

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 1544

TRANSCRIPT OF HEARING

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691

NOVEMBER 13, 1958

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motion of the Oil Conservation Commission :
at the request of certain operators in the :
Gallegos-Gallup Oil Pool in San Juan County: :
New Mexico, to permit any operator to ap- :
pear and show cause why any well or wells :
in the Gallegos-Gallup Oil Pool should be :
granted an exception to the daily tolerance: :
provisions of Rule 502 I (a) of the Com- :
mission Rules and Regulations. :
: :

BEFORE:

Mr. A. L. Porter,
Mr. Edwin L. Mechem
Mr. Murray Morgan

T R A N S C R I P T O F P R O C E E D I N G S

MR. PORTER: Proceed next to Case 1544.

MR. PAYNE: Case 1544. In the matter of the hearing called on the motion of the Oil Conservation Commission at the request of certain operators in the Gallegos-Gallup Oil Pool in San Juan County, New Mexico, to permit any operator to appear and show cause why any well or wells in the Gallegos-Gallup Oil Pool should be granted an exception to the daily tolerance provisions of Rule 502 I (a) of the Commission Rules and Regulations.

MR. GRANTHAM: If the Commission please, I am Everett Grantham of the firm of Grantham, Spann & Sanchez, Albuquerque,

appearing here for El Paso Natural Gas Products Company. We have some testimony we would like to submit. Mr. John Woodward, attorney for El Paso, is present and associated with me.

MR. PORTER: Any other appearances in this particular case, make it known at the present time.

MR. WOODRUFF: Norman Woodruff, representing El Paso Natural Gas Company.

MR. KELLAHIN: Jason Kellahin, representing Gulf Oil Corporation.

MR. GRANVILLE: E. B. Granville, representing Frontier Refining Company. I have a statement to make.

MR. WHITE: Charles White, of Gilbert, White & Gilbert, Santa Fe, New Mexico, appearing on behalf of Pan American, and I would like to make a statement.

MR. GRANTHAM: I would like to have Mr. Walsh sworn.

(Witness sworn)

EWELL N. WALSH,

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

DIRECT EXAMINATION

BY MR. GRANTHAM:

Q Will you state your name, please?

A Ewell, E-w-e-l-l N. Walsh.

Q What is your profession?

A Petroleum engineer.

Q By whom are you employed?

A El Paso Natural Gas Products Company as division petroleum engineer at Farmington, New Mexico.

Q Have you previously qualified in hearings before the Commission, Mr. Walsh?

A I have.

Q Mr. Walsh, in connection with this Case 1544 concerning exceptions to the tolerance provisions of Rule 502 I (a), are you familiar with the operations of the Products Company in the Gallegos-Gallup Oil Pool, San Juan County, New Mexico?

A I am.

Q On the board, Mr. Walsh, I wish you would identify the plat which appears there.

A On this map, outlined in blue, are the Pool limits of the Gallegos-Gallup Pool, as has been set forth by the Conservation Commission. This Pool covers lands in Township 27 North, Range 13 East, through Township 27 North, 12 West, Township 26 North, Range 12 West, and Township 26 North, Range 11 West.

Q Does the plat show all of the wells within that Pool?

A Yes, sir.

Q How many wells are presently being produced by the El Paso Natural Gas Products Company within the Gallegos-Gallup Pool?

A We have thirty-five wells.

Q Are you familiar with the history of the production of specifically of the Products Company wells and generally of the other

wells located within that Pool?

A Yes, I am.

Q In the Gallegos-Gallup Pool, are some of the Products Company wells tied into the gas gathering system?

A At the present time there are six wells that are tied into the El Paso Natural Gas gathering system.

Q And how many wells are not tied in?

A Twenty-nine.

Q I wish you would just proceed, Mr. Walsh, to outline the history of the production of those wells, both before and since the operation of Rule 502 I (a) as applied to the Gallegos-Gallup Pool.

A The wells that are tied into the gas gathering system at the present time, the present system, are extremely high gas-oil ratio wells and have flowing pressures which are -- in which they are able to meet the contract pressure set forth by the gas company. The remainder of the twenty-nine wells are essentially, or do have essentially low flowing pressures with a gas-oil ratio bearing from slightly below 2,000 to 1 to as high as 40 to 50,000 to 1. Before the daily tolerance Rule was put in effect in the north-western part of the state, many of these wells in this Field were able to produce their allowable within a short period of time, within a few days, you might say. Their being able to produce them this way, they were producing essentially low volumes of gas; at the time the daily tolerance Rule was put into effect, the wells were choked back in order to bring them under the daily tolerance. This caused

