CASE 5112: OCC TO CONSIDER EXTENDING HORIZONTAL LIMITS OF THE BURTON FLATS-STRAWN GAS POOL.

CASE No.

512

Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 16, 1974

EXAMINER HEARING

IN THE MATTER OF:

Hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Morrow Gas Pool, Eddy County, New Mexico. Case No. 5111

Hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico. Case No. 5112

Before: Richard L. Stamets, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission: William Carr, Esq.
and
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I N D E X

E X H I B I T S

MR. STAMETS: We'll call Case 5111.

MR. CARR: Case 5111. In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Morrow Gas Pool, Eddy County, New Mexico, to include the South half of Section 34, Township 20 South, Range 28 East, and the North half of Sections 8 and 9, and all of Section 10, Township 21 South, Range 27 East.

MR. STAMETS: Call for appearances in Case 5111.

MR. DERRYBERRY: I'm Tom Derryberry, attorney for the Commission. I have two witnesses to be sworn.

MR. HINKLE: I'm Clarence Hinkle representing Monsanto Company.

MR. LINES: Farrell Lines, Michael P. Grace and Company.

MR. STAMETS: Are there any other attorneys in this case.

MR. HOCHER: R. L. Hocher, Cities Service Oil Company.

MR. HINKLE: Mr. Examiner, I don't know how you intend to handle these cases. It seems to me the next case could be consolidated with this case for the purpose of Hearing, because the evidence will overlap the same wells

involved and if there's no objection, I would move these two cases be consolidated for the purpose of taking testimony.

MR. STAMETS: Is there an objection to the consolidation of these cases for the purpose of testimony?

MR. LINES: Is that 5112 and 5113?

MR. STAMETS: I don't believe 13 would be considered with the others. I believe that it is a separate case.

I believe when we reach Case 5113 it will be dismissed so there's no necessity in considering that one at this time.

Cases 5111 and 5112 will be consolidated. We should call Case 5112 for the record.

MR. CARR: Case 5112. In the matter of hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton-Flats-Strawn Gas Pool, Eddy County, New Mexico, to include all of Section 10, Township 21 South, Range 27 East.

MR. STAMETS: Do any other attorneys have witnesses that they intend to present in this case?

MR. HINKLE: I have one Monsanto witness.

MR. LINES: I don't, just a statement.

MR. STAMETS: We will swear the witnesses at this time

and then the Hearing will adjourn and reconvene in Morgan Hall.

(Witnesses are sworn.)

(Whereupon, a recess was taken.)

MR. STAMETS: The Hearing will please come to order. Mr. Derryberry, you may proceed.

MR. DERRYBERRY: I would like to call Carl Ulvog.

CARL ULVOG

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

DIRECT EXAMINATION

BY MR. DERRYBERRY:

Q Would you please state your name and position for the record?

A I'm Carl Ulvog. I'm senior petroleum geologist, Oil Conservation Commission.

MR. STAMETS: Mr. Ulvog, I believe that you will need to speak up in this room so that everybody can hear.

A I'm Carl Ulvog, senior petroleum geologist with the Oil Conservation Commission here in Santa Fe.

BY MR. DERRYBERRY:

Q Have you previously testified before the Commission and had your qualifications made a matter of record?

MR. DERRYBERRY: Mr. Examiner, I'd like a determination as to qualifications in this.

MR. STAMENTS: The witness is qualified.

BY MR. DERRYBERRY:

Q Have you made a study of the geologic characteristics of the Burton Flats-Strawn Gas Pool in Eddy County, New Mexico?

A Yes, sir, I have.

Q Have you summarized the results of this geologic study in the form of exhibits?

A Yes, sir, I have four exhibits.

Q Could you please take Exhibit, what is marked as Commission's Exhibit No. 1, and explain the significance of that Exhibit?

(Whereupon, a discussion was held off the record.)

A I have here Exhibit No. 1. I have put another one up on the board over here. This is a structural contour map. That contour is on the base of the Morrow and the top of the Barnett.

Q All right, and could you -- does this include most of the producing wells in the what is now defined as the Burton Flats-Morrow Gas Pool?

A This map, Exhibit 1, has all of the completed wells in Morrow formation in Burton Flats Pool as of the January 1 --

MR. STAMETS: (Interrupting) Carl, do you have another copy?

THE WITNESS: Yes, I do. We can pass them out to the audience here.

MR. STAMETS: We're a little short. If you sit over here next to me, Mr. Hinkle, I'm sure that you and I can share it.

THE WITNESS: I do have one more copy here if that would help somebody out. That's it.

BY MR. DERRYBERRRY:

(Whereupon, a discussion was held off the record.)

Q Could you examine what has been marked Commission's Exhibit No. 2 and explain the significance of that Exhibit?

A Yes. Exhibit No. 2 is a stratigraphic section. I'm afraid I don't have enough copies to go around. I have two and then one that I put up here on the board right here that I'll refer to.

MR. STAMETS: We'll put this one around on the table and anybody that wants to may step up and take a look at that.

THE WITNESS: That's this Exhibit right here.

BY MR. DERRYBERRY:

Q That stratigraphic cross section is of the wells which were shown on the connected line on the first Exhibit?

A That's correct. The structural map which is Exhibit No. 1 which is passed out. You'll notice the wells to the north in Section 34 marked "A". That is this well to the left and "A" Prime to the South, this one.

Q Was there any particular reason why you chose these wells for this cross section?

A Yes. There were several reasons. It goes from the structurally highest completed well in the field to the lowest well, which is a dry well -- I mean, at least it was a dry hole in the formation we're discussing today. That's the old Humble Well in Section 15.

Q What is the difference in the depth of these?

A Actually, this is very flat. The actual difference is in the sub-sea elevations between the highest and the lowest wells on the base of the Pennsylvanian or base of the Morrow at the top of the Barnett is just 180 feet, which is -- since they are about three miles apart, that's a slope of about one foot vertical to 125 feet horizontal. It's very flat.

Q Very little difference in that?

A Right.

Q Anything further on this Exhibit?

A Yes. I would like to discuss all of them to a little greater detail, but if you want to go through the other Exhibits, we'll do so.

Q Would you examine what's been marked as Commission's Exhibit No. 3 and explain its significance?

A Yes, I have -- Exhibit No. 3 is this large cross section of which there is just that one copy due to the difficulty in reproducing and so on, which is a stratigraphic section, goes through exactly the same wells we have in Exhibit 2 and is exactly the same orientation. That is "A" and this is "A" Prime. This is exactly the same orientation there, because in this case the reference horizon is the base of the Morrow and top of the Barnett and I have shown a number of correlation points on there, but primarily it's for discussing the pay zones.

Q All right. Could you please explain what the various colored markings are on this stratigraphic cross section indicate?

A Yes. This red line at the very top is what I call the Strawn marker. This blue line coming through here, that is called Atoka marker. This blue line coming through here

is called the Morrow marker. This black line, horizontal line at the bottom is the base of the Pennsylvanian or base of the Morrow, if you please, on top of the Barnett. The other colors on this -- the different colors have no particular significance except to make it a little simpler to follow where these different zones are on the logs. Where I have colored completely across the log, that is where that well was perforated and this shows the different zones in each well that have been perforated. I have arbitrarily assigned a number system to all of those zones that occur in the Morrow section. I have 13 of those zones all shown over here on that chart, right.

Q The basis for delineating these zones as separate zones is primarily stratigraphic?

A These were determined through correlations of all the logs in this field from these logs. I have no cores, samples or anything else to work with, only these logs and so these zones were correlated throughout the field. That is another reason for selecting these wells, because I believe that all of the presently producing zones are represented here. You'll find the equivalents of some of these in the other wells in the pool.

Q These colored areas represent only those zones which

have been perforated in each of the wells?

A That is correct. Where the color band goes completely across the log, that zone is perforated, yes. We have colored in only the gamma rays curve that is where the equivalents would be here where it is not perforated.

Q All right. The Exhibit indicates that there are different zones, no two wells have perforated in the same two paying zones. In other words, there are different paying zones in each of the wells or different combinations of paying zones in each of the wells?

A That statement is partly correct, but if you don't mind, I'd like to discuss that a little further as we go along because I can consider all of the wells in the field then.

Q All right. Would you go on to Exhibit 4 and explain it, please?

A Exhibit 4, I do not have one on the board, but it is a combination that I have called a comparative analysis. It is partly tabular and partly graphic. I have here three copies, where I have listed all of the wells. There are two more copies here.

This Exhibit is, as I say, is a combination between a table and a part of Exhibit "A", which is the structure map

which is put on there to give you structural relationship in connection with all of the other various conditions existing in the field.

Q All right. So, in other words, you used Exhibit 1 plus other data to come up with this?

A A part of Exhibit 1 is incorporated into this. That is correct.

Q All right. Could you explain the significance of this Exhibit?

A Yes.

Q Along with and relating it to the other Exhibits?

A All right. If I may, I'd like to go back to Exhibit 1 to begin with. The structure contour map. This may be an over-optimistic interpretation of the structure. It's conceivable there is no closure as I indicated on this map. I used the most optimistic approach. Usually, in a deeper horizon we find this pool lined on a slight terrace on a regional monoclinal east dip and with very little closure, just a flat thing. That's why I say it may not even be a closure there. It's really not critical to our discussions here, because I think it's obvious we're talking about a stratigraphic trap. So,structural position has very little to do with any of the producing characteristics of these wells,

which we'll see a little bit more later. I have deliberately taken a well from the lowest producer to the very highest producer in order to demonstrate this. As I mentioned, all of the sub-sea points on that map are the top of the Barnett and the contours are 100-foot intervals on that horizon. Now, going to Exhibit 2 which is the structural section, this demonstrates further the very flatness of this field. We have in this case an exaggeration, if you please, of the dip of some three to four times. It's only about a fourth as steeply dipping as that would indicate. That shows you how very flat it is.

Now, on Exhibit 2, as I mentioned, I don't like at this stage to say that these are definitely the tops of the formations that has been indicated. I'd like to point out how these points were arrived at. I have correlated seven or eight different points through the fields that we could use for formation boundaries, but what I have taken, for instance, as top of the Morrow, or I prefer to call it the Morrow marker, it is more or less a compromise between the reported Morrow tops that we have gotten from operators in order to come to some point that says all conditions we have. For instance, I have a reported Morrow pay zone immediately below this marker in the Monsanto No. 4 Burton Flats

Section 34. Therefore, if that is, in fact, Morrow then my marker must be above that point. So, all of these markers that I have chosen satisfy the conditions that the pays we have recorded did fall in the intervals with the eight determinations I have given them.

Now, as an example of the impossibility of using the reported tops, I have indicated just here -- you can see it on the sections that I have passed out, how just as three wells, the Monsanto No. 3 Flats in Section 3, the Gulf No. 1 Surf Federal in Section 10 and the Coquino Well. Those three will suffice to see what I'm talking about. You'll notice there have been, for Atoka there have been a number of different fixes for Atoka. I have colored them in there, but you can see the Coquino Well there above my marker. Then, the Gulf Well, it's below the marker. In the Monsanto Well it's far below my marker and over here is the old Humble dry hole, it is almost what I have called it. So, see, it's sort of a compromise. This applies to all of the other points that I have used. I do want to make that clear at this point. We may have to come back and change these points based on correlations, some of which have not been done yet.

Q The main purpose in your pick is to show the

relative position of the top of the marker. I have used correlative points you can map on those horizons so that we won't change structural position any if we do move them somewhere.

Now, if I may go to Exhibit 3, which is my big section up here. I correlated these points as well as I can lithologically. That is, I don't necessarily mean to imply that the producing sections, for instance, over here in the Coquino Well, which I have labelled, for instance, No. 3. I have indicated that known to be in the Humble Well in Section 15 by this coloring of the gamma rays curves. I don't mean to imply that is a potential pay in that well. I'm merely saying that that is the equivalent lithologic unit and that applies to all of these where I -- you'll note they're not all everywhere present, but that's the purpose of coloring all these in throughout the field. I may have even over simplified. There may even be more than the 13 that I have indicated that I have just lumped together. That's the best job of correlating those jobs you can do.

As far as this section is concerned, as far as this display is concerned, there are no two wells completed in precisely the same zones. I have put these potentials -- after their potentials -- we're talking about Morrow now. I

have put that on the bottom of each one of these and my next Exhibit is designed to include all wells in the field. We have more complete coverage and in there you will see that there is no relationship to the net feet perforated and the potential or to the specific zones that have been perforated and the potential, nor to the number of zones and the potential, nor between the structural position and the potential of that well. And if I may go to Exhibit 4 then, you'll notice that the --

Q (Interrupting) Before we discuss this, would you explain the significance of these lines to each of the wells?

A Yes, those colored lines merely connect the data of the well to the position of that well structurally and location in the section. It's just a visual aid. That's all it is.

Q All right.

A I have not connected all of the data to wells. You'll notice I've skipped a few. I have taken the most varying position and connected them to wells and with the others, it is tabulated there, but I didn't intend to discuss that particularly. There was nothing outstanding about them, you see. They are more or less, you might say, average wells. But you'll notice that the well with the lowest shut-in tubing

pressure, that's at the top of the list. That's in Section 33, Unit 8. The well with the lowest shut-in tubing pressure there is an offset to the well with the highest potential over in Section 34.

The well with the lowest -- pardon me -- with the highest tubing pressure, that is "B" Unit in Section 8, over to the furthest westerly location in the field, has very little low potential, relatively low potential. It has the maximum amount of footage perforated -- pardon me --not the maximum, but almost as high as any of them. The well with the highest tubing pressure, that's what I was talking about at each side of the field.

Now, if you look at the structural position of the wells, if you start with the "G" unit in Section 34, that is, of course, the highest potential and it's highest in terms of mcf per pay zone and also the highest in mcf per foot perforated. It is also structurally the highest well. So, we could say we have structural trap, but if you go to the very next well in terms of the potential -- the orange circle there in the Unit "K", Section 10, in terms of mcf per pay and again we have only two zones perforated as we did in the previous well. That is the lowest structural well in the field.

Now, this is designed to show that there is no relationship between structural position and the potential of the well. There is no relationship to either the number of pays included in the potentional nor specific pay zone I listed and numbered for each well, also. There is no relationship there. We have only two wells that are actually completed in the same zones and that would be Unit "G" of Section 34 and in Zones 7 and 8 and Unit "I" of Section 4, 21, 27. Both are completed in zones 7 and 8 and yet one has the highest potential, both absolute and in terms of mcf per pay and mcf per perforated. The other one is next to the lowest.

These are the zones I'm talking about here.

Q Could you explain that, the term you used mcf per pay?

A Yes. This is strictly a statistical thing I have taken. That is simply the number of pay zones divided into calculated absolute open flow.

Q All right. So, in other words, from these four Exhibits, you have determined that there is -- would you say that there is very little structural differentiation across the pool between the wells?

A There is, I believe, exactly 118 feet of difference

between the highest and the lowest producing wells on the base of the Morrow. I couldn't use a top of pay obviously, because it jumps around so badly. We only have a structural difference then of about 118 feet. If you want to consider individual zones even, that's your maximum difference that you'll have structuraly wise from the lowest to the highest, and I think this cross section makes it plain that zones are discontinuous. They come and go. There is even a possibility that some of them could be productive that have not been perforated.

