and 2 prepared by you or under your supervision?

A Yes, they were.

MR. KELLAHIN: That completes the examination of the witness. I would like to offer Exhibits 1 and 2.

MR. NUTTER: City Service Exhibits 1 and 2 will be admitted in evidence.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Foster, could you give us the completion

dates for each of the six wells in the pool?

A I am not sure I know the exact dates on -- the City Service Betts No. 1 was completed in December, 1962, but no connection was made until about March of '63, if my memory serves me. The Reed Buffalo Valley No. 1 was -- primarily, these will be connection dates and not completion dates, due to the availability --

Q At least no production from the wells until these connection dates you are going to be giving?

A Yes. The Reed Buffalo Valley No. 1, January, 1968; Reed Buffalo Valley No. 2, March, 1968; the Southwest Production Buffalo Valley No. 1, March, 1968; the Southwest Production Clements No. 1, March, 1968. Pan American has completed a well in Section 11, but they have no pipe line connection at this time; however, it is completed.

Q When was the well completed? Do you have any idea?

A I believe it was the latter part of November.

Q Late '68?

A '68, yes.

Q Mr. Foster, you indicated that your Exhibit No. 2 shows nonratable take among these wells. Will the other witness go into the capacity of the wells to produce?

A I don't believe so.

Q Well, can you give us what the capacity of the wells are, then?

A The absolute open flow range from 3 point 6 mmcf per day to over nine mmcf per day.

Q Can you give us those open flows on the individual wells and the dates those were taken, please?

A These were tests that were given me over the phone and they were not -- I don't know whether they were even reported. They said that's what it will produce as the absolute open and I have no dates, except they must be the first month, I would say, because this was when I called them after completion. The Reed Buffalo Valley No. 1 had an indicated absolute open flow of 6 point 4 mmcf per day; Southwest Clements No. 1 had an indicated absolute open flow, I have, 4 point 7 mmcf per day; Southwest Buffalo Valley No. 1 had an indicated absolute open flow of 9 point 2 mmcf per day; the City Service Betts No. 1 had an absolute open flow of 3 point 6 mmcf per day.

Q 3 point 6?

A Yes, sir. The Reed Buffalo Valley No. 2, I have never been able to get.

Q No potential on it? Do you know what the Pan

American Well is capable of producing?

A No, I do not. It's capable of producing about 8 mmcf per day. All these rates are in excess to the actual production that these wells have produced during 1968.

Q Well, Mr. Foster, according to these potentials that you gave us, the Betts Well has the smallest calculated absolute open flow of any well. Is this evidence of nonratable necessarily? It's the only well that's connected to Southern Union; the rest are connected to Phillips Petroleum, is that correct?

A Yes, sir. I am not sure I follow your question there. You are saying that because ours has a smaller capacity that it is reflected by its producing ability here; is that what you mean?

Q I was just wondering; if we take your Exhibit No. 2 and compare the production for 1968 between the Betts Well and the Reed Buffalo Valley No. 1, the Betts Well produced 3 hundred 3 thousand mcf and the Reed Well produced a million 2 hundred thousand. On the face of it, it appears like there is nonratable take there, but if we consider that the calculated absolute open flow of the Reed Well is 6 point 4 million and the Betts Well is 3 point 6 million, maybe there

is some reason for the difference in the production.

A I am not sure how to answer that. In your --

Q Is the Betts Well producing at its capacity?

A The Betts Well is not producing at its capacity. It has a capacity in excess to what it has been producing at.

Q Well, in December it made 57 thousand mcf, which would be something less than 2 million a day --

A Yes.

Q -- and it has a capacity to produce 3 point 6 million a day. When, incidentally, was this calculated absolute open flow made on your well?

A 1963.

Q Do you have a more recent test on the well?

A We have a more recent test that indicates it will produce just slightly less than 2 million a day.

Q Less than 2 million a day?

A Right.

Q Well, that's what it is producing in the pipe line?

A In November and December, yes.

Q So, it's producing at capacity, isn't it?

A That I don't know. I don't know what the flowing

tubing pressure was at that time, and I could tell you if I knew that. I would say it's close to capacity in November and December, yes.

Q When it was making this 57 thousand?

A Yes.

MR. NUTTER: Are there any other questions of Mr. Foster?

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q In regard to the Betts No. 1 Well, the average production for the year 1968, was that below the capacity of the well, the ability of the well to produce?

A Yes.

Q Is open flow a measure of the reserves underlying the tract dedicated to the well, Mr. Foster?

A I don't think it is. No.

Q Is it generally, in the industry, accepted as a measure of reserve?

A To my knowledge, it is not.

MR. KELLAHIN: That's all I have.

MR. NUTTER: Are there any other questions of Mr. Foster? He may be excused.

MR. KELLAHIN: Call Mr. Taylor, please.

E. E. TAYLOR

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A E. E. Taylor.

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

A City Service Oil Company, District Development
Geologist in Midland, Texas.

Q Have you ever testified before the Oil
Conservation Commission?

A No, sir.

Q For the benefit of the Examiner, would you briefly
outline your education and experience as a geologist?

A I graduated from the University of Oklahoma in 1950
with a BS in Geology. I have been employed by City Service
for 18 years; worked in Kansas, Oklahoma, Texas, and foreign,
Algiers, Italy. I have been in Midland in this job for 7
years.

Q In connection with your work in Midland, is the
Buffalo Valley-Pennsylvanian Gas Pool under your jurisdiction?

A Yes, sir.

Q As a geologist? Are the witnesses' qualifications acceptable?

MR. NUTTER: Yes, they are.

Q (By Mr. Kellahin) Mr. Taylor, have you made an examination of the available information in the Buffalo Valley-Pennsylvanian Pool?

A Yes, sir.

Q Referring to what has been marked as Exhibit No. 3, would you identify that Exhibit?

A This is a structure map, contoured on top of the Morrow and it indicates that the productive area of the Buffalo field hasn't been defined and east-west distance is approximately 2 miles wide; north-south is open ended.

Q Does the structure reflect that the producing formation is fairly uniform throughout the area known to be in the pool at this time?

A Yes, sir.

Q Briefly, would you describe the producing formation? What type of formation is this?

A It's a sand, and average pay thickness would be around 20 feet.

Q Would that be fairly uniform throughout the

producing area?

A Yes, sir. It wouldn't vary over five feet.

Q And you say that pool has not been defined as yet, north and south, is that correct?

A Yes, sir.

Q Now, referring to what has been marked as Exhibit No. 4, would you identify that Exhibit?

A This is a north-south cross-section, running from Southwest Production No. 1 Buffalo Valley Comp. down to the City Service Betts.

Q Is that the cross-section that's shown on Exhibit 3 by a red line?

A It's depicted by a red line on Exhibit 3.

Q What does this cross-section indicate, Mr. Taylor?

A It indicates that the wells depicted here produce from the same formation, primarily the Sand that I have called Sand B in the Morrow.

Q Does this show the perforated intervals in the wells?

A Yes, sir. The red intervals in Sand B are the perforated intervals likewise in Sand A and 1 well, the Buffalo Valley Comp. 2 is an open-hole completion interval is shown at the bottom of the electric log.

Q Again, does this reflect that the net pay in the wells shown on the Exhibit 4 is fairly uniform throughout the pool?

A Yes, sir.

Q As a geologist, would it be possible for you to make a calculation of the reserves underlying the Buffalo Valley Pool at this time?

A No, sir.

Q Could you make such a calculation as to individual tracts within the pool?

A No, sir.

