Case Number

4853

Application

Transcripts.

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
MORGAN HALL, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
Wednesday, February 14, 1973

EXAMINER HEARING

IN THE MATTER OF:

Application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico.

Case No. 4853

BEFORE: Daniel S. Nutter,
Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: We will call next Case 4853.

MR. CARR: Case 4853, application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico.

MR. MORRIS: Mr. Examiner, I'm Richard Morris of Montgomery, Federici, Hannahs & Morris of Santa Fe, appearing on behalf of El Paso Natural Gas Company. With me is Mr. J. C. Considine of El Paso Natural Gas Company, an attorney, member of the Texas Bar, who will be with me and will present the case for El Paso.

MR. NUTTER: Are there other appearances, please?

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin & Fox, Santa Fe, appearing on behalf of Texas Oil and Gas Company and Hawkins Oil Company.

MR. COHEN: Saul Cohen, Santa Fe, New Mexico, appearing on behalf of Southern Union Gas Company.

MR. CARTER: Roy Carter, Denver, Colorado, appearing on behalf of Amoco Production Company.

MR. NUTTER: No further appearances, we will proceed. We may have an appearance on behalf of the Commission staff.

At the outset of the hearing today, I would like to read a statement that was made by the Examiner at the hearing on December 19th, that anything relating to other than the protection of correlative rights or the prevention of waste will be admitted for informational purposes only and will not

be relevant for the consideration of the application or its denial or approval.

Would you proceed, Mr. Morris?

MR. MORRIS: I don't know whether the witness has been sworn, Mr. Examiner. We have one witness, Mr. Woodruff.

F. NORMAN WOODRUFF

a witness, having been first duly sworn according to law, upon his oath, testified as follows:

DIRECT EXAMINATION

BY MR. CONSIDINE:

Q Mr. Woodruff, would you please state your full name for the record?

A I'm F. Norman Woodruff.

Q And would you state your position with El Paso Natural Gas?

A Director of Gas Prorations, El Paso Natural Gas, El Paso, Texas.

Q Have you, on previous occasions, appeared before this Commission and given testimony?

A Yes, I have.

Q Will you please explain the circumstances involving El Paso Natural Gas Company's operations in the San Juan Basin which have led to this application in this case?

A During the year 1972, El Paso, in it's continuing studies of its available gas supply to meet its market requirements, became aware that towards the latter portion

of 1972 it appeared that it would be unable to meet the full, firm requirements of its customers, and that from that time on it appeared that curtailment, some degree of curtailment, would be apparent, both summer and winter. Actual experience has proved our prognostication. We started curtailing last November and have curtailed to some degree continuously since that time.

Now, at the time we made this study, it became apparent to us that we should look at our supply to see what we might be able to do in order to improve the availability of gas to our pipeline and in turn be able to maximize the deliveries to our customers. We knew that to the extent that we could improve our operating practices, and that we might prevail upon those who sell gas to us to improve their operating practices, that this would help the situation; and we have undertaken to accomplish these improvements and operating practices, both in operating the pipeline and in operating the wells that both we operate and that are operated by others.

In this study, it also became apparent that one of the major reasons for down time of wells was the seven-day shut-in period during the taking of deliverability tests for wells in the San Juan Basin.

Q Aside from the use in prorating of gas, what are some of the other uses for test data taken on the wells in the San

Juan Basin area?

A Now, both the State and Federal regulatory agencies use test data in fulfilling their responsibilities, in administering their responsibilities. Also, both pipelines and the operators of wells utilize their test data in their continuing analysis of the wells and in their reservoir studies.

Q What benefits are to be obtained by foregoing these tests?

A Well, if these tests are foregone, there is actually a double benefit by foregoing it. The first is the benefit from having the additional volume that is available to the customers and may be sold during the year. The second is the savings in time, effort, and expense which would be gained by those parties responsible for the testing of the wells.

Q Have you put a pencil to these benefits in an attempt to quantify them?

A Yes, I have, and I think that I can give you a general idea of what will be gained in terms of additional gas that may be sold in quantity figure, and in terms of the revenue that may be gained from the owners of this gas.

There is, in the San Juan Basin, in very round numbers, something like 2,000,000,000 delivery capacity. Now, if each of the wells are tested every year in a manner that requires seven-day shut in, you would have

seven days of this 2,000,000,000 delivery capacity apparently denied to the market. That would equate to 7 times 2, or 14,000,000,000. Now, I would like to explain why it's apparent. When a well is shut in, it does build up, and when it's turned back on it produces with a head. It produces more for a period of time than it would have produced had it not been shut in prior to being turned back on; and there has been some study of this, and in general, though, we have found that variation in the wells -- We find that on the average, about 75 per cent of the availability that would have been received, had you produced the well for the seven days, is lost by shutting in the well for seven days; and so, to convert this 14,000,000,000 to a more realistic loss figure, you would have to multiply the 14,000,000,000 by 75 per cent, and that would reduce the 14,000,000,000 to 10.5 billion. We might round out the figure, for the ease of calculation to 10,000,000,000.

Now, currently there is a great variety of price of the gas in San Juan, but a reasonable round number price, I think, is $.25 per Mcf, and if we use this $.25 times 10,000,000,000, we come out with two and a half million dollars as being the reasonable estimate of the amount of income that would have been received by the owners of the wells had they been produced rather than shut in for the

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seven-day period. Now, it should be understood that if no wells are tested during this year, and will evolve during our testimony, we are suggesting that half of the wells, in essence, could be tested one year and the other half the other year. So the average annual benefit would be one half of this 2.5 million dollars, or about one and a quarter million dollars per year.

Now, there is a further benefit, or savings, in this instance derived by not testing wells in that it costs each of the operators something to test his well. And, in our analysis of what it costs owners to test their wells, a $40 per test per well figure was being derived. It's not clear just how many wells would have to be tested, there is over 7,000 wells in the Basin, some of them are exempt; but let's assume that 5,000 would be tested, and if you could forego these tests on these 5,000 wells, at $40 a test, you would have $200,000 as the savings in cost of testing. Here, again, that would be if you didn't test them at all times, any of the wells for the year, and our proposal would be to test wells every other year; so, again, this should be cut in half. So the average annual savings should be around $100,000. So, you would have, in summary, additional gas sales of around $1,000,000 to $1,250,000, and then a saving in test cost around $100,000.

Q Would you please describe what tests are currently required of the various wells in the San Juan Basin?

A Currently in the San Juan Basin all wells, both in prorated and non-prorated pools, are required to take deliverability tests on an annual basis; and this annual test requires a seven-day shut in pressure test, and that is all the wells with the exception of the exempt marginal wells that must be tested annually.

Q And the exempt marginal wells are exempted entirely from testing?

A That is correct.

Q What conclusions did you draw from your study of the testing procedures of these wells?

A Well, we concluded in our study of the San Juan Basin wells that there was no need to take deliverability tests for proration purposes on any marginal well, and since unprorated wells are not prorated, that there is no need of taking deliverability test on those wells. No need, that is, except for the necessity of getting reservoir data in order to continue the studies which are conducted both by the regulatory bodies and the owners of the wells.

Q Based upon these conclusions, what action did El Paso take?

A Our initial action was to write Mr. Porter on September 28 asking that the Commission take such action as was necessary, including a hearing, if they found it to be so

necessary, to exempt all marginal wells from the deliverability test requirement. That hearing was scheduled on November 1, 1972, and the hearing is the same as the number which exists today, Case 4853.

Q Did you subsequently amend your application in that case?

A Yes, as a result of our discussions with various interested parties in the San Juan Basin, it became apparent that there were other potential means of minimizing the down time of wells in the San Juan Basin; and it appeared that these other means needed to be considered, so we then wrote to Mr. Porter again on -- Well, first we asked the Commission to continue the hearing from the November 1st date, and the Commission did agree to do that. We then wrote the Commission on November 17 asking that they broaden the scope of our hearing so as to permit the consideration of one, other means of avoiding or minimizing the loss of pipeline availability attributable to the period wells in prorated pools are shut in in order to conduct the annually-required deliverability and shut-in pressure tests; two, exempting wells in non-prorated pools from the annual deliverability and shut-in pressure requirements; and, three, exempting all wells in the San Juan Basin from the requirement for annual shut-in pressure tests as provided in the General Rules and Regulations.

As a result of this letter, the Commission broadened

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the call of the hearing and reset it for December 19, 1972

Q And what occurred at the time the matter was called for hearing on that date?

A At the time it was called for hearing, it was continued to this day, February 14, 1973.

Q 1973?

A 3.

Q I believe, also, that an informal conference was held on that date. Did the parties attending that conference suggest the consideration of other testing procedures?

A Yes, they did. We had a discussion concerning a number of different modes of testing. I think very good consideration was given to all, I would say it seemed that generally most favored some change in the testing procedure; and the general trend seemed to favor a testing on an every other year or bienniel basis, rather than just exempting the marginal wells, as had been our initial proposal.

Q Has El Paso considered this type of a testing proposal?

A Yes, El Paso has carefully considered this type of proposal, particularly from the standpoint of whether it appears that equities would be disturbed in the prorated pools by the calculation for the prorated pools, in the calculation formula, for a two-year period rather than a one-year period.

Q Did you reach any conclusions?

A Yes, we concluded that the wells are in a condition of stability so that a deliverability taken one year can be used for a two-year period with the reasonable expectation that equities of the parties will not be disturbed, provided that new and reworked wells are tested on an annual basis until reasonable stability is established.

Q At the time this matter was called on December 19, what was El Paso prepared to do?

A El Paso, at that time, was prepared to offer an alternative procedure to that which we had orignally proposed, and the original alternative procedure would have provided for the testing of all wells in both prorated and non-prorated pools every other year.

Q That, again, is with the exception of exempt marginal wells?

A Correct.

Q During the informal conference held, this matter was discussed by the various parties?

A Yes, it was discussed and it was generally agreed, as a result of that meeting, that El Paso would return to the hearing which the Examiner had recessed and ask for a continuation, and that in the interval between then and the time the hearing was reset, that we would prepare, set out in writing, the proposed amendments to Order Number R-333-F, as amended, and furnish them to all interested parties and to the Commission so that each

might have the opportunity to study our proposal before this hearing today was reconvened.

Q And was this done?

A Yes, this was done. A letter was furnished to the operators in the latter portion of December.

MR. CONSIDINE: Mr. Examiner, that letter which was mentioned by the witness is dated December 21, 1972, and has been marked as our Exhibit Number 1, dated this date.

Q (By Mr. Considine) Mr. Woodruff, are the revisions the same as those contained in the letter dated December 21, 1972?

A Yes. What we propose to do will be the same as was contained in that letter.

Q Will you describe these revisions?

A Yes, I will. In substance, this proposal provides as follows: for bienniel deliverability and shut-in pressure tests on all gas wells in the prorated and non-prorated pools, except those wells classified as exempt marginal. No deliverability and shut-in pressure test shall be required on exempt marginal wells. All new wells, reworked wells, and recompleted wells in the San Juan Basin area shall receive deliverability and shut-in pressure tests on an annual basis until three annual tests have been taken and thereafter such tests shall be taken on a bienniel basis. All Basin wells in a given pool

would be tested in the same test year; and in order to accomplish this, the San Juan Basin pools were divided into two groups for testing in alternate years.

Now, the order then would provide for testing of a certain group of wells in odd years, 1973 being an odd year, we would propose that the groups which are identified in our proposal as Group A be tested in the year 1973; and no test be required for the pools in Group B. And to explain more thoroughly, Group A would include the following pools -- and, as I said, these are the pools that we would propose to have well tests for the year 1973: Blanco-Mesaverde, Aztec-Pictured Cliffs, Ballard-Pictured Cliffs, West Kutz-Pictured Cliffs, Tapacito-Pictured Cliffs. The Group B wells would not be tested this year but would be tested in 1974, and that group would consist of the following: Basin Dakota, South Blanco-Pictured Cliffs, Fulcher-Kutz-Pictured Cliffs, Blanco-Pictured Cliffs, and all other gas pools in the San Juan Basin area which would include all of the non-prorated pools. I think it's well to say that these groups were made up in an attempt to try to reasonably, equally divide the number of wells that would have to be tested between two-year periods. In other words, we tried to have about the same number of wells in '73 as would be tested in '74. The inclusion of these pools were ones that the people

who worked for El Paso, that actually test the wells, analyzed and recommended to us.

Q Mr. Woodruff, in your opinion, would the granting of the application in this case operate as to create waste or impair correlative rights?

A I consider that granting of our application would in no way create waste or impair correlative rights.

Q Have you anything further to add regarding the El Paso proposal, with the change we made for the test requirements of the San Juan Basin gas wells?

A Yes, I would like to suggest that in the granting of El Paso's application, the Commission establish a criterion for the wells in non-prorated pools which would exempt those wells of a character comparable to the exempt marginal wells in the prorated pools, so that we will not be testing those wells in the non-prorated pools which may, for economic reasons or other good cause, determined by the Commission, deserve exemptions to the testing procedure.

Q Mr. Woodruff, further on your answer with regard to correlative rights, do you think there will be any particular benefit to any class of wells?

A I think there is a clear correlative right benefit that would be gained from marginal wells by permitting them to forego the taking of tests. Marginal wells are already

incapable of producing their full allowable, and to the extent that they are permitted to produce more gas, they are then permitted to produce a greater share of their allowable; and I think it's certainly beneficial in terms of correlative rights to permit this to be done. I think in general that I'd also like to say that we, El Paso, know that the Commission and the other parties in the San Juan Basin are vitally interested in the matters which have concerned us and which we have discussed in this hearing today, and we would like to ask all interested parties, either today or in the future, to give us benefit of their thoughts as to how we can best fulfill our responsibilities both as a pipeline company -- well, as a pipeline company both to the producers from who we get our gas and to our customers; and we hope that those here agree that this is an effort in that direction.

MR. CONSIDINE: Mr. Examiner, that concludes our Direct presentation. I would like to point out that El Paso recognizes there may be other orders which make reference to the annual testing procedure which should also be altered if our application is granted. I would also at this time offer our Exhibit 1, dated this date, into evidence.

MR. NUTTER: El Paso's Exhibit 1 will be admitted in evidence, and in line with what you just remarked on, Mr. Considine, it will be necessary to, if the approval is adopted,

amend Rule 9-D of our Order Number R-1670, which makes reference to annual deliverability tests. That's one I know of.

MR. CONSIDINE: Yes, sir.

MR. NUTTER: That concludes your Direct testimony?

MR. CONSIDINE: Yes, sir.

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

MR. TRAYWICK: I'm Carl Traywick of the United States Geological Survey, Roswell.

CROSS-EXAMINATION

BY MR. TRAYWICK:

Q Mr. Woodruff, on your recommendation to the Commission, certain marginal wells might be exempted from testing. Would that apply to new wells that are completed as marginal wells? Are you suggesting that Rule R-333-F be changed further than proposed by the Commission in its judgment, to go beyond exempt marginal wells?

A Our recommendation would be that any new well, whether it be marginal or non-marginal, be required to be tested for a three-year period with the exception of a new well which the Commission found was in the category deserving to be exempt marginal well; and we would not recommend that the Commission require tests on a well which they have found should be in this exempt category.

Q Which would be the same as before, the rule as amended?

A I want to shake my head yes, but I would ask for the Commission to accept a yes answer as being correct unless they want to correct me. I am not sure how they administer that; so I get an affirmative nod.

MR. TRAYWICK: Thank you, Mr. Examiner.

MR. NUTTER: Are there other questions of the witness?

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Woodruff, you are familiar, I'm sure, with our present method of classifying exempt wells.

A I am generally familiar.

Q Do you recall our discussion of yesterday changing the method of classifying exempt wells on a straight 2,000 or 1,000 or whatever we arrived at, production figure, that is average production, rather than making the calculation as to the F-1 factors on the acreage factors at the present time? I'm sure you are aware that we use the acreage factors in determining whether a well is exempt or not. Now, I'd like to comment as to your attitude on changing the method. Do you agree with it?

A The proposal, Mr. Utz, was one which was further presented for our consideration yesterday, and I would feel that other than expressing off the top of my head, some ideas, that I cannot express my company's position on it. The

Commission have, in their good judgment, administratively established the criterion for what is an exempt marginal well and what is not. I know the Commission's has been one of the major factors, and I think it should be one of the major factors. Now, what the breaking point in terms of monthly allowables should be, I'm not prepared to say; but as prices change, the volume may very well change according to the changed Commission picture relating solely to price. So, I think this could be a continuing study on the part of the Commission. I know of no disagreement or any consideration on anybody's part that what the Commission has heretofore done is unreasonable. Certainly we have not considered it so, and we would be happy to consult with you formally or informally on any other change, and if you desire to study this and to respond. But I do not feel that I am in a position to go any further than that at this time.

Q Well, would the increase of the price of gas, which evidently will come, would you not think that the necessity for information, reservoir information, in lower marginal areas, might be in order?

A Would you be good enough to give me that question again, Mr. Utz?

Q Well, in the event of an increase in the price of gas, which apparently will come, which supposedly will increase

activities in more lower marginal areas of the San Juan Basin, would you not think that the availability of the reservoir information in the more marginal areas would be in order?

A As I understand your question, we certainly hope that an improvement in the price will make economic the development of some areas that have not heretofore been developed; and of course, the gathering of data in those areas would be very important to anyone that may be considering that development. So, yes, I think the data will be important as to the development of the areas, let's say, that heretofore have been considered uneconomic in the San Juan Basin area.

MR. UTZ: Thank you.

MR. NUTTER: Are there further questions?

(No response.)

MR. NUTTER: The witness may be excused. Does anyone wish to offer testimony at this time?

(No response.)

MR. NUTTER: We will take a 10-minute recess.

(Whereupon, Case 4853 was recessed for 10 minutes.)

MR. NUTTER: The hearing will come to order, please. We are on Case Number 4853.

Mr. Carr, do you have a witness in this case?

MR. CARR: Yes, we have one witness and request that

he be sworn.

EMERY ARNOLD,

a witness, having been first duly sworn according to law, upon his oath, testified as follows:

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and occupation, please?

A Emery Arnold. I am a supervisor of Commission's District 3 in Aztec, New Mexico.

Q Mr. Arnold, are you familiar with the amendments proposed in Case 4853, the gas well testing procedures in the San Juan Basin?

A Yes, I am.

Q Have you prepared any exhibits for presentation this morning?

A Yes, I've prepared two exhibits. The first exhibit is a production analysis of each of the prorated pools in the San Juan Basin, which shows the wells in each pool divided into production groups. This was prepared by analysis of the 1972 production of all the wells in each pool.

MR. NUTTER: Mr. Arnold, do you have an extra copy of that to furnish to El Paso?

THE WITNESS: Yes.

A This exhibit is prepared for informational purposes mainly.

It was prepared to enable us to try to determine what the criterion should be, possibly, in defining exempt marginal wells. The column on the far right shows the percentage of wells producing that amount of gas or less for each group. In other words, in the Basin Dakota Pool, 16.4 per cent of the wells in the pool are producing 2,000 Mcf per month or less, 26.5 per cent are producing 3,000 Mcf per month or less, and so forth. The wells are divided into 500 Mcf per month groups.

Exhibit Number 2 is a summary showing the classification of all prorated wells in the San Juan Basin as of January, 1973. This information is taken from the January, 1973 proration schedule.

MR. NUTTER: For your information, Exhibit Number 2 is the last page of that folder.

Q (By Mr. Carr) Mr. Arnold, were these exhibits prepared by you or under your supervision and direction?

A Yes, they were.

MR. CARR: Mr. Examiner, I move the admission of Oil Conservation Commission's Exhibits 1 and 2.

MR. NUTTER: Exhibits 1 and 2 will be admitted into evidence.

Q (By Mr. Carr) Mr. Arnold, do you have any recommendations or proposals in view of the suggested amendments as to how the Commission can define the exempt marginal wells?

A If the Commission finds that there is a justifiable need for reducing the number of wells to be tested in the San Juan Basin, I think that El Paso's proposed method is the best method to accomplish that reduction and still give us pretty good pool information, reservoir information. I do think, however, that we should revise our criterion for exempting wells from tests. At the present time we are exempting about 38 per cent of the wells from tests, so that actually we are taking approximately 40 per cent of the wells off the top before we split them from the bienniel testing, which really leaves a large gap in some areas where we need more tests, I think.

So, I would recommend, based upon the study we've made, that we use 1,000 Mcf per month on all wells that are completed in the Pictured Cliffs formation or shallower, as a criterion. In other words, any well in anyone of those formations which produce less than 12,000 Mcf in a year would be exempt. For wells completed in formations deeper than the Pictured Cliffs, I would recommend that we use 2,000 Mcf per month or 24,000 Mcf for the year. Any well which failed to produce in excess of 24,000 Mcf in a year would be exempt. That would result in the exemption of about 24 per cent above the total prorated wells in the Basin.

I would also recommend that those criterion also be

used in non-prorated pools.

Q Do you have any further recommendation?

A I believe that covers it.

MR. CARR: Mr. Examiner, I have no further questions.

CROSS-EXAMINATION

BY MR. NUTTER:

Q Mr. Arnold, with respect to your Exhibit Number 2, where you have the total XM column there and a percentage of totals, does that ~~present~~ represent the present means of exempting wells, or would this be the percentage under the proposed--

A No, actually, this is the percentages taken from the January proration schedule after the last reclassification.

Q So this is based on the present criterion?

A Right. Then, if you want to find out what the criterion would be, based upon any other volume, you can pick up the percentage from Exhibit Number 1 for any volume that you would care to look at, for that matter.

Q In other words, refer there to the third or fourth page, Ballard-Pictured Cliffs, Mr. Arnold, of Exhibit 1.

A The Ballard-Pictured Cliffs?

Q Yes, sir.

A All right.

Q Now, you are recommending 1,000 for this pool, right?

A Right.

Q So you've got 322 of 522 total wells that produce less

than 1,000, is this it?

A No, 200 wells.

Q 200 of the 522, I mean.

A 200 of the 522 producing less than 1,000 which is 33.8 per cent in that particular pool.

Q Would be exempt?

A Right.

Q I see.

A Those percentages, as you will see, fluctuate rather widely from pool to pool. In the Tapacito-Pictured Cliffs, for instance, 11.7 per cent of the wells are producing 1,000 Mcf or less, where as that percentage in the Ballard-Pictured Cliffs is 33.8 per cent.

MR. NUTTER: Are there any questions of Mr. Arnold?

(No response.)

MR. NUTTER: If not, he may be excused. Do you have anything further, Mr. Carr?

MR. CARR: No.

MR. NUTTER: Do you have any further testimony, Mr. Morris?

MR. MORRIS: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case 4853, statements?

MR. SIMMONS: All I have is a statement to read into the record right at this time. I'm prepared to do that.

MR. NUTTER: Yes, sir, please do.

MR. SIMMONS: Mr. Examiner, I'm W. B. Simmons, Junior, Proration Engineer from the Mobile Midland Area Office.

Mobile Oil Corporation, an operator in the San Juan Basin, New Mexico, proposes the following recommendations for the Commission's consideration in Case Number 4853, amendment of the gas well testing procedure, San Juan Basin, New Mexico: One, reduce the frequency of shut-in tests on all wells with such tests being required as follows, A, bienniel shut-in tests on all wells, except those classified as exempt marginal; B, no shut-in tests on exempt marginal wells; C, annual shut-in tests of all new wells, reworked wells and recompleted wells for three years, bienniel tests thereafter; take deliverability tests on all wells except those classified as exempt marginal; D, no shut-in tests on exempt marginal wells, E, annual shut-in tests of all new wells, reworked wells, and recompleted wells for three years, bienniel tests taken thereafter. Two, take annual deliverability tests on all wells except those classified as exempt marginal. Three, test all gas wells in a given pool in the same test year.

Mobile believes that the above testing recommendations will provide sufficient reservoir data to adequately evaluate the pool status while maintaining a high producing level for the field. Annual deliverability tests will cause no loss in gas production and will provide the Commission and operators

with positive information on the true capacity of the wells on a standardized basis. That's all.

MR. NUTTER: Thank you. Anyone else?

MR. CARTER: Roy Carter, Amoco Production Company, Denver, Colorado. Amoco Production Company is the second largest producer in the San Juan Basin, with the total of 553 wells. Now, we've reviewed the proposal as stated by El Paso and we are in complete concurrence with this proposal and urge that it be adopted. We cannot see that this would be detrimental to our interests in any way. We feel that it will provide sufficient reservoir data, as far as our company is concerned.

MR. COHEN: Mr. Examiner, Saul Cohen for Southern Union Gas Company. Southern Union supports the application made today by the El Paso Natural Gas Company. I do want to add, however, that Southern Union feels very strongly that the data obtained by these tests is absolutely vital and that nothing be done to diminish in any way the amount of data available; and toward that end, we support the suggestions made by Mr. Utz informally yesterday and here today, and Mr. Arnold, that the criterion for exempt marginal wells be carefully reviewed to insure that all of the parties concerned continue to receive an undiminished amount of this testing data. And with that reservation, or footnote, we do, as I said, support the application.

MR. NUTTER: Thank you.

MR. KELLAHIN: Mr. Examiner, Jason Kellahin, Kellahin & Fox, Santa Fe, appearing for Texas Oil and Gas Company and Hawkins Oil Company. We are in agreement with the proposal that has been made by El Paso Gas Company.

MR. WILLEFORD: Harry Willeford, District Production Manager for Tenneco, Denver, Colorado. Tenneco also operates some 400-plus wells in the Basin, has a large vested interest. We do support El Paso's application, and as many other people said today, we are vitally interested in continuing to gather the necessary data to analyze and better understand our vested interest. In that respect, we fully support the Commission's proposal, Mr. Arnold, in particular, in increasing the number of wells that will be tested, less the number of the exempt marginal wells.

MR. NUTTER: Are there any other statements?

(No response.)

MR. NUTTER: We have some communications that were received. Here is one from Gulf Oil Corporation received October 25. I presume that their position has not changed because we haven't received any further communication from them.

"Gulf Oil Corporation is an operator in the San Juan Basin area. We are in agreement with El Paso Natural Gas Company in that Order Number R-333-F as amended, should be amended to remove the tests for marginal wells. We, therefore,

support El Paso Natural Gas Company's position in Case 4853."

We've got one from Southern Union Gas Company, however, I will not read that into the record, they have made a personal appearance.

We had a statement telephoned in this morning from Mr. C. E. Cardwell, Junior, District Manager of Atlantic-Richfield in Denver. It reads as follows:

"Atlantic Richfield Company wishes to make known that it opposes the proposal to amend Order R-333-F, proposal by El Paso Natural Gas Company. The reason for this opposition are as follows: One, Atlantic Richfield opposes any proposal which, in effect, bypasses, reduces, or nullifies these responsibilities or jurisdiction of the New Mexico Oil Conservation Commission; two, Atlantic-Richfield feels that the annual testing of all of its wells is necessary for various reservoir engineering studies; three, Atlantic-Richfield Company has in the past and will in the future test each of its wells at least annually, whether or not such test is required by regulations; four, a review of several years' records show that more gas wells' shut-in time was experienced in San Juan Basin due to El Paso Natural Gas Company's request or order than due to annual testing. Signed, C. B. Cardwell, Junior."

I believe that concludes our communications. If there are no further statements, we will take the case under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, JOHN DE LA ROSA, 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.

John De La Rosa
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4853, heard by me on Feb 14, 1973.

....., Examiner
New Mexico Oil Conservation Commission

I N D E X

E X H I B I T S

	OFFERED	ADMITTED
El Paso Exhibit #1	16	16
OCC Exhibits #1 and #2	22	22

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

December 19, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico.

Case No. 4853

BEFORE: Daniel S. Nutter,
Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: We will call next Case 4853, which is the application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico.

I will call for appearances in this case.

MR. MORRIS: Richard Morris, of Montgomery, Federici, Andrews, Hannahs and Morris, appearing on behalf of the Applicant, El Paso Natural Gas Company. Mr. J. C. Considine of El Paso, Texas, and a member of the Texas Bar, will participate with me in this case.

MR. COHEN: Saul Cohen, of the firm of Olmsted, Cohen and Bingaman, Santa Fe, appearing on behalf of Southern Union Gas Company. Mr. Haseltine of that company will be our witness.

MR. COOTER: Paul Cooter, of Atwood and Malone, Roswell, appearing on behalf of Amoco Production Company. We will have one witness.

MR. McDERMOTT: W. H. McDermott, of McDermott, Connelly and Stevens, Santa Fe, appearing on behalf of Marathon Oil Company. Mr. Gray and Mr. Webb will be the witnesses for Marathon.

MR. NUTTER: Are there any other appearances?

MR. PAYNE: Oliver Payne, appearing on behalf of the Commission. The Commission will have one witness, Mr. Emery Arnold.

MR.MR. NUTTER: I'm glad to welcome old Ollie back. He was attorney for the Commission for a number of years, and has been gone since 1961, and we are glad to have him back on board this morning to help us out at this time.

Are there any other appearances?

MR. KELLAHIN: Jason Kellahin, of Kellahin and Fox, Santa Fe, appearing on behalf of Aztec Oil and Gas Company and Caulkins Oil Company.

MR. NUTTER: Are there any other appearances?

(No response)

MR. NUTTER: Mr. Morris, you may proceed.

MR. MORRIS: We will have, Mr. Examiner, one witness only, Mr. Woodruff. I would ask that he be sworn at this time, and then that we be given a few minutes to mark our exhibits.

F. NORMAN WOODRUFF,

was called as a witness, and after being duly sworn, testified as follows:

MR. NUTTER: At the outset of this hearing, I would like to make a statement. We go back to 1959, at which time the Commission entered Order Number R-1092A, which was an application asking the Commission for a change of the proration formula for the Jalmat Gas Pool in Lea County, New Mexico. The Commission entered Order R-1092A, and among its findings was included finding number six. Finding number six reads as follows: "That the inclusion of a deliverability factor in

the proration formula for the Jalmat Gas Pool will result in the production of a greater percentage of the pool allowable, and that it will more nearly enable the various purchasers in the Jalmat Gas Pool to meet the market demand for gas from said pool."