Q Are these zones that you have designated on your stratigraphic cross section separated from the other zones stratigraphically?

A Yes, there are barriers between them. That is correct. We're talking here mostly in terms of sandstones and we have essentially shales separating those different zones.

Now, there is one characteristic which we cannot discuss, we don't have the data to discuss with and that is that the potential could be influenced by the drilling and the completion. We heard testimony in other cases where it depends on drilling fluid and a lot on completion and so on, but I have not even attempted to evaluate those conditions.

We simply didn't have the data to do it with.

Q So, in other words, these Exhibits show that the pay zones in the Morrow formation designated in these wells are discontinuous, that the recovery from these pay zones in any two wells differs and that pay zones come and go between the wells and are not present in some of the wells, are present in others and are present in different combinations in the wells?

A That's right. I was trying to find if there was one zone or several zones that were more prolific than others. It's possible some of these zones are contributing very little to the production, so, I was looking for some combination of zones that would give you a relationship perhaps to the potentials and so on. But you will find here there are five wells actually producing from Zone 5. That's the most wells that have the same zones completed in them and yet the potential ranges from 1,000,442 mcf to 37 and a half million. That's a tremendous spread. Obviously, I had to look for something else besides that Zone 5. Three of the wells produced from Zone 4, also. We have exactly the same spread in the potential. Two of them also produced from Zone 6 and the [illegible] of these five wells produced from Zone 7 as well.

That illustrates the impossibility. I have already completed Zones 7 and 8, which are both completed in two wells and it's a tremendous difference between those.

One other feature, it's amazing how little spread you have between the pressures of all of these wells through the highest to the lowest. They range from 3508 to 3785, which is a difference of 177 pounds. That's the maximum range.

Q So that would indicate also that the differences between these wells are caused by stratographic variations?

A That's right.

Q Based on the geological studies you've made, could you render an opinion as to the practicability of estimating total reserves under the subject pool by a method of net feet of pay per volume?

A I haven't attempted to log analysis in this case, because the conditions that I have discussed indicate to me it would be completely futile. I don't see how you could possibly do this on the basis of data we have and on the basis of log data, either reserve calculations on each well or for the total field.

Q In other words, you don't think that it would be practical, based on geologic data, to either estimate total

reserves under the pool or the reserves underlying the different tracts in the subject pool?

A I think any attempts to do it would be completely futile.

Q All right. Do you have anything further to add?

A I think that will cover the Morrow unless there are some other questions.

(Whereupon, a discussion was held off the record.)

MR. STAMETS: That concludes your Direct Testimony as relates to Case 5111?

MR. DERRYBERRY: Of this witness, yes.

MR. STAMETS: We will Cross Examine this witness concerning Morrow formation and then he'll continue his testimony in relation to this Strawn formation.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Ulvog, you mentioned a need for regional correlation, as you see this situation now, such regional correlation would not really affect what we're discussing here today?

A No. I have looked at wells outside of the field in all directions and just made some tentative correlations

through this area and I don't find any reason to believe that we are wrong here. I think we're in the ballpark. Even if we do have to make a change, we're going to wind up with a say, top of the Morrow, pretty close to where it is depicted here.

Q If I understand your testimony rightly, we have here again a typical Morrow situation with producing sands or stringers which vary greatly between wells as to quality, porosity, permeability, thickness and which vary in aerial extent?

A That is correct.

MR. STAMETS: Are there other questions of this witness relative to the testimony on the Morrow Pool? If there are none, you may proceed with your Direct on the Strawn.

DIRECT EXAMINATION

BY MR. DERRYBERRY:

Q Mr. Ulvog, will you please refer to your Exhibit No. 1?

A Yes, it was agreed that we would combine these cases and so I'll just use the Exhibits that I have. The Strawn formation, or at least what we consider to be Strawn, is shown on these structural maps. Exhibit 1 will still

suffice. We have just four Strawn producers in the field, incidentally.

On this Exhibit 1, I have indicated as the legend shows, the wells that are singly completions as well as the dual completions. They are all Morrow completions and the one well in Section 3, or north of Section 3, with green letter "A" is an Atoka-Morrow dual completion.

The southern most Monsanto well in Section 34 with a blue "S" by it is a Strawn-Morrow dual. The southern most well in Section 3 with a small blue "s" by it is a Strawn-Morrow dual.

The two wells in Section 10 are Strawn-Morrow dual completions, but so for the Strawn there are four producers, that four I just mentioned.

Structure wise, I'm still using the Morrow, the base of the Pennsylvanian in other words, for structural control. The top of the Strawn structure wise would not vary a great deal from this except we would perhaps wipe out any closures that might be there, because the overall Pennsylvanian Section from the -- what I'll call top of the Strawn, which I'd rather refer to as the Strawn marker, from this point --

Q (Interrupting) You are referring to Exhibit 2 now?

A Yes. The thickness of overall Pennsylvanian from the top of the Strawn to the top of the Barnett thickens slightly as you go down dip, so the result is that the lowest structural position of the pay zone of the Strawn well is the highest well over here on the Barnett, but we're only talking about 20 feet of variation in sub-sea elevations at the top of the pay zone of the Strawn. 21 feet, I think is the maximum difference in sub-sea elevation. So, you see it's very flat.

Otherwise, that map will suffice for structural control.

Q You are referring to Exhibit No. 3?

A Yes. Pardon me. No, I was referring to Exhibit No. 1 for the structural position. I was pointing out where those zones fall in the Strawn Section on Exhibit 3. The structural cross section here, Exhibit 2, still will suffice to show that the top of the Strawn is essentially similar to the top of the Barnett.

Q In other words, it runs more or less parallel?

A More or less. On Exhibit 3, I have shown -- I've attempted to -- I've worked at Strawn Zone. It's very nearly in the center of the middle of the section that I have called Strawn, half way roughly between the top of the Strawn and the

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top of the Atoka and I have attempted to break it down on the map as well as I can and I see it as being two zones, if you will. I haven't bothered to indicate their approximate position over here. It's possible that we are talking about a zone in the lowest structural position of the Strawn being in Unit "N" of Section 34 South, 28 East. It's a single unit. It's possible that that unit is simply breaking up as you go down dip on Figure 1 or slightly up dip on the Strawn. It is breaking up into two separate zones. We see that maximum division occurring over here in Humble dry hole in Section 15. Almost that separation occurring in the Unit "K" of Section 10, but we have two different zones occurring over here so I treated it as two zones in an attempt to see if perhaps one or the other were the best pay zone which leads me to an Exhibit 4. Here I have considered all of those Strawn wells. Incidentally, those four Strawn producers are shown on both Exhibits 2 and Exhibit 3. But I have a table here to show the relationship, if any, between the structural position, the potential, the shut-in tubing pressures, the total feet perforated and in the case of the Strawn, we also have the condensate produced in all of the producers so I have even considered the condensate.

Q Just for convenience, could you designate which

wells on Exhibit 4 are Strawn producers?

A Yes. Unit "N", Section 34, 20 South, 28 East; Unit "V", Section 3, 21 South, 27 East; Unit "C", Section 10, 28 South 27 East; Unit "A", Section 10, 21 South, 27 East. Those are the four producers and that's from north to south.

Q Now --

A (Interrupting) Pardon me. The Exhibit 4 that you are looking at deals with the Morrow.

Q So, we do have a --

A (Interrupting) Oh, we have a different tabulation for the Strawn for the simple reason that those are Morrow pays only.

Q All right. So, we do have a different Exhibit 4?

A This is a different Exhibit 4. We are dealing with a different pay zone and different wells.

Q Do you have any more copies?

A I haven't completed them. I will do so, however. If I may have just a second, I'll give you another.

(Whereupon, a discussion was held off the record.)

A This is simply another comparative analysis similar to what I did with the Morrow, statistical and since this is very flat, about 20 feet total variation in structural position,

I haven't really given a lot of attention to structure, but I have indicated where the top is on this table, in case you're interested.

The lowest structural position at the top of the pay zone, incidentally, when I say top of the pay zone is Strawn, I'm talking about the top of the highest pay. The difference there is, I think, exactly 24 feet from the highest and lowest.

The lowest structural position occurs in the Unit "N" of Section 34. That's the well with the highest potential. It is also the well with the lowest shut-in tubing pressure.

We got the lowest -- I mean to the highest structural position which occurs in Unit "V" of Section 3, 21 South 27 East. That's the smallest amount of total pay perforated. It's quite low potential. It has the highest amount of condensate, the highest percentage of condensates. The well with the greatest footage perforated occurred in Unit "C" of Section 10 where both of these zones are completed. That well has the lowest potential of all. The well with the lowest amount of condensate and the highest shut-in tubing pressure is the southern most well in Unit "K", Section 10, 21 South, 27 East.

Now, if you'll look at the chart, you will see that you cannot relate the minimums of foot perforated to tubing pressure or potential or barrels of condensate or anything else. You will see that I have circled the maximums with red and the minimums with green. I find no relationship here.

Q Would this indicate that there are stratigraphic variations in the pay zone or zones that result in differing recoveries or different potentials from the well?

A Very definitely. We are dealing here essentially with carbonates whereas in this case of Morrow, we are dealing with sandstone. The carbonate materials vary tremendously in the porosity and permeability. They become shalely and thereby lose their permeability. They are not continuous, as you can see, and I don't know how you are going to predict where they will occur. They come and go, because of changes in the lithology. The cleanliness of the carbonates, if you please.

Q So, that while there are not a great number of pays in the Strawn formation, the producing characteristics of the pay zone or zones that are present in the Strawn do vary significantly between wells?

A Varies tremendously.

Q And those variations are not based on structure?

A That is correct. We are dealing with stratigraphic traps.

Q Based on geologic evidence, which you have examined can you form an opinion as to the practicability of estimating total reserve underlying the Burton Flats-Strawn Gas Pool based on net feet of pay and porosity?

A No. I don't -- I wouldn't say that you can't make an estimate, but I feel that they would be quite useless for the simple reason that we do not know the extent of each one of these zones. There is no way of predicting that.

Q This would also be based on the limited number of wells?

A Yes, we do have those four wells. We do have limited data. That's correct.

Q By these same data, would you find that it would be practicable or meaningful to make estimates of the reserves underlying these specific traps in the Burton Flats-Strawn Gas Pool?

A I personally don't feel that that would be meaningful to do a log analysis, reserve calculations and so on. I don't believe it would be meaningful, no.

Q Do you have anything further to add?

A No, I think that covers it.

MR. DERRYBERRY: Mr. Examiner, we're finished with this witness in this case.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Ulvog, I note from your Exhibit No. 1 that the Strawn Wells that are producing are in a relatively narrow north-south band and that there are no producing Strawn Wells lying east or west of this band. Would this make it difficult or impossible to develop the really good or viable isopach map on the Strawn?

A I believe it would.

Q On the Strawn pay, I should say.

A I looked at that unit and comparable to this pay zone or these two pay zones, if you wish, in all of the wells in the field, I would hesitate to make any predictions as to where these pay zones might be. You could have some additional pays in wells that have already been drilled, but I'm not the one that's going to say that definitely will produce.

Q Based on the information we have here, you cannot predict whether the Strawn formation is productive out into, say, the west half of the west half of Sections 11, 21, 27 or into the east half or east half of Section 9, just exactly

where does it go?

A There is no way you can predict it. You can have an offset -- well, you do have an offset. A number of these producers that simply do not have that zone developed to reservoir conditions. So, you can offset any of these Strawn producers and absolutely have no Strawn pay. Yet, you could drill one offsetting a well without that zone developed and have a fine pay.

Q Based on the productive capacities of the wells and the logs, it looks like there are significant variations with wells in the Strawn?

A Definitely.

Q You would anticipate that there would be differences in pay between the wells in section line as well?

A Very, very much so.

Q This would make it difficult, if not impossible, to determine the amounts of gas and condensates in this pool at this time, or under any particular trap at this time?

A That's correct.

Q Are there any other questions of this witness relative to the testimony as to the Strawn Pool? There are none. Would you like to offer your Exhibit?

MR. DERRYBERRY: I would like to tender Commission's

Exhibits 1 through 4, Morrow case and 1 through 4-S for the Strawn case.

(Whereupon, Commission's Exhibits 1 through 4-S and 1 through 4-M were marked for identification.)

MR. STAMETS: Are there any objection to these Exhibits? They will be admitted into evidence.

(Whereupon, Commission's Exhibits 1 through 4-M and 1 through 4-S were admitted in evidence.)

MR. STAMETS: Anything further from this witness?

MR. DERRYBERRY: No.

MR. STAMETS:: You may be excused.

(Witness excused.)

MR. DERRYBERRY: At this time I would like to clarify that these cases are consolidated only for the purpose of procuring evidence and I would like to make sure that the evidence for the Morrow case is distinguished from evidence for the Strawn case. We don't intend evidence presented in one case to support any findings which I have made in the other case.

MR. STAMETS: I'm sure that the Orders based on testimony here will reflect that and the record should

adequately show that information at this time.

You may call your next witness.

MR. DERRYBERRY: I would like to call Mr. Daniel Nutter. I would like to point out that we'll be following the same foremat with Mr. Nutter that we did with Mr. Ulvog. We'll present all the Exhibits and testimony for the Morrow and then have Cross Examination and then present the Exhibits and testimony for the Strawn.

DANIEL S. NUTTER

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

DIRECT EXAMINATION

BY MR. DERRYBERRY:

Q Would you please state your name and position for the record?

A Daniel Nutter, Chief Engineer for Oil Conservation Commission.

Q How long have you been with the Commission?

A I've been with the Commission a little over 19 years.

Q Have you previously testified before the Commission and had your qualifications made a matter of record?

A Yes, sir, I have.

MR. DERRYBERRY: Are his qualifications acceptable?

MR. STAMETS: They are.

Q Do your duties include the study of oil and gas

reservoirs in the State of New Mexico?

A Yes, sir, they do.

Q In connection with those duties, is it also among your duties to study various gas reservoirs and make recommendation to the Commission concerning the needs for the prorationing gas reservoirs?

A Yes, that is among my duties.

Q What are the principal factors the Commission considers in determining whether gas prorationing is necessary?

A The Commission has four basic parameters for determining whether to institute gas prorationing in any given gas pool. The first of these is whether the producing capacity of the reservoir is in excess of the apparent market demand for the reservoir. The second parameter is whether there is in the gas pool more than one purchaser. The third parameter to consider is whether there are non-standard proration units in the pool, that is, units which contain either more or less acreage than the standard units for the pool. The fourth basic consideration is whether there are unorthodox locations which have been approved in the pool and which have penalty factors applied them them becase of their unorthodox location. Those are the four basic parameters that the Commission considers.

Q In line with your duties previously expressed, have you made a study of the Burton Flats-Morrow Gas Pool in Eddy County, New Mexico, in light of the four principal factors of prorationing you have just mentioned?

A Yes, sir, I have made a study of both pools in respect to these four basic considerations.

Q Based on your study, which of the four factors are not present in that pool?