Q Mr. Taylor, under the New Mexico Statutes, pro-rating gas, the Commission -- and I am quoting from Section 65-3-14 -- the Commission is required to make such orders as will afford the owner of each property in a pool the opportunity to produce his just and equitable share of the oil or gas or both in the pool, being an amount insofar as can be practically determined and so far as such can be practically obtained, without waste, substantially in the proportion that the quantity of the recoverable oil or gas or both under such property bears to the total recoverable oil or gas or both in the pool. Now, with that requirement in mind, what formula would you recommend to the Commission

in making an allocation of production in the Buffalo Valley Pool?

A I believe it should be 100 percent surface allocation.

Q Surface acreage?

A Surface acreage allocation, yes, sir.

Q Is this because you do not have sufficient information to make a more precise calculation about the reserves?

A Yes, sir.

Q Will any other information become available in the immediate future that would change this situation?

A I don't believe so; none that I know of.

Q And, as I understand, since the pool has not been completely defined as yet, you could not make a calculation of the reserves in the pool at all?

A That's right. It's my opinion that it couldn't be done.

Q Do you recommend that the pool be prorated?

A Yes, sir.

Q Now, you heard the testimony of Mr. Foster. Are you in agreement with his conclusion in regard to the necessity for prorating production?

A Yes, sir.

Q Were Exhibits 3 and 4 prepared by you or under your supervision?

A Yes, sir.

Q At this time, I would like to offer in evidence Exhibits 3 and 4.

MR. NUTTER: City Service Exhibits 3 and 4 will be admitted in evidence.

(Whereupon, Applicant's Exhibits 3 and 4 were offered and admitted in evidence.)

MR. KELLAHIN: That's all I have, Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Taylor, referring here to your Exhibit No. 3, you mentioned that the pool had been defined on the east and west and was open ended north and south?

A Yes, sir.

Q Now, the well up here in the southeast corner of Section 27 tested a Morrow, is that correct?

A The Morrow -- the sand was present there.

Q But, it penetrated the Morrow?

A Yes, sir.

Q And the well in the southeast corner of Section 3 penetrated the Morrow?

A Yes, sir.

Q And the well up here in the northwest quarter of Section 36 penetrated the Morrow?

A Yes, sir.

Q And, over here in the northwest of 6 you've got a Morrow Well?

A Yes, sir.

Q What about this dry hole that's shown in the southeast quarter of 11? How deep is that well?

A This tested the Morrow. I haven't seen the log on it, but from depth I know it has.

Q That would possibly close the pool up on the south side?

A It would narrow it considerably.

Q At least, it's going to be narrowed a couple of contours. Now, could you tell me how the acreage is dedicated at the present time to these wells?

A Well, for instance, the Pan American 1C in the northwest quarter of Section 11, that unit is a -- consist of the west half of Section 11.

Q That's the west half? Okay.

A The two -- the Reed lease in Section 2 immediately above that, these are -- the No. 1 has the north half of Section 2 and the No. 2 has the south half of Section 2.

Q Okay.

A The Betts Well immediately north of those 2 consist of the south half of Section 35.

Q Okay.

A The southwest well in the No. 1 immediately northeast of the Betts Well is the north half of 35. This southwest production well in the northwest quarter of Section 1 --

Q Yes.

A -- I'm not positive which way that runs.

Q You are not sure if it is the north half or the west half?

A No, sir.

Q Are you acquainted with Mr. Foster's Exhibit No. 2, Mr. Taylor?

A Yes, sir.

Q I note there on that -- I possibly should have asked him when he was on the stand, but maybe you can explain it -- this Buffalo Valley No. 1 appears to have

quit producing. What's the score on that well?

A That southwest Buffalo Valley No. 1?

Q Yes, sir.

A I understand there was some -- in talking with --
ch, Reed and Reed's geologists while I was up on the Reed
No. 1 Hondo State, this well wasn't completed properly; there
was some mechanical difficulty; it has a good pay section,
and I don't know what their problem is.

Q It's one of the wells on the cross-section, as a
matter of fact?

A Yes. It has a good -- apparently good 23 foot
net pay section in the Sand.

Q But, according to Mr. Foster, that well had the
highest calculated absolute open flow of any well in the
pool, being 9 point 2 million, and here the best month
for production was less than 8 thousand mcf, and it declined
down to 40 mcf in the month of October. Of course, it only
produced one day. Have they lost the well; do you know?

A The last I knew, it wasn't producing, but they
haven't plugged it or done anything like that with it as
of 3 weeks ago or so.

Q It's not a matter of nonratable take by the
purchaser from that well, is it?

A No.

Q That's one of the four wells that's connected to Phillips and the other three wells they are purchasing from during the month of December, the Reed No. 1 produced one hundred one thousand mcf, the Reed No. 2 produced one hundred one thousand, and the Clements No. 1 produced one hundred two thousand, so the takes were very ratable, except from that one well, among the Phillips wells?

A Yes, sir.

MR. NUTTER: Are there any other questions of Mr. Taylor?

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Taylor, you stated that you could not calculate reserve in this pool. Will you brief me why you don't have that information not to make such calculation?

A Well, the main reason you couldn't calculate them for the pool is we don't know the limits of the pool.

Q But, you do have the reservoir data?

A Not all of it that would be required, I wouldn't think.

Q Well, you have pressures, don't you, for the pool, reservoir pressure?

A I don't have the pressures. I suppose --

Q City Service has the pressure, don't they? You know what the pressures are in the pool, the reservoir pressure?

A I think it shows on our Exhibit what it is.

Q I don't care what it is. I would like to know what factors are going into the reserve calculation that City Service doesn't have, of the pool? Well, can you tell this?

A No. Did you ask -- are you asking why I can't calculate the reserves?

Q That's right.

MR. KELLAHIN: I think Mr. Foster can answer that question, if you would like for him to.

MR. NUTTER: You have some questions along the line of reservoir data, you probably would like to direct to Mr. Foster, I imagine, Mr. Utz. Are there any questions of Mr. Taylor? We will excuse him from the stand and recall Mr. Foster then.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Foster, you understood my question, I believe, I asked Mr. Taylor, did you not?

A Primarily, in my opinion, there's no way you can pick a net equitable pay in these wells because there is no one that I know of that can interpret the E. A. Log, which is what Richfield originally used on this Betts Well when they originally drilled it. That is primarily the reason you could get no definite reserves per tract and since the field has not been defined, I think that we could come up with pseudo reserves if we knew what the limit of the field was, due to the pressures that we have. These pressures primarily are drill stem pressures that were put on this original plat here. They were to show that the field is in -- evidently in the same reservoir and the pressures are compatible and reasonably close.

Q You take shut in pressures every year on the wells, don't you?

A Not necessarily. These wells are not old enough. Now, the Betts is, and we have taken pressures occasionally in that, but the other wells are not old enough, as far as I know, to ever have been shut in. On this Exhibit 2 from the production that they have indicated, they haven't been shut in at all.

Q Well, pressure could be taken, couldn't it?

A I am sure they could.

Q And, do you have any problem as to build-up of the pressures, or do they stabilize pretty regular?

A Well, I can only answer for that one well, and I say it's pretty fast, 72 hours for sure.

Q The pressures that you are speaking of there, in your opinion, show communication between the wells?

A We have had no other pressures in these others and I don't know whether you can believe the baums that are running drill stem tests, due to the hard use they have. They are not quite as delicate. I don't know whether there is communication. I don't believe that there is enough pressure to indicate one way or the other.

Q Well, as I understand your answer then, you are summarizing it by saying you have a problem determining the net pay on the well basis?

A Right. On a well basis, yes.

Q You also mentioned surface acreage in that you don't know what the limits of the pool are?