After the Commission entered the order, there was a re-hearing, and the Commission reaffirmed the order. This order was appealed to the District Court, and the order was upheld by the District Judge. It was then appealed to the New Mexico Supreme Court, which reversed the District Court, and declared Order Number 1092A and 1092C invalid and void. The Supreme Court, in declaring the order invalid and void, made the following comment: "In considering finding number six, the record of the Commission furnishes us nothing upon which to base an assumption that the finding relates to the prevention of waste, or the protection of correlative rights. We find no statutory authority vested in the Commission to require the production of a greater percentage of the allowable, or to see to it that the gas purchasers can more nearly meet market demand unless such results stem from, or are made necessary by, the prevention of waste or the protection of correlative rights."

The Commission has on its docket at the present time scheduled to be heard on April 18th, 1973, Case Number 4682, which is a case considering an application for

additional drilling in the Blanco-Mesa Verde Gas Pool. The Commission, after hearing arguments on the case on June 29th, 1972, entered an order dated July 6th, 1972, with the following findings.

Findings six through ten will be entered into this record. It is this Commission's decision in the case, I'm not reading all the wording here, "it's the Commission's decision that Case 4682 must be predicated upon the prevention of waste of hydrocarbons, and the protection of the correlative rights of the owners of the properties in the Blanco-Mesa Verde Gas Pool. That the Commission will receive evidence that is relevant to the prevention of waste of hydrocarbons, and the protection of correlative rights. Evidence concerning market demand, curtailment of gas supplies, energy crisis, and environmental impact will be received by the Commission and considered in its determination to approve or disapprove the application if the party offering same can show the relevance of such matters to the prevention of waste and the protection of correlative rights.

"The Commission also has the authority to gather for informational purposes evidence concerning market demand, curtailment of gas supplies, energy crisis, and environmental matters, though such are not to be considered in its determination of approval or disapproval of the subject application.

"That the Commission will receive evidence concerning market demand, curtailment of gas supplies, energy crisis, and environmental matters if offered by a party merely for informational purposes."

I have been instructed to read that statement into the record today as notification to all parties that in the hearing today, anything relating to other than the protection of correlative rights or the prevention of waste will be admitted for informational purposes only, and will not be relevant for consideration of the application, or its denial or approval.

You may proceed, Mr. Morris.

MR. MORRIS: Mr. Examiner, in view of the explanatory statement you have made concerning the scope of this hearing, and the Commission's intentions, I would like to just make a brief opening statement concerning this case.

I think there is no secret about the fact that El Paso Natural Gas is very definitely concerned about meeting its market demand. We have made that very clear to the Commission, and to the various interested parties for the past several years. It's a very real problem to the company, to the State, and to the parts of the nation that El Paso serves, and where its customers are located.

We recognize, however, that this Commission, in view of the Jalmat decision, which you have referred to,

feels that it's constrained by the Conservation Statute in making a decision in this case on the basis of the prevention of waste and the protection of correlative rights.

Just what constitutes waste in this day and time is a matter that,in my opinion, is still emerging. We are still seeking a definition of what constitutes waste in the context of the day's problems.

Just as more or less an aside, I wonder whether the Supreme Court of New Mexico could reach the same decision if the Jalmat case were presented to it for the first time today, but that is a matter that we can only conjecture upon, and we are not asking the Commission here today to try and second guess the Supreme Court of the State of New Mexico, of course.

We believe that we can show, through the evidence that we will present today, that there is a conservation basis upon which the Commission should grant the application that we have made.

I believe there is a considerable monetary saving that can be made to the operators throughout the San Juan Basin by adopting and granting our application in some form. We believe,that to some degree, correlative rights, particularly those of the operators of the marginal wells, can be protected, and we believe that throughout this matter under discussion, that there are considerations of

the prevention of waste and the overall object of conservation that can be served by granting, in some form or another, the application we are making to you.

We do intend to present to the Examiner considerable evidence relating to market demand and El Paso Natural Gas Company's market situation. We feel that to attempt to present this case without that type of evidence would be asking the Commission to consider the matter in a vacuum and without regard to the real problems that exist in the gas industry.

We appreciate the Examiner's indulgence in permitting us to present this evidence, and we understand from the Examiner's rulings here, that it will be considered for background information.

With that, we will proceed.

(Whereupon an off the record discussion was held.)

(Hearing continues.)

MR. MORRIS: Mr. Examiner, we are prepared to proceed with the presentation of evidence. However, we have received a request from the attorney for Marathon Oil Company to bring this matter to the attention of the Examiner. Rather than proceeding in a formal hearing at this time, this matter might be referred instead to an informal conference so that all the operators who are present and have an interest in this matter could discuss

the matter on an informal basis before our presentation of evidence.

It has also been suggested that the actual presentation of evidence be continued to a later date. El Paso Natural Gas Company has no objection to this suggestion, so long as there is something definite to be accomplished by an informal conference, and so long as the matter is not continued for too long a time.

We would be agreeable for a continuance for, say, thirty or forty days, something like that. However, we believe the matter has some urgency, and has already been continued for some time, and we would suggest that if the Examiner finds this procedure advisable that he fix a date for a hearing some times in January.

MR. NUTTER: Does anyone have any suggestion? We do have certain dates that would be available for a hearing. We will be governed by the Examiner Hearing schedule, which lists dates of January 17th, January 31st, February 14th, and February 28th.

MR. MORRIS: It has been suggested that rather than asking the Examiner to set a time for a hearing, or for a continuance at this time, that we might go into informal conference, and then come back and report our progress to the Examiner, and if the matter needs to be continued at that time to a fixed date, we may have a better

feel for when that date should be.

MR. NUTTER: We could continue this case until a certain hour today, and then you could report back.

MR. MORRIS: Could we say 1:30?

MR. NUTTER: Case 4853 will be recessed until 1:30 this afternoon.

(Whereupon Case 4853 was recessed until 1:30 P.M., Tuesday, December 19th, 1972.)

(Case 4853 was continued at 1:30 P.M., Tuesday, December 19th, 1972.)

MR. NUTTER: The hearing will come to order. The first case this afternoon will be Case Number 4853.

MR. MORRIS: Mr. Examiner, when the matter was continued from this morning's session, those who had entered appearances in the case convened in an informal conference to discuss El Paso's application.

We would like to report to the Examiner at this time that I think it was a beneficial experience for us, although I cannot report here to you that everyone is in complete agreement, but we have determined a cours of procedure which I believe will be acceptable to you and to the Commission.

We would propose and move at this time that the hearing be continued until February 14th

Within the next few days, El Paso will file with the Commission, and will furnish to all of the parties that had entered appearances in this case, a specific proposal concerning the change that El Paso is seeking in this matter.

We want to clarify what it is that we are actually proposing by way of change.

I would like to say generally that our proposal will be to this effect. We will propose a biannual testing

on all wells in all pools prorated and non-prorated in the San Juan Basin, with the exception of the exempt marginal wells for which no tests are required under present procedures. There would, of course, be a discretionary right for each operator to test wells more often if he so desired, but the proposal would be to test all wells-- let me put it this way. A test of each well at least once every two years. The test would be conducted on all the wells in a particular pool in the same year under our proposal, and would become effective for 1973 for the first group of pools. Let's say half of the wells, or half of the pools that would constitute approximately half of the wells in the Basin.

That basically doesn't sound like much to have talked about all morning, but that is basically what we have determined that our application will be, and what our specific proposal will be, and we will file that with the Commission here within the next few days.

MR. NUTTER: Mr. Morris, just by outlining briefly what your proposal will be, it appears it may not conform specifically with the case as called here, and as noted on the docket here. Do you think you will file a new application, and we should re-advertise it, or will this advertisement for this case be sufficient?

MR. MORRIS: We would prefer not to have to call

a new case for the reason that the people who came this morning and entered appearances have now formed a group to try and work this out. We know who we are dealing with, and who we should be in communication with as far as trying to work out something acceptable to the industry and to the Commission. If we call a new case, it would,of course, entail the possibility that additional parties would appear at the time of the new hearing, and just for the sake of knowing who the interested parties are, and being in communication with them, we would rather just have a continuation of the present case. But we don't mean to be inflexible on that. If the Commission feels it should be re-advertised, we certainly will be willing to go along with that.

MR. NUTTER: I think the advertisement is broad enough to cover what you mentioned here as being the points that would be considered on February 14th. It may even be broader than you need.

MR. MORRIS: Yes.

MR. NUTTER: We have had contact from a number of operators who were not here today, but who have indicated an interest by correspondence submitted to the Commission. Perhaps if you take a list of those operators, Mr. Morris, you could furnish them with what you are proposing.

MR. MORRIS: I would be glad to do that.

MR. NUTTER: Is there any objection to a continuance of Case 4853?

(No response)

MR. NUTTER: If not, Case 4853 will be continued to a hearing to be held at the same place at 9:00 A.M., on February 14th, 1973.

This hearing stands adjourned.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, RICHARD E. McCORMICK, a Certified Shorthand 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.

Richard E. McCormick
CERTIFIED SHORTHAND REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4853, heard by me on 12/19, 1972.

Examiner
New Mexico Oil Conservation Commission

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
Wednesday, November 1, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico.

Case No. 4853

BEFORE: Elvis A. Utz,
Examiner

TRANSCRIPT OF HEARING

MR. UTZ: We have this morning three continued cases which we will take up first.

Case 4853, the application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico.

MR. MORRIS: I'm Richard Morris of Montgomery, Federici, Andrews, Hannahs and Morris, Santa Fe, appearing on behalf of the applicant, El Paso Natural Gas Company. It is our understanding that the Commission staff has, or intends to ask the Examiner to continue this case in some date in December and El Paso has no objection to this continuance. When we learned of this, El Paso, on October 27th, sent a letter to all operators in the San Juan Basin and I believe you have a copy of that letter in the file in this case, advising them that El Paso would have no objection to the continuance. And at this time, Mr. Examiner, we would join, or if you like, actually move for continuance in this case until December 19th.

MR. UTZ: Thank you, Mr. Morris. The case will be continued.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, JOHN DE LA ROSA, 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.

John De La Rosa
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4658
heard by me on July 1, 1972.

Examiner
New Mexico Oil Conservation Commission

El Paso Natural Gas Company

El Paso, Texas 79978

December 21, 1972

File
Case 4853

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Daniel S. Nutter, Examiner

Re: NMOCC Case 4853: Amendment of Gas Well Testing Procedure, San Juan Basin, New Mexico

Gentlemen:

Enclosed is El Paso Natural Gas Company's proposed change in the gas well testing procedures for the San Juan Basin, New Mexico, as such procedures are currently prescribed by Order No. R-333-F, as amended. In substance this proposal provides as follows:

(a) Biennial Deliverability and Shut-In Pressure Tests shall be taken on all gas wells in the prorated and non-prorated pools of the San Juan Basin Area except those wells classified as exempt marginal. No Deliverability and Shut-In Pressure Tests shall be required on exempt marginal wells.

(b) All new wells, reworked wells and recompleted wells in the San Juan Basin Area shall receive Deliverability and Shut-In Pressure Tests on an annual basis until three annual tests have been taken and thereafter such tests shall be taken on a biennial basis.

(c) All gas wells in a given pool shall be tested in the same test year. Accordingly, the San Juan Basin pools have been divided into two groups for testing in alternate years.

As indicated below, copies of this letter and of the proposed change in Order No. R-333-F have been sent to the principals and attorneys of all interested parties appearing of record in Case 4853. Copies have also been mailed to those parties communicating in writing with the Commission in reference to this case.

Very truly yours,

EL PASO NATURAL GAS COMPANY

James C. Considine

James C. Considine, Counsel

Enclosure

Mailing List, NMOCC Case No. 4853

Mr. W.H. McDermott
Attorney at Law
Lincoln Building
Santa Fe, N.M. 87501

Mr. Morris G. Gray
Division Attorney
Marathon Oil Company
P.O. Box 120
Casper, Wyoming 82601

Mr. Paul A. Cooter
Attorney at Law
P.O. Drawer 700
Roswell, N.M. 88201

Amoco Production Company
Security Life Bldg.
Denver, Colorado 80202
Attn: Mr. Vinton Pierce

Mr. Jason Kellahin
Attorney at Law
P.O. Box 1769
Santa Fe, N.M. 87501

Mr. Prentice Watts
Executive Vice President
Aztec Oil & Gas Company
2000 1st National Bank Bldg.
Dallas, Texas 75202

Mr. W. C. Blackburn
Continental Oil Company
152 N. Durbin St.
Casper, Wyoming 82601
Attn: Mr. C. M. Tarr

Mr. Saul Cohen
Attorney at Law
Box 877
Santa Fe, N.M. 87501

Southern Union Gas Company
Fidelity Union Tower
Dallas, Texas 75201
Attn: Mr. Oran Haseltine

Southern Union Production Co.
Attn: Mr. L. S. Muennick
Vice President
Fidelity Union Tower Bldg.
Dallas, Texas 75201

Mr. J. A. Morris
Engineering Supervisor
Mobil Oil Company
Midland, Texas 79701

Tenneco Oil Company
Attn: Mr. R. A. Williford
Suite 1200
Lincoln Tower Bldg.
Denver, Colorado 80203

Gulf Oil Corporation
P.O. Drawer 1150
Attn: Mr. R. O. Bobo
Midland, Texas 79701

Group A:

Blanco Mesaverde; Aztec-Pictured Cliffs; Ballard-Pictured Cliffs; West Kutz-Pictured Cliffs; Tapacito-Pictured Cliffs.

Group B:

Basin Dakota; South Blanco-Pictured Cliffs; Fulcher Kutz-Pictured Cliffs; Blanco-Pictured Cliffs; all other Gas Pools

C. All Biennial Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing.

(All other provisions of Order No. R-333-F, as amended, not herein set out shall be changed only as is necessary to provide for biennial rather than annual deliverability tests.)

PROPOSED REVISION TO ORDER NO. R-333-F, AS AMENDED

(all changes are underlined)

Section 2: Biennial Deliverability and Shut-In Pressure Tests

A. Biennial Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each test year except as follows:

1. A Biennial Deliverability and Shut-In Pressure Test will not be required during the test year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however.

2. When the Initial Deliverability and Shut-In Pressure Test required by Section 1-B above has been taken in accordance with the biennial testing procedure outlined in Section 2 of Chapter II of these rules, the initial test may be considered the biennial test for the year in which the test was completed. Provided however, that if an operator intends to use such initial test as the first biennial test, he must notify the Commission and the gas transportation facility to which the well is connected of his intent in writing prior to the conclusion of the 14-day conditioning period.

3. A newly completed well or a reworked or recompleted well shall be tested on an annual basis until three annual tests have been taken and thereafter on a biennial basis as is required for other wells in the pool in which that well is located.

B. In order that all tests of wells in a pool shall be conducted in the same test year and in order to divide the tests into alternate years on a reasonable basis, all wells to be tested in the pools listed in Group A below shall be tested in odd years and all wells in the pools listed in Group B shall be tested in even years.

OIL CONSERVATION COMMISSION

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

March 27, 1973

GOVERNOR
BRUCE KING
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

Re: Case No. 4853
Order No. R-333-F-1
Applicant:

El Paso Natural Gas Company

Mr. Richard S. Morris
Montgomery, Federici, Andrews,
Hannahs & Morris
Attorneys at Law
Post Office Box 2307
Santa Fe, New Mexico

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC x

OTHER Jason Kellahin, Saul Cohen, Paul Cooter, Carl Traywick, Bill Simmons, R. A. Williford

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. 4853
Order No. R-333-F-1

APPLICATION OF EL PASO NATURAL
GAS COMPANY FOR AMENDMENT OF GAS
WELL TESTING PROCEDURES, SAN
JUAN BASIN, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 14, 1973, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 27th day of March, 1973, 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 Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, R-333-H, and R-333-H-1, requires annual deliverability and shut-in pressure tests of all gas wells in the San Juan Basin of San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico, subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

(3) That the applicant, El Paso Natural Gas Company, seeks the amendment of Order No. R-333-F, as amended, to provide that biennial deliverability and shut-in pressure tests would be taken on all gas wells in the San Juan Basin except those wells classified as "exempt marginal," which exempt marginal wells would be exempt from the test requirements.

(4) That the applicant also proposes that all new wells, reworked wells, and recompleted wells in the San Juan Basin would receive deliverability and shut-in pressure tests on an annual basis until three annual tests have been taken, and that thereafter such tests would be taken on a biennial basis.

(5) That the applicant further proposes that all gas wells in any given pool would be tested in the same year, and that approximately one-half of the wells in the San Juan Basin would be tested each year.

(6) That the amendment of Commission Order No. R-333-F, as amended, in accordance with the proposal of El Paso Natural Gas Company as described in Findings Nos. (3) through (5) above will not cause waste nor violate correlative rights, and should be approved.

(7) That Commission Order No. R-333-F, as amended, should be further amended to provide definitive criteria upon which to classify gas wells as "exempt marginal," which exempt marginal wells would be exempt from deliverability and shut-in pressure test requirements.

(8) That the production from all gas wells in the San Juan Basin should be reviewed annually and the wells should be classified into or out of the test exempt status each year effective the first day of January.

(9) That upon review of said production, gas wells completed in the Pictured Cliffs or shallower formations which failed to produce in excess of 12,000 MCF during the preceding 12-month period, and gas wells completed in any formation deeper than the Pictured Cliffs formation which failed to produce in excess of 24,000 MCF during the preceding 12-month period, should be classified as exempt marginal, and should be exempt from further deliverability and shut-in pressure tests as long as they remain so classified.

(10) That adoption of the definitive criteria for classification of gas wells into or out of the exempt marginal status as outlined above will not cause waste nor violate correlative rights, and should be approved.

(11) That to avoid confusion, Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, R-333-H, and R-333-H-1, and as further amended as proposed in the instant case, should be superseded by an entire new order, designated as Commission Order No. R-333-F-1, which should promulgate gas well testing rules and procedures for the San Juan Basin as heretofore and herein approved by the Commission.

IT IS THEREFORE ORDERED:

(1) That effective January 1, 1974, the following Special Rules and Regulations governing gas well testing in the San Juan Basin (Counties of San Juan, Rio Arriba, McKinley, and Sandoval, New Mexico), superseding the rules and regulations contained in Commission Order No. R-333-F, as amended by Orders

Nos. R-333-G, R-333-H, and R-333-H-1, are hereby promulgated and adopted as an exception to Rules 401 and 402 of the general statewide rules and regulations of this Commission relating to gas well testing procedures.

GAS WELL TESTING RULES AND PROCEDURES
SAN JUAN BASIN, NEW MEXICO

CHAPTER I TYPE OF TESTS REQUIRED

Section 1: Initial Deliverability and Shut-In Pressure Tests for Newly Completed Wells

A. Immediately upon completion of each gas well in the San Juan Basin, a shut-in pressure test of at least seven days duration shall be made.

B. Within 60 days after a well is connected to a gas transportation facility, the well shall have been tested in accordance with Section 1 of Chapter II of these rules, "Initial Deliverability and Shut-In Pressure Test Procedures," and the results of the test filed with the Commission's Aztec office and with the gas transportation facility to which the well is connected. Failure to file said test within the above-prescribed 60-day period will subject the well to the loss of one day's allowable for each day the test is late.

C. The requirements for Initial Tests and Annual or Biennial Deliverability and Shut-In Pressure Tests and the notification requirements and scheduling of such tests which apply to newly completed wells shall also apply to reworked or recompleted wells.

D. Any tests taken for informational purposes prior to pipeline connection shall not be recognized as official tests for the assignment of allowables.

Section 2: Annual and Biennial Deliverability and Shut-In Pressure Tests

A. Biennial Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:

1. A newly completed well or a reworked or recompleted well shall be tested on an annual basis until three annual tests have been taken, after which the well shall be tested biennially as is required for other wells in the pool in which the well is located.

2. An Annual Deliverability and Shut-In Pressure Test shall not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however.

3. When the Initial Deliverability and Shut-In Pressure Test required by Section 1-B above has been taken in accordance with the annual and biennial testing procedure outlined in Section 2 of Chapter II of these rules, the initial test may be considered the first of the three required annual tests for the well. Provided however, if the operator intends to use such initial test as the first annual test, he must notify the Commission and the gas transportation facility to which the well is connected of his intent in writing prior to the conclusion of the 14-day conditioning period.

4. Wells classified as "exempt marginal" shall not be subject to the requirements of annual or biennial deliverability and shut-in pressure tests.

   Classification of wells into or out of the exempt marginal status shall be done once each year effective January 1.

   Gas wells completed in the Pictured Cliffs formation or in any shallower formation which were connected throughout the year but which failed to produce in excess of 12,000 MCF of gas during the preceding 12-month period shall be classified "exempt marginal."

   Gas wells completed in any formation deeper than the Pictured Cliffs formation which were connected throughout the year but which failed to produce in excess of 24,000 MCF of gas during the preceding 12-month period shall be classified "exempt marginal."

   A gas well connected for less than one year may be classified as "exempt marginal" if at least three months of production history is available at the annual classification time and if the average daily rate of production clearly indicates that the well would be eligible for exempt marginal status if 12 months of production history were available.

B. All Annual and Biennial Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the

appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between October 10 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing.

Section 3: Scheduling of Tests

A. By September 1 of each year, the District Supervisor of the Aztec District Office of the Commission shall by memorandum notify each gas transportation facility of the pools which are to be scheduled for biennial testing during the following testing season from December 1 through November 30.

B. Annual and Biennial Deliverability Tests

By November 1 of each year, each gas transportation facility shall, in cooperation with the operators involved, prepare and submit a schedule of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual and Biennial Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above.

The gas transportation facility and the Aztec District Office of the Commission shall be notified immediately by any operator unable to conduct any test as scheduled. In the event a well is not tested in accordance with the test schedule, the well shall be re-scheduled by the gas transportation facility, and the Commission and the operator of the well so notified in writing. Notice to the Commission must be received prior to the conclusion of the 14-day conditioning period. Notice to the Commission of shut-in

pressure tests which are scheduled at a time other than immediately following the flow test must be received prior to the time that the well is shut-in.

It shall be the responsibility of each operator to determine that all of its wells are properly scheduled for testing by the gas transportation facility to which they are connected, in order that all annual or biennial tests may be completed during the testing season.

B. Deliverability Re-Tests

An operator may, in cooperation with the gas transportation facility, schedule a well for a deliverability re-test upon notification to the Commission's Aztec office at least ten days before the test is to be commenced. Such re-test shall be for good and substantial reason and shall be subject to the approval of the Commission. Re-tests shall in all ways be conducted in conformance with the Annual and Biennial Deliverability Test Procedures of these rules. The Commission, at its discretion, may require the re-testing of any well by notification to the operator to schedule such re-test.

Section 4: Witnessing of Tests

Any Initial Annual or Biennial Deliverability and Shut-In Pressure Test may be witnessed by any or all of the following: an agent of the Commission, an offset operator, a representative of the gas transportation facility connected to the well under test, or a representative of the gas transportation facility taking gas from an offset operator.

CHAPTER II PROCEDURE FOR TESTING

Section 1: Initial Deliverability and Shut-In Pressure Test Procedure

A. Within 60 days after a newly completed well is connected to a gas transportation facility, the operator shall complete a deliverability and shut-in pressure test of the well in conformance with the "Annual and Biennial Deliverability and Shut-In Pressure Test Procedures" prescribed in Section 2 of this chapter. Results of the test shall be filed as required by Section 1 of Chapter I of these rules.

B. In the event it is impractical to test a newly completed well in conformance with Paragraph A above, the operator may conduct the deliverability and shut-in pressure test in the following manner (provided, however, that any test so conducted will not be accepted as the first annual deliverability and shut-in pressure test as described in Paragraph A-3 of Section 2, Chapter I):

1. A 7- or 8-day production chart may be used as the basis for determining the well's deliverability, providing the chart so used is preceded by at least 14 days continuous production. The well shall produce through either the casing or tubing, but not both, into a pipeline during these periods. The production valve and the choke settings shall not be changed during either the conditioning or flow period with the exception of the first week of the conditioning period when maximum production would over-range the meter chart or location production equipment.

2. A shut-in pressure of at least seven days duration shall be taken. This shall be the shut-in test required in Paragraph A, Section 1 of Chapter I of these rules.

3. The average daily static meter pressure shall be determined in accordance with Section 2 of Chapter II of these rules. This pressure shall be used as P_t in calculating P_w for the Deliverability Calculation.

4. The daily average rate of flow shall be determined in accordance with Section 2 of Chapter II.

5. The static wellhead working pressure (P_w) shall be determined in accordance with Section 2 of Chapter II.

6. The deliverability of the well shall be determined by using the data determined in Paragraphs 1 through 5 above in the deliverability formula in accordance with Section 2 of Chapter II.

7. The data and calculations for Paragraphs 1 through 6 above shall be reported as required in Section 1 of Chapter I of these rules, upon the blue-colored Form C-122-A.

Section 2: Annual and Biennial Deliverability and Shut-In Pressure Test Procedure

This test shall be taken by producing a well into the pipeline through either the casing or tubing, but not both. The production valve and choke settings shall not be changed during either the conditioning or flow periods except during the first seven days of the conditioning period when maximum production would over-range the meter chart or the location production equipment. The daily flowing rate shall be determined from an average of seven consecutive producing days, following a minimum conditioning period of 14 consecutive days production. The first seven days of said conditioning period shall have not more than one interruption, which interruption shall be no more than 36 continuous hours in duration. The eighth to fourteenth days, inclusive, of said conditioning period shall have no interruptions whatsoever. All production during the 14-day conditioning period plus the 7-day deliverability test period shall be at static wellhead working pressures not in excess of 75 percent of the previous annual or biennial 7-day shut-in pressure of the well if such previous annual or biennial shut-in pressure information is available; otherwise, the 7-day initial deliverability shut-in pressure of the well shall be used.

In the event that the existing line pressure does not permit a drawdown as specified above with the well producing unrestrictedly into the pipeline, the operator shall request an exception to this requirement on Form C-122-A. The request shall state the reasons for the necessity for the exception.

Instantaneous pressures shall be measured by deadweight gauge during the 7-day flow period at the casinghead, tubinghead, and orifice meter, and shall be recorded along with instantaneous meter-chart static pressure reading.

When it is necessary to restrict the flow of gas between the wellhead and orifice meter, the ratio of the downstream pressure to the upstream pressure shall be determined. When this ratio is 0.57, or less, critical flow conditions shall be considered to exist across the restriction.

When more than one restriction between the wellhead and orifice meter causes the pressures to reflect critical flow between the wellhead and orifice meter, the pressures across each of these restrictions shall be measured to determine whether critical flow exists at any restriction. When critical flow does not exist at any restriction, the pressures taken to disprove critical flow shall be reported to the Commission on Form C-122-A in item (n) of the form. When critical flow conditions exist, the instantaneous flowing pressures required hereinabove shall be measured during the last 48 hours of the 7-day flow period.

When critical flow exists between the wellhead and orifice meter, the measured wellhead flowing pressure of the string through which the well flowed during test shall be used as P_t when calculating the static wellhead working pressure (P_w) using the method established below.

When critical flow does not exist at any restriction, P_t shall be the corrected average static pressure from the meter chart plus friction loss from the wellhead to the orifice meter.

The static wellhead working pressure (P_w) of any well under test shall be the calculated 7-day average static tubing pressure if the well is flowing through the casing; it shall be the calculated 7-day average static casing pressure if the well is flowing through the tubing. The static wellhead working pressure (P_w) shall be calculated by applying the tables and procedures set out in the New Mexico Oil Conservation Commission Manual entitled "Method of Calculating Pressure Loss Due to Friction in Gas Well Flow Strings for San Juan Basin."

To obtain the shut-in pressure of a well under test, the well shall be shut in some time during the current testing season for a period of seven to fourteen consecutive days. Such shut-in pressure shall be measured during the eighth to fifteenth day following shutting in of the well. The 7-day shut-in pressure shall be measured on both the tubing and the casing when communication exists between the two strings. The higher of such pressures shall be used as P_c in the deliverability calculation. When any such shut-in pressure is determined by the Commission to be abnormally low, the shut-in pressure to be used shall be determined by one of the following methods:

1. A Commission-designated value.

2. An average shut-in pressure of all offset wells completed in the same zone.

3. A calculated surface pressure based on a measured bottom-hole pressure. Such calculation shall be made in accordance with the New Mexico Oil Conservation Commission "Back Pressure Manual," Example No. 7.

All wellhead pressures as well as the flowing meter pressure tests which are to be taken during the 7-day deliverability test period as required hereinabove shall be taken with a deadweight gauge. The deadweight reading and the date and time according to the chart shall be recorded and maintained in the operator's records with the test information.

Orifice meter charts shall be changed and so arranged as to reflect upon a single chart the flow data for the gas from each well for the full 7-day deliverability test period; however, no tests shall be voided if satisfactory explanation is made as to the necessity for using test volumes through two chart periods. Corrections shall be made for pressure base, measured flowing temperature, specific gravity, and super-compressibility; provided however, if the specific gravity of the gas from any well under test is not available, an estimated specific gravity may be assumed therefor, based upon that of gas from near-by wells, the specific gravity of which has been actually determined by measurement.

The 7-day average flowing meter pressure shall be calculated by taking the average of all consecutive 2-hour flowing meter pressure readings as recorded on the 7-day flow period chart. The pressure so calculated shall be used in calculating the wellhead working pressure, determining super-compressibility factors, and calculating flow volumes.

The 7-day flow period volume shall be calculated from the integrated readings as determined from the flow period orifice meter chart. The volume so calculated shall be divided by the number of testing days on the chart to determine the average daily rate of flow during said flow period. The flow chart shall have a minimum of seven and a maximum of eight legibly recorded flowing days to be acceptable for test purposes. The volume used in this calculation shall be corrected to New Mexico Oil Conservation Commission standard conditions.

The average flowing meter pressure for the 7-day or 8-day flow period and the corrected integrated volume shall be determined by the purchasing company that integrates the flow charts and furnished to the operator or testing agency when such operator or testing agency requests such information.

The daily volume of flow as determined from the flow period chart integrator readings shall be calculated by applying the Basic Orific Meter Formula:

$$Q = C' \sqrt{h_w P_f}$$

Where:

Q = Metered volume of flow Mcfd @ 15.025, 60° F., and 0.60 specific gravity.

C' = The 24-hour basic orifice meter flow factor corrected for flowing temperature, gravity, and supercompressibility.

h_w = Daily average differential meter pressure from flow period chart.

P_f = Daily average flowing meter pressure from flow period chart.

The basic orifice meter flow factors, flowing temperature factor, and specific gravity factor shall be determined from the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

The daily flow period average corrected flowing meter pressure, psig, shall be used to determine the supercompressibility factor. Supercompressibility Tables may be obtained from the New Mexico Oil Conservation Commission.