A Well, two of the factors are very obviously present in the Morrow Gas Pool. First, that there is more than one purchaser. The Burton Flats-Morrow Gas Pool has three purchasers that are physically connected to the wells. Transwestern Pipeline is in the pool; Southern Union Gas Company is in the pool; El Paso Natural is in the pool, and it is my understanding that certain acreage has been dedicated to the Llano Pipeline. So, we have four purchasers in the Morrow Gas Pool and we have Transwestern, Southern Union and El Paso in the Strawn Pool, so, we've got a least three purchasers there.

Q Are there any other factors that are --

A (Interrupting) Then in the Morrow Gas Pool, we have two wells. One has 275 acres dedicated to it, that being the Burton Flats Unit Well No. 2, in Section 2, and

one which has 277.45 acres dedicated to it, that being the Miller Federal No. 1, Section 3. All of the proration units in the Burton Flats-Strawn Pool are standard size.

Q Then the remaining units in the Morrow Pool are 328 acres?

A All of the remaining units in the Morrow Gas Pool are standard 328-acre units as far as I can determine from the plat.

Q All right. So, two of these of the four factors are obviously present. Do you know of any other factors that are also present?

A There are no penalized locations in either of the pools, so, this leaves one of the four remaining factors to be determined. That is, whether the producing capacity of the pool is greater than the apparent market demand.

Q Do you have any Exhibits to illustrate this third factor?

A Yes, sir. The Exhibit is on the wall. It's been -- for Morrow Gas Pool it has been identified as Exhibit "C", Case 5111. For the Strawn Gas Pool, it has been identified as Exhibit "C", Case 5112, and I have three preliminary Exhibits which I would like to go into before getting into that Exhibit -- or two preliminary Exhibits.

Q All right. Have those been designated?

A The first Exhibit entitled "Well Data Burton Flats-Morrow Gas Pool" and it should be marked as Exhibit "A", Case 5111.

(Whereupon, Commission's Exhibit "A", Case 5111 is marked for identification.)

A The next should be marked as Exhibit "B", Case 5111, and it's entitled, "Estimated Pipeline Delivery Capacity of the Wells Connected as of December 31, 1973, Burton Flats-Morrow Gas Pool."

(Whereupon, Commission's Exhibit "B", Case 5111 is marked for identification.)

Q All right. Would you like to explain the significance of these Exhibits in order?

A Yes, sir. The first one, the well data sheet, shows all of the wells that are completed in the Burton Flats-Morrow Gas Pool at the present time. There are 11 total wells in the pool. The wells are listed, the operator of the well is listed, the lease name, the well number, the location, the date of completion, the date tested, the potential of the well, the mcf per day, the shut-in tubing pressure,

the purchaser for those wells which are connected and the date of connection. You'll note that in the pool the deliverability of the well, the potential -- this is the calculated-absolute open flow varies from a low of 1,442 mcf per day to a high of 60,878,000 mcf per day. There is a correction to make on this Exhibit. For shut-in tubing pressure you will note that pressure is listed as not available for the Gulf Surf Federal Well. I have obtained that pressure now and it's 3,068 pounds. So, you can substitute a 3,068 for the NA there on that Exhibit.

Where we do have the range of pressure in the pool, ranging from 3,068, low, to a high of 3,785 pounds. Again, we note that in the second to the last column on the right, that there are multiplicity of purchasers in the pool. We also see that the first connection in the pool was made July the 12th, 1973, and the most recent connection that we have data on was made December 15th of 1973.

Now, if we go from Exhibit 'A', Case 5111 to Exhibit 'B', Case 5111, the estimated pipeline delivery capacity of the wells that were connected as of December 31, we find that we have eight of the 11 wells that are shown on Exhibit 'A'. We see that the calculated-absolute open flow again varies from 1,442 low to a high of 60,878,000. We also

have determined our estimated pipeline delivery capacity. Now, this pipeline delivery capacity has been determined by a combination of several factors. I have talked to engineers with the companies that operate these wells, found out what they think of the well, ~~get~~ they are acquainted with them, what they believe these wells will deliver into the pipelines under existing pipeline pressures, which by the way, go as high as 930 pounds in the pool. I've also used actual producing capabilities of the wells into the pipeline, which shows not necessarily what the maximum capability is, but it shows what the actual capability is. If it's done, it can do it. I've also just used some of my own understanding of conditions in the reservoir and pipeline conditions in the area to make these estimates of pipeline delivery capacity. You see, I have a low there of 1,500 up to a high of 20,000,000 for the big 60,000,000 well. This is, again I say, is not necessarily absolute maximum that these wells would deliver, but because some of them may exceed the figure I have given, but it is a figure that I'm certain these wells can deliver into the pipeline. You'll note in the case of several wells there, the 2F2, the 1B3, and the 1G3, that the pipeline delivery capacity is greater than the calculated absolute open flow.

I know that in some of these wells there is a certain amount of water produced. Apparently, production is good for the wells, the relative permeability of gas to the water is improving and the wells are delivering more and more as they stay on the line longer. Some of these wells are improving with age and the delivery capacity exceeds the original calculated-absolute open flow. So, with the background information that we've gotten from Exhibit "A" and Exhibit "B" from Case 5111, we'll go to Exhibit "C" in Case 5111, which I have labelled, "Burton Flats-Morrow Gas Pool Availability Delivery Comparison."

This has a scale to the left of thousands of mcf per day, running from zero up to 140,000. On the right there is a scale from zero to 10. This is simply a well count. It shows that at the beginning of 1973 there was one well completed in the pool. At the end of 1973 there were 11 wells completed in the pool. There is a dotted line. That line is labelled "Number of Wells Completed". There is a dotted black line here which is identified as "Number of Wells Connected". This means the number of wells that were connected during the month. So, we show that during July of 1973, four wells were connected. There were two more connections made in October, and one more connection made in

November, one more connection made in December. So, we now have a total of eight wells connected in the pool.

I have also put on this Exhibit the calculated-absolute open flow potential of the wells that are completed in the pool. When we started the year off, we had the one well and a total delivery capacity of about 27-and-one-half million a day. As the new wells were completed this calculated-absolute open flow of the pool has increased until now at the end of 1973, we have a total calculated-absolute open flow potential for Burton Flats-Morrow Gas Pool of about 141,000,000 a day.

I have taken these figures that were shown on Exhibit "B", my estimate of the pipeline deliverability, the estimated pipeline deliverability, and put it on this Exhibit and labelled it "Estimated Delivery Capacity of Wells Completed" so that we see that we have gone from the original well, which is completed in the first of the year and had a deliverability capacity of 17-and-one-half million. We have now the deliverability capacity for wells completed in the pool of about 86-and-a-half-million cubic feet of gas per day.

Now, that's the solid blue line. I have taken and put another blue line on here which is the estimated

delivery capacity of wells that were connected during the entire month for any of the given months after connections have been made. We see that we have at the present time for wells that were connected all of the month of November, 1973, we have an estimated deliverability capacity of 36-and-one-half million per day.

For the month of December we have an estimated delivery capacity of 52,000,000 cubic feet of gas per day. The green line shows what the actual takes from the pool have been. I don't have the December production figures. I was hoping I would get those in time for the Hearing so I could add one other line to this graph, but November is the latest month I have available and takes from the pool for wells that were connected for the entire month was a little over 29,000,00 ay. So, where we have for the month of Nove ber a total of 138,000,000 calculated-absolute open flow, a total of 83-and-a-half million pipeline delivery capacity for all wells in the pool, a total of 36-and-a-half million for the wells that were connected for the entire month of November. We had a total take from the pool of 29,000,000 from wells connected for the entire month. By those I have determined that we do have the capability in the pool in excess of market demand, because there is no

restriction other than the physical capacity of the pipelines. There has been no restriction by the Commission whatsoever on takes from the wells so we have to consider that the physical -- that the operators within the pool either limit this production or the market demand itself limits the production, and I believe that the capacity of the pool is greater than the capacity of the pipelines to take the gas or the necessity of the pipelines to take the gas.

Q So, in other words, past production should be treated as market demands?

A Yes, sir.

Q All right. So, now we have three of the four factors that the Commission considers in determining whether or not to institute prorationing?

A Three of the four factors are present in this pool.

Q On the basis of the presence of these three factors, do you recommend prorating the Burton Flats-Morrow Gas Pool?

A Yes, sir, I do.

Q If prorated, when do you recommend the prorationing to become effective?

A I wouldn't recommend prorationing become effective until the beginning of the next standard prorationing period which will commence April the 1st, 1974.

Q All right. You have heard previous testimony from Mr. Ulvog concerning the existence of these stringers within the Morrow formation in the Burton Flats Pool. Do you agree these stringers do exist?

A Absolutely.

Q That they are discontinuous?

A Yes, sir. There is no doubt in my mind whatsoever that the Morrow formation is interlaced with many stringers, some of which may or may not be in communication with each other. Some of these stringers exist in one well only as Mr. Ulvog has shown. Some of them proceed to adjacent wells, some of them simply just fade on between two adjacent wells and reappear in a third well, on over some distance, but there's no question that the Morrow formation is composed of many individual stringers which may or may not be in communication, which they probably aren't.

Q Mr. Nutter, do you have any data to support this last conclusion you make as to the discontinuity of these stringers in the pool?

A Yes, sir. I would refer to what has been identified as Exhibit "D", Case 5111, entitled "Burton Flats-Morrow Gas Pool, Eddy County, New Mexico, Shut-in Tubing Pressure." We'll see that we do have pressures identified -- we have the

wells identified and the pressure, the shut-in tubing pressure is that reported on the test. I don't have the number of hours that each one of these shut-in pressures followed, but some of them were just the hours shut in is a blank. For the ones that are available, 24 hours is the minimum time. I think 24 hours would probably be the period of time that the wells were shut in that the time is not given.

We do see that we've got a range from 3,785 to 3,068, which is a total of 717 pounds maximum differential between high pressure and low pressure. It happened that the well, that is the low well, offsets the high well so far as pressure is concerned, or I should say, the low well offsets the next to the high well insofar as pressure differential is concerned, but the difference between the next high well and the high well is only one pound. So, we have within one pound the total differential in pressure that's between two wells that are only 1,320 feet apart. Burton Flats Deep Unit No. 3 located in Unit "V" of Section 3 has a shut-in pressure of 3,784. The Gulf Surf Federal in Unit "C" of Section 10 directly south of that well has a shut-in tubing pressure of 3,068. You have a differential of 716 pounds between those wells. I believe that further supports Mr. Ulvog's contention that this reservoir is

producing from a number of variable stringers, that the capacities of the stringers is great in variation and also that pressure differential between the stringers is great in many cases.

Of course, we do have wells in there that have had almost similar shut-in tubing pressures, but we also have some wells which are producing from the same zones that are nearby to each other, but essentially this does demonstrate that there is a variation in the pay throughout the pool.

Q All right. Based on your testimony and upon the testimony of Mr. Ulvog, what conclusions do you draw as to the characteristics of this pool?

A Well, to me, the most obvious thing is that you can't use pour volume or the acre feet of pay method for determining the reserves under a given tract in this pool, because of the existence of these stringers. You may be able to determine the feet of pay, but we darn sure can't determine acre feet of pay, because no one knows how many acres any of these stringers covers. So, I believe this is just about the existence of these stringers and the fact that they come and go just about eliminates the possibility of determining reserves under a given tract.

Q How many different ways are there of calculating or determining the reserves?

A There's only two basic means of determining reserves in a gas pool. One is the pore pour volume method in which you find out what the available space in the reservoir is that can hold gas, how much of that space is occupied by water or some other substance, what the pressure on the gas is in that available space and simply calculate the volume of gas that is in that pore pour volume of the reservoir. Now, as I say, you can't determine that in this pool. It's absolutely impossible to make a pore pour-volume calculation of wells in the pool and to make a reserve determination for a given tract or for the pool as a whole. The other means of determining reserves is by the pressure decline method. Now, pressure decline won't give you the amount of reserves under a tract at all. It will simply give you the amount of reserves that are available to a well, but that doesn't mean that those reserves are under that tract. They may be coming from another tract or they may be coming from just a portion of the tract that the well is located on. It's just simply a determination of the amount of gas that is in communication with the well bore and as the pressure declines, you can't extrapolate the production curve and, incidentally,

the pressure decline and determine how much gas that well will produce. You can do this on a pool basis by taking all of the wells in the pool and determining the pressure decline on them and adding them up and determining the amount of gas that the pool will produce, but it's too early in the life of the pool to determine that in this case. So, you can't, as I say, determine it under the tract, so, I don't think that determination of reserves by pressure decline is applicable in this case either.

Q All right. So, in other words, you believe that it's impossible to determine the total pool reservoirs on the basis of the pressure decline method or upon the basis of net feet of pay or pour volume?

A That is correct. I don't believe you can determine it by ~~pour~~ pore volume. I don't believe you can determine it by pressure decline.

Q On the basis of this, what method would you recommend for the allocation formula in the Burton Flats-Morrow Gas Pool?

A I think the most equitable means of allocating the production is on the one thing that we can measure and that's the acreage assigned to the well and I would recommend the straight acreage formula for this pool.

Q All right. You are aware that the statute setting for the Commission's jurisdiction in Section 65-3-29 of the New Mexico Statutes Annotated defined correlative rights as the opportunity afforded so far as it is practicable to do so, the owner of each property in a pool to produce without waste his just and equitable share of the oil and gas or both in the pool, being an amount so far as can be practicalby determined insofar as can be practicably obtained without waste substantially in the proportion that the quantity of recoverable oil and gas, or both, under such property weighs to the total recoverable oil or gas, or both, in the pool until such purpose to use its just and equitable share in the reservoir energy. Do you believe that a straight acreage formula for allocating reserves within this pool for allocating allowables in this pool would comply with the statute?

A Yes, sir, I believe that insofar as it is practicable to do so. If we allocate the reserves among the wells and a proportion of acreage that the well has to the total acreage in the pool, that we will have complied with that portion of the statute that you've read insofar as it is practicable to do so.

Q Will you briefly summarize your recommendations

relating to prorationing of this pool?

A Yes, sir. I would recommend that, as I stated before, that prorationing be instituted as of April 1, 1974, that a straight acreage formula be utilized and that acreage factor should be applied to those units which have more or less than the standard 320-acre unit for the pool.

Q Do you have anything further to add to your testimony?

A Yes. I have prepared one more Exhibit, which should be identified as Exhibit "E", Case 5111.

(Whereupon, Commission's Exhibit "E", Case 5111 is marked for identification.)