A Right.

Q Of course, you would not be calculating the pool reserve; you would be calculating tract reserve, is that correct?

A You mean on a pressure basis?

Q This is a spacing of 320? If you are going to calculate 320 acre reserve, do you have enough information, as far as surface acreage is concerned, to calculate 320 acre reserve, aside from the net pay?

A I don't believe you can come up with any reserves on the tract basis. You can possibly on the newer wells, but I don't believe you can tell me how many feet of pay are in the Betts.

Q Do you know whether the entire 320 acre tract is productive or not?

A No. Do we ever?

Q Maybe the spacing ought to be 160.

A I think that at sometime when we have enough pressures to see about communication, then that can possibly be answered. I don't believe we have enough pressure indication or history to give us the answer to that.

Q For its own use, City Service does have some kind of reserve figure estimate, don't they?

A I don't know.

MR. UTZ: I think that answers my question.

MR. NUTTER: Are there any further questions of Mr. Foster? He may be excused. Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: I would only like to point out in line with Mr. Utz's questioning, that while it probably is possible that we could make the calculation of the reserves underlying the given tracts of the pool, that would not meet the requirements of the New Mexico Statute that also requires that you have to make a calculation of the reserves within the pool and correlate the two in arriving at a formula for the allocation of gas production, and under the circumstances, since the limits of the pool have not been defined, the best measure for allocation would, of course, be surface acreage because that can be measured.

MR. NUTTER: You can measure that?

MR. KELLAHIN: We can measure that. Yes, sir.

MR. RYAN: Gordon B. Ryan, Fort Worth, Texas, appearing on behalf of Pan American Petroleum Corporation. We were here mostly as an observer, but since the question has been raised regarding the well in the southeast quarter of Section 11, I think perhaps for the benefit of the Commission we have some data on that well that we can offer.

MR. NUTTER: Yes, sir, we would appreciate hearing data on that well.

MR. RYAN: I may state for the purpose of the record that I am appearing in association with Mr. Charles

Malone of the firm of Atwood and Malone.

MR. NUTTER: We have a written appearance on your behalf.

MR. RYAN: I have one witness and I'll ask that he be sworn.

(Witness sworn.)

WILLIAM C. WELLS, JR.

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

DIRECT EXAMINATION

BY MR. RYAN:

Q Would you state your name, by whom you are employed, and what capacity?

A My name is William C. Wells, Jr. I am employed by Pan American Petroleum Corporation as a petroleum engineer in our Fort Worth, Texas, office.

Q Have you previously testified before this Commission and had your qualifications as a petroleum engineer admitted?

A Yes, sir. I have.

Q You need to go any further on his qualifications?

MR. NUTTER: No, sir.

Q (By Mr. Ryan) Are you familiar with the application

presently pending before this Commission?

A Yes. I am.

Q Now, the past questioning, it was asked about the well located in the southeast quarter of Section 11. Do you have any data on that well?

A Yes. This well was drilled by Pan American Petroleum Corporation as a hundred percent working interest well. We are currently evaluating in upper horizon in the well bore. We did not set pipe to the Penn zone under question here. The zone was tested. We drill stem tested that zone and got gas to surface and I believe 14 minutes at a rate of 116 mcf per day, so we believe that at least a portion of the southeast quarter of Section 11 is productive of gas.

Q That was not completed as a commercial well, though, in the Penn zone?

A No. It wasn't.

Q But, some of that, in your estimation, is productive?

A Yes. By test data we can show that it is.

Q Do you have any other data on this well that would be of interest to the Commission?

A No, sir. I don't believe I do.

CROSS EXAMINATION

BY MR. NUTTER:

Q How about your well up there in the northwest quarter of Section 11?

A That's our Federal C Gas Comp. No. 1. We are currently negotiating on a contract for that well. I believe the absolute open flow on that was 8 point 8 million a day. I don't have that exact figure in front of me, but I believe that was it.

Q The City Service people said that the well was not connected, but you said that you are negotiating for a contract?

A Negotiating for a contract.

Q Would you mind telling us whether you are negotiating with Phillips or Southern Union or some third pipe line?

A Part of our negotiations right now are with Phillips.

Q I see. And the well in the southeast quarter tested 116 mcf a day from the Morrow?

A From the Morrow, comparable interval, yes.

Q And non-commercial, so you are working on the upper horizon?

A Yes.

MR. NUTTER: Are there any further questions of Mr. Wells? He may be excused. Do you have anything further, Mr. Ryan?

MR. RYAN: That's all.

MR. NUTTER: Does anyone have anything else they wish to offer in Case 4040?

MR. HATCH: The Commission has received a letter from Morris Antweil, a working interest owner with Cities Service Oil Company in the Baetz A 1-N-35-14-27 Gas Well in the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, supports the application of Cities Service Oil Company for the institution of gas prorationing in the Buffalo Valley-Pennsylvanian Gas Pool. Gas production from the several wells in this common gas reservoir and gas purchases by the pipe line companies involved have not been equitable to the interests represented in the reservoir. The entry of our statement of support of the applicant in Case 4040 into the record and your favorable consideration would certainly be appreciated. Morris Antweil.

MR. NUTTER: Thank you, Mr. Hatch. Does anyone have anything else to offer in Case 4040? We will take the case under advisement.

I N D E X

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[illegible]

I, GLENDA BURKS, Court Reporter 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.

Linda Burgo
Court Reporter

I do hereby certify that the above is a true and correct copy of the original as the same appears on the records of the New Mexico Oil Conservation Commission.

8/5 4040 69

[Signature]
New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

March 4, 1969

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 4040
Order No. R-1670-H
Applicant:
Cities Service Oil Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC x

Aztec OCC

Other Mr. Gordon Ryan, Pan American Petroleum Corp.
Fort Worth, Texas

DOCKET: EXAMINER HEARING - WEDNESDAY - FEBRUARY 5 1969

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner,
or Elvis A. Utz, Alternate Examiner:

CASE 4036: Application of Mobil Oil Corporation for a dual completion, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its C. L. O'Brien Well No. 1 located in Unit A of Section 7 Township 8 South, Range 30 East, Chaves County, New Mexico, to produce oil from an undesignated Pennsylvanian oil pool and the Lightcap (Devonian) Pool through parallel strings of tubing.

CASE 3975 (Reopened):

In the matter of Case No. 3975 being reopened pursuant to the provisions of Order No. R-3618, which order established 80-acre spacing units for the East Bluitt-San Andres Pool, Roosevelt County, New Mexico, for a period of approximately two months. All interested parties may appear and present evidence as to whether the subject area is indeed a separate common source of supply or an extension of the Bluitt-San Andres Gas Pool.

CASE 4010: (Continued from December 27, 1968 and January 8, 1969 Examiner Hearings)

Application of John H. Trigg for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg-San Andres formations through his Empire "J" Federal Well No. 1 located in Unit P of Section 1, Township 18 South, Range 26 East, Red Lake Grayburg-San Andres Pool, Eddy County, New Mexico.

CASE 4037: Application of Anadarko Production Company for several waterflood projects and waterflood buffer zones, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute several waterflood projects by the injection of water into the Grayburg and San Andres formations of the Square Lake Pool by the conversion to water injection of its Etz Federal Well No. 3 and its Grier Well No. 14 located, respectively, in Sections 19 and 20 of Township 16 South, Range 31 East, Eddy County, New Mexico. Applicant further seeks the designation of the S/2 SW/4 of said Section 19, the N/2 SE/4 of said Section 19, and the N/2 SE/4 of said Section 20 as waterflood buffer zones with capacity allowables.