When supercompressibility correction is made for a gas containing either nitrogen or carbon dioxide in excess of two percent, the supercompressibility factors of such gas shall be determined by the use of Table V of the C.N.G.A. Bulletin TS-402 for pressures 100-500 psig, or Table II, TS-461 for pressures in excess of 500 psig.

The use of tables for calculating rates of flow from integrator readings which do not specifically conform to the New Mexico Oil Conservation Commission "Back Pressure Test Manual" may be approved for determining the daily flow period rates of flow upon a showing that such tables are appropriate and necessary.

The daily average integrated rate of flow for the 7-day flow period shall be corrected for meter error by multiplication by a correction factor. Said correction factor shall be determined by dividing the square root of the chart flowing meter pressure, psia, into the square root of the deadweight flowing meter pressure, psia.

Deliverability pressure, as used herein, is a defined pressure applied to each well and used in the process of comparing the abilities of wells in a pool to produce at static wellhead working pressures equal to a percentage of the 7-day shut-in pressure of the respective individual wells. Such percentage shall be determined and announced periodically by the Commission based on the relationship of the average static wellhead working pressures (P_w) divided by the average 7-day shut-in pressure (P_c) of the pool.

The deliverability of gas at the "deliverability pressure" of any well under test shall be calculated from the

test data derived from the tests hereinabove required by use of the following deliverability formula:

$$D = Q \left[\frac{\left(P_c^2 - P_d^2 \right)}{\left(P_c^2 - P_w^2 \right)} \right]^n$$

Where:

D = Deliverability Mcfd at the deliverability pressure, (P_d), (at Standard Conditions of 15.025 psia and 60°F).

Q = Daily flow rate in Mcfd, at wellhead pressure (P_w).

P_c = 7-day shut-in Wellhead pressure, psia, determined in accordance with Section 2 of Chapter II.

P_d = Deliverability pressure, psia, as defined above.

P_w = Average static wellhead working pressure, as determined from 7-day flow period, psia, and calculated from New Mexico Oil Conservation Commission "Pressure Loss Due to Friction" Tables for San Juan Basin.

n = Average pool slope of back pressure curves as follows:

Mesaverde Formation	0.75
Dakota Producing Interval	0.75
Fruitland Formation	0.85
Farmington Formation	0.85
Pictured Cliffs Formation	0.85
Other Formations	0.75

(Note: Special Rules for Any Specific Pool or Formation May Supersede The Above Values. Check Special Rules If In Doubt.)

The value of the multiplier in the above formula (ratio factor after the application of the pool slope) by which Q is multiplied shall not exceed a limiting value to be determined and announced periodically by the Commission. Such determination shall be made after a study of the test data of the pool obtained during the previous testing season. The limiting value of the

multiplier may be exceeded only after the operator has conclusively shown to the Commission that the shut-in pressure (P_c) is accurate or that the static wellhead pressure (P_w) cannot be lowered due to existing producing conditions.

Any test prescribed herein will be considered unacceptable if the average flow rate for the final 7-day deliverability test is more than ten percent in excess of any consecutive 7-day average of the preceding two weeks. A deliverability test not meeting this requirement shall be invalid and the well shall be re-tested.

All charts relative to initial, annual, or biennial deliverability tests or photostats thereof shall be made available to the Commission upon its request.

All testing agencies, whether individuals, companies, pipeline companies, or operators, shall maintain a log of all tests accomplished by them, including all field test data.

All forms heretofore mentioned are hereby adopted for use in the San Juan Basin Area in open form subject to such modification as experience may indicate desirable or necessary.

Initial and Annual or Biennial Deliverability and Shut-In Pressure Tests for gas wells in all formations shall be conducted and reported in accordance with these rules and procedures. Provided however, these rules shall be subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

CHAPTER III INFORMATIONAL TESTS

A. A one-point back pressure test may be taken on newly completed wells before their connection or reconnection to a gas transportation facility. This test shall not be a required official test but may be taken for informational purposes at the option of the operator. When taken, this test must be taken and reported as prescribed below:

ONE-POINT BACK PRESSURE POTENTIAL TEST PROCEDURE

1. This test shall be accomplished after a minimum shut-in of seven days. The shut-in pressure shall be measured with a deadweight gauge.

2. The flow rate shall be measured by flowing the well three hours through a positive choke, which has a 3/4-inch orifice.

3. A 2-inch nipple which provides a mechanical means of accurately measuring the pressure and temperature of the flowing gas shall be installed immediately upstream from the positive choke.

4. The absolute open flow shall be calculated using the conventional back pressure formula as shown in the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

5. The observed data and flow calculations shall be reported in duplicate on Form C-122, "Multi-Point Back Pressure Test for Gas Wells."

6. Non-critical flow shall be considered to exist when the choke pressure is 13 psig or less. When this condition exists the flow rate shall be measured with a pitot tube and nipple as specified in the Commission's Manual of "Tables and Procedure for Pitot Tests." The pitot test nipple shall be installed immediately downstream from the 3/4-inch positive choke.

7. Any well completed with 2-inch nominal size tubing (1.995-inch ID) or larger shall be tested through the tubing.

B. Other tests for informational purposes may be conducted prior to obtaining a pipeline connection for a newly completed well upon receiving specific approval therefor from the Commission's Aztec office. Approval of these tests shall be based primarily upon the volume of gas to be vented.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

BRUCE KING, 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 OF THE STATE OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

CASE No. 2695
Order No. R-333-F

THE APPLICATION OF THE OIL CONSERVATION COMMISSION UPON ITS OWN MOTION FOR AN ORDER REVISING, AMENDING, OR DELETING CERTAIN PORTIONS OF ORDER R-333-C & D AS AMENDED BY ORDER R-333-E PERTAINING TO GAS WELL TESTING PROCEDURE APPLICABLE TO GAS WELLS COMPLETED IN SAN JUAN, RIO ARRIBA, McKINLEY, AND SANDOVAL COUNTIES, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 8, 1962, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 30th day of November, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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 there is need for a number of additions to and revisions of Order No. R-333-C & D as amended by Order No. R-333-E, heretofore entered by the Commission, said order outlining a testing procedure for gas wells completed in the Counties of San Juan, Rio Arriba, McKinley, and Sandoval, New Mexico.

(3) That the following rules and regulations should be adopted, and that said rules and regulations are in the interest of conservation.

IT IS THEREFORE ORDERED:

(1) That the following Special Rules and Regulations governing gas well testing in the San Juan Basin (Counties of San Juan, Rio Arriba, McKinley, and Sandoval, New Mexico), superseding the rules and regulations contained in Commission Order No. R-333-C & D, as amended by Order No. R-333-E, are hereby promulgated and adopted as an exception to Rules 401 and 402 of the general statewide rules and regulations of this Commission relating to gas well testing procedures.

GAS WELL TESTING RULES AND PROCEDURES
SAN JUAN BASIN, NEW MEXICO

CHAPTER I TYPE OF TESTS REQUIRED

Section 1: Initial Deliverability and Shut-In Pressure Tests for Newly Completed Wells

A. Immediately upon completion of each gas well in the San Juan Basin, a shut-in pressure test of at least seven days duration shall be made.

B. Within 60 days after a well is connected to a gas transportation facility, the well shall have been tested in accordance with Section 1 of Chapter II of these rules, "Initial Deliverability and Shut-In Pressure Test Procedures," and the results of the test filed with the Commission's Aztec office and with the gas transportation facility to which the well is connected. Failure to file said test within the above-prescribed 60-day period will subject the well to the loss of one day's allowable for each day the test is late.

C. The requirements for Initial Tests and Annual Deliverability and Shut-In Pressure Tests and the notification requirements and scheduling of such tests which apply to newly completed wells shall also apply to reworked or recompleted wells.

D. Any tests taken for informational purposes prior to pipeline connection shall not be recognized as official tests for the assignment of allowables.

Section 2: Annual Deliverability and Shut-In Pressure Tests

A. Annual Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from ~~January 1~~ December 1

R-333-H

the following November 30 each year

through ~~December 31 each year~~ except as follows:

(R-333-H)

"1. An Annual Deliverability and Shut-In Pressure Test will not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however."

2. ~~When completed~~ Test required by Section 1-B above has been taken in accordance with the annual testing procedure outlined in Section 2 of Chapter II of these rules, the initial test may be considered the annual test for the year in which the test was completed. Provided however, that if an operator intends to use such initial test as the first annual test, he must notify the Commission and the gas transportation facility to which the well is connected of his intent in writing prior to the conclusion of the 14-day conditioning period.

"B. All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing."

R-333-H-1

"A. Annual Deliverability Tests

R-333-H

By November 1 of each year, each gas transportation facility shall, in cooperation with the operators involved, prepare and submit a schedule of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above."

R.333-G ✓

"The gas transportation facility shall be notified immediately by any operator unable to conduct any test as scheduled. In the event a well is not tested in accordance with the test schedule, the well shall be re-scheduled by the gas transportation facility, and the Commission and the operator of the well so notified in writing. Notice to the Commission must be received prior to the conclusion of the 14-day conditioning period. Notice to the Commission of shut-in pressure tests which are scheduled at a time other than immediately following the flow test must be received prior to the time that the well is shut-in."

for testing by the gas transportation facility to which they are connected, in order that all annual tests may be completed during the testing season.

B. Deliverability Re-Tests

An operator may, in cooperation with the gas transportation facility, schedule a well for a deliverability re-test upon notification to the Commission's Aztec office at least ten days before the test is to be commenced. Such re-test shall be for good and substantial reason and shall be subject to the approval of the Commission. Re-tests shall in all ways be conducted in conformance with the Annual Deliverability Test Procedures of these rules. The Commission, at its discretion, may require the re-testing of any well by notification to the operator to schedule such re-test.

Section 4: Witnessing of Tests

Any Initial or Annual Deliverability and Shut-In Pressure Test may be witnessed by any or all of the following: an agent of the Commission, an offset operator, a representative of the gas transportation facility connected to the well under test, or a representative of the gas transportation facility taking gas from an offset operator.

CHAPTER II PROCEDURE FOR TESTING

Section 1: Initial Deliverability and Shut-In Pressure Test Procedure

A. Within 60 days after a newly completed well is connected to a gas transportation facility, the operator shall complete a deliverability and shut-in pressure test of the well in conformance with the "Annual Deliverability and Shut-In Pressure Test Procedures" prescribed in Section 2 of this

chapter. Results of the test shall be filed as required by Section 1 of Chapter I of these rules.

B. In the event it is impractical to test a newly completed well in conformance with Paragraph A above, the operator may conduct the deliverability and shut-in pressure test in the following manner (provided, however, that any test so conducted will not be accepted as the first annual deliverability and shut-in pressure test as described in Paragraph A-2 of Section 2, Chapter I):

1. A 7- or 8-day production chart may be used as the basis for determining the well's deliverability, providing the chart so used is preceded by at least 14 days continuous production. The well shall produce through either the casing or tubing, but not both, into a pipeline during these periods. The production valve and the choke settings shall not be changed during either the conditioning or flow period with the exception of the first week of the conditioning period when maximum production would over-range the meter chart or location production equipment.

2. A shut-in pressure of at least seven days duration shall be taken. This shall be the shut-in test required in Paragraph A, Section 1 of Chapter I of these rules.

3. The average daily static meter pressure shall be determined in accordance with Section 2 of Chapter II of these rules. This pressure shall be used as P_t in calculating P_w for the Deliverability Calculation.

4. The daily average rate of flow shall be determined in accordance with Section 2 of Chapter II.

5. The static wellhead working pressure (P_w) shall be determined in accordance with Section 2 of Chapter II.

6. The deliverability of the well shall be determined by using the data determined in Paragraphs 1 through 5 above in the deliverability formula in accordance with Section 2 of Chapter II.

7. The data and calculations for Paragraphs 1 through 6 above shall be reported as required in Section 1 of Chapter I of these rules, upon the blue-colored Form C-122-A.

and Biennial

Section 2: Annual Deliverability and Shut-In Pressure Test Procedure

This test shall be taken by producing a well into the pipeline through either the casing or tubing, but not both. The production valve and choke settings shall not be changed during either the conditioning or flow periods except during the first seven days of the conditioning period when maximum production would over-range the meter chart or the location production equipment. The daily flowing rate shall be determined from an average of seven consecutive producing days, following a minimum conditioning period of 14 consecutive days production. The first seven days of said conditioning period shall have not more than one interruption, which interruption shall be no more than 36 continuous hours in duration. The eighth to fourteenth days, inclusive, of said conditioning period shall have no interruptions whatsoever. All production during the 14-day conditioning period plus the 7-day deliverability test period shall be at static wellhead working pressures not in excess of 75 percent of the previous annual 7-day shut-in pressure of the well if such previous annual shut-in pressure information is available; otherwise, the 7-day initial deliverability shut-in pressure of the well shall be used.

In the event that the existing line pressure does not permit a drawdown as specified above with the well producing unrestrictedly into the pipeline, the operator shall request an exception to this requirement on Form C-122-A. The request shall state the reasons for the necessity for the exception.

Instantaneous pressures shall be measured by deadweight gauge during the 7-day flow period at the casinghead, tubinghead, and orifice meter, and shall be recorded along with instantaneous meter-chart static pressure reading.

When it is necessary to restrict the flow of gas between the wellhead and orifice meter, the ratio of the downstream pressure to the upstream pressure shall be determined. When this ratio is 0.57, or less, critical flow conditions shall be considered to exist across the restriction.

When more than one restriction between the wellhead and orifice meter causes the pressures to reflect critical flow between the wellhead and orifice meter, the pressures across each of these restrictions shall be measured to determine whether critical flow exists at any restriction. When critical flow does not exist at any restriction, the pressures taken to disprove critical flow shall be reported to the Commission on Form C-122-A in the "Remarks" section of the form. When critical flow conditions exist, the instantaneous flowing pressures required hereinabove shall be measured during the last 48 hours of the 7-day flow period.

When critical flow exists between the wellhead and orifice meter, the measured wellhead flowing pressure of the string through which the well flowed during test shall be used as P_t when calculating the static wellhead working pressure (P_w) using the method established below.

When critical flow does not exist at any restriction, P_t shall be the corrected average static pressure from the meter chart plus friction loss from the wellhead to the orifice meter.

The static wellhead working pressure (P_w) of any well under test shall be the calculated 7-day average static tubing pressure if the well is flowing through the casing; it shall be the calculated 7-day average static casing pressure if the well is flowing through the tubing. The static wellhead working pressure (P_w) shall be calculated by applying the tables and procedures set out in the New Mexico Oil Conservation Commission Manual entitled "Method of Calculating Pressure Loss Due to Friction in Gas Well Flow Strings for San Juan Basin."

"To obtain the shut-in pressure of a well under test, the well shall be shut in some time during the annual testing season for a period of seven to fourteen consecutive days. Such shut-in pressure shall be measured during the eighth to fifteenth day following shutting in of the well. The 7-day shut-in pressure shall be measured on both the tubing and the casing when communication exists between the two strings. The higher of such pressures shall be used as P_c in the deliverability calculation. When any such shut-in pressure is determined by the Commission to be abnormally low, the shut-in pressure to be used shall be determined by one of the following methods:"

(R-333-G) ✓

1. A Commission-designated value.

2. An average shut-in pressure of all offset wells completed in the same zone.

3. A calculated surface pressure based on a measured bottom-hole pressure. Such calculation shall be made in accordance with the New Mexico Oil Conservation Commission "Back Pressure Manual," Example No. 7.

[illegible] period as required hereinabove shall be taken with a deadweight gauge. The deadweight reading and the date and time according to the chart shall be recorded and maintained in the operator's records with the test information.

Orifice meter charts shall be changed and so arranged as to reflect upon a single chart the flow data for the gas from each well

for the full 7-day deliverability test period; however, no tests shall be voided if satisfactory explanation is made as to the necessity for using test volumes through two chart periods. Corrections shall be made for pressure base, measured flowing temperature, specific gravity, and supercompressibility; provided however, if the specific gravity of the gas from any well under test is not available, an estimated specific gravity may be assumed therefor, based upon that of gas from near-by wells, the specific gravity of which has been actually determined by measurement.

The 7-day average flowing meter pressure shall be calculated by taking the average of all consecutive 2-hour flowing meter pressure readings as recorded on the 7-day flow period chart. The pressure so calculated shall be used in calculating the wellhead working pressure, determining supercompressibility factors, and calculating flow volumes.

The 7-day flow period volume shall be calculated from the integrated readings as determined from the flow period orifice meter chart. The volume so calculated shall be divided by the number of testing days on the chart to determine the average daily rate of flow during said flow period. The flow chart shall have a minimum of seven and a maximum of eight legibly recorded flowing days to be acceptable for test purposes. The volume used in this calculation shall be corrected to New Mexico Oil Conservation Commission standard conditions.

The average flowing meter pressure for the 7-day or 8-day flow period and the corrected integrated volume shall be determined by the purchasing company that integrates the flow charts and furnished to the operator or testing agency when such operator or testing agency requests such information.

The daily volume of flow as determined from the flow period chart integrator readings shall be calculated by applying the Basic Orific Meter Formula:

$$Q = C' \sqrt{h_w P_f}$$

Where:

Q = Metered volume of flow Mcfd @ 15.025, 60° F., and 0.60 specific gravity.

C' = The 24-hour basic orifice meter flow factor corrected for flowing temperature, gravity, and supercompressibility.

h_w = Daily average differential meter pressure from flow period chart.

P_f = Daily average flowing meter pressure from flow period chart.

The basic orifice meter flow factors, flowing temperature factor, and specific gravity factor shall be determined from the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

The daily flow period average corrected flowing meter pressure, psig, shall be used to determine the supercompressibility factor. Supercompressibility Tables may be obtained from the New Mexico Oil Conservation Commission.

When supercompressibility correction is made for a gas containing either nitrogen or carbon dioxide in excess of two percent, the supercompressibility factors of such gas shall be determined by the use of Table V of the C.N.G.A. Bulletin TS-402 for pressures 100-500 psig, or Table II, TS-461 for pressures in excess of 500 psig.

The use of tables for calculating rates of flow from integrator readings which do not specifically conform to the New Mexico Oil Conservation Commission "Back Pressure Test Manual" may be approved for determining the daily flow period rates of flow upon a showing that such tables are appropriate and necessary.

The daily average integrated rate of flow for the 7-day flow period shall be corrected for meter error by multiplication by a correction factor. Said correction factor shall be determined by dividing the square root of the chart flowing meter pressure, psia, into the square root of the deadweight flowing meter pressure, psia.

Deliverability pressure, as used herein, is a defined pressure applied to each well and used in the process of comparing the abilities of wells in a pool to produce at static wellhead working pressures equal to a percentage of the 7-day shut-in pressure of the respective individual wells. Such percentage shall be determined and announced periodically by the Commission based on the relationship of the average static wellhead working pressures (P_w) divided by the average 7-day shut-in pressure (P_c) of the pool.

The deliverability of gas at the "deliverability pressure" of any well under test shall be calculated from the test data derived from the tests hereinabove required by use of the following deliverability formula:

$$D = Q \left[\frac{\left(P_c^{\,2} - P_d^{\,2} \right)}{\left(P_c^{\,2} - P_w^{\,2} \right)} \right]^n$$

Where:

D = Deliverability Mcfd at the deliverability pressure, (P_d), (at Standard Conditions of 15.025 psia and 60°F).

Q = Daily flow rate in Mcfd, at wellhead pressure (P_w).

P_c = 7-day shut-in wellhead pressure, psia, determined in accordance with Section 2 of Chapter II.

P_d = Deliverability pressure, psia, as defined above.

P_w = Average static wellhead working pressure, as determined from 7-day flow period, psia, and calculated from New Mexico Oil Conservation Commission "Pressure Loss Due to Friction" Tables for San Juan Basin.

n = Average pool slope of back pressure curves as follows:

Mesaverde Formation	0.75
Dakota Producing Interval	0.75
Fruitland Formation	0.85
Farmington Formation	0.85
Pictured Cliffs Formation	0.85
Other Formations	0.75

(Note: Special Rules for Any Specific Pool or Formation May Supersede The Above Values. Check Special Rules If In Doubt.)

The value of the multiplier in the above formula (ratio factor after the application of the pool slope) by which Q is multiplied shall not exceed a limiting value to be determined and announced periodically by the Commission. Such determination shall be made after a study of the test data of the pool obtained during the previous testing season. The limiting value of the multiplier may be exceeded only after the operator has conclusively shown to the Commission that the shut-in pressure (P_c) is accurate or that

the static wellhead pressure (P_w) cannot be lowered due to existing producing conditions.

Any test prescribed herein will be considered unacceptable if the average flow rate for the final 7-day deliverability test is more than ten percent in excess of any consecutive 7-day average of the preceding two weeks. A deliverability test not meeting this requirement shall be invalid and the well shall be re-tested.

All charts relative to initial or annual deliverability tests or photostats thereof shall be made available to the Commission upon its request.

All testing agencies, whether individuals, companies, pipeline companies, or operators, shall maintain a log of all tests accomplished by them, including all field test data.

All forms heretofore mentioned are hereby adopted for use in the San Juan Basin Area in open form subject to such modification as experience may indicate desirable or necessary.

Initial and Annual Deliverability and Shut-In Pressure Tests for gas wells in all formations shall be conducted and reported in accordance with these rules and procedures. Provided however, these rules shall be subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

CHAPTER III INFORMATIONAL TESTS

A. A one-point back pressure test may be taken on newly completed wells before their connection or reconnection to a gas transportation facility. This test shall not be a required official test but may be taken for informational purposes at the option of the operator. When taken, this test must be taken and reported as prescribed below:

ONE-POINT BACK PRESSURE POTENTIAL TEST PROCEDURE

1. This test shall be accomplished after a minimum shut-in of seven days. The shut-in pressure shall be measured with a deadweight gauge.

2. The flow rate shall be measured by flowing the well three hours through a positive choke, which has a 3/4-inch orifice.

3. A 2-inch nipple which provides a mechanical means of accurately measuring the pressure and temperature

of the flowing gas shall be installed immediately upstream from the positive choke.

4. The absolute open flow shall be calculated using the conventional back pressure formula as shown in the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

5. The observed data and flow calculations shall be reported in duplicate on Form C-122, "Multi-Point Back Pressure Test for Gas Wells."

6. Non-critical flow shall be considered to exist when the choke pressure is 13 psig or less. When this condition exists the flow rate shall be measured with a pitot tube and nipple as specified in the Commission's Manual of "Tables and Procedure for Pitot Tests." The pitot test nipple shall be installed immediately downstream from the 3/4-inch positive choke.

7. Any well completed with 2-inch nominal size tubing (1.995-inch ID) or larger shall be tested through the tubing.

B. Other tests for informational purposes may be conducted prior to obtaining a pipeline connection for a newly completed well upon receiving specific approval therefor from the Commission's Aztec office. Approval of these tests shall be based primarily upon the volume of gas to be vented.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

E. S. WALKER, Member

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

S E A L

esr/

Memo

From

EMERY ARNOLD

To Dan,

We have made a few minor notations etc. but find the proposed order OK in most respects &

please be sure to order about an extra 100 copies of the new order for us.

Thanks

Emery

Adopted — DSN 3/12/73

Oil Conservation Commission – Aztec, New Mexico

to Emery & A.L
Jan

DRAFT

DSN/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. 4853

Order No. R-333-F-1

APPLICATION OF EL PASO NATURAL
GAS COMPANY FOR AMENDMENT OF GAS
WELL TESTING PROCEDURES, SAN
JUAN BASIN, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 14, 1973 at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of March, 1973, 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 Commission Order No. R-333-F, as amended by and R-333-H-1, Orders Nos. R-333-G, ~~and~~ R-333-H, requires annual deliverability and shut-in pressure tests of all gas wells in the San Juan Basin of San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico, subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

(3) That the applicant, El Paso Natural Gas Company, seeks the amendment of Order No. R-333-F, as amended, to provide that biennial deliverability and shut-in pressure tests would be taken on all gas wells in the San Juan Basin except those wells classified as "exempt marginal," which exempt marginal wells would be exempt from the test requirements.

(4) That the applicant also proposes that all new wells, reworked wells, and recompleted wells in the San Juan Basin would receive deliverability and shut-in pressure tests on an annual basis until three annual tests have been taken, and that thereafter such tests would be taken on a biennial basis.

(5) That the applicant further proposes that all gas wells in ~~a~~ any given pool would be tested in the same year, and that approximately one-half of the wells in the San Juan Basin would be tested each year.

(6) That the amendment of Commission Order No. R-333-F, as amended, in accordance with the proposal of El Paso Natural Gas Company as described in Findings Nos. (3) through (5) above will not cause waste nor violate correlative rights, and should be approved.

(7) That Commission Order No. R-333-F, as amended, should be further amended to provide definitive criteria upon which to classify gas wells as "exempt marginal," which exempt marginal wells would be exempt from deliverability and shut-in pressure test requirements.

(8) That the production from all gas wells in the San Juan Basin should be reviewed annually and the wells should be classified into or out of the test exempt status each year effective the first day of January.

(9) That upon review of said production, gas wells completed in the Pictured Cliffs or shallower formations which failed to produce in excess of 12,000 MCF during the preceding 12-month period, and gas wells completed in any formation deeper than the Pictured Cliffs formation which failed to produce in excess of 24,000 MCF during the preceding 12-month period, should be classified as exempt marginal, and should be exempt from further deliverability and shut-in pressure tests as long as they remain so classified.

(10) That adoption of the definitive criteria for classification of gas wells into or out of the exempt marginal status as outlined above will not cause waste nor violate correlative rights, and should be approved.

(11) That to avoid confusion, Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, R-333-H, and R-333-H-1, and as further amended as proposed in the instant case, should be superseded by an entire new order, designated as Commission Order No. R-333-F-1, which should promulgate gas well testing rules and procedures for the San Juan Basin as heretofore and herein approved by the Commission.

IT IS THEREFORE ORDERED:

(1) That the following Special Rules and Regulations governing gas well testing in the San Juan Basin (Counties of San Juan, Rio Arriba, McKinley, and Sandoval, New Mexico), superseding the rules and regulations contained in Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, R-333-H, and R-333-H-1, are hereby promulgated and adopted as an exception to Rules 401 and 402 of the general statewide rules and regulations of this Commission relating to gas well testing procedures.

GAS WELL TESTING RULES AND PROCEDURES
SAN JUAN BASIN, NEW MEXICO

CHAPTER I TYPE OF TESTS REQUIRED

Section 1: Initial Deliverability and Shut-In Pressure Tests for Newly Completed Wells

A. Immediately upon completion of each gas well in the San Juan Basin, a shut-in pressure test of at least seven days duration shall be made.

B. Within 60 days after a well is connected to a gas transportation facility, the well shall have been tested in accordance with Section 1 of Chapter II of these rules, "Initial Deliverability and Shut-In Pressure Test Procedures," and the results of the test filed with the Commission's Aztec office and with the gas transportation facility to which the well is connected. Failure to file said test within the above-prescribed 60-day period will subject the well to the loss of one day's allowable for each day the test is late.

C. The requirements for Initial Tests and Annual or Biennial Deliverability and Shut-In Pressure Tests and the notification requirements and scheduling of such tests which apply to newly completed wells shall also apply to reworked or recompleted wells.

D. Any tests taken for informational purposes prior to pipeline connection shall not be recognized as official tests for the assignment of allowables.

Section 2: Annual and Biennial Deliverability and Shut-In Pressure Tests

A. Biennial Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:

1. A newly completed well or a reworked or recompleted well shall be tested on an annual basis until three annual tests have been taken, after which the well shall be tested biennially as is required for other wells in the pool in which the well is located.

2. An Annual Deliverability and Shut-In Pressure Test shall not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however.

3. When the Initial Deliverability and Shut-In Pressure Test required by Section 1-B above has been taken in accordance with the annual and biennial testing procedure outlined in Section 2 of Chapter II of these rules, the initial test may be considered the first of the three required annual tests for the well. Provided however, if the operator intends to use such initial test as the first annual test, he must notify the Commission and the gas transportation facility to which the well is connected of his intent in writing prior to the conclusion of the 14-day conditioning period.

4. Wells classified as "exempt marginal" shall not be subject to the requirements of annual or biennial deliverability and shut-in pressure tests.

   Classification of wells into or out of the exempt marginal status shall be done each year effective January 1.

Gas wells completed in the Pictured Cliffs formation or in any shallower formation which failed to produce in excess of 12,000 MCF of gas during the preceding 12-month period shall be classified "exempt marginal."

Gas wells completed in any formation deeper than the Pictured Cliffs formation which failed to produce in excess of 24,000 MCF of gas during the preceding 12-month period shall be classified "exempt marginal."

B. All Annual and Biennial Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between ~~November 1~~ October 10 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing. (60 days)

Section 3: Scheduling of Tests

A. By September 1 of each year, the District Supervisor of the Aztec District Office of the Commission shall by memorandum notify each gas transportation facility of the pools which are to be scheduled for biennial testing during the following testing season from December 1 through November 30.

B. Annual and Biennial Deliverability Tests

By November 1 of each year, each gas trasnporta-

of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual and Biennial Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above.

The gas transportation facility and the Aztec office of the OCD shall be notified immediately by any operator unable to conduct any test as scheduled. In the event a well is not tested in accordance with the test schedule, the well shall be re-scheduled by the gas transportation facility, and the Commission and the operator of the well so notified in writing. Notice to the Commission must be received prior to the conclusion of the 14-day conditioning period. Notice to the Commission of shut-in pressure tests which are scheduled at a time other than immediately following the flow test must be received prior to the time that the well is shut-in.

It shall be the responsibility of each operator to determine that all of its wells are properly scheduled for testing by the gas transportation facility to which they are connected, in order that all annual or biennial tests may be completed during the testing season.

B. Deliverability Re-Tests

An operator may, in cooperation with the gas transportation facility, schedule a well for a deliverability re-test upon notification to the Commission's Aztec office at least ten days before the test is to be commenced. Such re-test shall be for good and substantial reason and shall be subject to the approval of the Commission. Re-tests shall in all ways be conducted in conformance with the Annual and Biennial Deliverability Test Procedures of these rules. The Commission, at its discretion, may require the re-testing of any well by notification to the operator to schedule such re-test.