A This Exhibit is labelled, "Non-marginal-Marginal Status of Wells Under Assumed Market Demand Conditions". Now, I recommended that prorationing be instituted. Let's see what the effects of prorationing would be on the wells in the pool. We have the eight wells that presently have pipeline connections. Those wells are identified on the left column under the term "Well Designation". We next have the estimated pipeline delivery capacity for those eight wells. Then, we have a total of five different market demand conditions tabulated. First market demand is 30,000,000 per

day and we see under the 30,000 per day that we would have three marginal wells, that the top unit allowable for the pool would be 3,631 cubic feet mcf per day. There is one penalized well there. It would be 3,978, so four wells would receive 4,631 mcf per day and one well would receive 3,978 and the three marginal wells would be producing at capacity for a total of 30,000,000 a day market demand. If we increase the market demand to 40,000,000, we see the top allowable is 6,867 cf per day and that we now have four marginal wells. If we increase the monthly demand to 50,000,000 per day, and I think this is probably about what it's going to be when the pipelines get everything in order and functioning properly, it will be around 50,000,000 a day. We see that we have three remaining top allowable wells and that the allowable for each of these wells is close to 10,000,000 a day. We've got three wells that can make that and the five remaining wells, which currently have connection, would receive a marginal allowable totalling 21,000,000. The three top allowable wells would get 29,000,000 to come up to 50,000,000 total. I've also taken it out to 60,000,000 and 65,000,000 a day and the setup of the wells doesn't change, only the allowable for the top allowable wells changes. This is the effect that prorationing would have under the different market demand conditions.

Q Do you have anything further?

A Yes, sir. We have also advertised that this pool should be extended. I would recommend that the Burton Flats-Morrow Gas Pool be extended to include the South half of Section 34, Township 20 South, Range 28 East and the North half of Sections 8 and 9 and all of Section 10, Township 21 South, Range 27 East.

Q These are within one mile of the present pool limits?

A Yes, sir, they are.

Q Anything further?

A No, I have nothing further.

MR. DERRYBERRY: I have nothing further of this witness and I would like to tender the Commission's Exhibits "A" through "E".

MR. STAMETS: Any objection to the admission of Commission's Exhibits "A" through "E"? They will be so admitted.

(Whereupon, Commission's Exhibits "A" through "E", Case 5111, for identification are admitted in evidence.)

MR. STAMETS: Are there questions of this witness

relative to his testimony concerning the Burton Flats-Morrow Gas Pool? If there are none, you may proceed with your testimony concerning the Burton Flats-Strawn Gas Pool.

DIRECT EXAMINATION

BY MR. DERRYBERRY:

Q In connection with your duties connected with studying gas reservoirs in the State of New Mexico, have you made a study of the Burton Flats-Strawn Gas Pool?

A Yes, sir, I have.

Q Have you summarized the results of this study in the form of an Exhibit?

A Yes, sir, I have.

Q Do you like to take those Exhibits in order and explain their significance?

A Yes, sir, I will. As I stated earlier, in the Morrow Gas Pool it was obvious from the beginning we had two of the four factors present. We had two pipe -- we had more than one pipeline and we had non-standard units. Now, in the Burton Flats-Strawn Gas Pool, the first obvious reflections is that we only have one of those four factors present, the existence of more than one purchaser in the pool, because there are only four wells and each of the four wells is on a standard-320-acre unit and there are no

penalized wells at all, penalized unorthodox locations. We only start off with one factor, more than one purchaser. So, the study was to determine whether you have production capacity in excess of market demand. Well, we started off two Exhibits here. The first of which is identified as "Well Data, Burton Flats-Strawn Gas Pool" and should be identified as Exhibit "A", Case 5112.

(Whereupon, Commission's Exhibit "A", Case 5112, is marked for identification.)

A The next one is labelled "Estimated Pipeline Delivery Capacity of Wells Connected as of December 31, 1973, Burton Flats-Strawn Gas Pool." It should be identified as Exhibit "B", Case 5112.

(Whereupon, Commission's Exhibit "B", Case 5112, is marked for identification.)

Q Based on these Exhibits, do you find any of the other factors present in the pool?

A Yes, sir. We first take well data sheets, we see that we have listed here the operators, the lease name, and the well number of the four wells, location of each is identified, completion date of each of the four wells is given,

the date it was tested, what its potential is in Mcf per day. This is calculated-absolute open flow. The shut-in tubing pressure, the purchasers that are connected to the wells. We see we have Transwestern, Southern Union and El Paso and the date of connection for each of the four wells.

Exhibit "B" is the determination similar to this that I made for the Morrow Gas Pool in which I listed the four wells, the calculated-absolute open flow and the estimate of pipeline delivery capacity. Again, I used the information I obtained from the engineers that operate the wells that know them, the actual take from the wells and my own knowledge of pipeline conditions and the factors that are present in the pool. I have determined that the 3B3 has an estimated pipeline delivery capacity of 1,700 a day. The 4N34 has an estimated pipeline delivery capacity of 15,000 mcf a day. The 1K10 has an estimated pipeline delivery capacity of 3,000 mcf a day and the 1C10 has an estimated capacity of 1,500 mcf a day.

Now, if we refer to what has been identified as Exhibit "C", Case 5112, we find that the first well was completed in the pool and we have a scale on the left saying paying 1,000 Mcf per day. Scale on the right saying well counting from zero to 10. We find that the first well was completed

in the beginning of April, 1973, and July saw completion of a second well, and there was two additional wells completed in August of 1973, for a total well count at the present time of four.

We've also on this chart put what the calculated-absolute open flow of the pool is, as wells have been completed. We started off in April when we had only one well with a pipeline-delivery capacity of like about 4,500.

As the second well came in delivery capacity went up to 23-and-one-half million a day. At the present time the pool has the calculated-absolute open flow of 5,705, it looks like.

We, also, put -- that was a red line to identify calculated-absolute open flow of wells completed. The next line is a blue line which is identified as estimated delivery capacity of wells completed. We find at the present time since the last wells were completed, we have a total pipeline delivery capcity estimated at 42-and-a-half million a day.

Now, we have placed on here another blue line with little stars on it, which shows the estimated delivery capacity of wells connected during the entire month and we find that in the month of November, the most recent month for which we have production data available, that our estimated

pipeline delivery capacity for those wells that were connected during the entire month of November, the toval capacity was 36-and-a-half million a day. Actual production is also identified on here as pipeline take from wells that were producing during the entire month. We see during the month of November that the pipeline took approximately a little less than 22,000,000 a day compared with a potential for the pool of 36-and-a-half million a day, pipeline conditions.

So, by this, I draw the conclusion that since there were no restrictions placed on the production from the pool by the Commission that the market demand must have reflected what the -- either the market demand or pipeline facilities limited production and that this is less than the capacity of the well to produce. So, I believe that we do have capacity in excess of market demand.

Q So, do you have any other conclusions from these Exhibits that you have presented so far?

(Whereupon,a discussion was held off the record.)

A I believe this gives now two of the factors that we must consider. We have more than one purchaser and we got capacity greater than the market demands for the pool.

Q On the basis of the presence of these two factors,

as illustrated in your Exhibits, do you recommend prorating the Burton Flats-Strawn Gas Pool?

A Yes, I do.

Q If prorated, when would you recommend the prorationing become effective?

A I would recommend that the prorationing not become effective until the beginning of the next prorationing period which will commence April the 1st, 1974.

Q You heard the testimony of Carl Ulvog as to the differing producing capabilities of the pay zone in the Strawn formation due to stratigraphic variations. Do you agree with this testimony?

A Yes, I do. While the Strawn is not composed of as many variable stringers as the Morrow is, there certainly is no continuity as demonstrated by Mr. Ulvog's big cross section up here. There's no continuity of pay across the reservoir and I don't believe that here you would be able to make a determination of reserves under the tract by the pour-volume method either.

Q Do you base upon the information that is available to you, have you made a determination as to the practicability of estimating reserves under the pool and under each individual tract on the basis of pressure-decline method?

A Before I get into that, I would like to refer to Exhibit "D" in Case 5112 and show what our differential on pressure is on this reservoir. We have a low pressure, a shut-in tubing pressure of 2,865. I think that this might be due to some fluids in the well, more in this well, but this is the only shut-in tubing pressure that I have for this well and the low pressure of the pool is 2,865. The next highest pressure in the pool is 3,255. The next highest is 3,415 and the highest pressure recorded for the pool is 3,761. So, we see that we have a total variation from north to south of 896 pounds between the high well and the low well. Now, we have three wells here that line up right in a row and we have a variations between the low well which is 3,255 and this offset well of 160 pounds and between these two wells, offset wells, we have a variation of pressure of 346 pounds. Again, I think that this pressure differential that is existent across the pool would show the lack of communication of all of the stringers in the formation.

Q This would be based on stratigraphic rather than on readily ascertainable structural differentiation in this pool?

A I think that would be a question for Mr. Ulvog rather than I.

Q So, on the basis of pressure data available to you, have you made a determination as to the practicability of estimating pool reserves and tract reserves on the basis of pressure-decline method?

A I think that it is obvious again that we can't use the pour-volume method for determining what our reserves are. In fact, these stringers are not continuous and that there is a pressure differential, we might be able to determine the feet of pay, but not the acre feet, because we can't determine the acres again and I don't believe we can use that method. The other method, of course, for determining reserves would be the pressure decline method. As I stated earlier, you can determine the pressure decline. You can determine the reserves by extrapolating the pressure decline, but you can't determine the reserves under the tract, only the reserves that are available to the well bore. By using pressure decline on the pool as a whole, you can determine the reserves in that reservoir, but not under the given tract. So, I don't believe it is proper to use the pressure decline method of trying to come up with the formula. I don't believe it's proper to the sense to use a pour volume or effective feet of take method for determining the allocation formula in this reservoir.

Q All right. So, in other words, -- well, you just covered it in your last bit. On the basis of the data available to you, what method would you think is appropriate for an allocation formula -- for determining an allocation formula in this pool?

A I think the most equitable means of allocating the production is there is only one thing we can measure and that's the acres in the tract that is dedicated to the well, and I would recommend the straight acre formula for the pool.

Q Do you believe that the straight acreage method of allocation satisfies the requirements set forth in the definition of correlative rights in Section 65-3-29(h) of the New Mexico Statutes?

A Yes, sir, I do. As statute requires that Commission allocate production among the wells on the basis of reserves of the tract compared to the total reserves in the pool insofar as it is practicable, and I believe the most practicable method of doing this would be by giving that well its proportionate share of the allowable on the pool based on its share of the acreage of the total pool.

Q That would insure the protection of correlative rights as defined in the statute?

A In my opinion, it would insofar as it is practicable

to do so.

Q Okay. Would you briefly summarize your recommendations for prorationing the Burton Flats-Strawn Gas Pool?

A Yes, sir, I would. Again, I'll state that I recommend that the pool be prorated, that the effective date of the prorationing be April the 1st, 1974, that a straight acreage formula be utilized and that any units which have more or less than the standard 320 acres dedicated to them would receive an acreage factor in proportions to the variation of their acreage from the standard 320.

Q Is there anything further you would like to add to your testimony?

A Yes, there is. I have one more Exhibit which should be identified as Exhibit "E" in Case 5112.

(Whereupon, Commission's Exhibit "E", Case 5112, was marked for identification.)

Q Could you explain the significance of this Exhibit?

A Yes. Since I have recommended prorationing, this Exhibit is designed to show what the effect of prorationing is. It is identified, "Burton Flats-Strawn Gas Pool Non-Marginal-Marginal Status of Wells Under Assumed Market Demand Conditions" and it shows what the effect would be under given market

conditions, assuming a market demand of ten, eleven and twelve million a day, we see that we have three marginal wells and one non-marginal well. That the marginal wells are going to be producing at their capacity of any of these given market demand conditions and that the increased allowable simply goes to one well that can make it.

Q Anything further?

A Nothing further.

MR. DERRYBERRY: Mr. Examiner, I have no further questions of this witness and I would like to move that Commission's Exhibits "A" through "E" of Case 5112 be admitted in evidence.

MR. STAMETS: Without objection these Exhibits will be so admitted.

(Whereupon, Commission's Exhibits "A" through "E", Case 5112, for identification were admitted in evidence.)

MR. STAMETS: Does that conclude your Direct testimony in this case?

MR. DERRYBERRY: For Case 5112, yes.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Nutter, I may have misunderstood your testimony

relative to your Exhibit No. "C" in this case. I have examined the Exhibit and it would appear that the November pipeline takes would range about 11,000,000 a day, while capacity was about 21,000,000; is that correct?

A I would have to refer to that Exhibit. That is probably the case. There is an error on this. This shows the takes were 22,000,000 a day -- 21,000,000 plus -- and the takes weren't that high. The total takes on my data sheets here for the wells that were connected during the entire month were 328,000,000 divided by 30 was the total take of 10,950,000 a day. That's what I used, this market demand.

MR. DERRYBERRY: Which Exhibit is that market demand reflected in?

THE WITNESS: The market demand is reflected on Exhibit "E".

MR. DERRYBERRY: All right.

MR. STAMETS: Mr. Porter?

MR. PORTER: Mr. Nutter, what did you say demonstrated the capacity of the wells in the Strawn?

THE WITNESS: The total capacity of the wells would be a summary of the figures on Exhibit "B", which would be --

MR. PORTER: I thought you gave the capacity of

36-and-a-half million.

THE WITNESS: There is something wrong with the figures on this Exhibit because the total capacity is reflected by Exhibit "B" shows the capacity of the wells to produce into the pipeline is 21,200,000 per day. The Exhibit "C" for the month of November should reflect that there were two wells connected -- there were actually three wells connected during the entire month. However, that Gulf Surf Federal did not produce. This kind of threw the calculations off because we are considering a well that is connected, taken it into consideration, but it did not produce. The actual takes from the pool during the montn of November were 328,511 from the wells that were connected during the month. This was a total of 10,950,000 average per day against a delivery capacity of 16,700,000 per day for the two wells that were connected during the entire month which did produce. So, still you have pipeline capacity -- or you have delivery capacity in excesss of the take in the reservoir.

MR. PORTER: As I was listening to your testimony, Mr. Nutter, I thought you gave an identical figure of delivery capacity of which you have given in the Morrow.

THE WITNESS: That's what I say this line is wrong on here. That would be 21-and-a-half. This line is in

error on this Exhibit. The capacity 21,200,000 rather than the 43,000,000. That's too many Exhibits in front of me at the same time.

MR. PORTER: 21,200,000?

THE WITNESS: The total capacity as reflected on Exhibit "C" by summarizing these pipeline delivery capacities is 21,200,000.

MR. PORTER: So, that it be correct in the record.

THE WITNESS: Yes, sir. Thank you.

BY MR. STAMETS:

Q Is there anything further?

A No, nothing further

Q Anything relative to the Strawn Pool? There are none. If you have nothing further this concludes the Commission's case 5111 and 5112.

MR. STAMETS: The witness may be excused.

(Witness is excused.)

MR. STAMETS: Mr. Hinkle, do you have any witnesses?

MR. HINKLE: We have two Exhibits. They are officially marked copies. There is an extra copy, if you want.

E. M. SCHOLL

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

DIRECT EXAMINATION

BY MR. HINKLE:

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

A My name is Ed Scholl. I live in Midland, Texas and I'm employed by Monsanto Company as District Engineer.

Q Have you qualified as a petroleum engineer before the Commission?

A Yes, I have.

Q In previous times?

A Yes, sir.

Q Your qualifications are a matter of record with the Commission?

A Yes, they are.

Q Have you made a continuing study of the Burton Flats area from the beginning since the wells were drilled?

A Yes, sir.