CASE 4038: Application of Kennedy Oil Company for a waterflood project and waterflood buffer zone, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg and San Andres formations of the Square Lake Pool by the conversion to water injection of its Camper Federal Well No. 2 located in Unit K of Section 19, Township 16 South, Range 31 East, Eddy County, New Mexico. Applicant further seeks the designation of the N/2 SW/4 of said Section 19 as a waterflood buffer zone with capacity allowable.

CASE 4039: The application of the Oil Conservation Commission upon its own motion for an order granting an exception to the ninth paragraph of Chapter II, Section 2 of Order No. R-333-F to permit shutting in gas wells for the required shut-in test at some period during the 1969 test season other than immediately following the 7-day deliverability flow test; further to permit measuring the shut-in test pressure during the 8th to 15th day of shut-in of the well rather than on the 8th day as presently required. The above exceptions would be for the 1969 annual deliverability test season only and would be applicable to all wells in San Juan, Rio Arriba, McKinley and Sandoval Counties, New Mexico, subject to the testing requirements of Chapter II of Order No. R-333-F.

CASE 4023: (Continued and readvertised from the January 15, 1969 Regular Hearing)

Application of Ernest A. Hanson for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Queen formation in the perforated interval from approximately 1724 feet to 1736 feet in his Welch Federal Well No. 2 located 1650 feet from the North line and 2310 feet from the West line of Section 22, Township 19 South, Range 28 East, East Millman Queen-Grayburg Pool, Eddy County, New Mexico.

CASE 4040: Application of Cities Service Oil Company for the institution of gas prorationing in the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the limitation of gas production from the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to reasonable market demand and to the capacity of gas transportation facilities, and that the subject pool be governed by the general rules and regulations for the prorated gas pools of Southeastern New Mexico insofar as said general rules and regulations are not inconsistent with the special rules and regulations governing the subject pool. Further, the applicant proposes that the allowable production from the pool be allocated among the wells in the pool on a 100% surface acreage basis.

CASE 4041: Application of Tamarack Petroleum Company, Inc. for salt water injection, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to inject produced salt water into the Queen formation in the perforated interval from 4955 feet to 5030 feet in its Texaco Moran Well No. 2, located in Unit H of Section 22, Township 19 South, Range 35 East, Pearl Queen Pool, Lea County, New Mexico.

CASE 4042: Application of El Paso Natural Gas Company for an amendment to Order No. R-2948, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-2948, which order established a number of non-standard gas proration units in the Basin-Dakota Gas Pool, Rio Arriba County, New Mexico. Applicant proposes to change the acreage dedication comprising units 12 and 13 of Township 28 North, Range 6 West and Units 16 and 17 of Township 28 North, Range 7 West to comprise the following:

<u>TOWNSHIP 28 NORTH, RANGE 6 WEST</u>		
Unit	Acres	Description
12	420	Section 33: N/2
13	330.71	Section 33: S/2

<u>TOWNSHIP 28 NORTH, RANGE 7 WEST</u>		
Unit	Acres	Description
16	420	Section 35: N/2
17	427.40	Section 35: S/2

CASE 4017: [Continued from the January 8, 1969 Examined Hearing]
Application of Corinne Place for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying Section 8, Township 21 South, Range 24 East, North Indian Hills-Morrow Gas Pool, Eddy County, New Mexico. Said acreage to be dedicated to a well to be drilled in the SE/4 of said Section 8. Also to be considered will be the costs of drilling said well, a charge for the risk involved a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

- CASE 4043: Application of David Fasken for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying Section 8, Township 21 South, Range 24 East, North Indian Hills-Morrow Gas Pool, Eddy County, New Mexico. Said acreage to be dedicated to a well to be drilled 1980 feet from the North line and 2105 feet from the East line of said Section 8. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well. Case No. 4043 will be consolidated for purposes of hearing with Case No. 4017 which is the application of Corinne Grace for compulsory pooling of the same section.
- CASE 4044: Application of Continental Oil Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of two existing non-standard gas proration units into one 481-acre unit comprising the E/2 and E/2 W/2 of Section 3, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, to be dedicated to its Reed A-3 Wells Nos. 2 and 3 located in Units H and I, respectively of said Section 3, to be effective as of January 1, 1967. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.
- CASE 4045: Application of H & S Oil Company for an amendment to Order No. R-3357, as amended by Order No. R-3357-A, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3357, as amended by Order No. R-3357-A, which order authorized the H & S West Artesia Unit Waterflood Project. Applicant proposes to substitute the Roach Drilling Company-Leonard Well No. 18 located in Unit D of Section 17 as a water injection well in said project in lieu of the Cities Service-Mell Well No. 17 located in Unit M of Section 8, both in Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico.
- CASE 4030: (Continued from the January 22, 1969 Examiner Hearing)
- Application of Argus Production Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers formation in the perforated and open-hole interval from approximately 3554 feet to 3775 feet in its J. T. Lynn A-28 Well No. 3 located 2310 feet from the South line and 1650 feet from the East line of Section 28, Township 23 South, Range 36 East, Jalmat Yates-Seven Rivers Pool, Lea County, New Mexico.

ir/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4040
Order No. R-1670-H

APPLICATION OF CITIES SERVICE OIL
COMPANY FOR THE INSTITUTION OF GAS
PRORATIONING IN THE BUFFALO VALLEY-
PENNSYLVANIAN GAS POOL, CHAVES
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 5, 1969,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 4th day of March, 1969, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That Order No. R-2349, dated October 31, 1962, created
the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New
Mexico, and promulgated temporary Special Rules and Regulations
for same.

(3) That by Order No. R-2349-A, dated October 21, 1964,
said temporary Special Rules and Regulations were made permanent.

(4) That the applicant, Cities Service Oil Company, seeks
the limitation of gas production from said gas pool to reasonable
market demand, and that the allowable production from the pool
be allocated among the wells in the pool on a 100% surface
acreage basis.

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CASE No. 4040

Order No. R-1670-H

(5) That the applicant further proposes that the subject pool be governed by the General Rules and Regulations for the Prorated Gas Pools of Southeastern New Mexico insofar as said General Rules and Regulations are not inconsistent with the Special Rules and Regulations governing the subject pool.

(6) That there are five producing gas wells in the subject pool that have connections to a gas transportation facility.

(7) That a sixth well has been completed but has not yet been connected to a gas transportation facility.

(8) That the wells presently completed in the subject pool are capable of producing in excess of the reasonable market demand for gas from the pool.

(9) That four of the wells are connected to the Phillips Petroleum Company Pipeline System and one well is connected to the Southern Union Gas Company Pipeline System.

(10) That the evidence indicates that gas is not being taken ratably from all of the producing wells in the pool.

(11) That in order to prevent waste and protect correlative rights, the total allowable natural gas production from the gas wells producing from the subject pool should be restricted to reasonable market demand.

(12) That due to the lack of reservoir information, it is presently impracticable to attempt to compute recoverable tract reserves or recoverable pool reserves in the subject pool.

(13) That considering the available reservoir information, a 100% surface acreage formula is presently the most reasonable basis for allocating the allowable production among the wells delivering to the gas transportation facilities in the subject pool.

(14) That the adoption of a 100% surface acreage formula for allocating the allowable production in the subject pool will, insofar as is presently practicable, prevent drainage between producing tracts which is not equalized by counter-drainage.

(15) That the adoption of a 100% surface acreage formula for allocating the allowable production in the subject pool will,

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CASE No. 4040

Order No. R-1670-H

insofar as is presently practicable, afford to the owner of each property in the subject pool the opportunity to produce his just and equitable share of the gas in the pool and to use his just and equitable share of the reservoir energy.