Section 4: Witnessing of Tests

Any Initial, or Annual (or Biennial) Deliverability and Shut-In Pressure Test may be witnessed by any or all of the following: an agent of the Commission, an offset operator, a representative of the gas transportation facility connected to the well under test, or a representative of the gas transportation facility taking gas from an offset operator.

CHAPTER II PROCEDURE FOR TESTING

Section 1: Initial Deliverability and Shut-In Pressure Test Procedure (and Biennial)

A. Within 60 days after a newly completed well is connected to a gas transportation facility, the operator shall complete a deliverability and shut-in pressure test of the well in conformance with the "Annual Deliverability and Shut-In Pressure Test Procedures" prescribed in Section 2 of this chapter. Results of the test shall be filed as required by Section 1 of Chapter I of these rules.

B. In the event it is impractical to test a newly completed well in conformance with Paragraph A above, the operator may conduct the deliverability and shut-in pressure test in the following manner (provided, however, that any test so conducted will not be accepted as the first annual deliverability and shut-in pressure test as described in Paragraph A-3 of Section 2, Chapter I):

1. A 7- or 8-day production chart may be used as the basis for determining the well's deliverability, providing the chart so used is preceded by at least 14 days continuous production. The well shall produce through either the casing or tubing, but not both, into a pipeline during these periods. The production valve and the choke settings shall not be changed during either the conditioning or flow period with the exception of the first week of the conditioning period when maximum production would over-range the meter chart or location production equipment.

2. A shut-in pressure of at least seven days duration shall be taken. This shall be the shut-in test required in Paragraph A, Section 1 of Chapter I of these rules.

3. The average daily static meter pressure shall be determined in accordance with Section 2 of Chapter II of these rules. This pressure shall be used as P_t in calculating P_w for the Deliverability Calculation.

4. The daily average rate of flow shall be determined in accordance with Section 2 of Chapter II.

5. The static wellhead working pressure (P_w) shall be determined in accordance with Section 2 of Chapter II.

6. The deliverability of the well shall be determined by using the data determined in Paragraphs 1 through 5 above in the deliverability formula in accordance with Section 2 of Chapter II.

7. The data and calculations for Paragraphs 1 through 6 above shall be reported as required in Section 1 of Chapter I of these rules.

Section 2: Annual and Biennial Deliverability and Shut-In Pressure Test Procedure

This test shall be taken by producing a well into the pipeline through either the casing or tubing, but not both. The production valve and choke settings shall not be changed during either the conditioning or flow periods except during the first seven days of the conditioning period when maximum production would over-range the meter chart or the location production equipment. The daily flowing rate shall be determined from an average of seven consecutive producing days, following a minimum conditioning period of 14 consecutive days production. The first seven days of said conditioning period shall have not more than one interruption, which interruption shall be no more than 36 continuous hours in duration. The eighth to fourteenth days, inclusive, of said conditioning period shall have no interruptions whatsoever. All production during the 14-day conditioning period plus the 7-day deliverability test period shall be at static wellhead working pressures not in excess of 75 percent of the previous annual or biennial 7-day shut-in pressure of the well if such previous annual or biennial shut-in pressure information is available; otherwise, the 7-day initial deliverability shut-in pressure of the well shall be used.

In the event that the existing line pressure does not permit a drawdown as specified above with the well producing unrestrictedly into the pipeline, the operator shall request an exception to this requirement on Form C-122-A. The request shall state the reasons for the necessity for the exception.

Instantaneous pressures shall be measured by deadweight gauge during the 7-day flow period at the casinghead, tubinghead, and orifice meter, and shall be recorded along with instantaneous meter-chart static pressure reading.

When it is necessary to restrict the flow of gas between the wellhead and orifice meter, the ratio of the downstream pressure to the upstream pressure shall be determined. When this ratio is 0.57, or less, critical flow conditions shall be considered to exist across the restriction.

When more than one restriction between the wellhead and orifice meter causes the pressures to reflect critical flow between the wellhead and orifice meter, the pressures across each of these restrictions shall be measured to determine whether critical flow exists at any restriction. When critical flow does not exist at any restriction, the pressures taken to disprove critical flow shall be reported to the Commission on Form C-122-A in ~~the~~ item (n) ~~"Remarks" section~~ of the form. When critical flow conditions exist, the instantaneous flowing pressures required hereinabove shall be measured during the last 48 hours of the 7-day flow period.

When critical flow exists between the wellhead and orifice meter, the measured wellhead flowing pressure of the string through which the well flowed during test shall be used as P_t when calculating the static wellhead working pressure (P_w) using the method established below.

When critical flow does not exist at any restriction, P_t shall be the corrected average static pressure from the meter chart plus friction loss from the wellhead to the orifice meter.

The static wellhead working pressure (P_w) of any well under test shall be the calculated 7-day average static tubing pressure if the well is flowing through the casing; it shall be the calculated 7-day average static casing pressure if the well is flowing through the tubing. The static wellhead working pressure (P_w) shall be calculated by applying the tables and procedures set out in the New Mexico Oil Conservation Commission Manual entitled "Method of Calculating Pressure Loss Due to Friction in Gas Well Flow Strings for San Juan Basin."

To obtain the shut-in pressure of a well under test, the well shall be shut in some time during the ~~annual~~ current testing season for a period of seven to fourteen consecutive days. Such shut-in pressure shall be measured during the eighth to fifteenth day following shutting in of the well. The 7-day shut-in pressure shall be measured on both the tubing and the casing when communication exists between the two strings. The higher of such pressures shall be used as P_c in the deliverability calculation. When any such shut-in pressure is determined by the Commission to be abnormally low, the shut-in pressure to be used shall be determined by one of the following methods:

1. A Commission-designated value.

2. An average shut-in pressure of all offset wells completed in the same zone.

3. A calculated surface pressure based on a measured bottom-hole pressure. Such calculation shall be made in accordance with the New Mexico Oil Conservation Commission "Back Pressure Manual," Example No. 7.

All wellhead pressures as well as the flowing meter pressure tests which are to be taken during the 7-day deliverability test period as required hereinabove shall be taken with a deadweight gauge. The deadweight reading and the date and time according to the chart shall be recorded and maintained in the operator's records with the test information.

Orifice meter charts shall be changed and so arranged as to reflect upon a single chart the flow data for the gas from each well for the full 7-day deliverability test period; however, no tests shall be voided if satisfactory explanation is made as to the necessity for using test volumes through two chart periods. Corrections shall be made for pressure base, measured flowing temperature, specific gravity, and supercompressibility; provided however, if the specific gravity of the gas from any well under test is not available, an estimated specific gravity may be assumed therefor, based upon that of gas from near-by wells, the specific gravity of which has been actually determined by measurement.

The 7-day average flowing meter pressure shall be calculated by taking the average of all consecutive 2-hour flowing meter pressure readings as recorded on the 7-day flow period chart. The pressure so calculated shall be used in calculating the wellhead working pressure, determining supercompressibility factors, and calculating flow volumes.

The 7-day flow period volume shall be calculated from the integrated readings as determined from the flow period orifice meter chart. The volume so calculated shall be divided by the number of testing days on the chart to determine the average daily rate of flow during said flow period. The flow chart shall have a minimum of seven and a maximum of eight legibly recorded flowing days to be acceptable for test purposes. The volume used in this calculation shall be corrected to New Mexico Oil Conservation Commission standard conditions.

The average flowing meter pressure for the 7-day or 8-day flow period and the corrected integrated volume shall be determined by the purchasing company that integrates the flow charts and furnished to the operator or testing agency when such operator or testing agency requests such information.

The daily volume of flow as determined from the flow period chart integrator readings shall be calculated by applying the Basic Orific Meter Formula:

$$Q = C' \sqrt{h_w P_f}$$

Where:

Q = Metered volume of flow Mcfd @ 15.025, 60° F., and 0.60 specific gravity.

C' = The 24-hour basic orifice meter flow factor corrected for flowing temperature, gravity, and supercompressibility.

h_w = Daily average differential meter pressure from flow period chart.

P_f = Daily average flowing meter pressure from flow period chart.

The basic orifice meter flow factors, flowing temperature factor, and specific gravity factor shall be determined from the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

The daily flow period average corrected flowing meter pressure, psig, shall be used to determine the supercompressibility factor. Supercompressibility Tables may be obtained from the New Mexico Oil Conservation Commission.

When supercompressibility correction is made for a gas containing either nitrogen or carbon dioxide in excess of two percent, the supercompressibility factors of such gas shall be determined by the use of Table V of the C.N.G.A. Bulletin TS-402 for pressures 100-500 psig, or Table II, TS-461 for pressures in excess of 500 psig.

The use of tables for calculating rates of flow from integrator readings which do not specifically conform to the New Mexico Oil Conservation Commission "Back Pressure Test Manual" may be approved for determining the daily flow period rates of flow upon a showing that such tables are appropriate and necessary.

The daily average integrated rate of flow for the 7-day flow period shall be corrected for meter error by multiplication by a correction factor. Said correction factor shall be determined by dividing the square root of the chart flowing meter pressure, psia, into the square root of the deadweight flowing meter pressure, psia.

Deliverability pressure, as used herein, is a defined pressure applied to each well and used in the process of comparing the abilities of wells in a pool to produce at static wellhead working pressures equal to a percentage of the 7-day shut-in pressure of the respective individual wells. Such percentage shall be determined and announced periodically by the Commission based on the relationship of the average static wellhead working pressures (P_w) divided by the average 7-day shut-in pressure (P_c) of the pool.

The deliverability of gas at the "deliverability pressure" of any well under test shall be calculated from the test data derived from the tests hereinabove required by use of the following deliverability formula:

$$D = Q \left[\frac{\left(P_c^{\,2} - P_d^{\,2} \right)}{\left(P_c^{\,2} - P_w^{\,2} \right)} \right]^n$$

Where:

D = Deliverability Mcfd at the deliverability pressure, (P_d), (at Standard Conditions of 15.025 psia and 60°F).

Q = Daily flow rate in Mcfd, at wellhead pressure (P_w).

P_c = 7-day shut-in wellhead pressure, psia, determined in accordance with Section 2 of Chapter II.

P_d = Deliverability pressure, psia, as defined above.

P_w = Average static wellhead working pressure, as determined from 7-day flow period, psia, and calculated from New Mexico Oil Conservation Commission "Pressure Loss Due to Friction" Tables for San Juan Basin.

n = Average pool slope of back pressure curves as follows:

Mesaverde Formation	0.75
Dakota Producing Interval	0.75
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Farmington Formation	0.85
Pictured Cliffs Formation	0.85
Other Formations	0.75

(Note: Special Rules for Any Specific Pool or Formation May Supersede The Above Values. Check Special Rules If In Doubt.)

The value of the multiplier in the above formula (ratio factor after the application of the pool slope) by which Q is multiplied shall not exceed a limiting value to be determined and announced periodically by the Commission. Such determination shall be made after a study of the test data of the pool obtained during the previous testing season. The limiting value of the multiplier may be exceeded only after the operator has conclusively shown to the Commission that the shut-in pressure (P_c) is accurate or that the static wellhead pressure (P_w) cannot be lowered due to existing producing conditions.

Any test prescribed herein will be considered unacceptable if the average flow rate for the final 7-day deliverability test is more than ten percent in excess of any consecutive 7-day average of the preceding two weeks. A deliverability test not meeting this requirement shall be invalid and the well shall be re-tested.

All charts relative to initial, ~~or~~ annual, or biennial deliverability tests or photostats thereof shall be made available to the Commission upon its request.

All testing agencies, whether individuals, companies, pipeline companies, or operators, shall maintain a log of all tests accomplished by them, including all field test data.

All forms heretofore mentioned are hereby adopted for use in the San Juan Basin Area in open form subject to such modification as experience may indicate desirable or necessary.

Initial and Annual or Biennial Deliverability and Shut-In Pressure Tests for gas wells in all formations shall be conducted and reported in accordance with these rules and procedures. Provided however, these rules shall be subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

CHAPTER III INFORMATIONAL TESTS

A. A one-point back pressure test may be taken on newly completed wells before their connection or reconnection to a gas transportation facility. This test shall not be a required official test but may be taken for informational purposes at the option of the operator. When taken, this test must be taken and reported as prescribed below:

ONE-POINT BACK PRESSURE POTENTIAL TEST PROCEDURE

1. This test shall be accomplished after a minimum shut-in of seven days. The shut-in pressure shall be measured with a deadweight gauge.

2. The flow rate shall be measured by flowing the well three hours through a positive choke, which has a 3/4-inch orifice.

3. A 2-inch nipple which provides a mechanical means of accurately measuring the pressure and temperature of the flowing gas shall be installed immediately upstream from the positive choke.

4. The absolute open flow shall be calculated using the conventional back pressure formula as shown in the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

5. The observed data and flow calculations shall be reported in duplicate on Form C-122, "Multi-Point Back Pressure Test for Gas Wells."

6. Non-critical flow shall be considered to exist when the choke pressure is 13 psig or less. When this condition exists the flow rate shall be measured with a pitot tube and nipple as specified in the Commission's Manual of "Tables and Procedure for Pitot Tests." The pitot test nipple shall be installed immediately downstream from the 3/4-inch positive choke.

7. Any well completed with 2-inch nominal size tubing (1.995-inch ID) or larger shall be tested through the tubing.

B. Other tests for informational purposes may be conducted prior to obtaining a pipeline connection for a newly completed well upon receiving specific approval therefor from the Commission's Aztec office. Approval of these tests shall be based primarily upon the volume of gas to be vented.

(2) That jurisdiction of this cause is retained for the

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CASE NO. 4692
Order No. R-333-H-1

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION FOR THE AMENDMENT OF THE GAS WELL TESTING PROCEDURES PROMULGATED BY ORDER NO. R-333-F, AS AMENDED, FOR NORTHWEST, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE COMMISSION:

It appearing to the Commission that due to clerical error and inadvertence, Order (3) of Order No. R-333-H, dated May 11, 1972, does not correctly state the intended order of the Commission,

IT IS THEREFORE ORDERED:

(1) That Order (3) on Page 2 of Order No. R-333-H, dated May 11, 1972, is hereby corrected to read in its entirety as follows:

"B. All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing."

(2) That this order shall be effective nunc pro tunc as of May 11, 1972.

DONE at Santa Fe, New Mexico, this 2nd day of June, 1972.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

BRUCE KING, Chairman

S E A L

ALEX J. ARMIJO, Member

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. 4649
Order No. R-333-G

APPLICATION OF THE OIL CONSERVATION
COMMISSION ON ITS OWN MOTION FOR THE
AMENDMENT OF THE GAS WELL TESTING
PROCEDURES PROMULGATED BY ORDER NO.
R-333-F FOR NORTHWEST NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 19, 1972, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 1st day of February, 1972, 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 there is need for a number of amendments to Order R-333-F, heretofore entered by the Commission, said order outlining the testing procedure for gas wells completed in San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico.

(3) That the following amendments should be adopted, in the interests of conservation.

IT IS THEREFORE ORDERED:

(1) That Sub-Section B. of Chapter I, Section 2, Order No. R-333-F, is hereby amended to read as follows:

"All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between December 1 and December 31 must be filed not later than January 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond January 10 will be granted except after notice and hearing."

(2) That Paragraph 2 of Sub-Section A of Chapter I, Section 3, of Order No. R-333-F, is hereby amended to read as follows:

"The gas transportation facility shall be notified immediately by any operator unable to conduct any test as scheduled. In the event a well is not tested in accordance with the test schedule, the well shall be re-scheduled by the gas transportation facility, and the Commission and the operator of the well so notified in writing. Notice to the Commission must be received prior to the conclusion of the 14-day conditioning period. Notice to the Commission of shut-in pressure tests which are scheduled at a time other than immediately following the flow test must be received prior to the time that the well is shut-in."

(3) That Paragraph nine of Chapter II, Section 2 of Order No. R-333-F is hereby amended to read as follows:

"To obtain the shut-in pressure of a well under test, the well shall be shut in some time during the annual testing season for a period of seven to fourteen consecutive days. Such shut-in pressure shall be measured during the eighth to fifteenth day following shutting in of the well. The 7-day shut-in pressure shall be measured on both the tubing and the casing when communication exists between the two strings. The higher of such pressures shall be used as P_c in the deliverability calculation. When any such shut-in pressure is determined by the Commission to be abnormally low, the shut-in pressure to be used shall be determined by one of the following methods:"

1. A Commission-designated value.

2. An average shut-in pressure of all offset wells completed in the same zone.

3. A calculated surface pressure based on a measured bottom-hole pressure. Such calculation shall be made in accordance with the New Mexico Oil Conservation Commission "Back Pressure Manual," Example No. 7.

(4) 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

BRUCE KING, 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 FOR THE AMENDMENT OF THE GAS WELL TESTING PROCEDURES PROMULGATED BY ORDER NO. R-333-F, AS AMENDED, FOR NORTHWEST, NEW MEXICO.

CASE NO. 4692
Order No. R-333-H

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 19, 1972, at Hobbs, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 11th day of May, 1972, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, 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 Commission Order No. R-333-F, as amended by Commission Order No. R-333-G, sets forth the testing procedure for gas wells completed in San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico.

(3) That said testing procedure was adapted to six-month proration periods for wells in prorated gas pools.

(4) That Order No. R-1670-K established one-year proration periods for wells in prorated gas pools.

(5) That Order No. R-333-F, as amended by Order No. R-333-G, should be amended to adapt the testing rules and procedures for gas wells in Northwest New Mexico to one-year proration periods.

IT IS THEREFORE ORDERED:

(1) That Sub-Section A. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"A. Annual Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:"

(2) That Paragraph 1. of Sub-Section A. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"1. An Annual Deliverability and Shut-In Pressure Test will not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however."

(3) That Sub-Section B. of Chapter I, Section 2, Order No. R-333-F, as amended, is hereby amended to read as follows:

"B. All Annual Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days after the end of the month during which the test is completed. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing.

(4) That Sub-Section A. of Chapter I, Section 3, Order No. R-333-F, as amended, is hereby amended to read as follows:

"A. Annual Deliverability Tests

By November 1 of each year, each gas transportation facility shall, in cooperation with the operators involved, prepare and submit a schedule of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above."

(5) 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

BRUCE KING, Chairman

ALEX J. ARMIJO, Member

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

S E A L

dr/

PROPOSED REVISION TO ORDER NO. R-333-F, AS AMENDED

(all changes are underlined)

Section 2: Biennial Deliverability and Shut-In Pressure Tests

A. Biennial Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each test year except as follows:

1. A Biennial Deliverability and Shut-In Pressure Test will not be required during the test year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however.

2. When the Initial Deliverability and Shut-In Pressure Test required by Section 1-B above has been taken in accordance with the biennial testing procedure outlined in Section 2 of Chapter II of these rules, the initial test may be considered the biennial test for the year in which the test was completed. Provided however, that if an operator intends to use such initial test as the first biennial test, he must notify the Commission and the gas transportation facility to which the well is connected of his intent in writing prior to the conclusion of the 14-day conditioning period.

3. A newly completed well or a reworked or recompleted well shall be tested on an annual basis until three annual tests have been taken and thereafter on a biennial basis as is required for other wells in the pool in which that well is located.

B. In order that all tests of wells in a pool shall be conducted in the same test year and in order to divide the tests into alternate years on a reasonable basis, all wells to be tested in the pools listed in Group A below shall be tested in odd years and all wells in the pools listed in Group B shall be tested in even years.

Group A:

Blanco Mesaverde; Aztec-Pictured Cliffs; Ballard-Pictured Cliffs; West Kutz-Pictured Cliffs; Tapacito-Pictured Cliffs. odd years (1973)

Group B:

Basin Dakota; South Blanco-Pictured Cliffs; Fulcher Kutz-Pictured Cliffs; Blanco-Pictured Cliffs; all other Gas Pools even years (no test in '73)

C. All Biennial Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing.

(All other provisions of Order No. R-333-F, as amended, not herein set out shall be changed only as is necessary to provide for biennial rather than annual deliverability tests.)

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

October 4, 1972

DOCKET MAILED
Date 2-1-73

Case 4853

DOCKET MAILED
Date 10-18-72

El Paso Natural Gas Company
P. O. Box 1492
El Paso, Texas 79999

Attention: Mr. F. Norman Woodruff

Re: Application for exemption of marginal wells from certain testing procedures

Gentlemen:

In response to your letter of September 28, 1972, regarding the above-described subject, I wish to inform you that the matter will be set for hearing before an examiner on November 1, 1972.

Very truly yours,

GEORGE M. HATCH
Attorney

GMH/dr

western union **Telegram**

RECEIVED
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OIL CONSERVATION COMM.
Santa Fe

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NEW MEXICO OIL CONSERVATION COMMISSION
ATTN A L PORTER,JR SECRETARY/DIRECTOR PO BOX 2088
SANTA FE NM 87501

BT
SUBJECT EXAMINER HEARING FEBRUARY 14TH1973 CASE NUMBER 4853
ATLANTIC RICHFIELDCOMPANY WISHES TO MAKE IT KNOWN THAT ITOPPOSES
THE PROPOSAL TO AMEND ORDER R-333-FAS PROPOSED BY EL PASO NATURAL
GAS COMPANY. THE REASONS FOR THIS OPPOSITION ARE AS FOLLOWS
1. ATLANTIC RICHFIELD COMPANY OPPOSES ANY PROPOSAL WHICH IN

SF-1201 (R5-69)

western union **Telegram**

EFFECT BYPASSES REDUCES OR NULIFIES THE RESPONSIBILITIES OR
JURISDICTION OF THE NEW MEXICO OIL CONSERVATION COMMISSION
2. ATLANTIC RICHFIELD COMPANY FEELS THAT THE ANNUAL TESTING
OF ALL ITS WEALTH IS NECESSARY FOR VARIOUS RESERVIOR ENGINEERING
STUDIES
3. ATLANTIC RICHFIELD COMPANY HAS IN THE PASSED AND WILL IN
THE FUTURE TEST EACH OF ITS WELL AT LEAST ANNUALY WHEATHER OR
NOT SUCH A TEST IS REQUIRED BY REGULATION
4. A REVIEW OF SEVERAL YEARS RECORDS SHOWS THAT MORE GAS WELL
SHUT IN TIME WAS EXPERIENCED IN THE SAN JUAN BASIN DUE TO ELPASO
NATURAL GAS COMPANIES REQUEST OR"ORDER"THEN DUE TO ANNUAL TESTING
C E CARDWELL JR DISTRICT MANAGER

SF-1201 (R5-69)

EL PASO NATURAL GAS COMPANY'S
AMENDMENT OF GAS WELL TESTING ORDER NO. R-333-F
SAN JUAN BASIN, NEW MEXICO

CASE NO. 4853
FEBRUARY 14, 1973

Mobil Oil Corporation, an operator in the San Juan Basin, New Mexico, proposes the following recommendations for the Commission's consideration in Case No. 4853, Amendment of the Gas Well Testing Procedure, San Juan Basin, New Mexico:

1. Reduce the frequency of shut-in tests on all wells with such tests to be required as follows:
   A. Biennial shut-in tests on all wells, except those classified as exempt marginal.
   B. No shut-in tests on exempt marginal wells.
   C. Annual shut-in tests of all new wells, reworked wells and recompleted wells for 3 years; biennial tests thereafter.
2. Take annual deliverability tests on all wells, except those classified as exempt marginal.
3. Test all gas wells in a given pool in the same test year.

Mobil believes that the above testing recommendations will provide sufficient reservoir data to adequately evaluate the pool status while maintaining a high producing level for the field.

Annual deliverability tests will cause no loss in gas production and will provide the Commission and operators with positive information on the true capacity of the wells on a standardized basis.

WBSimmons,Jr./mw
2/8/73

Docket No. 7

DOCKET: EXAMINER HEARING - TUESDAY - DECEMBER 19, 1972

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

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

ALLOWABLE: (1) Consideration of the allowable production of gas for January, 1973, from seventeen 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 January, 1973.

CASE 4608: (Reopened) (Continued from November 14, 1972)

In the matter of Case 4608 being reopened pursuant to the provisions of Order No. R-4213 which order established special rules and regulations for the Haystack Siluro-Devonian Pool, Chaves County, New Mexico, including a provision for 80-acre spacing units. All interested persons may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 4860: (Continued from the November 29, 1972 Examiner Hearing)

Application of Craig Folson for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well to test the Queen formation at an unorthodox oil well location 1340 feet from the South line and 1300 feet from the East line of Section 12, Township 13 South, Range 31 East, Caprock-Queen Pool, Chaves County, New Mexico.

CASE 4869: (Continued and Readvertised)

Application of Claude C. Kennedy for the amendment of Order No. R-4263, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-4263 to prohibit the transfer of allowable to any well located closer than 1320 feet from the outer boundary of the Lone Pine Dakota "D" Unit Area, Lone Pine Dakota "D" Pool, McKinley County, New Mexico.

CASE 4874: Application of Skelly Oil Company for a dual completion and water injection well, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Skelly Waterflood Unit Well No. 3 located in Unit D of Section 22, Township 17 South, Range 31 East, Eddy County, New Mexico, in such a manner as to permit the production of oil from the Fren-Seven Rivers Pool and the injection of water into the Grayburg-Jackson Pool through parallel strings of tubing.

CASE 4875: Application of ESH Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Lower San Andres formation in the perforated interval from 5144 feet to 5170 feet in its Hobbs State Well No. 5 located in Unit F of Section 29, Township 18 South, Range 38 East, Hobbs Field, Lea County, New Mexico.

CASE 4876: Application of Gulf Oil Corporation for an unorthodox oil well location and amendment of Order No. R-2248, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its West Dollarhide Devonian Unit Well No. 118 at an unorthodox location 2540 feet from the South line and 1420 feet from the West line of Section 33, Township 24 South, Range 38 East, West Dollarhide-Devonian Pool, Lea County, New Mexico. Applicant further seeks the amendment of Order No. R-2248 to provide for administrative approval of additional production and injection wells in the aforesaid unit at unorthodox locations.

CASE 4877: Application of Texas Pacific Oil Company, Inc. for two non-standard oil proration units and a non-standard location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an 80-acre non-standard proration unit comprising the NE/4 NW/4 and NW/4 NE/4 of Section 2 to be dedicated to its State "C" Well No. 1 located in Unit B and a 40-acre non-standard proration unit comprising the SE/4 NW/4 of Section 2 to be dedicated to its State "C" Well No. 2 located in Unit F of Section 2 and an 80-acre standard proration unit comprising the E/2 NE/4 of Section 2 to be dedicated to its State "D" Well No. 1 at an unorthodox location in Unit A of Section 2, Township 12 South, Range 33 East, Bagley Siluro-Devonian Pool, Lea County, New Mexico.

CASE 4878: Application of Harding Oil Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn and Atoka formations underlying the E/2 SE/4 of Section 10, Township 17 South, Range 37 East, Lea County, New Mexico, to be dedicated to a Humble City Field extension well to be drilled at a standard location for said pools; also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4879: Application of Atlantic Richfield Company for gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 320-acre non-standard proration unit comprising the N/2 of Section 30, Township 23 South, Range 37 East, to be dedicated to its Eva Blinebry Wells Nos. 2 and 7 located in Units D and G, respectively, of said Section 30; a 320-acre non-standard proration unit comprising the E/2 of Section 26, Township 22 South, Range 36 East to be dedicated to its McDonald State Wells Nos. 8 and 9 located in

(Case 4879 continued from page 2)

Units P and G, respectively, of said Section 26, and a 640-acre standard gas proration unit comprising all of Section 15, same township, to be dedicated to its McDonald State Wells Nos. 13, 14, and 15 located in Units P, G, and L, respectively, of said Section 15, Jalmat Gas Pool, Lea County, New Mexico.

CASE 4880: Application of Jake L. Hamon for the amendment of Order No. R-638-C, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-638-C which established 150 barrels of oil per day as the maximum allowable for the South Knowles-Devonian Pool. Applicant proposes that the regular 80-acre depth bracket allowable be applied to said pool.

CASE 4881: Application of Anadarko Production Company for two unorthodox oil well locations, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill two wells at unorthodox locations 1980 feet from the South line and 1310 feet from the West line of Section 9 and 1310 feet from the North line and 1980 feet from the East line of Section 16, both in Township 18 South, Range 29 East, Loco Hills Pool, Eddy County, New Mexico.

Applicant further seeks the adoption of a procedure for administrative approval of additional production and injection wells in its Far West Loco Hills Sand Unit at unorthodox locations.

CASE 4882: Application of Shell Oil Company for a waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the San Andres formation through the following five wells in the Cato-San Andres Pool, Chaves County, New Mexico: Amoco Federal Wells Nos. 4, 6, 7, and 8 in Units G, O, E, and M, respectively, of Section 33 and Hodges Federal B Well No. 4 in Unit M of Section 34, all in Township 8 South, Range 30 East.

CASE 4883: Application of El Paso Natural Gas Company for non-standard gas spacing units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the following non-standard gas spacing units adjacent to the Blanco-Pictured Cliffs Pool in Township 31 North, Range 9 West, San Juan County, New Mexico:

A 145.6-acre unit comprising lots 9 and 10 and 15 through 18 of Section 31;

A 153.5-acre unit comprising lots 14 through 17 of Section 30 and lots 7 and 8 of Section 31;

A 156.5-acre unit comprising lots 17 and 18 of Section 19 and lots 6 through 9 of Section 30;

A 152.6-acre unit comprising lots 7 through 10 and 15 and 16 of Section 19.

CASE 4853: (Continued and Readvertised)

Application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the gas well testing procedures for the San Juan Basin, New Mexico, promulgated by Order No. R-333-F, as amended, to remove the requirement for annual deliverability and shut-in pressure tests for marginal wells.

Applicant further requests the Commission to consider:

1. Other means of avoiding or minimizing the loss of pipeline availability attributable to the period wells in prorated pools are shut in in order to conduct the annually required deliverability and shut-in pressure tests;

2. Exempting wells in non-prorated pools from the annual deliverability and shut-in pressure requirements; and,

3. Exempting all wells in the San Juan Basin from the requirement for annual shut-in pressure tests as provided in the General Rules and Regulations.