the wells to have a rapid decline in oil production and a rapid increase in gas production, bringing the GOR up to a fairly high level. For example, in May of 1958, we had twenty-six wells on production. The average daily production allotted to those twenty-six wells, that is, taking the total allowable for the twenty-six dividing by the number was fifty-six barrels a day. In October, 1958, due to the wells being corrected on production according to their gas-oil ratio, this allowable was 27,000 -- pardon me -- the average daily allowable was 30 barrels. In May of '58, the average production for the wells was 37 barrels. In October it was 12.7 barrels, which is a considerable decline over a short period of time of oil production even though some of the wells had higher allowables. During this time the gas-oil ratio was also increased, and so the wells have been penalized heavily due to these high GOR's. Insofar as this daily tolerance Rule, we request that the wells within the Pool be allowed to produce without the restriction of the daily tolerance rate, Rule 502, Section 1, Sub-section (a). We believe that we will be able to produce this oil in essentially slugs and there will be less gas being vented to the atmosphere. In the case of the wells that are already tied into the gas system, this exception would ease in scheduling the production of those wells while we are working with the El Paso Natural Gas Company on their take. We had one case in which we took a well that had a high GOR and made mechanical installation on this well for the removal of paraffin. We installed a free piston and intermeter. This piston was set

so as to stop at a depth of approximately 3,000 foot. This depth is not low enough to allow that piston to get down into the fluid level. In the flowing three months of production, we noted on this well that the GOR was cut essentially by two-thirds, the gas production was cut by almost two-thirds, and our oil production increased by about a third. As far as trying to install now such installation on every well we have in the Field, we feel that the cost would be too high to warrant doing that now due to the production history and the way the Field has acted in the past. The Gallegos-Gallup engineering committee which was formed to make a study of this Field has a subcommittee working as far as possible to determine the most economical and feasible way to produce this Field to assure maximum return to the operators and to have the highest possible recovery factor.

If this request is granted, it will allow the venting of less gas and will help conserve reservoir energy, and also will give time for more information to the subcommittee for the use in their study. The El Paso Natural Gas Products Company requests that if this exception is granted, that the exception be in effect only until proper facilities can be constructed to gather the casing head gas. At that time a review will be made to determine if there is a need for continuance of the exception. Also the El Paso Natural Gas Products Company requests that if this exception is granted, that it will apply to all wells within the Pool limits as set forth by the Commission and all wells within one mile of the Pool limits.

Q Is it your idea, Mr. Walsh, that if these wells should be produced on an exception to this Rule by the so-called slug method, would it be necessary to work out a staggered plan of production, that is, so that all wells will not be produced within any short period of time during the month?

A Essentially since this Field is not tied into an oil gathering system, I don't believe that there should be a set schedule. It would be up to each operator's viewpoint as far as doing so, when to produce wells.

Q Are all of the Product Company's wells within this Pool capable of making the allowable?--

A No, sir, not all of them.

Q -- under any method of production?

A No, sir, not all of them.

Q From your knowledge and information, how many do you think could make their allowable by the so-called slug method of production, and how many might be questionable?

A Based on my study of it, I would say out of the twenty-nine wells that are not tied into the system now, fourteen of them should -- will or should -- be able to produce their allowable in short periods of time or producing slugs, and fifteen will be questionable and will not be determined until we can try the method of them.

Q Mr. Walsh, I gain actually from your testimony that one of the main reasons for the request which is made to the Com-

mission is to gain some experience which will be beneficial to the all of the operators in possibly proposing Field Rules for the operation of that Pool?

A Yes, sir, that's right.

MR. GRANTHAM: That's all.

MR. PORTER: Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Walsh, this slug method of production that you are talking about, what is the time interval of producing these slugs?

A You are relating to the one well, Mr. Nutter, or what I believe we would do on all of them?

Q No, sir. I mean on this slug method, I believe that you intend to show those wells.

A They will be shut in for a period of time and then allowed to produce their oil and then shut in to prevent venting of gas that might follow the oil. As far as time, that can only be determined by experimenting with each individual well.

Q Do you think this will probably be a matter of hours, within a day or days, within a week, or a matter of shutting them in for several weeks and then open them up, a month or a day or two? I realize there is going to be a variation on the wells, but what is the idea on it?

A There is a possibility that we may find that it will just take a few hours a day in order to allow enough oil to collect

by slugs, and it might take maybe two or three days. As far as shutting in a week or three weeks, just -- I don't believe that you could come up on the right side of it by doing that. You would be shut in too much of your producing time.

Q I see. I was just wondering what the approximate length of time would be.

A Well, it's hard to determine without actually experimenting with each well.