IT IS THEREFORE ORDERED:

(1) That the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, shall be prorated, effective May 1, 1969.

(2) That the subject pool shall be governed by the General Rules and Regulations for the Prorated Gas Pools of Southeastern New Mexico promulgated by Order No. R-1670, as amended, insofar as said General Rules and Regulations are not inconsistent with this order or the Special Rules and Regulations for the subject pool as hereinafter set forth, in which event the Special Rules shall apply.

**SPECIAL RULES AND REGULATIONS
FOR THE
BUFFALO VALLEY-PENNSYLVANIAN GAS POOL**

A. WELL LOCATION AND ACREAGE REQUIREMENTS

RULE 2. Each well completed or recompleted in the Buffalo Valley-Pennsylvanian Gas Pool shall be located in the northwest quarter or the southeast quarter of the section and shall be located no nearer than 990 feet to the outer boundary of the quarter section nor nearer than 330 feet to any governmental quarter-quarter section line; provided, however, that any well drilling to or completed in said pool on or before October 31, 1962, is hereby excepted from the requirements of this rule.

RULE 5(A). Each well completed or recompleted in the Buffalo Valley-Pennsylvanian Gas Pool shall be located on a standard proration unit consisting of any two contiguous quarter sections of a single governmental section, being a legal subdivision (half section) of the United States Public Land Surveys. For purposes of these rules, a standard proration unit shall consist of 316 through 324 contiguous surface acres.

RULE 5(C). The Secretary-Director shall have authority to grant an exception to Rule 5(A) without notice and

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CASE No. 4040

Order No. R-1670-H

hearing where an application has been filed in due form and where the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys, or where the following facts exist and the following provisions are complied with:

- (1) The non-standard unit consists of contiguous quarter-quarter sections or lots.
- (2) The non-standard unit lies wholly within a single governmental section.
- (3) The entire non-standard unit may reasonably be presumed to be productive of gas from the Buffalo Valley-Pennsylvanian Gas Pool.
- (4) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which any part of the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (5) In lieu of Paragraph 4 of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if, after a period of thirty days, no such operator has entered an objection to the formation of such non-standard unit.

C. ALLOCATION AND GRANTING OF ALLOWABLES

RULE 8(A). The allowable production in the Buffalo Valley-Pennsylvanian Gas Pool shall be allocated as follows:

The pool allowable remaining each month after deducting the total allowable assigned to marginal wells shall be allocated among the non-marginal wells entitled to an allowable in the proportion that each well's acreage factor bears to the total of the acreage factors for all non-marginal wells in the pool.

-5-

CASE No. 4040

Order No. R-1670-H

C. GENERAL

RULE 25. The vertical limits of the Buffalo Valley-Pennsylvanian Gas Pool shall be the Pennsylvanian formation.

RULE 26. The first proration period for the Buffalo Valley-Pennsylvanian Gas Pool shall commence May 1, 1969, and shall terminate December 31, 1969. Subsequent proration periods shall be the six-month periods as provided in the General Rules.

IT IS FURTHER ORDERED:

(1) That the Special Rules and Regulations for the Buffalo Valley-Pennsylvanian Gas Pool promulgated by Orders Nos. R-2349 and R-2349-A are hereby superseded.


(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

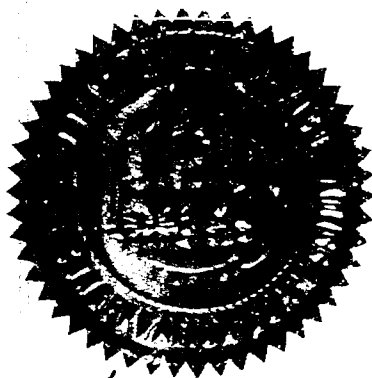
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


ALEX J. ARMIDO, Member


A. L. PORTER, Jr., Member & Secretary



ear/

Morris R. Antweil

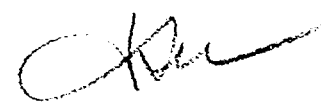
OIL OPERATOR

P. O. Box 2010

HOBBS, NEW MEXICO

January 29, 1969

69 JAN 30 PM 1 00



New Mexico Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Attn: Mr. Daniel S. Nutter, Examiner

Re: Case 4040

Gentlemen:

Morris R. Antweil, a working interest owner with Cities Service Oil Co. in the Baetz "A" 1-N-35-14-27 gas well in the Buffalo Valley, Penn Gas Pool, Chaves County, New Mexico, supports the application of Cities Service Oil Co. for the institution of gas prorationing in the Buffalo Valley, Penn Gas Pool. Gas production from the several wells in this common gas reservoir and gas purchases by the pipe line companies involved have not been equitable to the interests represented in the reservoir.

The entry of our statement of support of the applicant in Case 4040 into the record and your favorable consideration will certainly be appreciated.

Respectfully,

MORRIS R. ANTWEIL



R. M. Williams

RMW/cs

R-27-E

R-28-E

<p>27</p> <p>State</p> <p>U.S. Navy</p>	<p>26</p> <p>State</p> <p>U.S. Navy</p>	<p>25</p> <p>State</p> <p>U.S. Navy</p>	<p>30</p> <p>State</p> <p>U.S. Navy</p>
<p>34</p> <p>State</p> <p>U.S. Navy</p>	<p>35</p> <p>State</p> <p>U.S. Navy</p>	<p>36</p> <p>State</p> <p>U.S. Navy</p>	<p>31</p> <p>State</p> <p>U.S. Navy</p>
<p>3</p> <p>State</p> <p>U.S. Navy</p>	<p>3.6 MMCF</p> <p>State</p> <p>U.S. Navy</p>	<p>4.7 MMCF</p> <p>State</p> <p>U.S. Navy</p>	<p>6</p> <p>State</p> <p>U.S. Navy</p>
<p>10</p> <p>State</p> <p>U.S. Navy</p>	<p>11-68</p> <p>State</p> <p>U.S. Navy</p>	<p>12</p> <p>State</p> <p>U.S. Navy</p>	<p>7</p> <p>State</p> <p>U.S. Navy</p>
<p>13</p> <p>State</p> <p>U.S. Navy</p>	<p>14</p> <p>State</p> <p>U.S. Navy</p>	<p>15</p> <p>State</p> <p>U.S. Navy</p>	<p>16</p> <p>State</p> <p>U.S. Navy</p>

BEFORE EXAMINER NOTTER

OIL CONSERVATION COMMISSION

App. 15 EXHIBIT NO. 14

CASE NO. 4040

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14
ST
15
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E-1