CASE 4884: Application of Colorado Plateau Geological Services, Inc., for an extention of Order No. R-4227, McKinley County, New Mexico. Applicant, in the above-styled cause, as managing agent for oil and gas for the Henry Birdseye Estate, seeks a one-year extension to certain provisions of Order No. R-4227 which, as amended by Order No. R-4227-A, required that certain of the Birdseye wells in the Chaco Wash Mesaverde Oil Pool be placed on active production or water injection by December 31, 1972, or be plugged and abandoned. Applicant, or United States Fidelity and Guaranty Company, or any other interested party will be permitted to show cause why the effective date of the aforesaid order should not be enforced.

CASE 4885: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit John Lemley and Juanita Franks and Aetna Casualty and Surety Company and all other interested parties to appear and show cause why the Lemley and Franks Greathouse Well No. 1, located in Unit F of Section 10, Township 23 North, Range 1 West, Rio Arriba County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

wells, location of gas wells in conformance with the Southeast New Mexico 320-acre gas well location rules, and classification of wells as gas wells at a gas-liquid ratio of 30,000 or more. Oil wells in said area would be governed by the statewide rules.

CASE 4851: Application of Texaco Inc. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a unit area comprising 1400 acres, more or less, of state lands in Sections 1, 2, 11, and 12, Township 18 South, Range 34 East, Lea County, New Mexico.

CASE 4852: Application of Texaco Inc. for a pressure maintenance project and special rules therefor, Lea County, New Mexico. Applicant, in the above-styled cause, seeks to institute a pressure maintenance project in the Vacuum Grayburg-San Andres Pool by the injection of water through 8 wells at orthodox and unorthodox locations in Sections 1 and 2, Township 18 South, Range 34 East, Lea County, New Mexico. Applicant further seeks authority to drill 8 producing wells within the boundaries of said project at unorthodox locations and the assignment of a bonus allowable to said project.

CASE 4853: Application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the gas well testing procedures for the San Juan Basin, New Mexico, promulgated by Order No. R-333-F, as amended, to remove the requirement for annual deliverability and shut-in pressure tests for marginal wells.

CASE 4854: Application of Dugan Production Corporation to commingle gas production prior to metering, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle gas produced from wells located in Sections 25, 26, 35, and 36, Township 28 North, Range 15 West, undesignated Pictured Cliffs gas pool, San Juan County, New Mexico, prior to metering said gas, as an exception to Rule 403 of the Commission Rules and Regulations.

Docket No. 25-72

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 1, 1972

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

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

CASE 4835: (Continued from the September 27, 1972, Examiner Hearing)

Application of Texas Oil & Gas Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface of the ground down to and including the Pennsylvanian formation underlying the S/2 of Section 13, Township 22 South, Range 26 East, South Carlsbad Field area, Eddy County, New Mexico, to be dedicated to a well to be drilled 1980 feet from the South and East lines of said Section 13. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4849: Application of Harding Oil Company for pool creation, special rules therefor, and discovery allowable, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the Atoka formation for its Shipp Well No. 4 located in Unit I of Section 11, Township 17 South, Range 37 East, Lea County, New Mexico, and the promulgation of special rules therefor, including a provision for 80-acre spacing and proration units. Applicant further seeks the assignment of a discovery allowable of approximately 58,310 barrels of oil to said well.

CASE 4850: Application of Dalport Oil Corporation for amendment of pool rules, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Rule 2 (a) and Rule 7 of the special rules governing the Double L-Queen Associated Pool, Chaves County, New Mexico, to increase the size of a standard gas well proration unit from 160 acres to 320 acres and a corresponding increase in the gas allowable.

CASE 4843: (Continued from the October 17, 1972, Examiner Hearing)

Application of Dalport Oil Corporation for designation of a special gas area and special rules therefor, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Southeast Chaves Queen Gas Area comprising all of Townships 12 and 13 South, Ranges 30 and 31 East, Township 14 South, Ranges 29, 30 and 31 East, and Township 15 South, Ranges 29 and 30 East.

Applicant further seeks the promulgation of special rules for said area including a provision for 320-acre spacing for gas

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
1000 RIO BRAZOS ROAD - AZTEC
87410

GOVERNOR
BRUCE KING
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

October 27, 1972

Mr. A. L. Porter, Jr.
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Re: Case 4853

Dear Mr. Porter:

Case 4853 has been set for hearing before a Commission Examiner on November 1, 1972.

As you are aware this case was set upon the application of El Paso Natural Gas Company to consider their request that all marginal gas wells in prorated gas pools in the San Juan Basin be exempt from annual deliverability tests for the reason that their anticipated demand for gas is such as to make it impossible to shut in wells for the required seven days in order to secure the shut-in pressure used in the test.

The October, 1972, Gas Proration Schedule for pools in the San Juan Basin reflects that granting El Paso's request would result in the exemption of 4487 wells out of a total of 7021 wells. Tests would be required on only 2534 wells in the prorated pools. The Commission staff has discussed this case and respectfully requests a continuance of the case to a later date.

In support of this request the staff wishes to bring to your attention the following facts:

1. Rule 402 of the General Rules and Regulations states that shut-in pressure tests shall be taken annually on all natural gas wells. This testing procedure was found to be inadequate in the San Juan Basin and Case 529 was heard by the Commission on April 16, 1953, for the purpose of establishing a testing procedure for San Juan Basin gas wells. Deliverability testing procedure was established by Order R-333 which was signed June 17, 1953. The testing requirements were established for the purpose of defining the productive capacity of wells and for use in determining reservoir characteristics in gas pools. In the findings in this order it is stated that the promulgation of such rules was necessary "for the prevention of waste and the protection of correlative rights". This order predated the inception of gas proration in District #3 by almost two years as the first gas proration order was not effective until March, 1955.

2. Shut-in pressure information on gas wells provides the most reliable tool available for determining depletion rate and for calculating remaining recoverable reserves in a pool. This information is invaluable in rendering decisions in cases coming before the Commission. It is indispensible information for operators in the area or for potential investors in the Basin gas fields.

3. Shut-in pressure information provides the Commission with the most timely means of detecting casing failure in wells. This enables the Commission to take action to prevent the waste of gas and the contamination of fresh water.

4. El Paso Natural Gas Company states in their application that the requested exemption is necessary in order that they will be able to minimize curtailment of gas supplies to their customers. Due to producing characteristics of gas wells in the San Juan Basin as determined from production history, we feel that the total production loss from shutting in wells to obtain the seven day shut-in pressure would be small. It is an established fact that gas wells which have been shut-in for a period of time respond with higher than average production rates for a period of time when put back on production. We think that a detailed analysis of production history on a representative number of wells would be helpful in arriving at the amount of production loss that should be expected by continuing to secure seven day shut-in pressures. If this investigation shows that the production loss would not be significant, we would oppose the application as it now stands as we feel that there are many valid and impelling reasons to continue testing of gas wells in the San Juan Basin.

5. We think that there is a possibility that the lack of current deliverability tests on some marginal wells may have an adverse effect on well classification. Further time is needed to analyze the extent of this problem.

It is thought a sixty day period might be required to complete the investigation which we wish to make. As most shut-in pressure tests have not been scheduled until May or June during the last three year period, it does not appear that a continuance of the case until a date in January, 1973, would cause very much inconvenience irrespective of what the final decision may be when the case is heard.

If it is thought to be necessary, I will be glad to testify in Case 4853 on November 1 and make myself available for cross examination.

Thank you.

Yours very truly,

Emery C. Arnold
Supervisor, District #3

ECA:mc

cc: Mr. Norman Woodruff
El Paso Natural Gas Company
El Paso, Texas

Docket No. 5-73

DOCKET: EXAMINER HEARING - WEDNESDAY - FEBRUARY 14, 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 March, 1973 from seventeen 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 March, 1973.

CASE 4903: Application of Newmont Oil Company for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a producing oil well at an unorthodox location 990 feet from the South line and 1310 feet from the East line of Section 3, Township 18 South, Range 29 East, Loco Hills Pool, Eddy County, New Mexico.

CASE 4904: Application of Texas Pacific Oil Company, Inc. for two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the two following non-standard gas proration units in Township 23 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico:

A 120-acre unit comprising the W/2 SW/4 and NE/4 SW/4 of Section 4 to be dedicated to the State "A" Well No. 18 located in Unit M of said Section 4;

A 320-acre unit comprising the SE/4 SW/4 of Section 4 and the NW/4, S/2 NE/4, and NE/4 NE/4 of Section 9 to be simultaneously dedicated to the State "A" Well No. 111 located in Unit N of Section 4, Well No. 41 located in Unit A of Section 9, and Well No. 100 located in Unit H of Section 9.

CASE 4905: Application of John H. Hendrix for two dual completions, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete his Cossatot "B" Wells Nos. 2 and 3 located in Units M and N, respectively, of Section 12, Township 22 South, Range 37 East, Lea County, New Mexico, in such a manner as to produce oil from the Drinkard and Wantz-Granite Wash Pools through parallel strings of tubing.

CASE 4647 (Reopened):

In the matter of Case 4647 being reopened pursuant to the provisions of Order No. R-4246, which order established special rules and regulations for the Venado-Mesaverde Oil Pool, Sandoval County, New Mexico,

(Case 4647 continued from page 1)

including a provision for 80-acre proration units. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 4497 (Reopened):

In the matter of Case 4497 being reopened pursuant to the provisions of Order No. R-4102-A which order established temporary special rules and regulations for the Twin Lakes-Devonian Pool, Chaves County, New Mexico. All interested persons may appear and show cause why the gas-liquid ratio of 4000 to one should not be reduced and why the special rules and regulations should not be discontinued.

CASE 4853: (Continued from the December 19, 1972 Examiner Hearing)

Application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the gas well testing procedures for the San Juan Basin, New Mexico, promulgated by Order No. R-333-F, as amended, to remove the requirement for annual deliverability and shut-in pressure tests for marginal wells.

Applicant further requests the Commission to consider:

1. Other means of avoiding or minimizing the loss of pipeline availability attributable to the period wells in prorated pools are shut in in order to conduct the annually required deliverability and shut-in pressure tests;

2. Exempting wells in non-prorated pools from the annual deliverability and shut-in pressure requirements; and,

3. Exempting all wells in the San Juan Basin from the requirement for annual shut-in pressure tests as provided in the General Rules and Regulations.

Docket No. 29-72

DOCKET: EXAMINER HEARING - TUESDAY - DECEMBER 19, 1972

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

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

ALLOWABLE: (1) Consideration of the allowable production of gas for January, 1973, from seventeen 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 January, 1973.

CASE 4608: (Reopened) (Continued from November 14, 1972)

In the matter of Case 4608 being reopened pursuant to the provisions of Order No. R-4213 which order established special rules and regulations for the Haystack Siluro-Devonian Pool, Chaves County, New Mexico, including a provision for 80-acre spacing units. All interested persons may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 4860: (Continued from the November 29, 1972 Examiner Hearing)

Application of Craig Folson for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well to test the Queen formation at an unorthodox oil well location 1340 feet from the South line and 1300 feet from the East line of Section 12, Township 13 South, Range 31 East, Caprock-Queen Pool, Chaves County, New Mexico.

CASE 4869: (Continued and Readvertised)

Application of Claude C. Kennedy for the amendment of Order No. R-4263, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-4263 to prohibit the transfer of allowable to any well located closer than 1320 feet from the outer boundary of the Lone Pine Dakota "D" Unit Area, Lone Pine Dakota "D" Pool, McKinley County, New Mexico.

CASE 4874: Application of Skelly Oil Company for a dual completion and water injection well, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Skelly Waterflood Unit Well No. 3 located in Unit D of Section 22, Township 17 South, Range 31 East, Eddy County, New Mexico, in such a manner as to permit the production of oil from the Fren-Seven Rivers Pool and the injection of water into the Grayburg-Jackson Pool through parallel strings of tubing.

Docket No. 29-72

CASE 4875: Application of ESH Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Lower San Andres formation in the perforated interval from 5144 feet to 5170 feet in its Hobbs State Well No. 5 located in Unit F of Section 29, Township 18 South, Range 38 East, Hobbs Field, Lea County, New Mexico.

CASE 4876: Application of Gulf Oil Corporation for an unorthodox oil well location and amendment of Order No. R-2248, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its West Dollarhide Devonian Unit Well No. 118 at an unorthodox location 2540 feet from the South line and 1420 feet from the West line of Section 33, Township 24 South, Range 38 East, West Dollarhide-Devonian Pool, Lea County, New Mexico. Applicant further seeks the amendment of Order No. R-2248 to provide for administrative approval of additional production and injection wells in the aforesaid unit at unorthodox locations.

CASE 4877: Application of Texas Pacific Oil Company, Inc. for two non-standard oil proration units and a non-standard location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an 80-acre non-standard proration unit comprising the NE/4 NW/4 and NW/4 NE/4 of Section 2 to be dedicated to its State "C" Well No. 1 located in Unit B and a 40-acre non-standard proration unit comprising the SE/4 NW/4 of Section 2 to be dedicated to its State "C" Well No. 2 located in Unit F of Section 2 and an 80-acre standard proration unit comprising the E/2 NE/4 of Section 2 to be dedicated to its State "D" Well No. 1 at an unorthodox location in Unit A of Section 2, Township 12 South, Range 33 East, Bagley Siluro-Devonian Pool, Lea County, New Mexico.

CASE 4878: Application of Harding Oil Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn and Atoka formations underlying the E/2 SE/4 of Section 10, Township 17 South, Range 37 East, Lea County, New Mexico, to be dedicated to a Humble City Field extension well to be drilled at a standard location for said pools; also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4879: Application of Atlantic Richfield Company for gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 320-acre non-standard proration unit comprising the N/2 of Section 30, Township 23 South, Range 37 East, to be dedicated to its Eva Blinebry Wells Nos. 2 and 7 located in Units D and G, respectively, of said Section 30; a 320-acre non-standard proration unit comprising the E/2 of Section 26, Township 22 South, Range 36 East to be dedicated to its McDonald State Wells Nos. 8 and 9 located in

(Case 4879 continued from page 2)

Units P and G, respectively, of said Section 26, and a 640-acre standard gas proration unit comprising all of Section 15, same township, to be dedicated to its McDonald State Wells Nos. 13, 14, and 15 located in Units P, G, and L, respectively, of said Section 15, Jalmat Gas Pool, Lea County, New Mexico.

CASE 4880: Application of Jake L. Hamon for the amendment of Order No. R-638-C, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-638-C which established 150 barrels of oil per day as the maximum allowable for the South Knowles-Devonian Pool. Applicant proposes that the regular 80-acre depth bracket allowable be applied to said pool.

CASE 4881: Application of Anadarko Production Company for two unorthodox oil well locations, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill two wells at unorthodox locations 1980 feet from the South line and 1310 feet from the West line of Section 9 and 1310 feet from the North line and 1980 feet from the East line of Section 16, both in Township 18 South, Range 29 East, Loco Hills Pool, Eddy County, New Mexico.

Applicant further seeks the adoption of a procedure for administrative approval of additional production and injection wells in its Far West Loco Hills Sand Unit at unorthodox locations.

CASE 4882: Application of Shell Oil Company for a waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the San Andres formation through the following five wells in the Cato-San Andres Pool, Chaves County, New Mexico: Amoco Federal Wells Nos. 4, 6, 7, and 8 in Units C, O, E, and M, respectively, of Section 33 and Hodges Federal B Well No. 4 in Unit M of Section 34, all in Township 8 South, Range 30 East.

CASE 4883: Application of El Paso Natural Gas Company for non-standard gas spacing units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the following non-standard gas spacing units adjacent to the Blanco-Pictured Cliffs Pool in Township 31 North, Range 9 West, San Juan County, New Mexico:

A 145.6-acre unit comprising lots 9 and 10 and 15 through 18 of Section 31;

A 153.5-acre unit comprising lots 14 through 17 of Section 30 and lots 7 and 8 of Section 31;

A 156.5-acre unit comprising lots 17 and 18 of Section 19 and lots 6 through 9 of Section 30;

A 152.6-acre unit comprising lots 7 through 10 and 15 and 16 of Section 19.

CASE 4853: (Continued and Readvertised)

Application of El Paso Natural Gas Company for amendment of gas well testing procedures, San Juan Basin, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the gas testing procedures for the San Juan Basin, New Mexico, promulgated by Order No. R-333-F, as amended, to remove the requirement for annual deliverability and shut-in pressure tests for marginal wells.

Applicant further requests the Commission to consider:

1. Other means of avoiding or minimizing the loss of pipeline availability attributable to the period wells in prorated pools are shut in in order to conduct the annually required deliverability and shut-in pressure tests;

2. Exempting wells in non-prorated pools from the annual deliverability and shut-in pressure requirements; and,

3. Exempting all wells in the San Juan Basin from the requirement for annual shut-in pressure tests as provided in the General Rules and Regulations.

CASE 4884: Application of Colorado Plateau Geological Services, Inc., for an extention of Order No. R-4227, McKinley County, New Mexico. Applicant, in the above-styled cause, as managing agent for oil and gas for the Henry Birdseye Estate, seeks a one-year extension to certain provisions of Order No. R-4227 which, as amended by Order No. R-4227-A, required that certain of the Birdseye wells in the Chaco Wash Mesaverde Oil Pool be placed on active production or water injection by December 31, 1972, or be plugged and abandoned. Applicant, or United States Fidelity and Guaranty Company, or any other interested party will be permitted to show cause why the effective date of the aforesaid order should not be enforced.

CASE 4885: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit John Lemley and Juanita Franks and Aetna Casualty and Surety Company and all other interested parties to appear and show cause why the Lemley and Franks Creathouse Well No. 1, located in Unit F of Section 10, Township 23 North, Range 1 West, Rio Arriba County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

Gulf Oil Company - U.S.

EXPLORATION AND PRODUCTION DEPARTMENT
MIDLAND DISTRICT

W. B. Hopkins
DISTRICT MANAGER
J. A. Hord
DISTRICT EXPLORATION MANAGER
J. L. Pike
DISTRICT PRODUCTION MANAGER
M. B. Moseley
DISTRICT SERVICES MANAGER

P. O. Drawer 1150
Midland, Texas 79701

October 24, 1972

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87501

Attn: Mr. A. L. Porter, Jr.

Re: Case 4853. Application of El Paso Natural Gas Company to Amend Order No. R-333-F Governing Gas Well Testing Procedure, San Juan Basin Area

Gentlemen:

Gulf Oil Corporation is an Operator in the San Juan Basin area. We are in agreement with El Paso Natural Gas Company that Order No. R-333-F, as amended, should be amended to remove the requirement for annual deliverability and shut-in pressure tests for marginal wells. We, therefore, support El Paso Natural Gas Company's position in Case 4853.

Yours very truly,

GULF OIL CORPORATION

By: R. O. Bobo
R. O. BOBO
District Proration Engineer

ROB: jmc

Gulf
A DIVISION OF GULF OIL CORPORATION

Set for Feb. 14 72

SOUTHERN UNION PRODUCTION COMPANY
FIDELITY UNION TOWER
DALLAS, TEXAS 75201

L. S. MUENNINK
VICE-PRESIDENT

October 23, 1972

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

In Case No. 4853, the Commission has before it a question of reviewing its rules pertaining to testing of marginal wells in the prorated gas pools of the San Juan Basin.

Southern Union Production Company is aware of the benefits that would accrue to both producers and purchasers if wells were generally available for production with as few interruptions as possible. At the same time we are mindful of the ongoing value of uniform well testing practices in matters of reservoir engineering. We know of no source of San Juan Basin engineering data comparable to that assembled down through the years through the functioning of the Commission's testing rules.

In view of our beliefs as set out above, Southern Union Production Company recommends an alternate year testing program whereby all marginal (non-exempt) wells would be tested at least one time in every two year period.

Respectfully yours,

SOUTHERN UNION PRODUCTION COMPANY

L. S. Muennink

L. S. Muennink, Vice President

LSM:t

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03191 DALLAS TEXAS 151 12-18 404P CST
PMS NEW MEXICO OIL CONSERVATION COMMISSION
PO BOX 2088
SANTA FE NMEX 87501

GENTLEMEN:

IN CASE NO 4853, THE COMMISSION HAS BEFORE IT A QUESTION OF REVIEWING ITS RULES PERTAINING TO TESTING OF MARGINAL WELLS IN THE PRORATED GAS POOLS OF THE SAN JUAN BASIN

SOUTHERN UNION PRODUCTION COMPANY IS AWARE OF THE BENEFITS THAT WOULD ACCRUE TO BOTH PRODUCERS AND PURCHASERS IF WELLS WERE GENERALLY ABAILABLE FOR PRODUCTION WITH AS FEW INTERRUPTIONS AS POSSIBLE. AT THE SAME TIME WE ARE MIDFUL OF THE ONGOING VALUE OF UNIFORM WELL TESTING PRACTICES IN MATTERS OF RESERVOIR ENGINEERING. WE KNOW OF NO SOURCE OF SAN JUAN BASIN ENGINEERING DATA COMPARABLE TO THAT ASSEMBLED DOWN THROUGH THE YEARS THROUGH THE FUNCTIONING OF THE COMMISSIONS TESTING RULES.

IN VIEW OF OUR BELIEFS AS SET OUT ABOVE, SOUTHERN UNION PRODUCTION COMPANY RECOMMENDS AN ALTERNATE YEAR TESTING PROGRAM WHEREBY ALL MARGINAL (NON-EXEMPT) WELLS WOULD BE TESTED AT LEAST ONE TIME IN EVERY TWO YEAR PERIOD. REPECTFULLY YOURS

SOUTHERN UNION PRODUCTION CO
L S MUENNINK VICE PRESIDENT

2103 EST

IPMFEKA SANA

El Paso Natural Gas Company

El Paso, Texas 79999

September 28, 1972

Case 4853

Mr. A. L. Porter, Jr., Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Porter:

As representatives of this company have pointed out to you from time to time in the recent past, the firm demand of El Paso's customer companies is approaching the total availability from all sources which El Paso relies upon for supply. In fact, it appears that we will begin curtailing deliveries to our customers because of lack of supply in November of 1972. Based on the current supply picture it appears that curtailments will exist every month, both winter and summer thereafter.

We are studying ways to minimize the loss of availability from existing sources and have concluded that a meaningful way will be to avoid the shutting in of marginal wells in San Juan Basin prorated pools for the seven-day period required for the taking of the Annual Deliverability and Shut-in Pressure Tests. We believe it reasonable to assume that an increasing percentage of the wells in the San Juan Basin will become marginal as demand approaches delivery capacity and that the foregoing of such tests on the marginal wells will in no way hinder the Commission's efforts to continue proration under the existing rules.

El Paso respectfully requests that the Commission take such action as necessary, including the setting of a hearing, if required, to amend its Order No. R-333, as amended, so as to exempt from the presently required Annual Deliverability and Shut-in Pressure Tests those wells in San Juan Basin Pools classified as marginal during the applicable test period.

If a hearing is required, we ask that it be set at the earliest possible date in order to facilitate the preparation of deliverability test schedules as required by the Commission.

While El Paso's requested exception is for all future test periods, we would recommend that this matter be reviewed in September, 1973 in order to establish the circumstances existing and foreseen at that time.

We will be happy to cooperate with any operator wishing to test an exempted well in order to obtain desired data.

Yours very truly,

F. Norman Woodruff

F. Norman Woodruff, Director
Gas Proration Operations

FNW:tm

DOCKET MAILED

Date 2-1-73

OIL CONSERVATION COMMISSION

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

GOVERNOR
BRUCE KING
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

Telegram (They will mail original)

DENVER, COLORADO

Subject: Examiner Hearing - February 14, 1973
Case No. 4853
Atlantic Richfield Co.

Atlantic Richfield Company wishes to make known that it opposes the proposal to amend Order R-333 - F-A-S proposal by El Paso Natural Gas Company. The reasons for this opposition are as follow:

1. Atlantic Richfield Company opposes any proposal which in effect by passes, reduces or nulifies the responsibilities or jurisdiction of the New Mexico Oil Conservation Commission.

2. Atlantic Richfield Company feels that the annual testing of all its wells is necessary for various reservoir engineering studies.

3. Atlantic Richfield Company has in the past and will in the future ~~pass~~ test each of its well at least annually whether or not such test is required by regulations.

4. A review of several years records shows that more gas well shut-in time was experienced in San Juan Basin due to El Paso Natural Gas Company's request or "Order" ~~then~~ than due to annual testing.

C. E. Cardwell, Jr.
District Manager

El Paso Natural Gas Company

El Paso, Texas 79999

November 17, 1972

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Porter:

At El Paso's request, you have continued until December 19, 1972 Case 4853 being El Paso's request that marginal wells in San Juan Basin Pools be exempted from the annual deliverability and shut-in pressure test requirement.

In our discussion with others, it appears appropriate to request the Commission to broaden the scope of our Hearing so as to permit the consideration of:

1. other means of avoiding or minimizing the loss of pipeline availability attributable to the period wells in prorated pools are shut-in in order to conduct the annually required deliverability and shut-in pressure tests:

2. exempting wells in non-prorated pools from the annual deliverability and shut-in pressure requirements; and,

3. exempting all wells in the San Juan Basin from the requirement for annual shut-in pressure test as provided in the General Rules and Regulations.

In view of the above, we ask that the call of Hearing 4853 be broadened to include a further request on El Paso's part for consideration of other means of avoiding the unnecessary shutting-in of wells for test in all the prorated and non-prorated San Juan Basin Pools and for exceptions to Order No. R-333 as amended and Rule 402 of the General Rules and Regulations as may be required under the circumstances.

Yours very truly,

F. Norman Woodruff

FNW

F. Norman Woodruff, Director
Gas Proration Operations

cc: San Juan Basin Operators tied to EPNG System
Southern Union Gas Company

El Paso Natural Gas Company

El Paso, Texas 79978

Case 4853

October 27, 1972

To All San Juan Basin Operators:

As we advised you on October 5, 1972, the New Mexico Oil Conservation Commission has set a Hearing for November 1, 1972 to consider our request that marginal wells in San Juan Basin Pools be exempted from deliverability test requirements.

We are advised that the staff of the New Mexico Oil Conservation Commission will request that this Hearing be continued to a later date in order to have the opportunity to collect additional data to evaluate this request.

El Paso Natural Gas Company has no objection to such a continuance and at the time this Hearing is called on November 1, 1972 will request the Commission to continue it to a date in December, 1972. Under these circumstances, we understand that the Commission will continue this case and we will plan on presenting no testimony.

We are taking this opportunity to advise you of this matter so that you will not unnecessarily attend this Hearing.

Yours very truly,

F. Norman Woodruff

FNW:mgs

F. Norman Woodruff, Director
Gas Proration Operations

cc: New Mexico Oil Conservation Commission
Santa Fe, New Mexico

New Mexico Oil Conservation Commission
Aztec, New Mexico

AVERAGE PRODUCTION ANALYSIS 1972

BASIN-DAKOTA

MCF/Mo.	MCF/D	APC	AMO	AOG	AEL	EPG	PCI	PLA	SKY	SU	SUG	No. Wells in Group	Cum. No. Wells	% of Pool
0-500	17	1	0	0	0	59	1	0	0	9	17	87	87	4.0
500-1000	33	0	0	0	0	75	1	0	0	3	11	90	177	8.2
1000-1500	50	0	0	1	0	80	0	0	0	2	16	99	276	12.8
1500-2000	67	0	0	0	0	63	0	0	1	5	10	79	355	16.4
2000-2500	83	0	1	0	0	92	0	0	0	4	13	110	465	21.5
2500-3000	100	1	1	0	0	85	0	0	0	1	21	109	574	26.5
3000-3500	117	0	1	0	0	82	0	0	0	3	11	97	671	31.0
3500-4000	133	0	1	0	0	81	0	0	0	7	17	106	777	35.9
4000-4500	150	0	0	0	0	100	0	0	0	4	15	119	896	41.4
4500-5000	167	0	0	0	0	84	0	0	0	2	9	95	991	45.8
5000-5500	183	0	0	0	0	82	0	0	0	4	5	91	1082	50.0
5500-6000	200	0	1	0	0	74	0	0	0	1	7	83	1165	53.9
6000-6500	217	0	1	0	0	73	0	0	0	3	4	81	1246	57.6
6500-7000	233	0	1	0	0	59	0	0	0	6	2	68	1314	60.7
7000-7500	250	0	0	0	1	44	0	0	0	10	2	57	1371	63.4
7500-8000	267	0	0	0	0	42	0	0	0	3	10	55	1426	65.9
8000-8500	283	0	0	0	0	38	0	0	0	4	5	47	1473	68.1
8500-9000	300	0	0	0	0	32	0	0	0	7	3	42	1515	70.0
9000-9500	317	0	0	0	0	46	0	0	0	5	8	59	1574	72.8
9500-10,000	333	0	1	0	0	34	0	0	0	7	9	51	1625	75.1
10,000-Up		0	6	0	0	388	0	1	0	37	106	538	2163	100.0
Over 2000		1	14	0	1	1436	0	1	0	108	247	1808		
Under 2000		1	0	1	0	277	2	0	1	19	54	355		
Pool Totals		2	14	1	1	1713	2	1	1	127	301	2163		

APC	Amerada Petroleum Corp.
AMO	Amoco Production Co.
AOG	Aztec Oil & Gas Co.
AEL	Aztec Oil & Gas Co. & El Paso Natural Gas Co.
EPG	El Paso Natural Gas Co.
PCI	Petroleum Consultants, Inc.
PLA	Plateau, Inc.
SKY	Skelly Oil Co.
SU	Southern Union Gas Co.
SUG	Southern Union Gathering Co.

AVERAGE PRODUCTION ANALYSIS
1972
BLANCO-MV

MCF/MO	MCF/D	EPG	SU	SUG	NO. WELLS IN GROUP	CUM. NO. WELLS	% OF POOL
0- 500	17	54	2	3	59	59	2.9
500- 1000	33	71	1	8	80	139	6.4
1000- 1500	50	104	5	5	114	253	12.4
1500- 2000	67	104	6	9	119	372	18.2
2000- 2500	83	85	6	12	103	475	23.2
2500- 3000	100	108	1	12	121	596	29.2
3000- 3500	117	87	0	8	95	691	33.8
3500- 4000	133	70	1	8	79	770	37.7
4000- 4500	150	62	2	9	73	843	41.2
4500- 5000	167	49	0	6	55	898	43.9
5000- 5500	183	57	1	13	71	969	47.4
5500- 6000	200	50	1	6	57	1026	50.2
6000- 6500	217	45	0	7	52	1078	52.7
6500- 7000	233	32	0	8	40	1118	54.7
7000- 7500	250	36	3	9	48	1166	57.0
7500- 8000	267	30	2	2	34	1200	58.7
8000- 8500	283	31	1	4	36	1236	60.5
8500- 9000	300	25	1	4	30	1266	61.9
9000- 9500	317	29	1	3	33	1299	63.6
9500-10,000	333	27	0	6	33	1332	65.2
10,000- UP		612	7	93	712	2044	100.0
OVER 2000		1435	27	210	1672		
UNDER 2000		333	14	25	372		
POOL TOTALS		1768	41	235	2044		

AVERAGE PRODUCTION ANALYSIS - 197?