Q Well now, you mentioned that on one well you would install an intermeter with this free piston. In a lot of instances, is not an intermeter installed in the well head and there is no necessity for expenditure of money on some other equipment? Is it put on not only in relationship with the piston?

A Yes. Yes, it is.

Q What is the cost of that intermeter?

A Your complete cost, I would say, would run you approximately three, four hundred dollars.

Q Do you think these wells have a glorious enough future that they will pay out a three or four hundred dollar --

A Going back to your scheduling, I wouldn't doubt there is going to be some of the wells that can be put on an intermeter and be allowed to produce under this slug method, but there might be some in which the intermeter might be there, like I say, two or three days, and on cases like that, you can have the pumper go on and turn it on rather than have a piece of equipment tied up.

Q Do you propose in asking for this exception from Rule 502 I (a) that any restriction whatsoever be placed on the daily production?

A No. Just as I stated here, that we ask for an exception to the Rule without exception unless the Commission sees fit that they should put exception.

Q Do you think that an exception to the Rule with exceptions in the range of, say, 200 percent of the daily allowable would be liveable with, bearable.

A Yes, I do. You mean, in other words, raise from 125 percent to your 200 percent?

Q Yes.

A Yes, sir.

Q You could live with that?

A Yes. That essentially would give you, for the wells, a fifteen-day production period instead of the normal thirty.

Q Mr. Walsh, you didn't mean to imply, I hope, that these GOR's in this Pool went up because the Rule 502 I (a) went into effect last spring?

A Well, actually, well maybe not on account, but we had to choke those wells.

Q This was probably at the time of the life of these wells that the GOR was going up, --

A Possibly could

Q -- and the allowable for the wells did increase about

that time, and the wells were permitted to produce more oil --

A Yes.

Q -- than they had previously?

A I couldn't say that is actually what caused it, but it might have been it happened at the same time.

Q It might have contributed to it, but possibly there were other reasons, too, is that correct?

A That's true.

Q Do you have any idea or anticipate--these wells were not of sufficient pressure to meet this contract that is necessary for the wells to go into a high pressure line -- do you have any idea when those wells will be connected to the gathering facilities?

A I believe Mr. Woodruff is going to make a statement on that.

Q You would be willing for this daily tolerance exception to be effective only until such time as the casing head gas facilities were available for low pressure wells?

A Yes, sir, and then to have a review at that time to determine if it should be a continuance or some other change.

MR. NUTTER: I believe that's all.

MR. PORTER: Anyone else have a question? Mr. Cooley.

QUESTIONS BY MR. COOLEY:

Q Mr. Walsh, what is the reservoir mechanism in the Gallegos-Gallup Oil Pool?

A Solution gas, essentially.

Q Is it your experience that a solution gas reservoir is very sensitive or is not very sensitive?

A Well, my experience in this reservoir here, I would say it was sensitive.

Q Would you explain that answer, please? What do you mean by sensitive?

A Just based on the information from this Field, we are producing these wells essentially at low rate of oil volume. In doing so, the gas is evidently breaking out of the solution and traveling through the well bore faster than the oil is moving, getting a high gas production and getting a high GOR. Under this method that we recommend, which will allow the accumulation of oil at the well bore, that oil will be produced as a slug with essentially small volume of gas, and then that well will be shut in to prevent the gas behind it from coming out.

Q Is it your opinion, then, that such a production method will result in a greater ultimate recovery of oil from the Pool?

A Possibly under primary method, yes.

MR. COOLEY: That's all the questions I have.

MR. PORTER: Anyone else have a question of Mr. Walsh?

MR. GRANTHAM: I would like to ask one question.

REDIRECT EXAMINATION

BY MR. GRANTHAM:

Q This proposed method of production, what is your opinion about the conservation of reservoir energy by going from the present

method to the one you propose?

A Well, no doubt if we can hold that gas in the reservoir rather than venting it to the atmosphere and trying to hold our bottom hole pressure up, it would actually be a conservation of reservoir energy.

MR. GRANTHAM: That's all.

MR. PORTER: Mr. Grantham, did you desire to enter this map?

MR. GRANTHAM: If the Commission please, I would like to offer in evidence as El Paso Natural Gas Company's Exhibit 1 the plat identified by this witness.

MR. PORTER: Without objection, the Exhibit will be admitted. Any further questions of the witness?

MR. NUTTER: Yes, sir.

RE-CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Walsh, when we were talking about that 200 percent daily tolerance, didn't you say you had fifteen days?

A Well, 100 percent daily tolerance, 100 percent production is figured, say, on a thirty-day month, on thirty-days, right?

Q Yes.