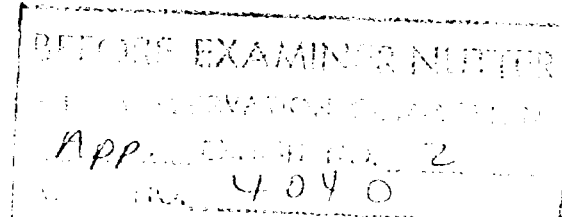
Two
BUFFALO VALLEY PENN. GAS POOL

*(C.S. 1000)
1/1/68 (both
1/1/68 & 1/1/68)
1/1/68*

		<u>CITIES SERVICE</u>		<u>READ</u>				<u>SOUTHWEST PROD.</u>			
		<u>Baetz #1</u>		<u>#1 (Comm.)</u>		<u>#2</u>		<u>Buffalo Valley #1</u>		<u>Clements #1</u>	
		<u>MCF</u>	<u>Bbls.</u>	<u>MCF</u>	<u>Bbls.</u>	<u>MCF</u>	<u>Bbls.</u>	<u>MCF</u>	<u>Bbls.</u>	<u>MCF</u>	<u>Bbls.</u>
1968	Jan.	36,616	419	102,836	2,865	--	--	--	--	--	--
	Feb.	2,282	71	101,557	2,947	--	--	--	--	--	--
	Mar.	44,191	326	115,638	3,367	59,413	2,306	--	76	--	1,635
	Apr.	8,761	24	96,446	2,755	87,137	3,061	6,410	29	78,365	2,873
	May	16,364	270	80,352	2,169	77,731	2,562	2,931	24	79,675	2,305
	June	17,951	97	68,723	2,255	78,046	2,030	7,888	78	45,055	1,971
	July	11,682	109	107,235	2,551	98,832	3,027	286*	12	97,398*	2,627
	Aug.	9,345	106	115,793	2,632	97,903	2,841	228	3	119,117	3,015
	Sept.	18,135	86	110,067	2,343	37,295 (11)	948	84 (1)	2	114,142	2,770
	Oct.	23,264	215	113,811	1,966	19,562 (7)	541	40 (1)	1	116,602	2,662
	Nov.	57,718	360	106,029	1,894	103,662	2,888	0	0	107,316*	2,388
	Dec.	<u>57,665</u>	<u>348</u>	<u>101,612</u>	<u>1,335</u>	<u>101,052</u>	<u>2,567</u>	<u>0</u>	<u>0</u>	<u>102,039</u>	<u>1,978</u>
YEARLY TOTAL		303,974	2,431	1,220,099	29,079	760,633	22,771	17,867	255	859,709	24,224

* Gas Corrected from New Mexico Engineering Report

() Days Produced



11-6

ANALYSIS OF ASSIGNING ALLOWABLES TO UNCONNECTED WELLS

INDIAN BASIN AREA

Estimated Pool Production:

Southern Union estimated gas takes:

Entire Area - 20 M²CFD

CASE NO. 3237

Exhibit 8

Indian Basin - Upper Penn. 18 M²CFD

Indian Basin - Morrow 2 M²CFD

Natural Gas Pipeline estimated gas takes:

Entire Area - 100 M²CFD

Indian Basin - Upper Penn. 80 M²CFD

Indian Basin - Morrow 20 M²CFD

1. Upper Pennsylvanian Pool

Includes 640 acre units on which wells have been completed or in process of being completed as of April 1, 1965.

Southern Union Gas Company - 4 units

Natural Gas Pipeline Company 18 units

Assigning estimated Southern Union Gas production to units on basis of 100% acreage:

$$\frac{18 \text{ M}^2\text{CFD} \times 4.5 \times 4 \times 182.5 \text{ days}}{4 \text{ units}} = 3285 \text{ M}^2\text{CF/Pro. Period.}$$

Unconnected Units:

$$4.5 \text{ M}^2\text{CFD} \times 18 \text{ units} \times 182.5 \text{ days} = \frac{14782 \text{ M}^2\text{CF/Pro. Period}}{18067 \text{ M}^2\text{CF/Pro. Period}}$$

14,782 N.G.P.L. accrued underage = 185 days underproduction in one 6 month proration period.
80 M²CFD rate of production.

Assuming two years until N.G. P.L. is connected then they will be under produced 740 days or 2.0 years.

Exhibit 8
Page 2

MORROW POOL

Development as of April 1, 1965

Southern Union Gas Company - 2 units

Natural Gas Pipeline - 6 units

$2 \text{ M}^2\text{CFD} = 1.0 \times 2 \times 182.5 = 365 \text{ M}^2\text{CF/Pro. Period}$
2 units

Unconnected Wells:

$1.0 \times 6 \times 182.5 = 1095 \text{ M}^2\text{CF/Pro. Unit}$

Pool Allowable $1460 \text{ M}^2\text{CF/Pro. Unit}$

1095 N.G.P.L. accrued underage = 55 days underproduction in one proration period.

$20 \text{ M}^2\text{CFD}$ N.G.P.L. rate of production.

Assuming two years until connection N.G.P.L. would be under produced 220 days or .6 years.

UPPER PENNSYLVANIAN POOL

Includes all 640 acre units which Oil Conservation Commission staff believes will be productive based on current geological data.

Productive Units - 43

Southern Union Gas - 5 units

Natural Gas Pipeline - 38 units

$18 \text{ M}^2\text{CFD} = 3.6 \times 5 \times 182.5 = 3285 \text{ M}^2\text{CF/Period}$

5 units

Unconnected Wells:

$3.6 \times 38 \times 182.5 =$

$\frac{24,966 \text{ M}^2\text{CF/Period}}{28,251 \text{ M}^2\text{CF/Period}}$

Pool Allowable

$24,966 \text{ N.G.P.L. accrued underage} = 312 \text{ days underproduction in one period.}$

$80 \text{ M}^2\text{CFD rate of production}$

Assuming two years until N.G.P.L. connection, they would be underproduced 1248 days or 3.4 years.

MORROW POOL

Includes all 640 acre units which Oil Conservation Commission staff believe will be productive based on current geological data.

Productive Units - 10

Southern Union Gas - 2 Units

Natural Gas Pipeline - 8 Units

$$2 \text{ M}^2\text{CFD} = 1.0 \times 2 \times 182.5 = 365 \text{ M}^2\text{CF/Period}$$

2 units

Unconnected Wells:

$$1.0 \times 8 \times 182.5 = 1460 \text{ M}^2\text{CF/Period}$$

$$\text{Pool Allowable} \quad 1825 \text{ M}^2\text{CF/Period}$$

1460 N.G.P.L. accrued underage = 73 days underproduction in one period.
20 M²CFD rate of production

Assuming two years until N.G.P.L. is connected, they would be underproduced 292 days or .8 years.

ALTERNATIVE PROCEDURES CONCERNING UNCONNECTED WELLS

1. Assign underproduction to a well after it is connected if the owner of the well establishes that he has been denied the opportunity to produce his just and equitable share of the gas in the pool.

2. Allocate the allowable production to connected wells based on the acreage in a proration unit committed to a connection; e.g., a well with 320 acres committed to Southern Union and 320 acres committed to Natural Gas Pipeline would receive a 320-acre allowable upon connection to Southern Union and a 640-acre allowable upon connection to Natural Gas Pipeline.

3. Allow each unconnected well to accrue underproduction based on total pool production divided by the number of unconnected wells.

4. Allow each unconnected well on a standard unit to accrue underproduction equivalent to the allowable assigned to a connected well on a standard unit.

ALTERNATIVE PROCEDURES CONCERNING UNCONNECTED WELLS

1. Assign underproduction to a well after it is connected if the owner of the well establishes that he has been denied the opportunity to produce his just and equitable share of the gas in the pool.
2. Allocate the allowable production to connected wells based on the acreage in a proration unit committed to a connection; e.g., a well with 320 acres committed to Southern Union and 320 acres committed to Natural Gas Pipeline would receive a 320-acre allowable upon connection to Southern Union and a 640-acre allowable upon connection to Natural Gas Pipeline.
3. Allow each unconnected well to accrue underproduction based on total pool production divided by the number of unconnected wells.
4. Allow each unconnected well on a standard unit to accrue underproduction equivalent to the allowable assigned to a connected well on a standard unit.

16-Com. after Penn.
6- after Penn.