MR. HINKLE: Are his qualifications acceptable?

MR. STAMETS: They are.

BY MR. HINKLE:

Q Have you prepared or has there been prepared under

your direct supervision two Exhibits for introduction in this case?

A Yes, sir.

Q Refer to Exhibit No. 1 and explain what this shows?

A Exhibit 1 is a plat of the general Burton Flats area which I have outlined in red which is considered the Burton Flats Deep Unit. It's operated by Monsanto Company for a number of working interest owners, Monsanto, Gulf, Cities, Exxon, Superior, Mobil, Transwestern, Great Western, Evers and Ed Hudson.

To show the activity in the area as of this week, first of all I would like to point out the order of the development in Burton Flats Unit. We drilled Burton Flats No. 1 in Section 3, which was a prolific Morrow Well. We then drilled No. 2 in Section 2, which is also a single Morrow Well. No. 3 in Section 3 is a dual Strawn-Morrow Well. We then drilled the Duncan Miller No. 1 in Section 3 which is a dual Atoka-Morrow Well. Burton Flats No. 4 in Section 34 is a dual Strawn-Morrow Well. No. 5 was in Section 2 which is temporarily abandoned pending the evaluation. It is not a producer at this point in time. We then came up and drilled No. 6 in Section 34 which is a very prolific Morrow-Strawn dual completion -- excuse me. This is a single

completion in the Morrow which had the 60,000,000 AOF. We then drilled No. 7, Section 33 and we are in the process of completing and hooking up Burton Flats No. 8 in Section 27. No. 9 is drilled and we are drill stem testing at this point. We have staked locations for No. 10 in Section 26 and also for No. 11 in 27. We intended -- the reason for the lease dating on all this activity, we just wanted to point out that it's an ever-increasing development program in this area, very active. That's about all I have on this Exhibit.

Q You mentioned the Burton Flats Unit Agreement. Is Monsanto the operator of that?

A Yes, sir.

Q Have you had meetings with the working interest owners with respect to prorationing in this area?

A Yes, sir.

Q And you have authority to testify on their behalf?

A Yes, I do.

Q Referring to Exhibit 2 and explain what this shows.

A Exhibit 2 is a summary of pertinent data on wells 1 through 7. It shows the date the wells were completed, the interval completed, whether it be Morrow, Strawn, Atoka. We have further broken down when Southern Union started sales, taking gas in the well and also Transwestern. These

dates are also shown. We also have the absolute open flow for each individual interval and these numbers reflect the initial absolute flow that was taken prior to connecting to sales line.

Then, we have broken down the takes from each pipeline for July, August, September, October and November. We had also hoped to have December by this time, but we don't have that production. It shows the chronological events of when each well was connected. We are in the process of hooking up Burton Flats No. 8, which is not shown on here and 7, you'll notice has not been connected. We show the AOF on that. That's about all I have on that.

Q You heard the testimony introduced in these two cases by the Commission. Do you agree substantially with the testimony that has been introduced?

A Yes, sir, we agree.

Q Do you have any comment on any of the Exhibits that were introduced by the Commission?

A Yes. Mr. Nutter's five exhibits on examining the probable nominations or probable takes are realistic in the Morrow. However, I feel that in the Strawn, we'll be able to take a little more gas through Transwestern and Southern Union. There are a number of events that were taken in

November that we didn't produce all the time. As you know, I think Transwestern has almost unlimited takes that they would like to have. The design of the pipelines are such diameter that it is my opinion, that I don't think we'll be limited by pipeline situation. I also wanted to confirm Mr. Nutter's remarks that we also have heard that Llano will be coming into each Burton Flats Well. We don't know what their situation is, but it will be a third split stream on each Burton Flats Unit well, which is quite a mechanical feat.

Outside the unit, I can't speak for some of the activity outside the unit, but there are a lot of wells that are being completed. We're drilling one outside the unit in Section 11. That's about the only comment I had about the --

Q (Interrupting) Speaking on behalf of Monsanto to the other operators which you represent, do you favor the approval of the position of the Commission with respect to acreage prorationing in this area?

A Yes, we have no objection to acreage. We would also like to recommend that Statewide rules be adopted for spacing, well locations and also on the prorationing.

MR. HINKLE: We offer Exhibits 1 and 2.

MR. STAMETS: Without objection, Monsanto's Exhibits

1 and 2 will be admitted into evidence.

(Whereupon, Monsanto's Exhibits Nos. 1 and 2 for identification were admitted in evidence.)

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Scholl, which section is Burton Flats No. 4 located in?

A Burton Flats 4 is located in Section 34. It's in the southwest quarter of 34.

Q Thank you. You indicated that the Strawn takes would likely be higher than indicated on Mr. Nutter's Exhibit. Do you have a feeling as to how much higher at this time?

A Let me back up just a minute. My feeling is that in analyzing the market demand of 10,000,000, 11,000,000 and 12,000,000, we feel like that would be in more of an order for maybe twice that much. If the wells are capable -- do you know what I'm trying to say, Dan?

MR. NUTTER: If there's only one well that's left as a non-marginal well, even at 10,000,000 --

A (Interruping) It's a unit well, that's what I was meaning. It is a capable well. I feel that each taker will nominate high for that well.

Q How soon do you anticipate this increase in takes might occur, before April 1st?

A Yes, I think you'll see it in December or January.

Q Is it possible, in your opinion, that before April 1st each of these wells would be marginal under a prorationing formula that has been requested here?

A I don't think so. I think we'll still have -- in the Morrow we'll have the three --

Q (Interrupting) I'm referring to the Strawn.

A To the Strawn. No, I think the No. 4 Well will still be a capable well. It will be cut back slightly.

Q It will be non-marginal.

Are there any other questions of this witness? If you have nothing further, you may be excused.

MR. HINKLE: Nothing further.

(Witness excused.)

MR. STAMETS: Does anybody else wish to offer any Direct evidence in these cases?

REDIRECT EXAMINATION

BY MR. DERRYBERRY:

MR. DERRYBERRY: Mr. Examiner, I would like to put Mr. Nutter back on Redirect to correct Commission's Exhibit "C" in Case 5112.

MR. NUTTER: I have corrected Exhibit "C", Case 5112. This now reflects that during the month of December

the estimated delivery capacity of wells that were connected during the entire month was 18,200,000 a day. This has been corrected. There is a black line that goes to another black line on here that has the little stars on it for the month of November. The estimated delivery capacity of the wells connected during the entire month for December is 21.2 million a day. This also shows that the production from the wells that were connected and producing during the entire month was 10,950 mcf per day average during November and we do not have the December production yet. Exhibit "C", Case 5112, has been corrected. It still shows the delivery capacity in the pipeline exceeded pipeline takes during the month of November.

Q Does that conclude your Redirect testimony?

A That concludes my Redirect testimony.

MR. STAMETS: Are there any questions of Mr. Nutter on Redirect?

You may be excused.

(Witness excused.)

MR. STAMETS: We have some statements in this case. Mr. Hocher?

MR. HOCHER: R. L. Hocher, representing Cities Service and as has been testified in this Hearing, Cities

Services is a non-operating interest owner on Burton Flats. As such, we wish to support the Commission in recommendation to adopt gas prorationing one hundred percent acreage.

I might also point out, in addition to interest that we have adjacent positions in the area and wish to support in any way we can, the adoption.

MR. STAMETS: Are there other statements in this Case? Mr. Lines?

MR. LINES: Farrell Lines, representing Michael P. Grace. I might mention we don't presently have acreage in the pool. However, we are negotiating for some. We also have some acreage just outside the pool which we plan to drill soon if we are successful in our well. We anticipate fully coming into the pool. We have no objections to the extensions, of course, on the limits proposed in these cases, 5111 and 5112. However, we are opposed to the proration by straight acreage basis. We know from talking to the Commission that in other parts of the State, in cases northwest, their deliverability factor is also included beside the straight acreage. We would suggest that the Commission should adapt some kind of deliverability factor as well.

In the testimony today, we find that because of stringers and because of lack of continuity between the wells,

there is no conclusive proof that there would be any drawing or draining from one well to another. As we note on the Commission's Exhibits today, we have one well with capacity -- open flow capacity in excess of 60,000,000 and under straight acreage prorationing its allowable would be somewhere in excess of 9,000,000 and we would propose that instead there be some kind of deliverability factor here so that all of the wells would be able to produce a percentage of their total open flow capacity to the deliverability or to the -- I'm sorry -- to the amounts that the pipelines can take. Otherwise, you have the situation where we've had in other pools where the small wells are allowed to produce 100 percent which is certainly unfair when the larger wells are able to produce 10 percent or at least less then one-fourth of their open flow capacity. We would recommend to the Commission that they do adapt some kind of a deliverability factor rather than 100-percent acreage factor to this prorationing.

MR. STAMETS: Any other statements in this case?

MR. REAVIS: My name is Harley Reavis with Exxon and we have a part interest in the Burton Flats Unit plus an acreage position in the area where we anticipate drilling. We do want to support the Commission's stand on 100-percent

acreage allocation and that it begin sometime in the future. I believe April the 1st is what Mr. Nutter recommended and we agree with that.

MR. STAMETS: Sorry, I passed over you this morning, Mr. Reavis. Are there other statements in this case?

MR. DERRYBERRY: Mr. Examiner, the Commission seems to be presenting its testimony in installments. The next section deals with Case 5112, relating to extention of pool limits of the Burton-Strawn Gas Pool.

I would like to put Mr. Nutter back on for his testimony at this time.

DANIEL S. NUTTER

recalled as a witness, having been previously sworn, testified as follows:

A I would recommend that the Burton-Strawn Gas Pool be extended to include all of Section 10, Township 21 South, Range 27 East, NMPA, Eddy County, New Mexico.

Q There are no sections which are within one mile of the present pool?

A This is continous with the present pool.

MR. DERRYBERRY: I believe that finally concludes the Commission's case.

MR. STAMETS: Any questions concerning this last

piece of testimony?

Do you have a closing statement, Mr. Derryberry?

MR. DERRYBERRY: I don't believe so.

MR. STAMETS: If there is nothing further in this case, we will take the case under advisement.

STATE OF NEW MEXICO)
)ss.
COUNTY OF SANTA FE)

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

RICHARD L. NYE, Court Reporter

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
OIL CONSERVATION COMMISSION CONFERENCE ROOM
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
November 15, 1973

IN THE MATTER OF:

The hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico

Case No. 5112

BEFORE: RICHARD L. STAMETS,
Examiner

TRANSCRIPT OF EXAMINER HEARING

MR. STAMETS: Call Case Number 5112.

MR. DERRYBERRY: Case Number 5112, In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico.

MR. STAMETS: This case has been continued until January 16th on the motion of interested operators.

C E R T I F I C A T E

I, DONNA KEITH, a 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.

Donna Keith

COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5112 heard by me on Nov 15, 1973.

Richard L. Stamets, Examiner
New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

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

I. R. TRUJILLO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

JANUARY 18, 1974

M E M O R A N D U M

TO: GAS PURCHASERS IN BURTON FLATS-MORROW AND BURTON FLATS-STRAWN GAS POOLS

FROM: A. L. PORTER, Jr., SECRETARY-DIRECTOR

SUBJECT: GAS PRORATIONING AND NOMINATIONS

Enclosed herewith are copies of Orders Nos. 4706 and R-4707, recently entered which institute gas prorationing in each of the above-named pools. You will note that prorationing in these pools will become effective April 1, 1974.

Please include preliminary nominations for these pools with your preliminary nominations for purchase of gas from all other gas pools for the next proration period which starts April 1, 1974, and continues through March 31, 1975. These preliminary nominations will be considered at the February 13 hearing. Therefore it will be necessary for us to have these preliminary nominations by February 4, 1974.

Please call Mr. J. E. Kapteina, our Gas Proration Engineer at (505) 827-2533 if you have any questions concerning preliminary or supplemental nominations.

ALP/DSN/ir

Enclosures

OIL CONSERVATION COMMISSION

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

I. R. TRUJILLO
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

February 8, 1974

Mr. Clarence Hinkle
Hinkle, Bondurant, Cox & Eaton
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Re: CASE NO. 5111 and 5112
ORDER NO. R-4706-A and R-4707-A

Applicant:

OCC

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.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other Mr. R. L. Hocker, Mr. Farrell Lines

OIL CONSERVATION COMMISSION

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

I. R. TRUJILLO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

January 21, 1974

Re: CASE NO. 5111 and 5112
ORDER NO. R-4706 and R-4707

Applicant:
OCC

Mr. Clarence Hinkle
Hinkle, Bondurant, Cox & Eaton
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

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.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other Mr. R. L. Hocker, Mr. Farrell Lines

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CASE NO. 5109
Order No. R-4704-A

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION TO CONSIDER EXTENDING THE HORIZONTAL LIMITS OF THE CATCLAW DRAW-MORROW GAS POOL, EDDY COUNTY, NEW MEXICO, TO INCLUDE ALL OF SECTION 35, TOWNSHIP 21 SOUTH, RANGE 25 EAST.

CASE NO. 5111
Order No. R-4706-A

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION TO CONSIDER EXTENDING THE HORIZONTAL LIMITS OF THE BURTON FLATS-MORROW GAS POOL, EDDY COUNTY, NEW MEXICO, TO INCLUDE THE S/2 OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 28 EAST, AND THE N/2 OF SECTIONS 8 AND 9, AND ALL OF SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST.

CASE NO. 5112
Order No. R-4707-A

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION TO CONSIDER EXTENDING THE HORIZONTAL LIMITS OF THE BURTON FLATS-STRAWN GAS POOL, EDDY COUNTY, NEW MEXICO, TO INCLUDE ALL OF SECTION 10, TOWNSHIP 21 SOUTH, RANGE 27 EAST.

NUNC PRO TUNC ORDER

BY THE COMMISSION:

(1) It appearing to the Commission that Order No. R-4704, dated January 15, 1974, which instituted gas prorationing in the Catclaw Draw-Morrow Gas Pool, Order No. R-4706, dated January 18, 1974, which instituted gas prorationing in the Burton Flats-Morrow Gas Pool, and Order No. R-4707, dated January 18, 1974, which instituted gas prorationing in the Burton Flats-Strawn Gas Pool, all in Eddy County, New Mexico, are improperly numbered due to clerical error,

IT IS THEREFORE ORDERED:

(1) That effective January 15, 1974, Order No. R-4704 is hereby renumbered Order No. R-1670-O.

(2) That effective January 18, 1974, Order No. R-4706 is hereby renumbered Order No. R-1670-P.

CASE NO. 5109
Order No. R-4704-A

CASE NO. 5111
Order No. R-4706-A

CASE NO. 5112
Order No. R-4707-A

(3) That effective January 18, 1974, Order No. R-4707 is hereby renumbered Order No. R-1670-Q.

IT IS FURTHER ORDERED:

(1) That the amendments set forth in this order be entered nunc pro tunc on the above specified dates.