AZTEC PICTURED CLIFFS

MCF/NO.	MCF/D	EPG	SUG	NO. WELLS IN GROUP	CUM. NO. WELLS	% OF POOL
0-500	17	38	3	41	41	9.1
500-1000	33	54	15	69	110	24.3
1000-1500	50	41	20	61	171	37.7
1500-2000	67	43	18	61	232	51.2
2000-2500	83	40	20	60	292	64.5
2500-3000	100	31	11	42	334	73.7
3000-3500	117	28	8	36	370	81.7
3500-4000	133	18	7	25	395	87.2
4000-4500	150	16	1	17	412	90.9
4500-5000	167	8	2	10	422	93.2
5000-5500	183	8	0	8	430	94.9
5500-6000	200	5	1	6	436	96.2
6000-6500	217	4	0	4	440	97.1
6500-7000	233	3	0	3	443	97.8
7000-7500	250	3	1	3	446	98.5
7500-8000	267	2	0	1	447	99.1
8000-8500	283	0	1	2	449	99.3
8500-9000	300	1	0	1	450	99.3
9000-9500	317				450	99.8
9500-10,000	333				452	99.8
10,000-Up					452	100.0
					453	
Over 1000		252	91	343		
Under 1000		92	18	110		
Pool Totals		344	109	453		

AVERAGE PRODUCTION ANALYSIS
1972

BALLARD-PICTURED CLIFFS

MCF/MO.	MCF/D	EPNG	SUG	No. Wells In Group	Cumulative No. of Wells	% of Pool
0- 500	17	74	17	91	91	17.4
500-1000	33	85	24	109	200	38.3
1000-1500	50	65	15	80	280	53.6
1500-2000	67	53	18	71	351	67.2
2000-2500	83	38	4	42	393	75.3
2500-3000	100	19	5	24	417	79.9
3000-3500	117	27	3	30	447	85.6
3500-4000	133	19	2	21	468	89.7
4000-4500	150	10	0	10	478	91.6
4500-5000	167	9	1	10	488	93.5
5000-5500	183	6	0	6	494	94.6
5500-6000	200	6	0	6	500	95.8
6000-6500	217	3	0	3	503	96.4
6500-7000	233	4	0	4	507	97.1
7000-7500	250	0	0	0	507	97.1
7500-8000	267	0	0	0	507	97.1
8000-8500	283	1	0	1	508	97.3
8500-9000	300	1	0	1	509	97.5
9000-9500	317	1	0	1	510	97.7
9500-10000	333	1	0	1	511	97.9
10000-up	=	11	0	11	522	100.0
Over 1000		274	48	322		
Under 1000		159	41	200		
Pool Totals		433	89	522		

AVERAGE PRODUCTION ANALYSIS
1972
FULCHER KUTZ-PC

MCF/MO.		MCF/D	EPG	SU	SUG	NO. WELLS IN GROUP	CUM. NO. WELLS	% OF WELLS
0-	500	17	22	1	21	44	44	15.2
500-	1000	33	34	1	26	61	105	36.3
1000-	1500	50	15		27	42	147	50.9
1500-	2000	67	13		17	30	177	61.2
2000-	2500	83	8		13	21	198	68.5
2500-	3000	100	5		10	15	213	73.7
3000-	3500	117	5		4	9	222	76.8
3500-	4000	133	3		8	11	233	80.6
4000-	4500	150	5		8	13	246	85.1
4500-	5000	167	1		8	9	255	88.2
5000-	5500	183	2		4	6	261	90.3
5500-	6000	200	1		2	3	264	91.3
6000-	6500	217	0		2	2	266	92.4
6500-	7000	233	1		2	3	269	93.1
7000-	7500	250	2		1	3	272	94.1
7500-	8000	267	0		1	1	273	94.5
8000-	8500	283	0		1	1	274	94.8
8500-	9000	300	0		2	2	276	95.5
9000-	9500	317	0		1	1	277	95.8
9500-	10,000	333	0		1	1	278	96.2
10,000-	UP		1		10	11	289	100.0
OVER 1000			62	0	122	184		
UNDER 1000			56	2	47	105		
POOL TOTALS			118	2	169	289		

AVERAGE PRODUCTION ANALYSIS - 1972

SOUTH BLANCO - PICTURED CLIFFS

MCF/MO.	MCF/D	DRO	EPG	SU	SUG	NO. WELLS IN GROUP	CUM. NO. WELLS	% OF POOL
0-500	17	1	121	8	0	130	130	10.3
500-1000	33	0	187	18	0	205	335	26.7
1000-1500	50	0	176	18	2	196	531	42.2
1500-2000	67	0	159	12	2	173	704	56.2
2000-2500	83	0	129	13	3	145	849	67.5
2500-3000	100	0	97	14	1	112	961	76.5
3000-3500	117	0	70	7	3	80	1041	83.1
3500-4000	133	0	44	14	0	58	1099	87.4
4000-4500	150	0	44	7	0	51	1150	91.5
4500-5000	167	0	27	1	0	28	1178	93.7
5000-5500	183	0	18	2	0	20	1198	95.3
5500-6000	200	0	6	0	0	6	1204	95.8
6000-6500	217	0	11	1	0	12	1216	96.7
6500-7000	233	0	13	1	0	14	1230	97.9
7000-7500	250	0	3	2	0	5	1235	98.2
7500-8000	267	0	3	2	0	5	1240	98.6
8000-8500	283	0	5	0	0	5	1245	99.0
8500-9000	300	0	6	1	0	7	1252	99.6
9000-9500	317	0	1	0	0	1	1253	99.7
9500-10,000	333	0	0	0	0	0	1253	99.7
10,000-Up		0	4	0	0	4	1257	100.0
Over 1000		0	816	95	11	922		
Under 1000		1	308	26	0	335		
Pool Totals		1	1124	121	11	1257		

DRO Dyna Ray Oil & Gas Company
EPG El Paso Natural Gas Company
SU Southern Union Gas Company
SUG Southern Union Gathering Company

AVERAGE PRODUCTION ANALYSIS
1972

TAPACITO-PICTURED CLIFFS

MCF/MO.	MCF/D	EPNG	SUG	No. Wells In Group	Cumulative No. of Wells	% of Pool
0 - 500	17	8	2	10	10	5.1
500-1000	33	12	1	13	23	11.7
1000-1500	50	20	5	25	48	24.5
1500-2000	67	13	3	16	64	32.6
2000-2500	83	13	5	18	82	41.8
2500-3000	100	16	6	22	104	53.1
3000-3500	117	12	5	17	121	61.7
3500-4000	133	12	3	15	136	69.4
4000-4500	150	12	4	16	152	77.6
4500-5000	167	5	4	9	161	82.1
5000-5500	183	1	4	5	166	84.7
5500-6000	200	4	2	6	172	87.8
6000-6500	217	5	2	7	179	91.3
6500-7000	233	0	1	1	180	91.8
7000-7500	250	0	2	2	182	92.9
7500-8000	267	1	1	2	184	93.9
8000-8500	283	1	1	2	186	94.9
8500-9000	300	2	1	3	189	96.4
9000-9500	317	0	0	0	189	96.4
9500-10000	333	0	2	2	191	97.4
10000-up	-	3	2	5	196	100.0
Over 1000		120	53	173		
Under 1000		20	3	23		
Pool Totals		140	56	196		

AVERAGE PRODUCTION ANALYSIS 1972

WEST KUTZ - PICTURED CLIFFS

MCF/Mo.	MCF/D	EPNG	SU	No. Wells In Group	Cum. No. Wells	% of Pool
0- 500	17	24	12	36	36	21.6
500-1000	33	22	12	34	70	41.9
1000-1500	50	22	8	30	100	59.9
1500-2000	67	19	7	26	126	75.4
2000-2500	83	9	2	11	137	82.0
2500-3000	100	7	0	7	144	86.2
3000-3500	117	5	1	6	150	89.8
3500-4000	133	2	1	3	153	91.6
4000-4500	150	4	0	4	157	94.0
4500-5000	167	1	2	3	160	95.8
5000-5500	183	1	0	1	161	96.4
5500-6000	200	1	0	1	162	97.0
6000-6500	217	0	0	0	162	97.0
6500-7000	233	1	0	1	163	97.6
7000-7500	250	1	0	1	164	98.2
7500-8000	267	0	0	0	164	98.2
8000-8500	283	0	0	0	164	98.2
8500-9000	300	0	0	0	164	98.2
9000-9500	317	0	0	0	164	98.2
9500-10,000	333	1	0	1	165	98.8
10,000-Up		2	0	2	167	100.0
Over 1000		76	21	97		
Under 1000		46	24	70		
Pool Totals		122	45	167		

GAS WELL [illegible] JANUARY 1, [illegible] III

	Total Wells	Total NM	%	Total [illegible]	%	Total XM	%
Blanco-Mesaverde	2032	776	38.2	1256	61.8	920	[illegible]
Basin-Dakota	2156	487	27.6	1669	77.4	916	42.5
Aztec-Pictured Cliffs	453	193	42.6	260	57.4	111	24.5
Ballard-Pictured Cliffs	517	125	24.2	392	75.8	221	42.7
South Blanco-Pictured Cliffs	1245	730	58.6	515	41.4	322	25.9
Fulcher Kutz-Pictured Cliffs	286	109	38.1	177	61.9	124	43.4
West Kutz-Pictured Cliffs	167	68	40.7	99	59.3	71	42.5
Tapacito-Pictured Cliffs	193	93	48.2	100	51.8	[illegible]	[illegible]
Total Pictured Cliffs	2861	1318	46.1	1543	53.9	877	30.7
Total Other Formations-Prorated	[illegible]	55		2			
Northwest Prorated Total	7106	[illegible]	37.1	4470	62.9	2713	38.2
Northwest Non-Prorated Total	732						
Northwest Total	[illegible]						

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
OCC Staff EXHIBIT NO. #2
CASE NO. 4853

NEW MEXICO OIL CONSERVATION COMMISSION

INITIAL WELL DELIVERABILITY TEST REPORT FOR 19_____

Form C122-A
Revised 1-1-66

POOL NAME	POOL SLOPE	FORMATION	COUNTY
	n=		

COMPANY			WELL NAME AND NUMBER		
UNIT LETTER	SECTION	TOWNSHIP	RANGE	PURCHASING PIPELINE	
CASING O.D. – INCHES	CASING I.D. – INCHES	SET AT DEPTH – FEET	TUBING O.D. – INCHES	TUBING I.D. – INCHES	TOP – TUBING PERF. – FEET
GAS PAY ZONE FROM TO		WELL PRODUCING THRU CASING TUBING		GAS GRAVITY	GRAVITY X LENGTH
DATE OF FLOW TEST FROM TO		DATE SHUT-IN PRESSURE MEASURED			

PRESSURE DATA – ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWt)	(b) Flowing Tubing Pressure (DWt)	(c) Flowing Meter Pressure (DWt)	(d) Flow Chart Static Reading	(e) Meter Error (Item c – Item d)	(f) Friction Loss (a – c) or (b – c)	(g) Average Meter Pressure (Integr.)
(h) Corrected Meter Pressure (g + e)	(i) Avg. Wellhead Press. P_t = (h + f)	(j) Shut-in Casing Pressure (DWt)	(k) Shut-in Tubing Pressure (DWt)	(l) P_c = higher value of (j) or (k)	(m) Del. Pressure P_d = _____ $\frac{4}{5}P_c$	(n) Separator or Dehydrator Pr. (DWt) for critical flow only

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume – MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume Q = MCF/D

WORKING PRESSURE CALCULATION

$(1-e^{-s})$	$(F_c\ Q_m)^2\ (1000)$	$R^2 = (1-e^{-s})\ (F_c\ Q_m)^2 (1000)$	P_t^2	$P_w^2 = P_t^2 + R^2$	$P_w = \sqrt{P_w^2}$

DELIVERABILITY CALCULATION

$$D = Q\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right]^n = \_\_\_\_\_\left[\left(\_\_\_\_\_\right)^n \left(\_\_\_\_\_\right)^n = \_\_\_\_\_ = \_\_\_\_\_\right] = \_\_\_\_\_ \text{MCF/D}$$

REMARKS:

SUMMARY

Item h _____ Psia
P_c _____ Psia
Q _____ MCF/D
P_w _____ Psia
P_d _____ Psia
D _____ MCF/D

Company _____
By _____
Title _____
Witnessed By _____
Company _____

El Paso Natural Gas Company

El Paso, Texas 79978

December 21, 1972

2-14-73

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Appl. EXHIBIT NO. 1
CASE NO. 4853

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Daniel S. Nutter, Examiner

Re: NMOCC Case 4853: Amendment of Gas Well Testing Procedure, San Juan Basin, New Mexico

Gentlemen:

Enclosed is El Paso Natural Gas Company's proposed change in the gas well testing procedures for the San Juan Basin, New Mexico, as such procedures are currently prescribed by Order No. R-333-F, as amended. In substance this proposal provides as follows:

(a) Biennial Deliverability and Shut-In Pressure Tests shall be taken on all gas wells in the prorated and non-prorated pools of the San Juan Basin Area except those wells classified as exempt marginal. No Deliverability and Shut-In Pressure Tests shall be required on exempt marginal wells.

(b) All new wells, reworked wells and recompleted wells in the San Juan Basin Area shall receive Deliverability and Shut-In Pressure Tests on an annual basis until three annual tests have been taken and thereafter such tests shall be taken on a biennial basis.

(c) All gas wells in a given pool shall be tested in the same test year. Accordingly, the San Juan Basin pools have been divided into two groups for testing in alternate years.

As indicated below, copies of this letter and of the proposed change in Order No. R-333-F have been sent to the principals and attorneys of all interested parties appearing of record in Case 4853. Copies have also been mailed to those parties communicating in writing with the Commission in reference to this case.

Very truly yours,

EL PASO NATURAL GAS COMPANY

James C. Considine

James C. Considine, Counsel

Enclosure

Mailing List, NMOCC Case No. 4853

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Southern Union Gas Company
Fidelity Union Tower
Dallas, Texas 75201
Attn: Mr. Oran Haseltine

Southern Union Production Co.
Attn: Mr. L. S. Muennick
Vice President
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Mr. J. A. Morris
Engineering Supervisor
Mobil Oil Company
Midland, Texas 79701

Tenneco Oil Company
Attn: Mr. R. A. Williford
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Lincoln Tower Bldg.
Denver, Colorado 80203

Gulf Oil Corporation
P.O. Drawer 1150
Attn: Mr. R. O. Bobo
Midland, Texas 79701

DRAFT

DSN/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. 4853

Order No. R-333-F-1

APPLICATION OF EL PASO NATURAL GAS COMPANY FOR AMENDMENT OF GAS WELL TESTING PROCEDURES, SAN JUAN BASIN, NEW MEXICO.

3-14-73

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 14, 1973 at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of March, 1973, 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 Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, ~~and~~ R-333-H, and R-333-H-1, requires annual deliverability and shut-in pressure tests of all gas wells in the San Juan Basin of San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico, subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

(3) That the applicant, El Paso Natural Gas Company, seeks the amendment of Order No. R-333-F, as amended, to provide that biennial deliverability and shut-in pressure tests would be taken on all gas wells in the San Juan Basin except those wells classified as "exempt marginal," which exempt marginal wells would be exempt from the test requirements.

(4) That the applicant also proposes that all new wells, reworked wells, and recompleted wells in the San Juan Basin would receive deliverability and shut-in pressure tests on an annual basis until three annual tests have been taken, and that thereafter such tests would be taken on a biennial basis.

(5) That the applicant further proposes that all gas wells in ~~a~~ any given pool would be tested in the same year, and that approximately one-half of the wells in the San Juan Basin would be tested each year.

(6) That the amendment of Commission Order No. R-333-F, as amended, in accordance with the proposal of El Paso Natural Gas Company as described in Findings Nos. (3) through (5) above will not cause waste nor violate correlative rights, and should be approved.

(7) That Commission Order No. R-333-F, as amended, should be further amended to provide definitive criteria upon which to classify gas wells as "exempt marginal," which exempt marginal wells would be exempt from deliverability and shut-in pressure test requirements.

(8) That the production from all gas wells in the San Juan Basin should be reviewed annually and the wells should be classified into or out of the test exempt status each year effective the first day of January.

(9) That upon review of said production, gas wells completed in the Pictured Cliffs or shallower formations which failed to produce in excess of 12,000 MCF during the preceding 12-month period, and gas wells completed in any formation deeper than the Pictured Cliffs formation which failed to produce in excess of 24,000 MCF during the preceding 12-month period, should be classified as exempt marginal, and should be exempt from further deliverability and shut-in pressure tests as long as they remain so classified.

(10) That adoption of the definitive criteria for classification of gas wells into or out of the exempt marginal status as outlined above will not cause waste nor violate correlative rights, and should be approved.

(11) That to avoid confusion, Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, R-333-H, and R-333-H-1, and as further amended as proposed in the instant case, should be superseded by an entire new order, designated as Commission Order No. R-333-F-1, which should promulgate gas well testing rules and procedures for the San Juan Basin as heretofore and herein approved by the Commission.

IT IS THEREFORE ORDERED:

(1) That effective January 1, 1974, the following Special Rules and Regulations governing gas well testing in the San Juan Basin (Counties of San Juan, Rio Arriba, McKinley, and Sandoval, New Mexico), superseding the rules and regulations contained in Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, R-333-H, and R-333-H-1, are hereby promulgated and adopted as an exception to Rules 401 and 402 of the general statewide rules and regulations of this Commission relating to gas well testing procedures.

GAS WELL TESTING RULES AND PROCEDURES
SAN JUAN BASIN, NEW MEXICO

CHAPTER I TYPE OF TESTS REQUIRED

Section 1: Initial Deliverability and Shut-In Pressure Tests for Newly Completed Wells

A. Immediately upon completion of each gas well in the San Juan Basin, a shut-in pressure test of at least seven days duration shall be made.

B. Within 60 days after a well is connected to a gas transportation facility, the well shall have been tested in accordance with Section 1 of Chapter II of these rules, "Initial Deliverability and Shut-In Pressure Test Procedures," and the results of the test filed with the Commission's Aztec office and with the gas transportation facility to which the well is connected. Failure to file said test within the above-prescribed 60-day period will subject the well to the loss of one day's allowable for each day the test is late.

C. The requirements for Initial Tests and Annual or Biennial Deliverability and Shut-In Pressure Tests and the notification requirements and scheduling of such tests which apply to newly completed wells shall also apply to reworked or recompleted wells.

D. Any tests taken for informational purposes prior to pipeline connection shall not be recognized as official tests for the assignment of allowables.

Section 2: Annual and Biennial Deliverability and Shut-In Pressure Tests

A. Biennial Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:

1. A newly completed well or a reworked or recompleted well shall be tested on an annual basis until three annual tests have been taken, after which the well shall be tested biennially as is required for other wells in the pool in which the well is located.

2. An Annual Deliverability and Shut-In Pressure Test shall not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however.

3. When the Initial Deliverability and Shut-In Pressure Test required by Section 1-B above has been taken in accordance with the annual and biennial testing procedure outlined in Section 2 of Chapter II of these rules, the initial test may be considered the first of the three required annual tests for the well. Provided however, if the operator intends to use such initial test as the first annual test, he must notify the Commission and the gas transportation facility to which the well is connected of his intent in writing prior to the conclusion of the 14-day conditioning period.

4. Wells classified as "exempt marginal" shall not be subject to the requirements of annual or biennial deliverability and shut-in pressure tests.

Classification of wells into or out of the exempt marginal status shall be done once each year effective January 1.

33 MCF/connection/day

Gas wells completed in the Pictured Cliffs formation or in any shallower formation which were connected throughout the year but which failed to produce in excess of 12,000 MCF of gas during the preceding 12-month period shall be classified "exempt marginal."

66 MCF/connection day

Gas wells completed in any formation deeper than the Pictured Cliffs formation which were connected throughout the year but which failed to produce in excess of 24,000 MCF of gas during the preceding 12-month period shall be classified "exempt marginal."

A gas well connected for less than one year may be classified as "exempt marginal" if at least three months of production history is available at the annual classification time and if the ~~daily~~ average daily rate of production clearly indicates that the well would be eligible for exempt marginal status if 12 months of production history were available.

B. All Annual and Biennial Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between ~~November 1~~ October 10 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for

of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual and Biennial Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above.

The gas transportation facility and the Aztec District Office of the Commission shall be notified immediately by any operator unable to conduct any test as scheduled. In the event a well is not tested in accordance with the test schedule, the well shall be re-scheduled by the gas transportation facility, and the Commission and the operator of the well so notified in writing. Notice to the Commission must be received prior to the conclusion of the 14-day conditioning period. Notice to the Commission of shut-in pressure tests which are scheduled at a time other than immediately following the flow test must be received prior to the time that the well is shut-in.

It shall be the responsibility of each operator to determine that all of its wells are properly scheduled for testing by the gas transportation facility to which they are connected, in order that all annual or biennial tests may be completed during the testing season.

B. Deliverability Re-Tests

An operator may, in cooperation with the gas transportation facility, schedule a well for a deliverability re-test upon notification to the Commission's Aztec office at least ten days before the test is to be commenced. Such re-test shall be for good and substantial reason and shall be subject to the approval of the Commission. Re-tests shall in all ways be conducted in conformance with the Annual and Biennial Deliverability Test Procedures of these rules. The Commission, at its discretion, may require the re-testing of any well by notification to the operator to schedule such re-test.

Section 4: Witnessing of Tests (or Biennial)

Any Initial, ~~or~~ Annual, Deliverability and Shut-In Pressure Test may be witnessed by any or all of the following: an agent of the Commission, an offset operator, a representative of the gas transportation facility connected to the well under test, or a representative of the gas transportation facility taking gas from an offset operator.

CHAPTER II PROCEDURE FOR TESTING (and Biennial)

Section 1: Initial Deliverability and Shut-In Pressure Test Procedure

A. Within 60 days after a newly completed well is connected to a gas transportation facility, the operator shall complete a deliverability and shut-in pressure test of the well in conformance with the "Annual Deliverability and Shut-In Pressure Test Procedures" prescribed in Section 2 of this chapter. Results of the test shall be filed as required by Section 1 of Chapter I of these rules.

B. In the event it is impractical to test a newly completed well in conformance with Paragraph A above, the operator may conduct the deliverability and shut-in pressure test in the following manner (provided, however, that any test so conducted will not be accepted as the first annual deliverability and shut-in pressure test as described in Paragraph A-3 of Section 2, Chapter I):

1. A 7- or 8-day production chart may be used as the basis for determining the well's deliverability, providing the chart so used is preceded by at least 14 days continuous production. The well shall produce through either the casing or tubing, but not both, into a pipeline during these periods. The production valve and the choke settings shall not be changed during either the conditioning or flow period with the exception of the first week of the conditioning period when maximum production would over-range the meter chart or location production equipment.

2. A shut-in pressure of at least seven days duration shall be taken. This shall be the shut-in test required in Paragraph A, Section 1 of Chapter I of these rules.

3. The average daily static meter pressure shall be determined in accordance with Section 2 of Chapter II of these rules. This pressure shall be used as P_t in calculating P_w for the Deliverability Calculation.

4. The daily average rate of flow shall be determined in accordance with Section 2 of Chapter II.

5. The static wellhead working pressure (P_w) shall be determined in accordance with Section 2 of Chapter II.

6. The deliverability of the well shall be determined by using the data determined in Paragraphs 1 through 5 above in the deliverability formula in accordance with Section 2 of Chapter II.

7. The data and calculations for Paragraphs 1 through 6 above shall be reported as required in Section 1 of Chapter I of these rules, upon the blue-colored Form C-122-A.

Section 2: Annual and Biennial Deliverability and Shut-In Pressure Test Procedure

This test shall be taken by producing a well into the pipeline through either the casing or tubing, but not both. The production valve and choke settings shall not be changed during either the conditioning or flow periods except during the first seven days of the conditioning period when maximum production would over-range the meter chart or the location production equipment. The daily flowing rate shall be determined from an average of seven consecutive producing days, following a minimum conditioning period of 14 consecutive days production. The first seven days of said conditioning period shall have not more than one interruption, which interruption shall be no more than 36 continuous hours in duration. The eighth to fourteenth days, inclusive, of said conditioning period shall have no interruptions whatsoever. All production during the 14-day conditioning period plus the 7-day deliverability test period shall be at static wellhead working pressures not in excess of 75 percent of the previous annual or biennial 7-day shut-in pressure of the well if such previous annual or biennial shut-in pressure information is available; otherwise, the 7-day initial deliverability shut-in pressure of the well shall be used.

In the event that the existing line pressure does not permit a drawdown as specified above with the well producing unrestrictedly into the pipeline, the operator shall request an exception to this requirement on Form C-122-A. The request shall state the reasons for the necessity for the exception.

Instantaneous pressures shall be measured by deadweight gauge during the 7-day flow period at the casinghead, tubinghead, and orifice meter, and shall be recorded along with instantaneous meter-chart static pressure reading.

When it is necessary to restrict the flow of gas between the wellhead and orifice meter, the ratio of the downstream pressure to the upstream pressure shall be determined. When this ratio is 0.57, or less, critical flow conditions shall be considered to exist across the restriction.

When more than one restriction between the wellhead and orifice meter causes the pressures to reflect critical flow between the wellhead and orifice meter, the pressures across each of these restrictions shall be measured to determine whether critical flow exists at any restriction. When critical flow does not exist at any restriction, the pressures taken to disprove critical flow shall be reported to the Commission on Form C-122-A in ~~the "Remarks" section~~ item (n) of the form. When critical flow conditions exist, the instantaneous flowing pressures required hereinabove shall be measured during the last 48 hours of the 7-day flow period.

When critical flow exists between the wellhead and orifice meter, the measured wellhead flowing pressure of the string through which the well flowed during test shall be used as P_t when calculating the static wellhead working pressure (P_w) using the method established below.

When critical flow does not exist at any restriction, P_t shall be the corrected average static pressure from the meter chart plus friction loss from the wellhead to the orifice meter.

The static wellhead working pressure (P_w) of any well under test shall be the calculated 7-day average static tubing pressure if the well is flowing through the casing; it shall be the calculated 7-day average static casing pressure if the well is flowing through the tubing. The static wellhead working pressure (P_w) shall be calculated by applying the tables and procedures set out in the New Mexico Oil Conservation Commission Manual entitled

To obtain the shut-in pressure of a well under test, the well shall be shut in some time during the current testing season for a period of seven to fourteen consecutive days. Such shut-in pressure shall be measured during the eighth to fifteenth day following shutting in of the well. The 7-day shut-in pressure shall be measured on both the tubing and the casing when communication exists between the two strings. The higher of such pressures shall be used as P_c in the deliverability calculation. When any such shut-in pressure is determined by the Commission to be abnormally low, the shut-in pressure to be used shall be determined by one of the following methods:

1. A Commission-designated value.

2. An average shut-in pressure of all offset wells completed in the same zone.

3. A calculated surface pressure based on a measured bottom-hole pressure. Such calculation shall be made in accordance with the New Mexico Oil Conservation Commission "Back Pressure Manual," Example No. 7.

All wellhead pressures as well as the flowing meter pressure tests which are to be taken during the 7-day deliverability test period as required hereinabove shall be taken with a deadweight gauge. The deadweight reading and the date and time according to the chart shall be recorded and maintained in the operator's records with the test information.

Orifice meter charts shall be changed and so arranged as to reflect upon a single chart the flow data for the gas from each well for the full 7-day deliverability test period; however, no tests shall be voided if satisfactory explanation is made as to the necessity for using test volumes through two chart periods. Corrections shall be made for pressure base, measured flowing temperature, specific gravity, and supercompressibility; provided however, if the specific gravity of the gas from any well under test is not available, an estimated specific gravity may be assumed therefor, based upon that of gas from near-by wells, the specific gravity of which has been actually determined by measurement.

The 7-day average flowing meter pressure shall be calculated by taking the average of all consecutive 2-hour flowing meter pressure readings as recorded on the 7-day flow period chart. The pressure so calculated shall be used in calculating the wellhead working pressure, determining supercompressibility factors, and calculating flow volumes.

The 7-day flow period volume shall be calculated from the integrated readings as determined from the flow period orifice meter chart. The volume so calculated shall be divided by the number of testing days on the chart to determine the average daily rate of flow during said flow period. The flow chart shall have a minimum of seven and a maximum of eight legibly recorded flowing days to be acceptable for test purposes. The volume used in this calculation shall be corrected to New Mexico Oil Conservation Commission standard conditions.

The average flowing meter pressure for the 7-day or 8-day flow period and the corrected integrated volume shall be determined by the purchasing company that integrates the flow charts and furnished to the operator or testing agency when such operator or testing agency requests such information.

The daily volume of flow as determined from the flow period chart integrator readings shall be calculated by applying the Basic Orific Meter Formula:

$$Q = C' \sqrt{h_w P_f}$$

Where:

Q = Metered volume of flow Mcfd @ 15.025, 60° F., and 0.60 specific gravity.

C' = The 24-hour basic orifice meter flow factor corrected for flowing temperature, gravity, and supercompressibility.

h_w = Daily average differential meter pressure from flow period chart.

P_f = Daily average flowing meter pressure from flow period chart.

The basic orifice meter flow factors, flowing temperature factor, and specific gravity factor shall be determined from the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

The daily flow period average corrected flowing meter pressure, psig, shall be used to determine the supercompressibility factor. Supercompressibility Tables may be obtained from the New Mexico Oil Conservation Commission.

When supercompressibility correction is made for a gas containing either nitrogen or carbon dioxide in excess of two percent, the supercompressibility factors of such gas shall be determined by the use of Table V of the C.N.G.A. Bulletin TS-402 for pressures 100-500 psig, or Table II, TS-461 for pressures in excess of 500 psig.