WELLS IN INDIAN BASIN AREA

Purchaser	Elev.	Upper Penn. Comp. Int.	Morrow Comp. Int.	Upper Penn. C-128	Morrow C-128	Upper Penn.	AOE Morrow	Status
Varathon-N. Indian Basin Unit	#3K-3-21-23	3874						Dril.
Varathon-N. Indian Basin Unit	#1M 10-21-23	3893	7470-7596	9118-72	10-640	3240	5132	SI
Varathon-N. Indian Basin Unit	#2C 11-21-23	3794	7552-63			6076		Dril.
Ralph Lowe-Indian Basin	#1K 14-21-23	3824	7464-7548	9457-84	NP	10600	21800	SI
Robert Enfield-N. Indian Basin	#1N 17-21-23	4077	7396-7450		NP	8118		SI
Robert Enfield-Bunnel Fed.	#1J 18-21-23	4089			518-574			Dril.
J. C. Williams-Std. Fed.	#1G 19-21-23	4064	7044-7296		NP	21000		SI
Robert Enfield-N. Indian Hills	#2C 20-21-23	3901			520-640			Dril.
Robert Enfield-N. Indian Hills	#1G 21-21-23	3883	7232-7530		521-642	23000		SI
Robert Enfield-N. Indian Hills	#1J 22-21-23	3847	7505-7572	9118-9266	522-640	5062	14250	SI
Ralph Lowe-Ind. Basin	#1E 23-21-23	3832	7376-7588	9039-9263	523-640	16100	12100	SI
Ralph Lowe-Ind. Basin Fed. C	#1F 26-21-23	3856	7366-7416		526-640	67000		SI
Centroc-Indian Basin Fed.	#1G 19-21-24	3779	7388-7533	9226-9470	519-640	3150	11834	SI
Ralph Lowe-Indian Hills Unit	#1M 21-21-24	3704	7316-32		NP	21500		SI
Kerr McGee-Marcha Creek	#1J 30-21-24	3722	7334-7444	9152-9426	530-640	20000	17600	Dril.
Redfern-Minston	#1K 31-21-24	3905	7365-7670	9545-9604	531-637	29000	6000	SI
Varagon-Feepe	#1D 32-21-24	3849	T. 7360		NP	28500		SI
Std. of Texas -Bogle Flats	#1G 3-22-23	4035			53-677			Dril.
Std. of Texas -Bogle Flats	#21 4-22-23	4082	7550-7700		54-679	17600		Dril.
Atlantic-Walt Canyon	#2D 4-22-24	3970	7430-7554		NP	151349		SI
John Trigg-Fed. I.B	#1D 6-22-24	3932	7360-7476		535-640	264879		SI
John Trigg-Fed. C J	#1F 35-21-23	3961			536-640	7790	840	SI
Monsanto-Lowe St.	#1F 36-21-23	3868	7520-45	9296-9555				SI
Curtis Inman-Walt Canyon	#1O 3-22-24			TD 10694				Dry Hole
Northern Nat-McIntireck Hill	#1AC 23-22-25			TD 11730				Dry Hole
Superior-Cone Butte Unit	#1D 19-22-24			TD 10503				Dry Hole
St. of Tex-Fed. A	#1M 8-21-23				TD 7530			Dry Hole
Sincier-Varathon-Fed	#1K 24-21-24							Dry Hole
Union of Calif. St.	#1J 18-21-24							Dry Hole
Dekalb-Fed.	#1M 20-21-24	3725		TD 9320				Dry Hole
Ralph Lowe-Scaple	#1K 22-21-24	3690	I 6702	TD 9900	TD 9755			Dry Hole
Gas Gravity	Upper Penn.	Ave. 31	Range .635-.677	Gas Gravity	Morrow	Ave. .606	Range .603-.614	
Gas Liquid Ratio	125,523		16,265-501,071	Gas Liquid Ratio		300,853	43,600-530,560	
Liquid Gravity	55.10		49.2-59.2	Liquid Gravity		54.20	53-57	
Wellhead Pressure	2304		2356-2746	Wellhead Pressure		2872	2667-2990	

JASON W. KELLAHIN
ROBERT E. FOX

KELLAHIN AND FOX
ATTORNEYS AT LAW
54 1/2 EAST SAN FRANCISCO STREET
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

TELEPHONE 982-4315
AREA CODE 505

January 10, 1969

Case 4040

Oil Conservation Commission of New Mexico
Post Office Box 2088
Santa Fe, New Mexico

Gentlemen:

Enclosed please find three copies of an application on
behalf of Cities Service Oil Company for an amendment
to Order No. R-1670, as amended, for filing and hearing
on February 5.

Yours very truly,

Jason W. Kellahin
JASON W. KELLAHIN

jwk;peg
Enc. as stated

DOCKET MAILED

Date 1-23-69

ATWOOD, MALONE, MANN & COOTER
LAWYERS

505 622-6221
P. O. DRAWER 700
SECURITY NATIONAL BANK BUILDING
ROSWELL, NEW MEXICO
88201

JEFF D. ATWOOD (1933-1960)
CHARLES F. MALONE
RUSSELL D. MANN
PAUL A. COOTER
BOB F. TURNER
ROBERT A. JOHNSON
JOHN W. BASSETT
ROBERT E. SABIN
RUFUS E. THOMPSON

February 3, 1969

Mr. A. L. Porter, Jr.
Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico 87501

Re: Case No. 4040 - February 5, 1969

Dear Mr. Porter:

On behalf of Pan American Petroleum Corporation, we
enclose our Entry of Appearance in the case numbered above.

With best regards.

Very truly yours,

ATWOOD, MALONE, MANN & COOTER

By



CFM:bc

Enc.

cc: J. K. Smith, Esq. (w/Enc.)
Mr. Gordon R. Ryan (w/Enc.)

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION)	
OF CITIES SERVICE OIL COMPANY FOR)	
GAS PRORATIONING IN THE BUFFALO)	No. 4040
VALLEY-PENNSYLVANIAN GAS POOL,)	
CHAVES COUNTY, NEW MEXICO.)	

ENTRY OF APPEARANCE

The undersigned, Atwood, Malone, Mann & Cooter, P. O.
Drawer 700, Roswell, New Mexico, hereby enter their appearance in
this case in behalf of Pan American Petroleum Corporation, with Gordon
R. Ryan and Guy Buell of Fort Worth, Texas.

ATWOOD, MALONE, MANN & COOTER

By Charles E. Malone
P. O. Drawer 700
Roswell, New Mexico

BEFORE THE
OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF CITIES SERVICE OIL COMPANY FOR
AN AMENDMENT TO ORDER NO. R-1670,
AS AMENDED, TO INSTITUTE GAS PRO-
PORTIONING IN THE BUFFALO VALLEY-
PENNSYLVANIAN GAS POOL, CHAVES
COUNTY, NEW MEXICO

Case 4040

A P P L I C A T I O N

Comes now CITIES SERVICE OIL COMPANY and applies to the Oil Conservation Commission of New Mexico for an order amending Order No. R-1670, as amended, to institute gas prorationing in the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, and in support thereof would show the Commission:

1. That by Order No. R-2349, dated November 1, 1962, the Commission created the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, and promulgated special rules and regulations governing said pool.

2. That by said special pool rules, the Commission provided that any well completed or recompleted in said Buffalo Valley-Pennsylvanian Gas Pool shall be located on a standard proration unit consisting of any two contiguous quarter sections of a single governmental section, consisting of 316 through 324 contiguous surface acres.

3. That six wells are presently completed in said pool, an additional well is presently being drilled to said pool, and that it is applicant's information and belief that other wells are projected or, will be projected to said pool in the near future.

4. That a market demand presently exists for gas from subject pool, and that two gas purchasers, Phillips Petroleum Company and Southern Union Gas Company, are presently purchasing gas from wells in the subject pool.