DONE at Santa Fe, New Mexico, this 7th day of February, 1974.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

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

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION TO CONSIDER EXTENDING THE POOL LIMITS OF THE BURTON FLATS-STRAWN GAS POOL, EDDY COUNTY, NEW MEXICO, TO CONSIDER THE INSTITUTION OF GAS PRORATIONING IN SAID POOL, AND TO CONSIDER THE ADOPTION OF SPECIAL RULES AND REGULATIONS FOR SAID POOL.

CASE NO. 5112
Order No. R-4707

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 16, 1974, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 18th day of January, 1974, 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 by Order No. R-4622 effective September 1, 1973, the Commission created the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico, for the production of gas from the Strawn formation.

(3) That the horizontal limits of said pool have not been extended since that time.

(4) That the horizontal limits of the Burton Flats-Strawn Gas Pool as defined by the Commission at the time of hearing this case comprise the following described area:

EDDY COUNTY, NEW MEXICO
TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM
Section 3: S/2

(5) That the Burton Flats-Strawn Gas Pool in Eddy County, New Mexico, should be extended to include therein:

TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM
Section 10: All

(6) That at the time of hearing of this case, there were three wells producing from the subject pool as defined in Finding No. (4) above, and as extended pursuant to Finding No. (5) above, and one additional well producing from the Strawn formation in Section 34, Township 20 South, Range 28 East, immediately to the North and that the aforesaid four wells are producing from a common reservoir.

(7) That at the time of the hearing of this case, gas was being taken from wells producing from the subject reservoir by three transporters, being El Paso Natural Gas Company, Southern Union Gas Company, and Transwestern Pipe Line Company.

(8) That during the month of November, 1973, the latest month for which full monthly statistics are available, the estimated total delivery capacity of the three wells which had pipe line connections during the entire month was at least 18,200 MCF per day.

(9) That during the month of November, 1973, the actual production from the aforesaid three wells producing from the subject reservoir was approximately 10,950 MCF per day.

(10) That since, during the month of November, 1973, no restrictions other than market demand were placed upon the production from wells producing from the subject reservoir, actual production should be considered as market demand for gas from the reservoir.

(11) That during the month of November, 1973, the total delivery capacity of the wells producing from the subject reservoir exceeded market demand for gas from the reservoir.

(12) That under the conditions that now exist in the subject pool, there is a potential for non-ratable taking by pipelines from the various wells in the pool.

(13) That non-ratable taking by pipelines from the various wells in the pool would constitute a violation of correlative rights.

(14) That unrestricted production creates a potential for drainage which is not equalized by counter-drainage and that such drainage constitutes a violation of correlative rights.

(15) That the protection of correlative rights is a necessary adjunct to the prevention of waste.

(16) That in order to prevent waste and ensure that all owners of property in the subject pool have the opportunity to produce without waste their fair share of the gas in the pool, the subject pool should be prorated to limit the amount of gas to be recovered from each tract to that tract's share of the reasonable market demand for gas from the pool.

(17) That to ensure that each owner of property in the subject pool has the opportunity to produce that amount of gas that can be practicably obtained without waste substantially in the proportion that the recoverable gas under his tract bears to the total recoverable gas in the pool, the subject pool should be prorated in order to limit the amount of gas to be produced from the pool to the reasonable market demand and the capacity of the gas transportation facilities serving that pool.

(18) That the subject pool has not been completely developed.

(19) That production from the Strawn formation in the subject pool is from separate carbonate units with indeterminate areal extent and varying porosity and thickness within individual units and between units.

(20) That the above-described units are not continuous across the pool but are interconnected by the perforations in the various completions in the pool.

(21) That due to the above-described variations in the units and the lack of continuity of the units, the effective feet of pay and the reserves underlying each developed tract cannot be practicably determined from the data obtained at the wellbore.

(22) That there are recoverable gas reserves underlying each of the developed 320-acre tracts within the horizontal limits of the subject pool, as described in Finding No. (4) above and as extended pursuant to Finding No. (5) above, and one additional developed 320-acre tract in the Strawn formation in Section 34, Township 20 South, Range 28 East, immediately to the North, there being a total of four wells completed and capable of producing from the Burton Flats-Strawn gas reservoir.

(23) That due to the nature of the reservoir, the amount of recoverable gas under each producer's tract cannot be practicably determined in the subject pool by a formula which considers effective feet of pay and pore volume.

(24) That due to the nature of the reservoir, the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers effective feet of pay and pore volume.

(25) That due to the nature of the reservoir, the proportion of recoverable gas underlying each tract to the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers effective feet of pay and pore volume.

(26) That the amount of recoverable gas under each producer's tract cannot be practicably determined in the subject pool by a formula which considers the deliverability of a well.

(27) That the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers the deliverability of the wells in the pool.

(28) That the proportion of recoverable gas underlying each tract to the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers the deliverability of the wells within the pool.

(29) That the amount of recoverable gas under each producer's tract cannot be practicably determined by a formula which considers previous production and pressure decline.

(30) That due to the early state of depletion of the subject pool, the total amount of recoverable gas in the pool cannot be practicably determined by a formula which considers previous production and pressure decline.

(31) That the proportion of recoverable gas underlying each tract to the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers previous production and pressure decline.

(32) That the amount of gas which can be practicably obtained without waste by the owner of each property in the subject pool substantially in the proportion that the recoverable gas under his tract bears to the total recoverable gas in the pool can be practicably determined best by allocating the allowable production among the wells on the basis of developed tract acreage compared to total developed tract acreage in the pool.

(33) That, considering the nature of the reservoir and the known extent of development, a proration formula based upon surface acreage will afford the owner of each property in the pool the opportunity to produce his just and equitable share of the gas in the pool so far as such can be practicably obtained without waste substantially in the proportion that the recoverable gas under such property bears to the total recoverable gas in the pool.

(34) That in order to prevent waste, the total allowable production from all gas wells producing from the subject pool should be limited to the total reasonable market demand for gas from the pool.

(35) That in order to prevent waste the total allowable production from each gas well producing from the subject pool should be limited to that well's share of the reasonable market demand for gas from the pool.

(36) That, in order to prevent drainage between tracts that is not equalized by counter drainage, the allowable production from the pool should be prorated to the various producers on a just and equitable basis.

(37) That, considering the available reservoir information, a 100 percent surface acreage formula is the most reasonable basis for allocating the allowable production among the wells delivering to the gas transportation facilities.

(38) That the adoption of a 100 percent 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.

(39) That in order to ensure that each operator is afforded the opportunity to produce his property ratably with all other operators in the pool, allowable production from the pool should be prorated to the various producers upon a just and equitable basis.

(40) That the adoption of a 100 percent surface acreage formula for allocating the allowable production in the subject pool will insofar as is presently practicable allow each operator the opportunity to produce his property ratably with all other operators in the pool.

(41) That the subject pool should 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 such general rules and regulations are not inconsistent with this order.

IT IS THEREFORE ORDERED:

(1) That the Burton Flats-Strawn Gas Pool in Eddy County, New Mexico, as heretofore classified, defined and described, is hereby extended to include therein:

TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM
Section 10: All

(2) That the Burton Flats-Strawn Gas Pool in Eddy County, New Mexico, is hereby prorated effective April 1, 1974.

(3) 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 such general rules and regulations are not inconsistent with this order.

SPECIAL RULES AND REGULATIONS
FOR THE
BURTON FLATS-STRAWN GAS POOL

A. WELL LOCATION AND ACREAGE REQUIREMENTS

RULE 1. Each well completed or recompleted in the Burton Flats-Strawn Gas Pool or in the Strawn formation within one mile thereof and not nearer to nor within the boundaries of another pool producing from the Strawn formation shall be spaced, drilled, operated, and prorated in accordance with the rules for the Burton Flats-Strawn Gas Pool as set forth herein.

RULE 2. Each well shall be located no nearer than 1980 feet to the end boundary nor nearer than 660 feet to the side boundary of the proration unit nor nearer than 330 feet to any governmental quarter-quarter section line.

C. ALLOCATION AND GRANTING OF ALLOWABLES

RULE 8. (A) The total allowable to be allocated to gas wells in the pool regulated by this order each month shall be equal to the sum of the "preliminary" or "supplemental" nominations (whichever is applicable) together with any adjustments which the Commission deems advisable. The 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 gas wells in the pool.

RULE 8. (B) Allowables to newly completed gas wells shall commence on the day of connection to a gas transportation facility as determined from an affidavit furnished to the Commission (Drawer DD, Artesia, New Mexico 88210) by the purchaser or the date of filing of Form C-104 and a plat (Form C-102) whichever data is the latter.

RULE 9. (A) A standard unit consisting of 320 acres shall be assigned an acreage factor of 1.00, provided however, the acreage tolerances provided in Rule 5 (A) shall apply.

C. GENERAL

RULE 25. The vertical limits of the Burton Flats-Strawn Gas Pool shall be the Strawn formation.

RULE 26. The first proration period for the Bur on Flats-Strawn Gas Pool shall commence on April 1, 1974.

IT IS FURTHER ORDERED:

(1) 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

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

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

S E A L

dr/

Docket No. 2-74

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 16, 1974

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

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

ALLOWABLE: (1) Consideration of the allowable production of gas for February, 1974, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico;

(2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for February, 1974.

CASE 5110: (Continued from the November 15, 1973, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Washington Ranch-Morrow Gas Pool, Eddy County, New Mexico, to include the S/2 of Section 28, Township 25 South, Range 24 East.

Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5111: (Continued from the November 15, 1973, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Morrow Gas Pool, Eddy County, New Mexico, to include the S/2 of Section 34, Township 20 South, Range 28 East, and the N/2 of Sections 8 and 9, and all of Section 10, Township 21 South, Range 27 East.

Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5112: (Continued from the November 15, 1973, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico, to include all of Section 10, Township 21 South, Range 27 East.

(Case 5112 continued from Page 1)

Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5113: (Continued from the November 15, 1973, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the institution of gas prorationing in the Burton Flats-Atoka Gas Pool, Eddy County, New Mexico, and to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5124: (Continued from the November 28, 1973, Examiner Hearing)

Application of Belco Petroleum Corporation for compulsory pooling and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the S/2 of Section 30, Township 20 South, Range 33 East, South Salt Lake-Morrow Gas Pool, Lea County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South line and 1300 feet from the East line of said Section 30. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5143: Application of El Paso Natural Gas Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its proposed Rocky Arroyo "D" Com. Well No. 2 in the center of Unit L of Section 4, Township 22 South, Range 22 East, Rocky Arroyo-Morrow Gas Pool, Eddy County, New Mexico, the S/2 of said Section 4 to be dedicated to the well.

CASE 5144: Application of Depco, Inc. for two waterflood projects, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute two waterflood projects by the injection of water into the Grayburg-San Andres formation through six wells located on applicant's State 647 lease in Sections 31 and 32, Township 17 South, Range 28 East, Artesia Pool, Eddy County, New Mexico, and through one well on the Kersey and Company Ramapo "A" Lease in said Section 32.

CASE 5145: Application of Texas Pacific Oil 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 Devonian formation in the perforated interval from 10,872 feet to 11,032 feet in its State "B" Well No. 2 located in Unit B of Section 11, Township 12 South, Range 33 East, Bagley Siluro-Devonian Pool, Lea County, New Mexico.

CASE 4969: (Reopened)

In the matter of Case No. 4969 being reopened pursuant to the provisions of Order No. R-4557, which order established a temporary special depth bracket allowable for the Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico. All interested parties may appear and show cause why the special allowable should be made permanent.

CASE 5146: Application of Midwest Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Target Unit Area comprising 5120 acres, more or less, of State and Federal lands in Townships 25 and 26 South, Range 25 East, Eddy County, New Mexico.

CASE 5147: Application of Mesa Petroleum Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying the S/2 of Section 12, Township 16 South, Range 35 East, North Shoe Bar Field, Lea County, New Mexico, to be dedicated to a well to be drilled at a standard location for said unit in Unit O of said Section 12. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5148: Application of Coquina Oil Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox gas well location 990 feet from the North and East lines of Section 16, Township 19 South, Range 25 East, Boyd-Morrow Gas Pool, Eddy County, New Mexico, the N/2 of said Section 16 to be dedicated to said well.

CASE 5149: Application of Cities Service Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 21 South, Range 27 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard Pennsylvanian gas well location for said unit. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5150: Application of Hanson Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through 10 wells in its Mescalero Ridge Unit Area in Sections 26 and 35, Township 19 South, Range 34 East, Pearl-Queen Pool, Lea County, New Mexico.

CASE 5151: Application of Penroc Oil Corporation for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause seeks approval for the dual completion (conventional) of its Dero-Federal A-Com Well No. 1, located in Unit N of Section 35, Township 19 South, Range 28 East, Eddy County, New Mexico, in such a manner as to produce gas from the Winchester-Wolfcamp gas pool and an undesignated Strawn gas pool through the casing-tubing annulus and through tubing.

CASE 5152: Application of Petro-Lewis Corporation for a Special Depth Bracket Allowable, Media-Entrada Oil Pool, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks a special depth bracket allowable for the Media-Entrada Oil Pool, Township 19 North, Range 3 West, Sandoval County, New Mexico.

CASE 5140: (Continued from the January 3, 1974, Examiner Hearing)

Application of Pierce & Dehlinger for compulsory pooling, Vada-Pennsylvanian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Vada-Pennsylvanian Pool underlying the NW/4 of Section 24, Township 9 South, Range 33 East, Lea County, New Mexico, to be dedicated to the King Resources Sheridan Well No. 1-A located in Unit C of said Section 24. Also to be considered is designation of the applicant as operator of the NW/4 of said Section 24 and the well located thereon, provision for allocation of actual operating costs and charges for supervision, and allocation of costs for reworking said well including a 200% charge attributable to any non-consenting working interest owner's pro rata share of said workover costs, for the risk involved in said workover.

CASE 4956: (Reopened) (Continued from the January 3, 1974, Examiner Hearing)

Application of Pierce & Dehlinger for a determination of well costs, Lea County, New Mexico. Applicant, as operator of the Sheridan Well No. 1 located in Unit M of Section 13, Township 9 South, Range 33 East, Lea County, New Mexico, to which well is dedicated the SW/4 of said Section 13, all mineral interests in the Vada-Pennsylvanian Pool thereunder having been pooled by Commission Order No. R-4560, seeks the determination of reasonable well costs attributable to applicant and to King Resources, including, but not limited to, the costs of reworking and placing said Sheridan Well No. 1 back on production and attorneys fees in connection therewith. Applicant further seeks an order assessing, as a charge for the risk involved in the reworking of the well, 120% of the pro rata share of the reasonable well costs attributable to the working interest of King Resources.

CLARENCE E. HINKLE
W. E. BONDURANT, JR.
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
STUART D. SHANOR
C. D. MARTIN
PAUL J. KELLY, JR.
[redacted]

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MIDLAND, TEXAS OFFICE
521 MIDLAND TOWER
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November 9, 1973

Mr. Dan Nutter
Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Nutter:

This will confirm our telephone conversation of today in regard to the continuance of cases 5110 through 5113 on the examiner's docket for November 15.

We represent Black River Corporation who, with Cities Service, are the principal operators in the Washington Ranch-Morrow Gas Pool. Tom Phipps, Vice President of Black River, has discussed this matter with Cities Service and both companies would like to have Case No. 5110 continued to give them more time to make a study of all that may be involved in pro rating the Washington Ranch-Morrow Gas Pool.