A You can double that and you can produce your well in fifteen.

Q I think what I meant when I was talking about 200 percent was that you could produce two days' allowable in one day, and

then possibly have a blank the next day when you couldn't produce and two days' allowable the third day. That would be a 200 percent daily tolerance, I believe?

A Yes. No, you will produce fifteen days at 200 percent, won't we?

Q Counsel advised me that that is what 200 percent means. You can produce a thirty-day allowable in fifteen days. That would be a situation under which you could abide, is that correct?

A Yes, sir, it would.

MR. NUTTER: All right, thank you. That's all.

MR. PORTER: Any further questions of this witness?

You may be excused.

(Witness excused)

MR. PORTER: Anyone else have testimony to present in this case? Any statement?

MR. WHITE: If the Commission please, Pan American is one of the operators within the Gallegos-Gallup Oil Pool, and we concur with Mr. Walsh' testimony both as to the condition of the Pool and the problems that confront the operator. We also feel that reservoir pressure would be better maintained by the granting of the exception. We urge that it be made on a poolwide basis.

MR. WOODRUFF: Norman Woodruff, representing El Paso Natural Gas Company. El Paso Natural Gas Company is presently connected to eleven wells in the Gallegos-Gallup Pool, which are producing into our high pressure system. These wells are operated and

controlled by the producers. As to these eleven wells, it would be advantageous as a purchaser to have greater tolerance than we presently have because the space in our system is somewhat dependent on the market demand for gas which is sporadic. Now, for that reason, I think for those particular eleven wells the 200 percent tolerance might be somewhat undesirable. Greater tolerance, or this high gas-oil ratio of gas wells probably would have no adverse effect and would give greater ease in taking the gas. El Paso is planning on gathering the casing head gas from the other wells in this Pool. We presently have submitted to the Federal Power Commission in Docket 15696 a request for this. The time of hearing has not yet been set. However, we have requested that this particular matter be heard separately and more rapidly than would normally be heard under the full case. We concur in applicant's request that the suggested exception be reviewed at the time the facilities are available for taking all of the gas so that it can be determined at that time that exception will not cause the venting of gas because of production in excess at that time. Otherwise, we concur in the application of the El Paso Natural Gas Products Company.

MR. KELLAHIN: Jason Kellahin of Kellahin & Fox, Santa Fe, representing Gulf Oil Corporation. Gulf Oil Corporation is the operator of ten wells in the Gallegos-Gallup Oil Pool, and concurs in the application. We feel that the testimony which has been presented here shows the necessity of such an exception as a means of conserving the reservoir energy for the greatest ultimate recovery

of oil, and we note also that the call of this case tends to be to appear and show cause why any well or wells should be granted this exception. We feel the testimony that has been presented shows that it is a poolwide completion and the exception simply applies to all the wells in the Pool.

MR. GRANVILLE: E. B. Granville, Denver, Colorado, representing the Frontier Refining Company. We support the request of El Paso Natural Gas Products Company in this matter. In our opinion, all wells in the Gallegos-Gallup Oil Pool should be exempt from the daily tolerance provision of the Commission's Rule 502 I (a) to permit the wells to be produced on a more practical basis, and to conserve reservoir energy. We request that our eight wells in the Gallegos-Gallup Oil Pool be exempt from Rule 502 I (a). We have one well connected to the El Paso Natural Gas Products Company's high pressure gas gathering line, and the 200 percent tolerance mentioned would not benefit us very much on this well.

MR. PORTER: Off the record.

(Discussion off the record)

MR. PORTER: Back on the record.

MR. COOLEY: Mr. Woodruff, concerning these eleven wells which are connected to El Paso's high pressure system and which you requested additional tolerance on, could you submit a list of these wells, the operators thereof, and the locations to the Commission at your earliest convenience?

MR. WOODRUFF: We can and we will do so.

MR. COOLEY: Thank you, sir.

MR. PORTER: Anyone else have a statement to make in the case, anything further to offer?

MR. GRANTHAM: If the Commission please, I might point out one additional thought that has occurred to us, and that is, there is a slight difference in the situation with the wells that are tied into the gathering system, and the wells that are not tied in under the present method of production. I believe the testimony has shown, and I think it is true, that on the wells that are tied in, there is a waste of reservoir energy under the present method of production, whereas to the wells that are not tied in, you are wasting a commodity when it is vented into the atmosphere, and also wasting reservoir energy.

MR. WOODRUFF: I believe in writing any exception to wells connected to a high pressure system, that we should include within that exception any future wells which may be drilled that are capable of producing into a high pressure system.

MR. PORTER: Anyone else anything further to offer in the case? Take the case under advisement.