The use of tables for calculating rates of flow from integrator readings which do not specifically conform to the New Mexico Oil Conservation Commission "Back Pressure Test Manual" may be approved for determining the daily flow period rates of flow upon a showing that such tables are appropriate and necessary.

The daily average integrated rate of flow for the 7-day flow period shall be corrected for meter error by multiplication by a correction factor. Said correction factor shall be determined by dividing the square root of the chart flowing meter pressure, psia, into the square root of the deadweight flowing meter pressure, psia.

Deliverability pressure, as used herein, is a defined pressure applied to each well and used in the process of comparing the abilities of wells in a pool to produce at static wellhead working pressures equal to a percentage of the 7-day shut-in pressure of the respective individual wells. Such percentage shall be determined and announced periodically by the Commission based on the relationship of the average static wellhead working pressures (P_w) divided by the average 7-day shut-in pressure (P_c) of the pool.

The deliverability of gas at the "deliverability pressure" of any well under test shall be calculated from the test data derived from the tests hereinabove required by use of the following deliverability formula:

$$D = Q \left[\frac{\left(P_c^{\,2} - P_d^{\,2} \right)}{\left(P_c^{\,2} - P_w^{\,2} \right)} \right]^n$$

Where:

D = Deliverability Mcfd at the deliverability pressure, (P_d), (at Standard Conditions of 15.025 psia and 60°F).

Q = Daily flow rate in Mcfd, at wellhead pressure (P_w).

P_c = 7-day shut-in wellhead pressure, psia, determined in accordance with Section 2 of Chapter II.

P_d = Deliverability pressure, psia, as defined above.

P_w = Average static wellhead working pressure, as determined from 7-day flow period, psia, and calculated from New Mexico Oil Conservation Commission "Pressure Loss Due to Friction" Tables for San Juan Basin.

n = Average pool slope of back pressure curves as follows:

Mesaverde Formation	0.75
Dakota Producing Interval	0.75
Fruitland Formation	0.85
Farmington Formation	0.85
Pictured Cliffs Formation	0.85
Other Formations	0.75

(Note: Special Rules for Any Specific Pool or Formation May Supersede The Above Values. Check Special Rules If In Doubt.)

The value of the multiplier in the above formula (ratio factor after the application of the pool slope) by which Q is multiplied shall not exceed a limiting value to be determined and announced periodically by the Commission. Such determination shall be made after a study of the test data of the pool obtained during the previous testing season. The limiting value of the multiplier may be exceeded only after the operator has conclusively shown to the Commission that the shut-in pressure (P_c) is accurate or that the static wellhead pressure (P_w) cannot be lowered due to existing producing conditions.

Any test prescribed herein will be considered unacceptable if the average flow rate for the final 7-day deliverability test is more than ten percent in excess of any consecutive 7-day average of the preceding two weeks. A deliverability test not meeting this requirement shall be invalid and the well shall be re-tested.

All charts relative to initial, ~~or~~ annual or biennial deliverability tests or photostats thereof shall be made available to the Commission upon its request.

All testing agencies, whether individuals, companies, pipeline companies, or operators, shall maintain a log of all tests accomplished by them, including all field test data.

All forms heretofore mentioned are hereby adopted for use in the San Juan Basin Area in open form subject to such modification as experience may indicate desirable or necessary.

Initial and Annual or Biennial Deliverability and Shut-In Pressure Tests for gas wells in all formations shall be conducted and reported in accordance with these rules and procedures. Provided however, these rules shall be subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

CHAPTER III INFORMATIONAL TESTS

A. A one-point back pressure test may be taken on newly completed wells before their connection or reconnection to a gas transportation facility. This test shall not be a required official test but may be taken for informational purposes at the option of the operator. When taken, this test must be taken and reported as prescribed below:

ONE-POINT BACK PRESSURE POTENTIAL TEST PROCEDURE

1. This test shall be accomplished after a minimum shut-in of seven days. The shut-in pressure shall be measured with a deadweight gauge.

2. The flow rate shall be measured by flowing the well three hours through a positive choke, which has a 3/4-inch orifice.

3. A 2-inch nipple which provides a mechanical means of accurately measuring the pressure and temperature of the flowing gas shall be installed immediately upstream from the positive choke.

4. The absolute open flow shall be calculated using the conventional back pressure formula as shown in the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

5. The observed data and flow calculations shall be reported in duplicate on Form C-122, "Multi-Point Back Pressure Test for Gas Wells."

6. Non-critical flow shall be considered to exist when the choke pressure is 13 psig or less. When this condition exists the flow rate shall be measured with a pitot tube and nipple as specified in the Commission's Manual of "Tables and Procedure for Pitot Tests." The pitot test nipple shall be installed immediately downstream from the 3/4-inch positive choke.

7. Any well completed with 2-inch nominal size tubing (1.995-inch ID) or larger shall be tested through the tubing.

B. Other tests for informational purposes may be conducted prior to obtaining a pipeline connection for a newly completed well upon receiving specific approval therefor from the Commission's Aztec office. Approval of these tests shall be based primarily upon the volume of gas to be vented.

(2) That jurisdiction of this cause is retained for the

DOCKET MAILED

Date _____

Richard Morris
J. C. Considine EP Ltl P ✓

Saul Cohen
Amstead Cohen Bingaman - SF ✓
S. U. Oren Hurlstone

Paul Carter Conoco Prod ✓
witness

Bill McDermott ✓
Marris Grey Marathon

Oliver Payne W. C. Blackburn
Cont'l Oil Co ✓
152 N. Durbin
Casper 82601

J. Kellahin Aztec ✓
Caulkins.

recess & cont to
1:30 PM

@ 1:30 pm Dick Morris motion to ✓
continue to Feb 14

bi annual testing all pools all wells
prorated & non-pro
except exempt marg wells.
there would be right for operators
to test any well desired
tested
all wells in given pool in one year

RECLASSIFICATION & TESTING SUMMARY - ALL POOLS IN NORTHWEST NEW MEXICO

PERIOD ENDING	NO. WELLS	NM	M	XM	N TO M	N TO XM	M TO XM	NO. WELLS DOWN	M TO N	XM TO N	XM TO M	NO. WELLS UP
2- 1-72	6948	2410	2217	2321	224	8	158	390	91	1	323	415
8-31-71	6891	2461	1914	2516	196	35	108	339	190	26	125	341
2- 1-71	6859	2447	1865	2547	109	125	361	595	99	7	99	205
								1324				961

	2-1-72		8-1-71		2-1-71	
	No. Wells	%	No. Wells	%	No. Wells	%
M & XM of Total Wells	4538	65.3	4430	64.2	4412	64.8
XM of Total Wells	2321	33.4	2516	36.5	2547	37.4
M of Total Wells	2217	31.9	1914	27.7	1865	27.4
XM of Marginal Wells	2321	53.5	2516	56.8	2547	57.7

Total Non-Prorated wells	727	9.4
Total additional wells not to be tested by Case 4853 request	2944	38.3
Total all wells not to be tested by Case 4853 request	5265	68.6
No. XM wells tested in 1972 of the 2317	1807	77.9

Resultsof 1-1-73 Northwest N. Mex. Reclassification (1-24-73)

	XMorM to NM	NM to XMorM	Old Classification XMorM	Old Classification NM
Bacin-Dakota	22	180	1669	487
Blanco M.V.	51	174	1256	726
Aztec-P.C.	19	45	260	193
Ballard-P.C.	27	42	392	125
So. Blanco-P.C.	22	194	515	730
Devilsfork Gallup-P.C.	2	35	177	109
Rusk Gallup-P.C.	8	27	99	68
Tapacito-P.C.	29	6	100	93
	180	703	4468	2581
		-180	+523	-523
		523	4991	2058

Total wells = 7049
% Marginal 70.8
Increase XM 388
2-1-72-XM's 2321
Current # XM's 2709
% XM's 38.4 wpa. 5%

BREAK DOWN BY POOL OF RECLASSIFICATION BY CLASS

BASIN DAKA

106	N	TO	M	180 Down
8	N	TO	XM	
66	M	TO	XM	
2	M	TO	N	22 up.
20	XM	TO	M	

BLANCO MV

46	N	TO	M	174 down
6	N	TO	XM	
122	M	TO	XM	
43	M	TO	N	5 RETROS
1	XM	TO	N	51 ups.
7	XM	TO	M	

AZTEC P.C.

21	N	TO	M	45
1	N	TO	XM	
23	M	TO	XM	
16	M	TO	N	4 RETROS
1	XM	TO	N	19 ups.
2	XM	TO	M	

BALLARD P.C

11	N	TO	M	42 down
1	N	TO	XM	
30	M	TO	XM	
23	M	TO	N	22 RETROS
1	XM	TO	N	27 ups.

SOUTH BLANCO P.C.

63	N TO M	194 down.
13	N TO XM	
18	M TO N	5 RETROS
118	M TO XM	
1	XM TO N	22 up.
3	XM TO M	

FULCHER-KUTZ P.C.

13	N TO M	35 down
5	M TO N	1 RETROS
17	M TO XM	
2	XM TO M	2 up

WEST KUTZ P.C.

4	N TO M-	27 down
2	N TO XM-	8 up.
8	M TO N+	3 RETROS
20	M TO XM-	
1	XM TO M+	

JAPACITO P.C.

4	N TO M-	29 up.
24	M TO N+	1 RETROS
2	M TO XM-	
1	XM TO N+	6 down
4	XM TO M+	

EL PASO NATURAL GAS COMPANY
CURTAILMENTS
(All Volumes in M^2CF)

Case No. 4853
Exhibit

		Southern System	Northwest System	Total System
November, 1972	1	476.9	100.2	577.1
	2	476.9	24.0	500.9
	3	200.0	0	200.0
	4	77.5	0	77.5
	5	77.4	0	77.4
	6	159.8	0	159.8
	7	230.9	102.2	333.1
	8	334.5	101.2	435.7
	9	355.7	0	355.7
	10	357.5	0	357.5
	11	203.7	0	203.7
	12	202.6	46.9	249.5
	13	408.9	60.6	469.5
	14	358.3	86.5	444.8
	15	358.1	185.0	543.1
	16	281.7	98.4	380.1
	17	255.7	45.6	301.3
	18	256.6	26.9	283.5
	19	248.6	183.5	432.1
	20	281.2	94.1	375.3
	21	333.1	113.1	446.2
	22	446.4	37.7	484.1
	23	484.7	0	484.7
	24	447.8	0	447.8
	25	451.7	0	451.7
	26	229.2	207.5	436.7
	27	268.5	422.5	691.0
	28	321.0	322.2	643.2
	29	383.7	226.4	610.1
	30	473.7	204.2	677.9
Average		318.1	89.6	407.7
December, 1972	1	500.1	163.4	663.5
	2	362.6	135.3	497.9
	3	199.3	320.9	520.2
	4	274.3	500.1	774.4
	5	520.6	496.8	1,017.4
	6	663.5	559.9	1,223.4
	7	723.3	622.5	1,345.8
	8	711.9	528.0	1,239.9
	9	534.4	557.4	1,091.8
	10	529.8	649.0	1,178.8
	11	631.6	645.4	1,277.0
	12	770.5	610.6	1,381.1
	13	795.5	538.4	1,333.9
	14	817.7	443.7	1,261.4
Average		573.9	483.7	1,057.6

Case No. 4853
Exhibit No. _____

EL PASO NATURAL GAS COMPANY
(Southern Division)

Average Day

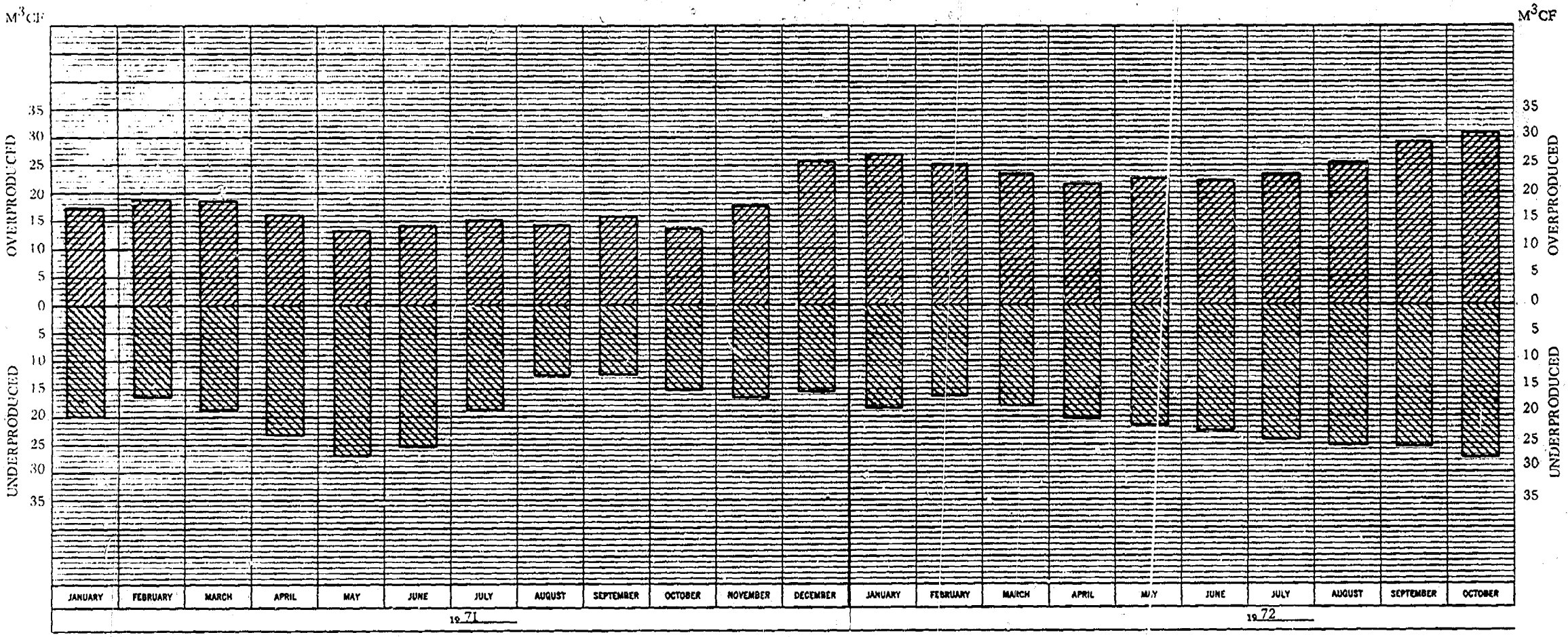
Summary of Estimated Mainline Requirements, Curtailment and Sales for the Period November 1, 1972 through October 31, 1973
(Volumes Stated in Mcf at 14.73 psia)

		Available for Sale	Curtailment	Requirements	Average Day Curtailment
1972	November	109,500,000	3,628,087	113,128,087	120,937
	December	113,460,000	6,882,838	120,342,838	222,024
1973	January	112,375,000	11,877,344	124,252,344	383,134
	February	100,800,000	10,180,726	110,980,726	363,593
	March	111,290,000	8,077,296	119,367,296	260,555
	April	104,100,000	8,680,762	112,780,762	289,354
	May	108,345,000	8,830,079	117,175,079	284,837
	June	109,800,000	5,425,068	115,225,068	180,831
	July	114,390,000	5,788,421	120,178,421	186,722
	August	110,980,000	8,281,788	119,261,788	267,152
	September	108,300,000	4,704,942	113,004,942	156,895
	October	107,725,000	7,899,472	115,624,472	254,852
	Total	1,311,065,000	90,256,823	1,401,321,823	247,279

Excerpt from El Paso Natural Gas Company F.P.C. Docket RP 72-6.

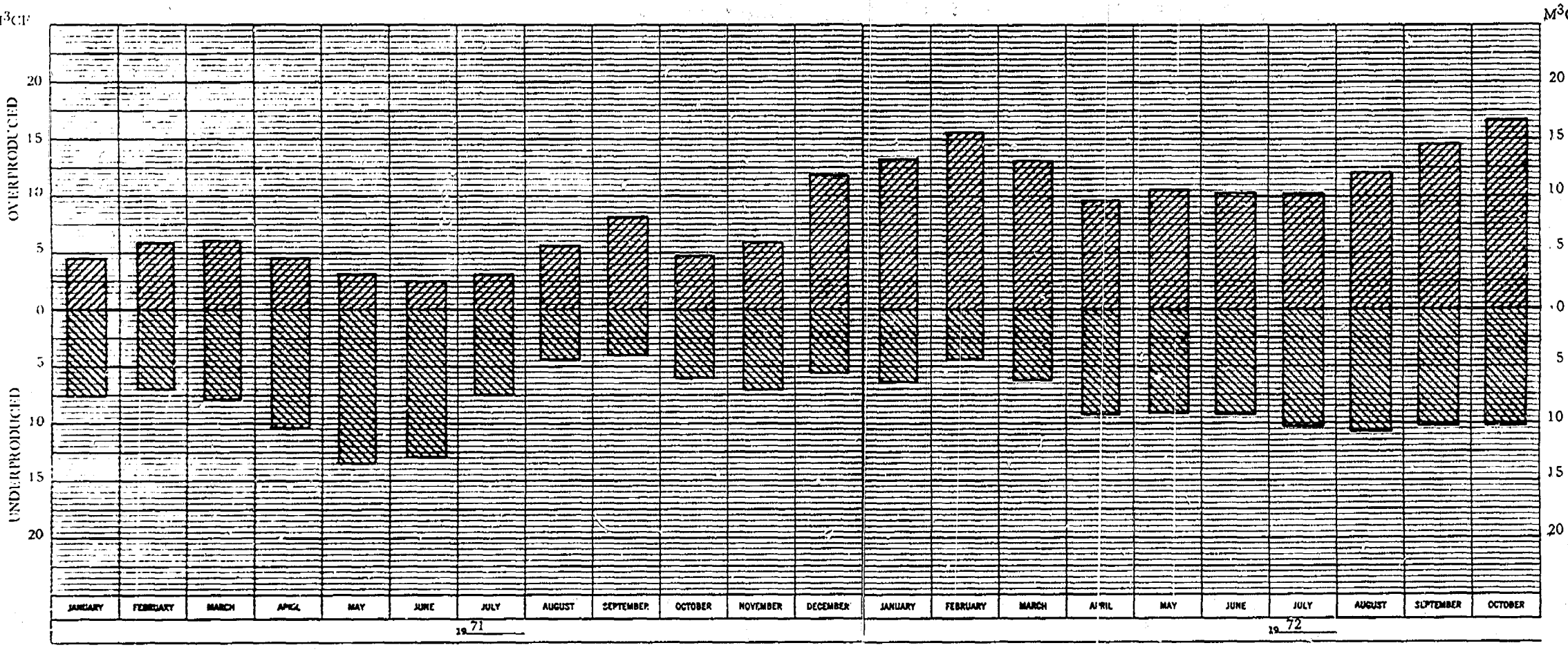
EL PASO NATURAL GAS COMPANY
CUMULATIVE STATUS OF WELLS IN SAN JUAN BASIN
Volumes in M^3CF at 15.025# p.b.

NMOCC CASE NO. 4853
EXHIBIT NO. _____



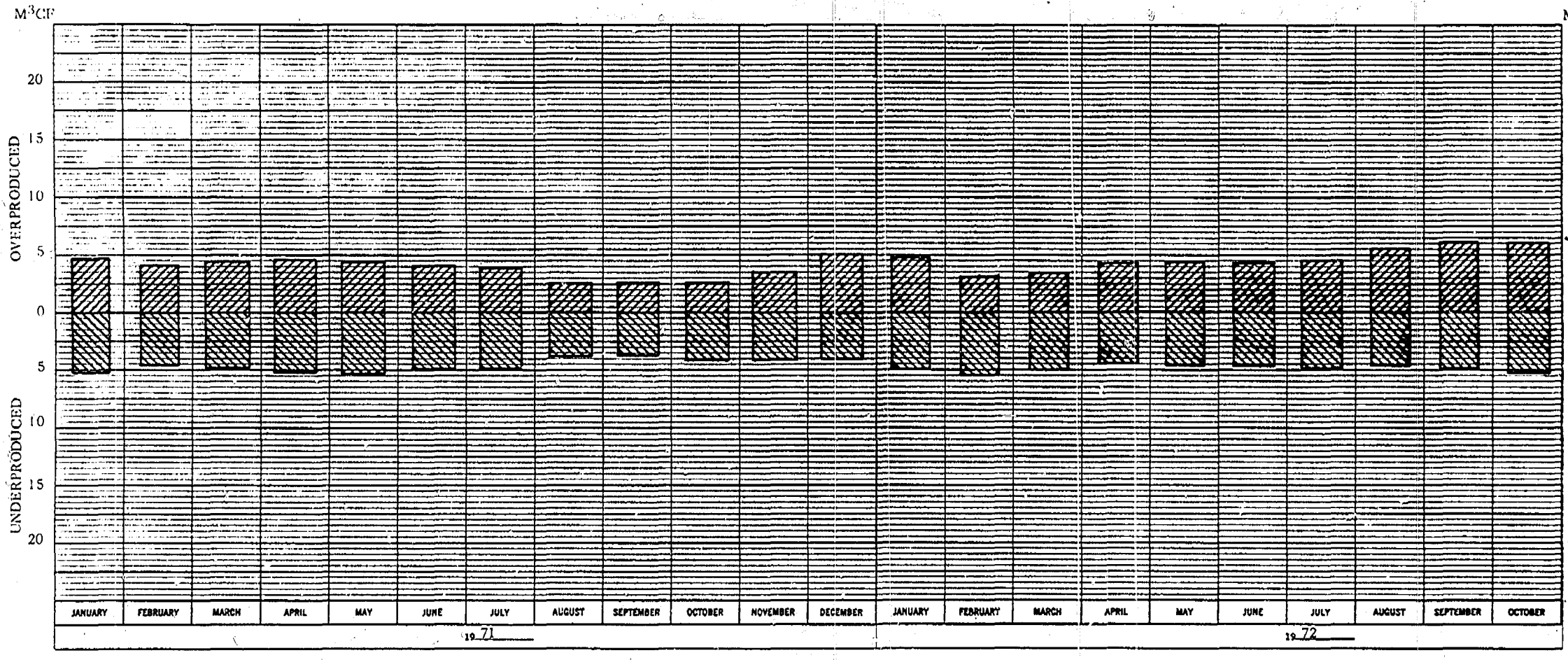
EL PASO NATURAL GAS COMPANY
CUMULATIVE STATUS OF MESA VERDE WELLS
Volumes in M^3CF at 15.025# p.b.

NMOCC CASE NO. 4853
EXHIBIT NO. _____



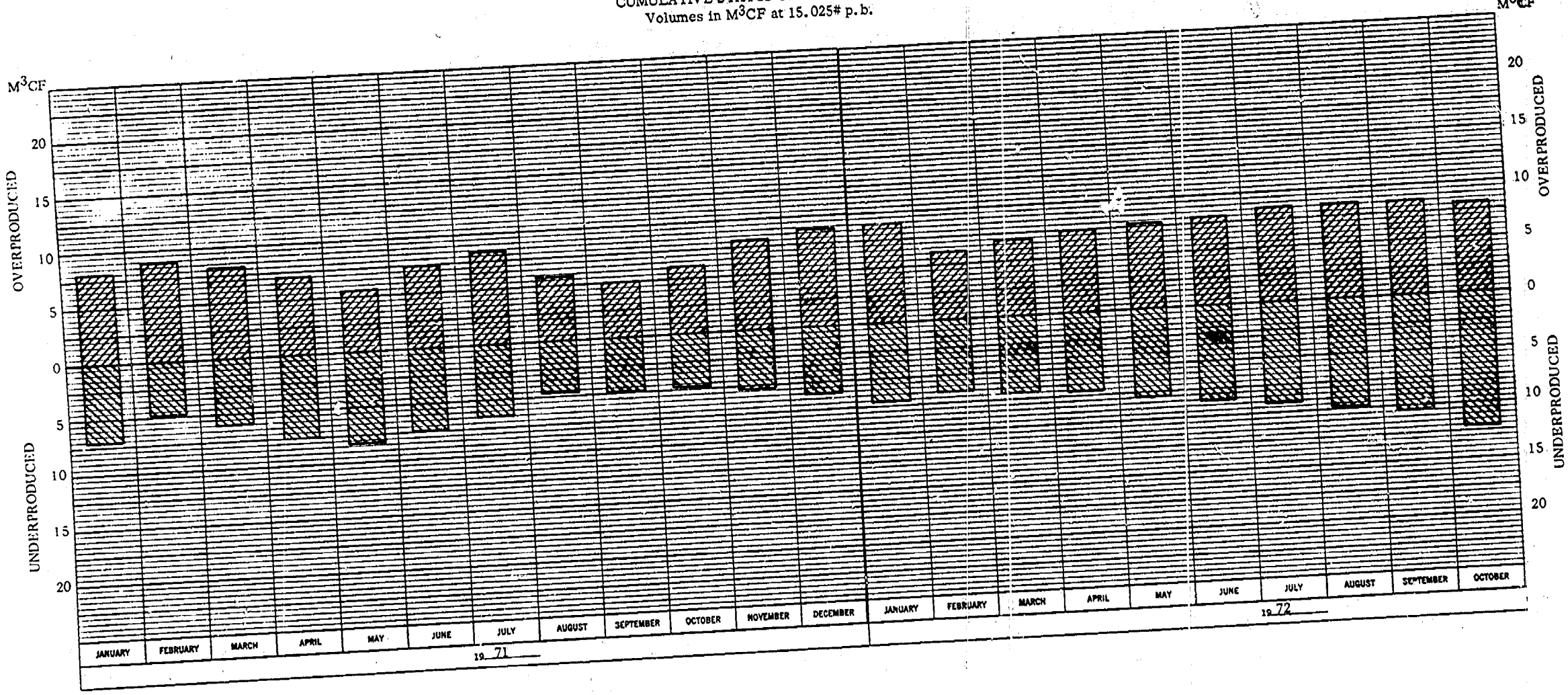
EL PASO NATURAL GAS COMPANY
CUMULATIVE STATUS OF PICTURED CLIFFS WELLS
Volumes in M^3CF at 15.025# p.b.

NMOCC CASE NO. 4853
EXHIBIT NO. _____



NMOCC CASE NO. 4853
EXHIBIT NO. _____

EL PASO NATURAL GAS COMPANY
CUMULATIVE STATUS OF DAKOTA WELLS
Volumes in M^3CF at 15.025# p.b.



EL PASO NATURAL GAS COMPANY
CUMULATIVE STATUS OF WELLS IN SAN JUAN BASIN POOLS
January, 1971 through October, 1972

(Volumes in MCF at 15.025# p.b.)

NMOCC CASE NO. 4853
EXHIBIT NO. _____

		Mesa Verde		Dakota		Pictured Cliffs		Total San Juan	
		No. of Wells	Volume	No. of Wells	Volume	No. of Wells	Volume	No. of Wells	Volume
January, 1971	Underproduced	377	7,643,718	195	7,106,169	518	5,342,828	1,090	20,092,715
	Overproduced	207	4,463,244	193	8,078,234	612	4,731,299	1,012	17,272,777
February, 1971	Underproduced	317	7,033,574	160	4,804,512	551	4,651,578	1,028	16,489,664
	Overproduced	301	5,882,118	177	8,753,363	524	4,195,861	1,002	18,831,342
March, 1971	Underproduced	330	7,873,731	173	5,963,541	556	4,917,091	1,059	18,754,363
	Overproduced	289	6,010,204	161	8,326,908	519	4,373,404	969	18,710,516
April, 1971	Underproduced	438	10,393,321	188	7,481,943	571	5,285,684	1,197	23,160,948
	Overproduced	168	4,492,296	150	7,019,451	502	4,562,337	820	16,074,084
May, 1971	Underproduced	456	13,469,528	189	8,260,513	551	5,318,338	1,196	27,048,379
	Overproduced	150	3,194,816	151	5,539,337	525	4,353,341	826	13,107,494
June, 1971	Underproduced	454	12,927,279	179	7,344,007	514	4,890,357	1,147	25,161,643
	Overproduced	153	2,520,520	169	7,361,584	562	4,184,570	884	14,066,674
July, 1971	Underproduced	342	7,448,587	160	6,485,793	511	4,881,037	1,013	18,815,417
	Overproduced	265	3,165,653	193	8,256,643	567	3,752,094	1,025	15,174,390
August, 1971	Underproduced	201	4,389,135	142	4,663,144	584	3,819,474	927	12,871,753
	Overproduced	457	5,682,884	175	5,867,121	487	2,657,935	1,119	14,207,940
September, 1971	Underproduced	161	3,998,773	151	4,884,717	599	3,735,208	911	12,618,698
	Overproduced	498	8,230,710	169	4,994,010	475	2,682,886	1,142	15,907,606
October, 1971	Underproduced	304	6,160,606	142	4,767,342	678	4,142,055	1,124	15,070,003
	Overproduced	358	4,757,701	197	6,238,500	396	2,634,545	951	13,630,746
November, 1971	Underproduced	292	7,058,340	149	5,333,963	554	4,148,242	995	16,540,545
	Overproduced	370	5,895,010	198	8,178,075	528	3,489,625	1,096	17,562,710
December, 1971	Underproduced	201	5,575,125	155	6,054,543	453	3,972,223	809	15,601,891
	Overproduced	464	11,763,761	196	8,820,952	630	5,022,298	1,290	25,607,011
January, 1972	Underproduced	209	6,446,565	170	7,226,556	520	4,995,266	899	18,668,387
	Overproduced	456	13,285,690	181	8,950,711	565	4,753,911	1,202	26,990,312
February, 1972	Underproduced	174	4,428,340	163	6,458,124	629	5,418,164	956	16,304,628
	Overproduced	470	15,737,800	146	6,177,909	424	3,205,842	1,040	25,121,551
March, 1972	Underproduced	225	6,183,185	163	6,802,731	588	4,998,215	976	17,984,131
	Overproduced	420	13,109,158	147	6,885,642	467	3,540,393	1,034	23,535,193
April, 1972	Underproduced	291	9,169,209	167	7,122,988	525	4,445,368	983	20,737,565
	Overproduced	355	9,723,168	148	7,529,747	533	4,372,823	1,036	21,625,738
May, 1972	Underproduced	280	9,122,653	173	7,969,661	523	4,680,683	976	21,772,997
	Overproduced	365	10,538,791	151	7,792,748	536	4,379,926	1,052	22,711,465
June, 1972	Underproduced	277	9,326,678	176	8,617,636	510	4,832,554	963	22,776,868
	Overproduced	374	10,327,933	160	7,959,859	557	4,259,363	1,091	22,547,155
July, 1972	Underproduced	283	10,308,169	180	9,180,277	503	4,890,505	966	24,378,951
	Overproduced	369	10,174,604	166	8,613,124	573	4,514,769	1,108	23,302,497
August, 1972	Underproduced	276	10,582,587	182	9,882,103	466	4,747,237	924	25,211,927
	Overproduced	377	12,031,449	178	8,694,118	614	5,638,450	1,169	26,364,017
September, 1972	Underproduced	255	10,093,096	182	10,544,805	455	4,855,548	892	25,493,449
	Overproduced	399	14,515,203	185	8,563,229	630	6,135,225	1,214	29,233,657
October, 1972	Underproduced	247	10,200,449	211	12,187,928	480	5,341,597	938	27,729,974
	Overproduced	408	16,575,380	159	8,266,247	613	6,056,525	1,180	30,898,152

NMOCC CASE NO. 4853
EXHIBIT NO. _____

EL PASO NATURAL GAS COMPANY
CUMULATIVE STATUS OF PICTURED CLIFF WELLS
January, 1971 through October, 1972

(Volumes in MCF at 15.025# p.b.)