We represent Monsanto Company who is the operator of working interest units in the Burton Flats-Morrow Pool, the Burton Flats-Strawn Pool and the Burton Flats-Atoka Gas Pool which are involved in Cases 5111, 5112 and 5113. Mr. Ed Schols of Monsanto has ad that they have had a meeting of the operators and all would like to have cases continued so as to give them additional time to make a thorough study of the matter before the cases are heard.

You may consider this as a request on behalf of the above mentioned parties to continue cases 5110, 5111, 5112 and 5113 until January 16, 1974, which we understand will be a date acceptable to you.

Thank you for your cooperation in connection with this matter.

Yours sincerely,

HINKLE, BONDURANT, COX & EATON

By [signature]

CEH:cs
cc: Monsanto Company
cc: Black River Corporation

[illegible]

Date [illegible]

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

Thursday, November 15, 1973

IN THE MATTER OF THE MOTION OF
THE OIL CONSERVATION COMMISSION
FOR A HEARING REGARDING EXTENDING
THE HORIZONTAL LIMITS OF THE
BURTON FLATS-STRAWN GAS POOL,
EDDY COUNTY, NEW MEXICO

Case No. 5112

ENTRY OF APPEARANCE

The undersigned, Modrall, Sperling, Roehl, Harris & Sisk, of Albuquerque, New Mexico, hereby enter their appearance herein for Gulf Oil Corporation, with its house counsel of Midland, Texas.

MODRALL SPERLING ROEHL HARRIS & SISK

By: James E. Sperling

Attorneys for Gulf Oil Corporation
P. O. Box 2168
Albuquerque, New Mexico 87103

(Case 5111 continued from Page 1)

Burton Flats-Morrow Gas Pool, Eddy County, New Mexico, to include the S/2 of Section 34, Township 20 South, Range 28 East, and the N/2 of Sections 8 and 9, and all of Section 10, Township 21 South, Range 27 East.

Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5112: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico, to include all of Section 10, Township 21 South, Range 27 East.

Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5113: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the institution of gas prorationing in the Burton Flats-Atoka Gas Pool, Eddy County, New Mexico, and to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

Docket No. 33-73

DOCKET: EXAMINER HEARING - THURSDAY - NOVEMBER 15, 1973

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 Richard L. Stamets, Alternate Examiner:

ALLOWABLE: (1) Consideration of the allowable production of gas for December, 1973, from sixteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico;

(2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for December, 1973.

CASE 5108: In the matter of the hearing called by the Oil Conservation Commission on its own motion to receive a report from the Blinebry Pool Study Committee which was appointed pursuant to the provisions of Order No. R-4536. It is expected that said committee will make recommendations and offer proposed pool rules for consideration by the Commission for the Blinebry Oil Pool and Blinebry Gas Pool, Lea County, New Mexico.

CASE 5109: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Catclaw Draw-Morrow Gas Pool, Eddy County, New Mexico, to include all of Section 35, Township 21 South, Range 25 East.

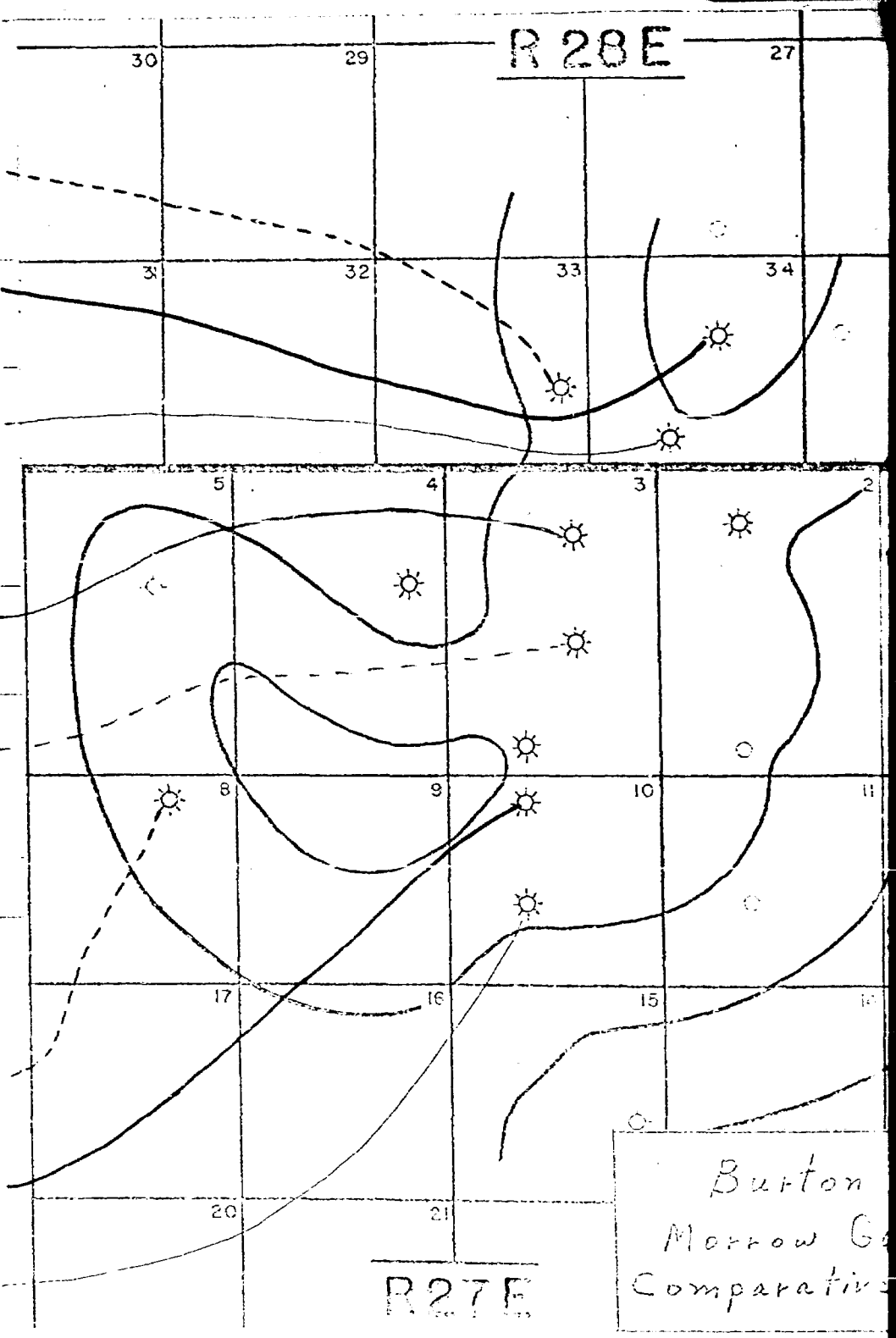
Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5110: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Washington Ranch-Morrow Gas Pool, Eddy County, New Mexico, to include the S/2 of Section 28, Township 25 South, Range 24 East.

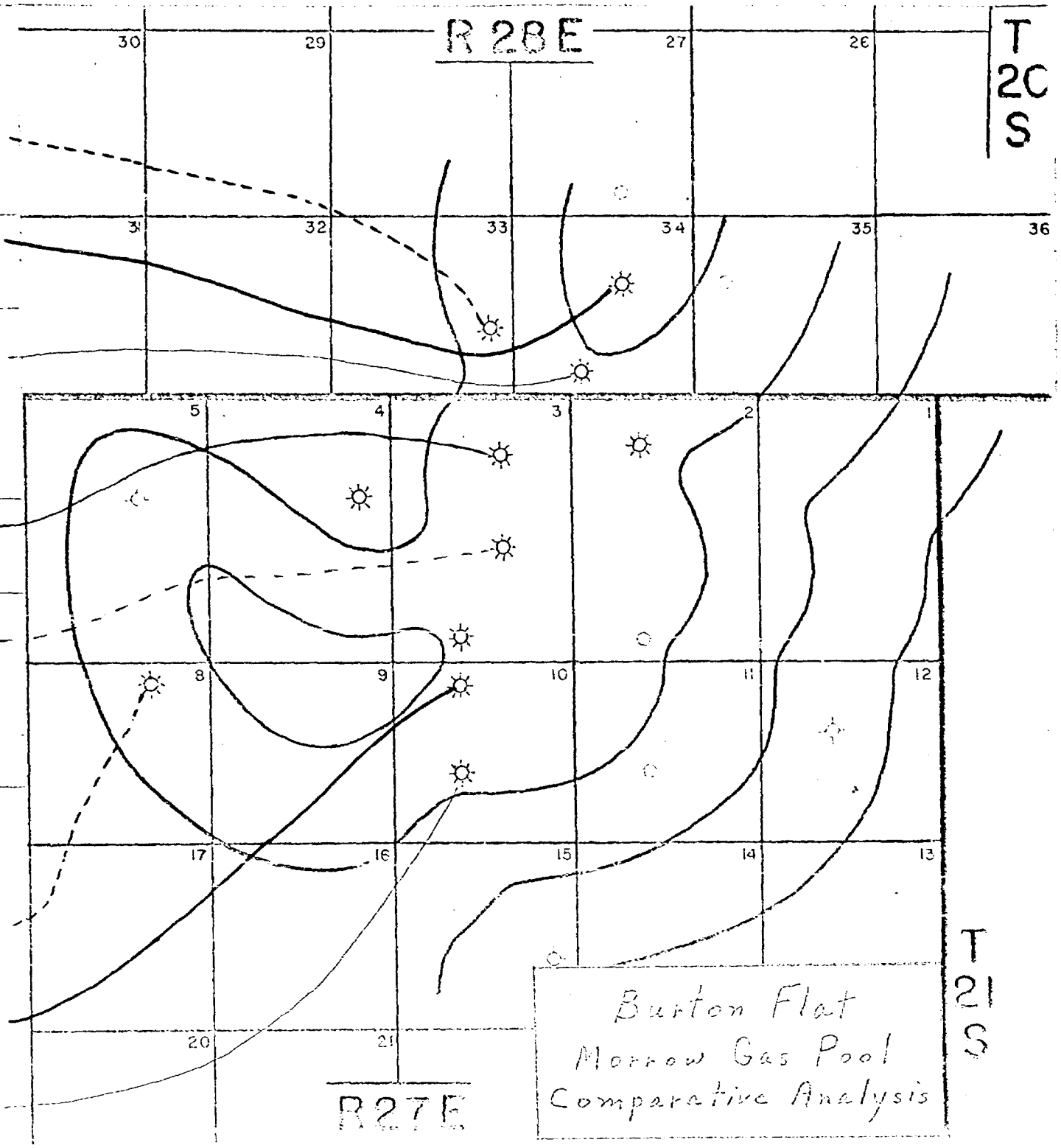
Also to be considered will be the institution of gas prorationing in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the allowable production among the wells in the pool.

CASE 5111: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the

Well	No. Pays	Pay Zones	Ft. Perf.	CAOF (MCF)	S.I.T.P.	Mcf/ Pay	Mcf/ Ft. Perf
I-33-20-28	3	1,5,7	37	5408	3508	1803	146
G-34-20-28	2	7,8	52	60,878	3662	30,439	1171
N-34-20-28	5	1,5,7, 10,13	68	1814	3657	363	27
F-2-21-27	3	1,6,7,	59	10,025	3632	3,341	170
G-3-21-27	1	5	6	6403	3668	6,403	1067
O-3-21-27	5	1,2,3, 4,5	46	37,500	3683	7,500	815
V-3-21-27	4	1,4,5,6,	32	5784	3784	1,446	181
I-4-21-27	2	7,8	18	1743	3575	872	97
B-8-21-27	6	1,2,4,5, 8,9	58	7339	3785	1,223	127
[illegible]-10-21-27	7	4,5,6,7, 9,11,12	44	1442		206	33
K-10-21-27	2	2,3	44	17,621 *	3764	8,811 *	400 *



f.	CAOF (MCF)	S.I.T.P.	Mcf/ Pay	Mcf/ Ft. Perf
7	5408	3508	1803	146
2	60,878	3662	30,439	1171
8)	1814	3657	363	27
9	10,025	3632	3,341	170
6)	6403	3668	6,403	1067
46	37,500	3683	7,500	815
32	5784	3784	1,446	181
18	1743	3575	872	97
53	7339	3785	1,223	127
44	1442		206	33
	*		*	*
44	17,621	3764	8,811	400



COMMISSION EXHIBIT "3" (STRATIGRAPHIC LOG) IN CASE FILE 5111 (USED FOR BOTH CASES.

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
Comm EXHIBIT NO. 3
CASE NO. 5112
Submitted by Commission
Hearing Date 1-16-73

Well	No. Pays	T/Pay Zone	Ft. Perf.	CAOF (MCF)	SITP	Bbls. Cond/MM
N-34-20-28	1	-7004 X	28	21,950	2865	43
V-3-21-27	2	-6980 X	26	2,277	3255	78
C-10-21-27	2	-6981	52	1,632	3415	46
K-10-21-27	1	-6984	35	3,095	3761	21

Comm. 4-S
S1/2
Commission
1-16-74

WELL DATA - BURTON FLATS-STRAWN GAS POOL

Operator	Lease Name	Well No.	Location	Compl. Date	Date Tested	Potential MCF/Day	SITP	Purchaser	Date Conn
Monsanto	Burton Flat Unit	3	V- 3-21S-27E	4-16-73	10-11-73	2277	3255	Trans-SU	7-1
Monsanto	Burton Flat Unit	4	N-34-20S-28E	7-23-73	12- 5-73	21950	2865	Trans-SU	10-1
Coquina	Yates State	1	K-10-21S-27E	8- 1-73	8- 2-73	3095	3761	E.P.	11-
Gulf	Cerf Fed.	1	C-10-21S-27E	8-23-73	8-29-73	1632	3415	Trans.	10-1

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
OCC
5782
OCC Staff
1/16/74

WELL DATA - BURTON FLATS-STRAWN GAS POOL

ease Name	Well No.	Location	Compl. Date	Date Tested	Potential MCF/Day	SITP	Purchaser	Date Connected
n Flat Unit	3	V- 3-21S-27E	4-16-73	10-11-73	2277	3255	Trans-SU	7-12-73
n Flat Unit	4	N-34-20S-28E	7-23-73	12- 5-73	21950	2865	Trans-SU	10-11-73
State	1	K-10-21S-27E	8- 1-73	8- 2-73	3095	3761	E.P.	11- 8-73
Fed.	1	C-10-21S-27E	8-23-73	8-29-73	1632	3415	Trans.	10-19-73

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
OCC
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1/16/74

BURTON FLATS-STRAWN GAS POOL

ESTIMATED PIPE LINE DELIVERY CAPACITY
OF WELLS CONNECTED AS OF
DECEMBER 31, 1973

Well Designation	CAOF	Estimated P.L. Delivery Capacity
3-V-3	2277	1,700
4-N-34	21950	1[illegible],000
1-K-10	3095	3,000
1-C-10	1632	1,500
	28954	21,200

All figures in MCF per day.

