

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 13, 1961

IN THE MATTER OF:

The hearing called by the Oil Conservation
Commission on its own motion to consider the
promulgation of an order prohibiting the flar-
ing of casinghead gas from oil wells in the
Cha Cha-Gallup and Totah-Gallup Oil Pools,
San Juan County, New Mexico.

CASE 2215

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CASE 2215

BEFORE:

Mr. A. L. Porter
Mr. E. S. Johnny Walker
Honorable Edwin L. Mechem

TRANSCRIPT OF PROCEEDINGS

MR. PORTER: The meeting will come to order. We'll take
next Case 2215.

MR. MORRIS: Case 2215: In the matter of the hearing
called by the Oil Conservation Commission on its own motion to
consider the promulgation of an order prohibiting the flaring of
casinghead gas from oil wells in the Cha Cha-Gallup and Totah-
Gallup Oil Pools, San Juan County, New Mexico.

MR. PORTER: Mr. Buell.

MR. BUELL: May it please the Commission, Guy Buell with
Pan American Petroleum Corporation. The Commission willing, we
would like to present Mr. Knight again today to report for all the
operators in both pools, as well as himself, on his progress since

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the August regular hearing.

MR. PORTER: That will be fine, Mr. Buell. Will you have Mr. Knight come forward, please, and be sworn?

(Witness sworn.)

DEAN KNIGHT

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

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Knight, would you state your complete name for the record, please?

A My name is Dean Knight.

Q Where do you live, Mr. Knight?

A I live in Tulsa, Oklahoma.

Q What is your capacity with the Knight Manufacturing and Supply Company?

A I am President of that firm.

Q And I believe you stated at past portions of this hearing that your company is installing the field-wide gathering systems in both pools?

A That is correct.

Q Speaking generally, Mr. Knight, before we go into detailed discussions of these exhibits, you have attended past portions of these hearings and you've heard we operators tell the Commission that the effort we operators are making in these two pools, as



well as the effort on your part, was unusual. Do you agree with that, generally?

A Yes, that is correct.

Q Why, in your opinion, is that unusual conservation effort, Mr. Knight?

A The main unusual thing about it is that usually when you start out to install a compression system in an oil field, which this is not a gas field, the field is drilled out and you know what you are doing. You can go to each wellhead, you can measure the gas, you can calculate it and you can design your system around that. That has not been true in this case.

Q I believe past testimony in this record will reflect that we've had a rapid rate of development in both pools, is that right?

A That is true.

Q Has that caused you to have to modify, revise, and change the design and pipe capacity of your system in both pools?

A Yes. Up to this point we have changed almost everything except the idea of doing it, everything in the pool has been changed at least once.

Q Have these changes been not only in extensions to your original design, but modification in the original designs themselves?

A Yes, they have.

Q It might be well for the record if we can make a



comparison, so the record will reflect just how rapidly these two pools have grown. If memory serves me correctly, active contract negotiations to handle the casinghead gas began between you and the operators back in March of 1961?

A That is correct.

Q Do you happen to recall the number of wells completed in each pool as of March, 1961?

A Yes, in the Totah Pool in March there were twenty-one wells completed; and in the Cha Cha Pool there were forty-one wells completed, for a total of sixty-two wells in both pools.

Q As of March 1, 1961?

A That is correct.

Q Do you happen to know the number of wells completed in each pool as of September 1?

A Yes, in the Totah Pool there are now fifty-four wells; in the Cha Cha Pool there are now seventy-five wells, for a total of one hundred twenty-nine wells. This pool has more than doubled since we started our contract negotiations.

Q That's over a hundred percent increase in the number of wells in both pools since we started work in our efforts to save this gas?

A Yes, that is true.

Q All right. Do you happen to recall offhand how much footage of additional pipe you have had to add to the system as it was originally designed?



A In round figures, the original system was about 100,000 feet, or converting it to miles, roughly twenty miles, and we have added to that roughly 25,000 feet, or a twenty-five percent increase in pipe length. Also there has been two or three increases in pipe diameters at various critical points.

Q Have you had to make these changes more or less on a day to day basis as the two pools have grown?

A Yes, we have had to, and sometimes we had to hold up. I know that during this last month we held up one piece of construction for about eight days to get in some ten-inch and some eight-inch pipe, which were going to be desperately needed, where originally the design called for six-inch.

Q Can you think of a good example we might use to point out to the Commissioners of one example of an extension area or a step-out development?

A Yes, we, when we started this in the four Sections up in the Northwest Section of Totah, there were no wells. Today Pan American on that four Sections has eight wells in Totah and two in the Cha Cha Pool, for a total of ten wells that didn't even exist and weren't even thought to be drilled in March, but they are now.

Q Was that a sizeable step out, a sizeable extension from the established production in Totah and Cha Cha?

A Yes, those ten wells represent roughly twenty percent of the whole Totah Pool today with their fifty-four wells.



Q Before we go to the exhibits which we put on the wall to show the progress as of today, I'm going to direct your attention back to the exhibit that was offered at the August regular hearing portion of this case, I believe that's Operator's Exhibit 3, and ask you to briefly review for the record where we were, from the standpoint of progress, as of that hearing.