5. That the wells presently completed in the pool are capable of producing in excess of the reasonable market demand for gas from the pool, and are capable of producing in excess of the capacity of the gas transportation facilities available.

6. That in order to prevent waste and protect correlative rights in the pool, the total allowable natural gas production from gas wells producing from the Buffalo Valley-Pennsylvanian Gas Pool should be restricted to reasonable market demand and the capacity of the gas transportation facilities available.

7. That due to lack of reservoir information, it is impracticable to attempt to compute recoverable tract reserves or recoverable pool reserves in the subject pool at the present time.

8. That considering available reservoir information, a 100% acreage formula is the most reasonable basis for allocating the allowable production among the wells delivering to a gas transportation facility in the pool.

9. That the adoption of a 100% surface acreage formula for allocating allowable production in the pool will, insofar as is practicable, afford the owner of each property in the pool the opportunity to produce his just and equitable share of the gas in the pool, and to use his just and equitable

share of the reservoir energy, and such formula will prevent waste.

WHEREFORE, applicant prays that this application be set for hearing before the Commission or before the Commission's duly appointed examiner, and that after notice and hearing as required by law the Commission enter its order amending Order No. R-1670, as amended, to provide for the prorationing of gas production in the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, as applied for.

Respectfully submitted,

CITIES SERVICE OIL COMPANY

BY: Jason W. Kellahin
Jason W. Kellahin

KELLAHIN & FOX
Post Office Box 1769
Santa Fe, New Mexico

ATTORNEYS FOR APPLICANT

DRAFT

GMH/esr
2-20-69

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

RECORDS CENTER & LAW LIBRARY

CASE No. 4040

Order No. R-1670 H

APPLICATION OF CITIES SERVICE OIL
COMPANY FOR THE INSTITUTION OF GAS
PRORATIONING IN THE BUFFALO VALLEY-
PENNSYLVANIAN GAS POOL, CHAVES
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 5, 1969,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of February, 1969, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That Order No. R-2349, dated ^{October 31} ~~November 1~~, 1962, created
the Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New
Mexico, and promulgated temporary Special Rules and Regulations
for same.

(3) That by Order No. R-2349-A, dated October 21, 1964,
said temporary Special Rules and Regulations were made permanent.

(4) That the applicant, Cities Service Oil Company, seeks
the limitation of gas production from said gas pool to reasonable
market demand, ~~and to the capacity of gas transportation facilities~~
and ~~that the~~ ^{allowable} ~~allowable~~ production from the pool be allocated
among the wells in the pool on a 100% surface acreage basis.

(5) That the applicant further proposes that the subject pool be governed by the General Rules and Regulations for the Prorated Gas Pools of Southeastern New Mexico insofar as said General Rules and Regulations are not inconsistent with the Special Rules and Regulations governing the subject pool.

(6) That there are five producing gas wells in the subject pool that have connections to a gas transportation facility.

(7) That a sixth well has been completed but has not yet been connected to a gas transportation facility.

(9) ~~(8)~~ That four of the wells are connected to the Phillips Petroleum Company Pipeline System and one well is connected to the Southern Union Gas Company Pipeline System.

(8) ~~(8)~~ That the wells presently completed in the subject pool are capable of producing in excess of the reasonable market demand for gas from the pool, ~~and are capable of producing in excess of the capacity of the gas transportation facilities serving said pool.~~

(10) That the evidence indicates that gas is not being taken ratably from all of the producing wells in the pool.

(11) That in order to prevent waste and protect correlative rights, the total allowable natural gas production from the gas wells producing from the subject pool should be restricted to reasonable market demand, ~~and the capacity of gas transportation facilities.~~

(12) That due to the lack of reservoir information, it is presently impracticable to attempt to compute recoverable tract reserves or recoverable pool reserves in the subject pool.

(13) That considering the available reservoir information, a 100% surface acreage formula is presently the most reasonable basis for allocating the allowable production among the wells delivering to the gas transportation facilities in the subject pool.

(14) That the adoption of a 100% surface acreage formula for allocating the allowable production in the subject pool will, insofar as is presently practicable, prevent drainage between producing tracts which is not equalized by counter-drainage.

(15) That the adoption of a 100% surface acreage formula for allocating the allowable production in the subject pool will, insofar as is presently practicable, afford to the owner of each property in the subject pool the opportunity to produce his just and equitable share of the gas in the pool and to use his just and equitable share of the reservoir energy.

IT IS THEREFORE ORDERED:

(1) That the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, shall be prorated, effective ^{May 1}~~April 1~~, 1969.

(2) That the subject pool shall be governed by the General Rules and Regulations for the Prorated Gas Pools of Southeastern New Mexico promulgated by Order No. R-1670, as amended, insofar as said General Rules and Regulations are not inconsistent with this order or the Special Rules and Regulations for the subject pool as hereinafter set forth, in which event the Special Rules shall apply.

SPECIAL RULES AND REGULATIONS
FOR THE
BUFFALO VALLEY-PENNSYLVANIAN GAS POOL

A. WELL LOCATION AND ACREAGE REQUIREMENTS

RULE 2. Each well completed or recompleted in the Buffalo Valley-Pennsylvanian Gas Pool shall be located in the northwest quarter or the southeast quarter of the section and shall be located no nearer than 990 feet to the outer boundary of the quarter section nor nearer than 330 feet to any governmental quarter-quarter section line; provided, however, that any well

drilling to or completed in said pool, *on or before October 31, 1962,* ~~as of the date of this order~~ is hereby excepted from the requirements of this rule.

RULE 5(A). Each well completed or recompleted in the Buffalo Valley-Pennsylvanian Gas Pool shall be located on a standard proration unit consisting of any two contiguous quarter sections of a single governmental section, being a legal subdivision (half section) of the United States Public Land Surveys. For purposes of these rules, a standard proration unit shall consist of 316 through 324 contiguous surface acres.

RULE 5(C). The Secretary-Director shall have authority to grant an exception to Rule 5(A) without notice and hearing where an application has been filed in due form and where the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys, or where the following facts exist and the following provisions are complied with:

(1) The non-standard unit consists of contiguous quarter-quarter sections or lots.

(2) The non-standard unit lies wholly within a single governmental section.

(3) The entire non-standard unit may reasonably be presumed to be productive of gas from the Buffalo Valley-Pennsylvanian Gas Pool.

(4) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which any part of the non-standard unit is situated and which acreage is not included in said non-standard unit.

(5) In lieu of Paragraph 4 of this rule, the applicant may furnish proof of the fact that all of the aforesaid

operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if, after a period of thirty days, no such operator has entered an objection to the formation of such non-standard unit.

C. ALLOCATION AND GRANTING OF ALLOWABLES

RULE 8(A). The allowable production in the Buffalo Valley-Pennsylvanian Gas Pool shall be allocated as follows: The pool allowable remaining each month after deducting the total allowable assigned to marginal wells shall be allocated among the non-marginal wells entitled to an allowable in the proportion that each well's acreage factor bears to the total of the acreage factors for all non-marginal wells in the pool.

G. GENERAL

RULE 25. The vertical limits of the Buffalo Valley-Pennsylvanian Gas Pool shall be the Pennsylvanian formation.

RULE 26. The first proration period for the Buffalo Valley-Pennsylvanian Gas Pool shall commence May 1, 1969, and shall terminate December 31, 1969. Subsequent proration periods shall be the six-month periods as provided in the General Rules.

IT IS FURTHER ORDERED:

(1) That Orders Nos. R-2349 and R-2349-A are hereby superseded.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

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(1) That Orders Nos. R-2349 and R-2349-A are hereby superseded.

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DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.