[illegible]

OCC

5112
OCC Staff
1/16/74

BURTON FLATS-STRAWN GAS POOL

NON-MARGINAL/MARGINAL STATUS OF WELLS UNDER ASSUMED MARKET DEMAND CONDITIONS

Assume Market Demand of 10,000 MCF/Day

Well Designation	Marg. Allow.	Non-Marg. Allow.
3-V-3	1700	
4-N-34		3800
1-K-10	3000	
1-C-10	1500	
	6200	3800
Total	10,000	

Assume Market Demand of 11,000 MCF/Day

3-V-3	1700	
4-N-34		4800
1-K-10	3000	
1-C-10	1500	
	6200	4800
Total	11,000	

Assume Market Demand of 12,000 MCF/Day

3-V-3	1700	
4-N-34		5800
1-K-10	3000	
1-C-10	1500	
	6200	5800
TOTAL	12,000	

	BFU #1	BFU# 2	BFU #3	BFU #3	MILLER FED. #1	MILLER FED. #1	BFU #4	BFU #4
ate Completed	11/3/72	1/24/73	4/16/73	4/16/73	5/1/73	5/1/73	7/23/73	7/23/73
nterval	Morrow	Morrow	Morrow	Strawn	Morrow	Atoka	Morrow	Strawn
outhern Union First Sales	7/12/73	7/12/73	7/12/73	7/12/73	8/15/73	8/15/73	12/6/73	12/6/73
ranswestern First Sales	8/13/73	8/13/73	8/13/73	8/13/73	10/17/73	10/17/73	10/17/73	10/17/73
bsolute Open Flow	30.5 M/D	10.0 M/D	8.1 M/D	1.3 M/D	5.4 M/D	4.6 M/D	2.4 M/D	20.7 M/D
uly Production (MCF)								
Southern Union	12,406	3,345	2,143	1,281	–	–	–	–
Transwestern	–	–	–	–	–	–	–	–
Total	12,406	3,345	2,143	1,281	–	–	–	–
ugust Production (MCF)								
Southern Union	2,783	8,875	1,501	1,202	7,716	8,641	–	
Transwestern	233,018	126,265	83,711	18,801	–	–	–	
Total	235,801	135,140	85,212	20,003	7,716	8,641	–	
ptember Production (MCF)								
Southern Union	3,693	22,831	4,897	588	5,663	21,520	–	
Transwestern	336,709	205,835	129,697	32,951	–	–	–	
Total	340,402	228,666	134,594	33,539	5,663	21,520	–	
tober Production (MCF)								
Southern Union	36,064	23,860	34,195	9,280	31,371	6,353	–	–
Transwestern	229,849	171,270	103,304	28,502	19,483	1,435	32,437	152,855
Total	265,913	195,130	137,499	37,782	50,854	7,788	32,437	152,855
vember Production (MCF)								
Southern Union	130,182	26,678	20,104	12,520	48,309	3,811	0	0
Transwestern	172,101	195,057	161,822	39,467	68,054	1,416	57,266	284,933
Total	302,283	221,735	181,926	51,987	116,363	5,227	57,266	284,933

BFU #1	BFU# 2	BFU #3	BFU #3	MILLER FED. #1	MILLER FED. #1	BFU #4	BFU #4	BFU #6	BFU #7
11/3/72	1/24/73	4/16/73	4/16/73	5/1/73	5/1/73	7/23/73	7/23/73	11/5/73	11/19/7.
Morrow	Morrow	Morrow	Strawn	Morrow	Atoka	Morrow	Strawn	Morrow	Morrow
7/12/73	7/12/73	7/12/73	7/12/73	8/15/73	8/15/73	12/6/73	12/6/73	Not connected	Not connected
8/13/73	8/13/73	8/13/73	8/13/73	10/17/73	10/17/73	10/17/73	10/17/73	12/14/73	Not connected
30.5 M/D	10.0 M/D	8.1 M/D	1.3 M/D	5.4 M/D	4.6 M/D	2.4 M/D	20.7 M/D	60.9 M/D	5.4 M/D
12,406	3,345	2,143	1,281	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
12,406	3,345	2,143	1,281	-	-	-	-	-	-
2,783	8,875	1,501	1,202	7,716	8,641	-			-
233,018	126,265	83,711	18,801	-	-	-			-
235,801	135,140	85,212	20,003	7,716	8,641	-			-
3,693	22,831	4,397	588	5,663	21,520	-			-
336,709	205,835	129,697	32,951	-	-	-			-
340,402	228,666	134,594	33,539	5,663	21,520	-			-
36,064	23,860	34,195	9,280	31,371	6,353	-	-	-	-
229,849	171,270	103,304	28,502	19,483	1,435	32,437	152,855	-	-
265,913	195,130	137,499	37,782	50,854	7,788	32,437	152,855	-	-
130,182	26,678	20,104	12,520	48,309	3,811	0	0	-	-
172,101	195,057	161,822	39,467	68,054	1,416	57,266	284,933	-	-
302,283	221,735	181,926	51,987	116,363	5,217	57,266	284,933		

EXAMINER STAMETS
ATION COMMISSION
Monsanto EXHIBIT NO. 2
5111
Hearing Date

DRAFT

dr

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. 5112

Order No. R- 4707

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION TO CONSIDER EXTENDING THE POOL LIMITS OF THE BURTON FLATS-STRAWN GAS POOL, EDDY COUNTY, NEW MEXICO, TO CONSIDER THE INSTITUTION OF GAS PRORATIONING IN SAID POOL, AND TO CONSIDER THE ADOPTION OF SPECIAL RULES AND REGULATIONS FOR SAID POOL.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 16, 1974, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this _____ day of January, 1974, 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 by Order No. R-4622 effective September 1, 1973, the Commission created the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico, for the production of gas from the Strawn formation, ~~and at that time no objection to the formation of said pool was received~~.

(3) That the horizontal limits of said pool have not been extended since that time. ~~by order of the Commission.~~

(4) That the horizontal limits of the Burton Flats-Strawn Gas Pool as defined by the Commission at the time of hearing this case comprise the following described area:

EDDY COUNTY, NEW MEXICO
TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM
Section 3: S/2

(5) That the Burton Flats-Strawn Gas Pool in Eddy County, New Mexico, should be extended to include therein:

TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM
Section 10: All

(6) That at the time of hearing of this case, there were three wells producing from the subject pool as defined in Finding No. (4) above, and as extended ~~as described in~~ pursuant to Finding No. (5) above, and one additional well producing from the Strawn formation in Section 34, Township 20 South, Range 28 East, immediately to the North, and that the aforesaid four wells are producing from a common reservoir

(7) That at the time of the hearing of this case, gas was being taken from wells producing from the subject ~~pool~~ reservoir by three transporters, being El Paso Natural Gas Company, Southern Union Gas Company, and Transwestern Pipe Line Company.

(8) That during the month of November, 1973, the latest month for which full monthly statistics are available, the estimated total delivery capacity of the three wells which had pipe line connections during the entire month was at least 18,200 MCF per day.

(9) That during the month of November, 1973, the actual production from the aforesaid three wells ~~within the subject pool~~ producing from the subject reservoir was approximately 10,950 MCF per day.

(10) That since, during the month of November, 1973, no restrictions other than market demand were placed upon the production from wells ~~within the~~ producing from the subject ~~pool~~ reservoir, actual production should be considered as market demand for gas from the ~~pool~~ reservoir.

(11) That during the month of November, 1973, the total delivery capacity of the wells ~~within~~ producing from the subject ~~pool~~ reservoir exceeded market demand for gas from the ~~subject pool~~ reservoir.

(12) That under the conditions that now exist in the subject pool, there is a potential for non-ratable taking by pipelines from the various wells in the pool.

(13) That non-ratable taking by pipelines from the various wells in the pool would constitute a violation of correlative rights.

(14) That unrestricted production creates a potential for drainage which is not equalized by counter-drainage and that such drainage constitutes a violation of correlative rights.

(15) That the protection of correlative rights is a necessary adjunct to the prevention of waste.

(16) That in order to prevent waste and ensure that all owners of property in the subject pool have the opportunity to produce without waste their fair share of the gas in the pool, the subject pool should be prorated to limit the amount of gas to be recovered from each tract to that tract's share of the reasonable market demand for gas from the pool.

(17) That to ensure that each owner of property in the subject pool has the opportunity to produce that amount of gas that can be practicably obtained without waste substantially in the proportion that the recoverable gas under his tract bears to the total recoverable gas in the pool, the subject pool should be prorated in order to limit the amount of gas to be produced from the pool to the reasonable market demand and the capacity of the gas transportation facilities serving that pool.

(18) That the subject pool has not been completely developed.

(19) That production from the Strawn formation in the subject pool is from ~~more than one separate stringer~~ indeterminate which vary greatly in areal extent and ~~in~~ varying porosity and thickness, ~~both~~ within individual ~~stringers~~ and between stringers.

(20) That the above-described ~~stringers~~ are not continuous across the pool but are interconnected by the perforations in the various completions in the pool.

(21) That due to the above-described variations in the ~~stringers~~ and the lack of continuity of the ~~stringers~~, the effective feet of pay and the reserves underlying each developed tract cannot be practicably determined from the data obtained at the wellbore.

(22) That there are recoverable gas reserves underlying each of the developed 320-acre tracts within the horizontal limits of the subject pool~~, that there are three developed 640-acre tracts within the pool~~ as described in Finding No. (4) above and as extended pursuant to Finding No. (5) above, and one additional developed 320-acre tract in the Strawn formation in Section 34, Township 20 South, Range 28 East, immediately to the North, there being a total of four wells completed and capable of producing from the Burton Flats-Strawn gas reservoir.

(23) That due to the nature of the reservoir, the amount of recoverable gas under each producer's tract cannot be practicably determined in the subject pool by a formula which considers effective feet of pay and pore volume.

(24) That due to the nature of the reservoir, the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers effective feet of pay and pore volume.

(25) That due to the nature of the reservoir, the proportion of recoverable gas underlying each tract to the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers effective feet of pay and pore volume.

(26) That the amount of recoverable gas under each producer's tract cannot be practicably determined in the subject pool by a formula which considers the deliverability of a well.

(27) That the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers the deliverability of the wells in the pool.

(28) That the proportion of recoverable gas underlying each tract to the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers the deliverability of the wells within the pool.

(29) That the amount of recoverable gas under each producer's tract cannot be practicably determined by a formula which considers previous production and pressure decline.

(30) That due to the early state of depletion of the subject pool, the total amount of recoverable gas in the pool cannot be practicably determined by a formula which considers previous production and pressure decline.

(31) That the proportion of recoverable gas underlying each tract to the total amount of recoverable gas in the subject pool cannot be practicably determined by a formula which considers previous production and pressure decline.

(32) That the amount of gas which can be practicably obtained without waste by the owner of each property in the subject pool substantially in the proportion that the recoverable gas under his tract bears to the total recoverable gas in the pool can be practicably determined best by allocating the allowable production among the wells on the basis of developed tract acreage compared to total developed tract acreage in the pool.

(33) That, considering the nature of the reservoir and the known extent of development, a proration formula based upon surface acreage will afford the owner of each property in the pool the opportunity to produce his just and equitable share of the gas in the pool so far as such can be practicably obtained without waste substantially in the proportion that the recoverable gas under such property bears to the total recoverable gas in the pool.

(34) That in order to prevent waste the total allowable production from each gas well producing from the subject pool should be limited to that well's share of the reasonable market demand for gas from the pool.

(35) That in order to prevent waste, the total allowable production from all gas wells producing from the subject pool should be limited to the total reasonable market demand for gas from the pool.

(37) That, considering the available reservoir information, a 100 percent surface acreage formula is the most reasonable basis for allocating the allowable production among the wells delivering to the gas transportation facilities.

(36) That, in order to prevent drainage between tracts that is not equalized by counter drainage, the allowable production from the pool should be prorated to the various producers on a just and equitable basis.

(38) That the adoption of a 100 percent 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.

(39) That in order to ensure that each operator is afforded the opportunity to produce his property ratably with all other operators in the pool, allowable production from the pool should be prorated to the various producers upon a just and equitable basis.

(40) That the adoption of a 100 percent surface acreage formula for allocating the allowable production in the subject pool will insofar as is presently practicable allow each operator the opportunity to produce his property ratably with all other operators in the pool.

(41) That the subject pool should 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 such general rules and regulations are not inconsistent with this order, ~~or the special rules and regulations for the subject pool promulgated by this order.~~

IT IS THEREFORE ORDERED:

(1) That the Burton Flats-Strawn Gas Pool in Eddy County, New Mexico, as heretofore classified, defined and described, is hereby extended to include therein:

TOWNSHIP 21 SOUTH, RANGE 27 EAST, NMPM
Section 10: All

(2) That the Burton Flats-Strawn Gas Pool in Eddy County, New Mexico, is hereby prorated effective April 1, 1974.

(3) 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 such 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
BURTON FLATS-STRAWN GAS POOL

A. WELL LOCATION AND ACREAGE REQUIREMENTS

RULE 1. Each well completed or recompleted in the Burton Flats-Strawn Gas Pool or in the Strawn formation within one mile thereof and not nearer to nor within the boundaries of another pool producing from the ~~Morrow~~ Strawn formation shall be spaced, drilled, operated, and prorated in accordance with the rules for the Burton Flats-Strawn Gas Pool as set forth herein.

RULE 2. Each well shall be located no nearer than 330 feet to the end boundary nor nearer than 660 feet to the side boundary of the proration unit nor nearer than 330 feet to any governmental quarter-quarter section line.

C. ALLOCATION AND GRANTING OF ALLOWABLES

RULE 8. (A) The total allowable to be allocated to gas wells in the pool regulated by this order each month shall be equal to the sum of the "preliminary" or "supplemental" nominations (whichever is applicable) together with any adjustments which the Commission deems advisable. The 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 gas wells in the pool.

RULE 8. (B) Allowables to newly completed gas wells shall commence on the day of connection to a gas transportation facility as determined from an affidavit furnished to the Commission (Drawer DD, Artesia, New Mexico 88210) by the purchaser or the date of filing of Form C-104 and a plat (Form C-102) whichever date is the latter.

RULE 9. (A) A standard unit consisting of 320 acres shall be assigned an acreage factor of 1.00, provided however, the acreage tolerances provided in Rule 5 (A) shall apply.

C. GENERAL

RULE 25. The vertical limits of the Burton Flats-Strawn Gas Pool shall be the Strawn formation.

RULE 26. The first proration period for the Burton Flats-Strawn Gas Pool shall commence on April 1, 1974.

IT IS FURTHER ORDERED:

(1) 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 herein-above designated.

In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider extending the horizontal limits of the Burton Flats-Strawn Gas Pool, Eddy County, New Mexico, to include all of Section 10, Township 21 South, Range 27 East

Also to be considered will be the institution of gas operations in said pool to provide for fixing the total allowable natural gas production from said pool to an amount equal to reasonable market demand and to the capacity of the gas transportation facilities. Also to be considered will be the adoption of special rules and regulations for said pool including a provision for allocating the reasonable production among the wells in the pool.