		Aztec P.C.		Ballard P.C.		South Blanco P.C.		Fulcher Kutz		Tapacito		West Kutz	
		No. of Wells	Volume	No. of Wells	Volume	No. of Wells	Volume	No. of Wells	Volume	No. of Wells	Volume	No. of Wells	Volume
January, 1971	Underproduced	68	489,415	64	926,888	286	2,318,716	28	688,890	37	702,216	35	216,703
	Overproduced	91	799,753	86	663,131	335	2,425,346	19	150,557	48	525,666	33	166,846
February, 1971	Underproduced	90	835,287	51	810,230	308	2,150,268	32	189,278	38	497,440	32	169,075
	Overproduced	62	521,894	105	923,797	277	2,084,323	12	109,279	37	360,170	30	196,398
March, 1971	Underproduced	80	698,106	63	987,342	314	2,329,221	29	178,378	38	525,004	32	199,040
	Overproduced	73	681,336	93	833,576	271	2,092,631	15	148,792	37	399,507	30	217,562
April, 1971	Underproduced	70	586,304	74	1,138,405	326	2,540,716	26	162,557	40	618,222	35	239,480
	Overproduced	83	881,354	82	838,326	258	2,069,669	17	195,383	35	370,068	27	207,537
May, 1971	Underproduced	67	530,600	69	1,187,568	312	2,530,706	27	174,965	40	649,377	36	245,122
	Overproduced	86	890,912	87	882,781	273	1,862,872	16	196,099	37	340,298	26	180,379
June, 1971	Underproduced	72	553,549	58	1,026,393	274	2,223,613	32	212,560	40	599,965	38	274,277
	Overproduced	81	732,768	98	975,283	311	1,820,328	11	167,891	37	338,383	24	149,917
July, 1971	Underproduced	75	636,768	60	1,088,147	267	2,146,504	32	187,498	41	556,069	36	266,051
	Overproduced	79	656,258	97	787,180	318	1,715,724	11	149,733	36	320,470	26	122,729
August, 1971	Underproduced	84	437,859	98	644,305	289	1,820,131	28	119,052	41	591,308	44	206,819
	Overproduced	62	432,584	58	365,105	309	1,384,277	8	121,310	37	263,530	13	91,129
September, 1971	Underproduced	88	389,125	72	500,689	336	1,931,545	24	109,586	34	608,285	45	195,978
	Overproduced	61	435,097	84	582,045	262	1,126,923	12	124,222	44	336,058	12	78,541
October, 1971	Underproduced	111	686,368	61	471,128	411	2,126,351	20	91,329	31	583,706	44	183,173
	Overproduced	38	255,861	98	809,450	187	959,668	16	151,436	47	390,038	13	68,092
November, 1971	Underproduced	104	647,436	82	706,233	272	1,820,312	19	96,927	40	736,009	37	141,325
	Overproduced	47	401,864	77	697,521	329	1,725,350	17	192,237	38	352,770	20	119,883
December, 1971	Underproduced	75	453,293	87	876,761	192	1,461,778	18	103,548	47	926,961	34	149,882
	Overproduced	76	718,984	72	681,085	410	2,936,501	18	228,497	31	301,189	23	156,042
January, 1972	Underproduced	88	756,280	100	1,192,795	228	1,757,234	17	104,032	46	951,304	41	233,621
	Overproduced	65	573,116	59	545,907	374	2,825,244	19	286,918	32	367,825	16	154,961
February, 1972	Underproduced	106	990,993	79	792,826	346	2,570,716	23	135,166	39	690,750	36	237,713
	Overproduced	34	287,310	34	276,995	292	1,932,282	15	240,062	30	290,032	19	179,161
March, 1972	Underproduced	92	784,285	62	570,636	334	2,512,369	25	159,311	41	766,438	34	205,176
	Overproduced	48	416,767	52	513,109	304	1,961,932	13	202,285	29	249,341	21	197,009
April, 1972	Underproduced	79	604,558	61	613,613	281	1,978,277	26	197,373	41	838,097	37	213,450
	Overproduced	62	585,766	53	558,112	358	2,601,730	13	178,952	29	245,334	18	202,929
May, 1972	Underproduced	81	659,154	63	692,199	276	2,086,161	25	201,655	42	809,955	36	231,559
	Overproduced	60	560,176	51	566,635	364	2,592,136	14	205,723	28	260,807	19	194,449
June, 1972	Underproduced	79	670,573	62	721,281	268	2,201,250	24	186,726	39	807,280	38	245,444
	Overproduced	63	527,360	54	621,153	375	2,422,863	15	231,598	33	261,024	17	187,365
July, 1972	Underproduced	81	641,592	60	717,537	266	2,267,883	23	188,614	38	830,668	35	238,211
	Overproduced	66	608,857	57	691,038	379	2,495,950	16	236,730	36	292,506	20	189,688
August, 1972	Underproduced	77	627,424	57	683,583	238	2,129,569	23	189,735	37	867,546	34	249,380
	Overproduced	74	833,018	59	780,475	407	3,222,447	16	265,838	37	329,730	21	206,942
September, 1972	Underproduced	77	661,047	54	709,446	231	2,165,407	22	195,348	38	854,682	33	249,618
	Overproduced	77	906,267	62	861,658	416	3,527,624	17	281,979	36	347,027	22	210,670
October, 1972	Underproduced	82	776,029	54	752,136	250	2,496,104	22	198,599	39	857,957	33	250,772
	Overproduced	75	723,304	63	917,867	399	3,447,136	18	301,712	36	429,108	22	237,398

Prelim. Perm.
Tentative 12 allow.
Dem. Prod.

John McGruder.
Bob Manning.
Jim Worsham ( ) ...
Bob Sledge

R. Prod.

Hi
1 2 3 4 5
A vel

2 3 4

4 5 6

1 2 3 4 5 6 July Prod.
+ June Reclass

1. Dec. 31 - 1972 Reclassify.
2. Go Retro for July Prod.
3. Reclass June 30 1973
4. July, in Sept.
5. Consider eliminating 6 X
6. Release S.I. ... on Basing last months allowable.

Dick Morris - E.P.
J.C. Cousidine C.P. atty

J. Kellahin - Aztec
Caulkins

Paul Cohen - S.U.

Paul Coater — Amoco

2 billion daily capacity in Basin
w/annual testing, 7 days of capacity
removed 14 billion capacity less the
SI build up head (equals 25%)

75% of 14 billion = 10 billion
ave price 25¢ (20x billion = 25 million)

additional cost of tests $40/well
5000 of 7000 must be tested
eliminate 200,000 by not testing at all
" ½ of tests save 100,000 on
testing costs plus get 1.25 million
worth of gas.

Study results
conclude no tests necessary for marg. wells.
except for reservoir knowledge

OCC should establish criteria for
exempting wells in non-prorated pools
similar to NM Criteria for prorated pools.

Carl Traywick – USGS would new marginal wells be exempt from testing?

Woodruff – any new well, except XM, would get 5 tests. XM would not be tested.

Utz – familiar w/ present method of classifying XM wells? would like comment on using 1000 – 2000 rather than acreage

Woodruff – cannot express EP position; Commission should continue to use its judgment, considering economics. As prices change criteria may change. In the past, has been reasonable.

W.B. Summers Mobil Midland
reduce freq of SI tests: biennial
no SI on XM
annual SI tests on new wells for 3 yrs
Annual Deliv tests except XM

Ray Carter, Amoco Denver
complete concurrence

Saul Cohen – S.H. Gas
supports appl of EP, support Utz & Arnold on criteria for XM

Kellahin – Aztec & Caulkins in agreement w/ EP
Williford Texaco Denver support EP application also Arnold proposal.

DRAFT

DSN/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. 4853

Order No. R-333-F-1

APPLICATION OF EL PASO NATURAL
GAS COMPANY FOR AMENDMENT OF GAS
WELL TESTING PROCEDURES, SAN
JUAN BASIN, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 14, 1973, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of March, 1973, 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 Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, ~~and~~ R-333-H and R-333-H-1, requires annual deliverability and shut-in pressure tests of all gas wells in the San Juan Basin of San Juan, Rio Arriba, McKinley, and Sandoval Counties, New Mexico, subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

(3) That the applicant, El Paso Natural Gas Company, seeks the amendment of Order No. R-333-F, as amended, to provide that biennial deliverability and shut-in pressure tests would be taken on all gas wells in the San Juan Basin except those wells classified as "exempt marginal," which exempt marginal wells would be exempt from the test requirements.

(4) That the applicant also proposes that all new wells, reworked wells, and recompleted wells in the San Juan Basin would receive deliverability and shut-in pressure tests on an annual basis until three annual tests have been taken, and that thereafter such tests would be taken on a biennial basis.

(5) That the applicant further proposes that all gas wells in ~~a~~ any given pool would be tested in the same year, and that approximately one-half of the wells in the San Juan Basin would be tested each year.

(6) That the amendment of Commission Order No. R-333-F, as amended, in accordance with the proposal of El Paso Natural Gas Company as described in Findings Nos. (3) through (5) above will not cause waste nor violate correlative rights, and should be approved.

(7) That Commission Order No. R-333-F, as amended, should be further amended to provide definitive criteria upon which to classify gas wells as "exempt marginal," which exempt marginal wells would be exempt from deliverability and shut-in pressure test requirements.

(8) That the production from all gas wells in the San Juan Basin should be reviewed annually and the wells should be classified into or out of the test exempt status each year effective the first day of January.

(9) That upon review of said production, gas wells completed in the Pictured Cliffs or shallower formations which failed to produce in excess of 12,000 MCF during the preceding 12-month period, and gas wells completed in any formation deeper than the Pictured Cliffs formation which failed to produce in excess of 24,000 MCF during the preceding 12-month period, should be classified as exempt marginal, and should be exempt from further deliverability and shut-in pressure tests as long as they remain so classified.

(10) That adoption of the definitive criteria for classification of gas wells into or out of the exempt marginal status as outlined above will not cause waste nor violate correlative rights, and should be approved.

(11) That to avoid confusion, Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, R-333-H, and R-333-H-1, and as further amended as proposed in the instant case, should be superseded by an entire new order, designated as Commission Order No. R-333-F-1, which should promulgate gas well testing rules and procedures for the San Juan Basin as heretofore and herein approved by the Commission.

IT IS THEREFORE ORDERED:

(1) That the following Special Rules and Regulations governing gas well testing in the San Juan Basin (Counties of San Juan, Rio Arriba, McKinley, and Sandoval, New Mexico), superseding the rules and regulations contained in Commission Order No. R-333-F, as amended by Orders Nos. R-333-G, R-333-H, and R-333-H-1, are hereby promulgated and adopted as an exception to Rules 401 and 402 of the general statewide rules and regulations of this Commission relating to gas well testing procedures.

GAS WELL TESTING RULES AND PROCEDURES
SAN JUAN BASIN, NEW MEXICO

CHAPTER I TYPE OF TESTS REQUIRED

Section 1: Initial Deliverability and Shut-In Pressure Tests for Newly Completed Wells

A. Immediately upon completion of each gas well in the San Juan Basin, a shut-in pressure test of at least seven days duration shall be made.

B. Within 60 days after a well is connected to a gas transportation facility, the well shall have been tested in accordance with Section 1 of Chapter II of these rules, "Initial Deliverability and Shut-In Pressure Test Procedures," and the results of the test filed with the Commission's Aztec office and with the gas transportation facility to which the well is connected. Failure to file said test within the above-prescribed 60-day period will subject the well to the loss of one day's allowable for each day the test is late.

C. The requirements for Initial Tests and Annual or Biennial Deliverability and Shut-In Pressure Tests and the notification requirements and scheduling of such tests which apply to newly completed wells shall also apply to reworked or recompleted wells.

D. Any tests taken for informational purposes prior to pipeline connection shall not be recognized as official tests for the assignment of allowables.

Section 2: Annual and Biennial Deliverability and Shut-In Pressure Tests

A. Biennial Deliverability and Shut-In Pressure Tests shall be made on all gas wells during the period from December 1 through the following November 30 each year except as follows:

1. A newly completed well or a reworked or recompleted well shall be tested on an annual basis until three annual tests have been taken, after which the well shall be tested biennially as is required for other wells in the pool in which the well is located.
2. An Annual Deliverability and Shut-In Pressure Test shall not be required during the current year for any well connected to a gas transportation facility after September 30. Such tests may be taken at the option of the operator of the well, however.
3. When the Initial Deliverability and Shut-In Pressure Test required by Section 1-B above has been taken in accordance with the annual and biennial testing procedure outlined in Section 2 of Chapter II of these rules, the initial test may be considered the first of the three required annual tests for the well. Provided however, if the operator intends to use such initial test as the first annual test, he must notify the Commission and the gas transportation facility to which the well is connected of his intent in writing prior to the conclusion of the 14-day conditioning period.
4. Wells classified as "exempt marginal" shall not be subject to the requirements of annual or biennial deliverability and shut-in pressure tests.

   Classification of wells into or out of the exempt marginal status shall be done each year effective January 1.

Gas wells completed in the Pictured Cliffs formation or in any shallower formation which failed to produce in excess of 12,000 MCF of gas during the preceding 12-month period shall be classified "exempt marginal."

Gas wells completed in any formation deeper than the Pictured Cliffs formation which failed to produce in excess of 24,000 MCF of gas during the preceding 12-month period shall be classified "exempt marginal."

B. All Annual and Biennial Deliverability and Shut-In Pressure Tests required by these rules must be filed with the Commission's Aztec office and with the appropriate gas transportation facility within 60 days following the completion of each test. Provided however, that any test completed between November 1 and November 30 must be filed not later than December 10. Failure to file any test within the above-prescribed times will subject the well to the loss of one day's allowable for each day the test is late. No extension of time for filing tests beyond December 10 will be granted except after notice and hearing.

Section 3: Scheduling of Tests

A. By September 1 of each year, the District Supervisor of the Aztec District Office of the Commission shall by memorandum notify each gas transportation facility of the pools which are to be scheduled for biennial testing during the following testing season from December 1 through November 30.

B. Annual and Biennial Deliverability Tests

By November 1 of each year, each gas trasnportation facility shall, in cooperation with the operators involved, prepare and submit a schedule

of the wells to which it is connected which are to be tested during the ensuing December and January. Said schedule shall be entitled, "Annual and Biennial Deliverability and Shut-In Pressure Test Schedule," and shall be submitted in triplicate to the Commission's Aztec office. At least one copy shall also be furnished each operator concerned. The schedule shall indicate the date of tests, pool, operator, lease, well number, and location of each well. At least 30 days prior to the beginning of each succeeding 2-month testing interval, a similar schedule shall be prepared and filed in accordance with the above.

The gas transportation facility shall be notified immediately by any operator unable to conduct any test as scheduled. In the event a well is not tested in accordance with the test schedule, the well shall be re-scheduled by the gas transportation facility, and the Commission and the operator of the well so notified in writing. Notice to the Commission must be received prior to the conclusion of the 14-day conditioning period. Notice to the Commission of shut-in pressure tests which are scheduled at a time other than immediately following the flow test must be received prior to the time that the well is shut-in.

It shall be the responsibility of each operator to determine that all of its wells are properly scheduled for testing by the gas transportation facility to which they are connected, in order that all annual or biennial tests may be completed during the testing season.

B. Deliverability Re-Tests

An operator may, in cooperation with the gas transportation facility, schedule a well for a deliverability re-test upon notification to the Commission's Aztec office at least ten days before the test is to be commenced. Such re-test shall be for good and substantial reason and shall be subject to the approval of the Commission. Re-tests shall in all ways be conducted in conformance with the Annual and Biennial Deliverability Test Procedures of these rules. The Commission, at its discretion, may require the re-testing of any well by notification to the operator to schedule such re-test.

Section 4: Witnessing of Tests

Any Initial or Annual (or Biennial) Deliverability and Shut-In Pressure Test may be witnessed by any or all of the following: an agent of the Commission, an offset operator, a representative of the gas transportation facility connected to the well under test, or a representative of the gas transportation facility taking gas from an offset operator.

CHAPTER II PROCEDURE FOR TESTING

Section 1: Initial Deliverability and Shut-In Pressure Test Procedure

A. Within 60 days after a newly completed well is connected to a gas transportation facility, the operator shall complete a deliverability and shut-in pressure test of the well in conformance with the "Annual (and Biennial) Deliverability and Shut-In Pressure Test Procedures" prescribed in Section 2 of this chapter. Results of the test shall be filed as required by Section 1 of Chapter I of these rules.

B. In the event it is impractical to test a newly completed well in conformance with Paragraph A above, the operator may conduct the deliverability and shut-in pressure test in the following manner (provided, however, that any test so conducted will not be accepted as the first annual deliverability and shut-in pressure test as described in Paragraph A-3 of Section 2, Chapter I):

1. A 7- or 8-day production chart may be used as the basis for determining the well's deliverability, providing the chart so used is preceded by at least 14 days continuous production. The well shall produce through either the casing or tubing, but not both, into a pipeline during these periods. The production valve and the choke settings shall not be changed during either the conditioning or flow period with the exception of the first week of the conditioning period when maximum production would over-range the meter chart or location production equipment.

2. A shut-in pressure of at least seven days duration shall be taken. This shall be the shut-in test required in Paragraph A, Section 1 of Chapter I of these rules.

3. The average daily static meter pressure shall be determined in accordance with Section 2 of Chapter II of these rules. This pressure shall be used as P_t in calculating P_w for the Deliverability Calculation.

4. The daily average rate of flow shall be determined in accordance with Section 2 of Chapter II.

5. The static wellhead working pressure (P_w) shall be determined in accordance with Section 2 of Chapter II.

6. The deliverability of the well shall be determined by using the data determined in Paragraphs 1 through 5 above in the deliverability formula in accordance with Section 2 of Chapter II.

7. The data and calculations for Paragraphs 1 through 6 above shall be reported as required in Section 1

Section 2: Annual and Biennial Deliverability and Shut-In Pressure Test Procedure

This test shall be taken by producing a well into the pipeline through either the casing or tubing, but not both. The production valve and choke settings shall not be changed during either the conditioning or flow periods except during the first seven days of the conditioning period when maximum production would over-range the meter chart or the location production equipment. The daily flowing rate shall be determined from an average of seven consecutive producing days, following a minimum conditioning period of 14 consecutive days production. The first seven days of said conditioning period shall have not more than one interruption, which interruption shall be no more than 36 continuous hours in duration. The eighth to fourteenth days, inclusive, of said conditioning period shall have no interruptions whatsoever. All production during the 14-day conditioning period plus the 7-day deliverability test period shall be at static wellhead working pressures not in excess of 75 percent of the previous annual or biennial 7-day shut-in pressure of the well if such previous annual or biennial shut-in pressure information is available; otherwise, the 7-day initial deliverability shut-in pressure of the well shall be used.

In the event that the existing line pressure does not permit a drawdown as specified above with the well producing unrestrictedly into the pipeline, the operator shall request an exception to this requirement on Form C-122-A. The request shall state the reasons for the necessity for the exception.

Instantaneous pressures shall be measured by deadweight gauge during the 7-day flow period at the casinghead, tubinghead, and orifice meter, and shall be recorded along with instantaneous meter-chart static pressure reading.

When it is necessary to restrict the flow of gas between the wellhead and orifice meter, the ratio of the downstream pressure to the upstream pressure shall be determined. When this ratio is 0.57, or less, critical flow conditions shall be considered to exist across the restriction.

When more than one restriction between the wellhead and orifice meter causes the pressures to reflect critical flow between the wellhead and orifice meter, the pressures across each of these restrictions shall be measured to determine whether critical flow exists at any restriction. When critical flow does not exist at any restriction, the pressures taken to disprove critical flow shall be reported to the Commission on Form C-122-A in the "Remarks" section of the form. When critical flow conditions exist, the instantaneous flowing pressures required hereinabove shall be measured during the last 48 hours of the 7-day flow period.

When critical flow exists between the wellhead and orifice meter, the measured wellhead flowing pressure of the string through which the well flowed during test shall be used as P_t when calculating the static wellhead working pressure (P_w) using the method established below.

When critical flow does not exist at any restriction, P_t shall be the corrected average static pressure from the meter chart plus friction loss from the wellhead to the orifice meter.

The static wellhead working pressure (P_w) of any well under test shall be the calculated 7-day average static tubing pressure if the well is flowing through the casing; it shall be the calculated 7-day average static casing pressure if the well is flowing through the tubing. The static wellhead working pressure (P_w) shall be calculated by applying the tables and procedures set out in the New Mexico Oil Conservation Commission Manual entitled "Method of Calculating Pressure Loss Due to Friction in Gas Well Flow Strings for San Juan Basin."

To obtain the shut-in pressure of a well under test, the well shall be shut in some time during the ~~annual~~ current testing season for a period of seven to fourteen consecutive days. Such shut-in pressure shall be measured during the eighth to fifteenth day following shutting in of the well. The 7-day shut-in pressure shall be measured on both the tubing and the casing when communication exists between the two strings. The higher of such pressures shall be used as P_c in the deliverability calculation. When any such shut-in pressure is determined by the Commission to be abnormally low, the shut-in pressure to be used shall be determined by one of the following methods:

1. A Commission-designated value.

2. An average shut-in pressure of all offset wells completed in the same zone.

3. A calculated surface pressure based on a measured bottom-hole pressure. Such calculation shall be made in accordance with the New Mexico Oil Conservation Commission "Back Pressure Manual," Example No. 7.

All wellhead pressures as well as the flowing meter pressure tests which are to be taken during the 7-day deliverability test period as required hereinabove shall be taken with a deadweight gauge. The deadweight reading and the date and time according to the chart shall be recorded and maintained in the operator's records with the test information.

Orifice meter charts shall be changed and so arranged as to reflect upon a single chart the flow data for the gas from each well for the full 7-day deliverability test period; however, no tests shall be voided if satisfactory explanation is made as to the necessity for using test volumes through two chart periods. Corrections shall be made for pressure base, measured flowing temperature, specific gravity, and supercompressibility; provided however, if the specific gravity of the gas from any well under test is not available, an estimated specific gravity may be assumed therefor, based upon that of gas from near-by wells, the specific gravity of which has been actually determined by measurement.

The 7-day average flowing meter pressure shall be calculated by taking the average of all consecutive 2-hour flowing meter pressure readings as recorded on the 7-day flow period chart. The pressure so calculated shall be used in calculating the wellhead working pressure, determining supercompressibility factors, and calculating flow volumes.

The 7-day flow period volume shall be calculated from the integrated readings as determined from the flow period orifice meter chart. The volume so calculated shall be divided by the number of testing days on the chart to determine the average daily rate of flow during said flow period. The flow chart shall have a minimum of seven and a maximum of eight legibly recorded flowing days to be acceptable for test purposes. The volume used in this calculation shall be corrected to New Mexico Oil Conservation Commission standard conditions.

The average flowing meter pressure for the 7-day or 8-day flow period and the corrected integrated volume shall be determined by the purchasing company that integrates the flow charts and furnished to the operator or testing agency when such operator or testing agency requests such information.

The daily volume of flow as determined from the flow period chart integrator readings shall be calculated by applying the Basic Orific Meter Formula:

$$Q = C' \sqrt{h_w P_f}$$

Where:

Q = Metered volume of flow Mcfd @ 15.025, 60° F., and 0.60 specific gravity.

C' = The 24-hour basic orifice meter flow factor corrected for flowing temperature, gravity, and supercompressibility.

h_w = Daily average differential meter pressure from flow period chart.

P_f = Daily average flowing meter pressure from flow period chart.

The basic orifice meter flow factors, flowing temperature factor, and specific gravity factor shall be determined from the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

The daily flow period average corrected flowing meter pressure, psig, shall be used to determine the supercompressibility factor. Supercompressibility Tables may be obtained from the New Mexico Oil Conservation Commission.

When supercompressibility correction is made for a gas containing either nitrogen or carbon dioxide in excess of two percent, the supercompressibility factors of such gas shall be determined by the use of Table V of the C.N.G.A. Bulletin TS-402 for pressures 100-500 psig, or Table II, TS-461 for pressures in excess of 500 psig.

The use of tables for calculating rates of flow from integrator readings which do not specifically conform to the New Mexico Oil Conservation Commission "Back Pressure Test Manual" may be approved for determining the daily flow period rates of flow upon a showing that such tables are appropriate and necessary.

The daily average integrated rate of flow for the 7-day flow period shall be corrected for meter error by multiplication by a correction factor. Said correction factor shall be determined by dividing the square root of the chart flowing meter pressure, psia, into the square root of the deadweight flowing meter pressure, psia.

Deliverability pressure, as used herein, is a defined pressure applied to each well and used in the process of comparing the abilities of wells in a pool to produce at static wellhead working pressures equal to a percentage of the 7-day shut-in pressure of the respective individual wells. Such percentage shall be determined and announced periodically by the Commission based on the relationship of the average static wellhead working pressures (P_w) divided by the average 7-day shut-in pressure (P_c) of the pool.

The deliverability of gas at the "deliverability pressure" of any well under test shall be calculated from the test data derived from the tests hereinabove required by use of the following deliverability formula:

$$D = Q \left[\frac{\left(P_c^{\,2} - P_d^{\,2} \right)}{\left(P_c^{\,2} - P_w^{\,2} \right)} \right]^n$$

Where:

D = Deliverability Mcfd at the deliverability pressure, (P_d), (at Standard Conditions of 15.025 psia and 60°F).

Q = Daily flow rate in Mcfd, at wellhead pressure (P_w).

P_c = 7-day shut-in wellhead pressure, psia, determined in accordance with Section 2 of Chapter II.

P_d = Deliverability pressure, psia, as defined above.

P_w = Average static wellhead working pressure, as determined from 7-day flow period, psia, and calculated from New Mexico Oil Conservation Commission "Pressure Loss Due to Friction" Tables for San Juan Basin.

n = Average pool slope of back pressure curves as follows:

Mesaverde Formation	0.75
Dakota Producing Interval	0.75
Fruitland Formation	0.85
Farmington Formation	0.85
Pictured Cliffs Formation	0.85
Other Formations	0.75

(Note: Special Rules for Any Specific Pool or Formation May Supersede The Above Values. Check Special Rules If In Doubt.)

The value of the multiplier in the above formula (ratio factor after the application of the pool slope) by which Q is multiplied shall not exceed a limiting value to be determined and announced periodically by the Commission. Such determination shall be made after a study of the test data of the pool obtained during the previous testing season. The limiting value of the multiplier may be exceeded only after the operator has conclusively shown to the Commission that the shut-in pressure (P_c) is accurate or that the static wellhead pressure (P_w) cannot be lowered due to existing producing conditions.

Any test prescribed herein will be considered unacceptable if the average flow rate for the final 7-day deliverability test is more than ten percent in excess of any consecutive 7-day average of the preceding two weeks. A deliverability test not meeting this requirement shall be invalid and the well shall be re-tested.

All charts relative to initial or annual or biennial deliverability tests or photostats thereof shall be made available to the Commission upon its request.

All testing agencies, whether individuals, companies, pipeline companies, or operators, shall maintain a log of all tests accomplished by them, including all field test data.

All forms heretofore mentioned are hereby adopted for use in the San Juan Basin Area in open form subject to such modification as experience may indicate desirable or necessary.

Initial and Annual or Biennial Deliverability and Shut-In Pressure Tests for gas wells in all formations shall be conducted and reported in accordance with these rules and procedures. Provided however, these rules shall be subject to any specific modification or change contained in Special Pool Rules adopted for any pool after notice and hearing.

CHAPTER III INFORMATIONAL TESTS

A. A one-point back pressure test may be taken on newly completed wells before their connection or reconnection to a gas transportation facility. This test shall not be a required official test but may be taken for informational purposes at the option of the operator. When taken, this test must be taken and reported as prescribed below:

ONE-POINT BACK PRESSURE POTENTIAL TEST PROCEDURE

1. This test shall be accomplished after a minimum shut-in of seven days. The shut-in pressure shall be measured with a deadweight gauge.

2. The flow rate shall be measured by flowing the well three hours through a positive choke, which has a 3/4-inch orifice.

3. A 2-inch nipple which provides a mechanical means of accurately measuring the pressure and temperature of the flowing gas shall be installed immediately upstream from the positive choke.

4. The absolute open flow shall be calculated using the conventional back pressure formula as shown in the New Mexico Oil Conservation Commission "Back Pressure Test Manual."

5. The observed data and flow calculations shall be reported in duplicate on Form C-122, "Multi-Point Back Pressure Test for Gas Wells."

6. Non-critical flow shall be considered to exist when the choke pressure is 13 psig or less. When this condition exists the flow rate shall be measured with a pitot tube and nipple as specified in the Commission's Manual of "Tables and Procedure for Pitot Tests." The pitot test nipple shall be installed immediately downstream from the 3/4-inch positive choke.

7. Any well completed with 2-inch nominal size tubing (1.995-inch ID) or larger shall be tested through the tubing.

B. Other tests for informational purposes may be conducted prior to obtaining a pipeline connection for a newly completed well upon receiving specific approval therefor from the Commission's Aztec office. Approval of these tests shall be based primarily upon the volume of gas to be vented.

(2) That jurisdiction of this cause is retained for the