A All right. I believe this is Exhibit 3, and as of that date this solid red line was the line that was welded, ditched, and in place, which was approximately a half of the Cha Cha or, oh, thirty-three and a third percent of the total system, or less.

Q That was the Cha Cha?

A That was all. There was nothing in Totah. This line here (indicating) was where the right-of-way had been cleared.

Q This line here?

A The dotted line, or the broken line. The right-of-way had been cleared, and I believe pipe had been strung over this area, and we were working right at this point as of the last meeting. This section here was all that was completed, which I would judge is about thirty percent of the total system.

Q Would you go now to what has been marked as Operator's Exhibit No. 4, and state for the record what that exhibit reflects?

(Whereupon, Operator's Exhibit No. 4 marked for identification.)

A= This is the Cha Cha system as it is today. Now the solid red line is all the pipe that's completed, in the ground,



ditched, covered up, and frankly operating today.

Q The solid red line represents that portion of the system that is complete and ready to go?

A Yes.

Q Does that include all of the system as it was designed, or as it existed back in August?

A Yes. This was the system that we thought we would use in August. This is the red line.

Q What is the significance of the solid yellow lines on that exhibit? I notice one in the Southeast portion, and another up in the Northwest, what is that?

A These are extensions that are being made. We have run the surveys on them, we are waiting on right-of-way, I believe, on them; but these are necessary extensions to conserve the gas out of two wells called the Tribal H, 2, and about in round figures, six to eight wells in this area that have been added to this system since the last time.

Q These two factors represented by the yellow lines, that represents two examples of additions that you have had to make to your system as you discussed earlier in your testimony?

A Yes, those are just plain additions to get more gas that has been brought in since the original setup was made.

Q What is the significance of the three green dots in the Southeastern portion of that exhibit?

A These are three compressors that are sitting on this



location, and today they are compressing gas and it is being sold to El Paso Natural Gas Company.

Q What's the significance -- is that arrow purple? I can't tell.

A Yes, it's purple. It's almost black, but let's call it purple, a purple arrow.

Q What does it designate?

A That is the tie-in to El Paso Natural, and that is actually the cash register or delivery point of gas.

Q Do you have an estimate, Mr. Knight, of the volume of gas that you are delivering to El Paso at that connection, say, today?

A Yes. As of eight o'clock this morning, the meters indicated that we were delivering at this point 1.9 million cubic feet per day. That was at eight o'clock this morning, and we should increase that before nightfall.

Q Before we go to the exhibit that reflects the Totah system, let me ask you to briefly review for the record the state of progress that existed at the August regular hearing.

A All right. The progress, of course, includes all of the line --

Q I believe you misunderstand me.

A All right.

Q I'm talking of Totah. Where were you in Totah at the time of the regular hearing?

A Excuse me. In Totah at the August hearing, there was

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thing together. I couldn't go across these -- what do they call them -- arroyos, we call them canyons in our part of the country. We had to come off the top of the hill, go down to the bottom and then follow the canyon out, and that's what we have done here. These solid red lines here are part of the line that is already in place, because it involved this dropping off this 400 feet off the top of these bluffs, and that's why this is in in such a manner, because it's following the floor of a canyon. That's the only way we could get through.

Q And again on this exhibit, and with particular reference to the Southeast system, does the solid red indicate the portion of the system that is complete?

A Yes, the solid red, which is quite small in this particular one, that is in place and done.

Q What is the significance of the broken red and white portion?

A That is pipe that has been, the right-of-way has been cleared and the pipe is strung, the ditches are being dug and the work is in progress there.

Q Why haven't you made more progress in that Southeast system? Why don't we have more solid red there, Mr. Knight?

A Well, actually there is, we received a letter from El Paso Natural, who said that due to their having to redo this line completely in here, I think everybody is aware --

Q By "this line", you mean the El Paso?



A The El Paso line. They are redoing the lines in here to be able to take the quantity of gas we have to deliver to them. Over in the other areas, they did not have to tear out a line and put in a new one, but in this area, I understand they're having to tear out and revise their line. They won't be ready until October 1, and possibly October 15. So we have dropped off our work here and been concentrating in this area here and here (indicating), so we could get some gas movement, which was of prime importance.

Q Do you anticipate any difficulty in having that portion of your system now reflected on that exhibit in broken red and white line, do you anticipate having any difficulty in having that complete by the time that El Paso is ready to tie in?

A No, I don't anticipate any, unless we have a rain and that washes the floors of the canyon in, but I don't anticipate that at this time of the year.

Q What is the significance of the yellow line, is that the same that we talked about on Exhibit 4?

A Yes, this is another extension necessitated by more drilling activity in this area, and another one down in this area, and we are planning to tie it in to here so we can go ahead and take care of this gas in this area (indicating).

Q What stage of work are you at now on that portion shown in yellow?

A That has been surveyed and right-of-way applications have again been made, and that's about the status of that one.



It's right at the very beginning, you might say.

Q Let's go now to what we have designated as the Northwest system in Totah. Briefly relate to the Commission and the record where you are on that system now.

A All right. The solid red line again represents a line that is in and complete, even including that little mark up here (indicating). Now you note that is no good up there, it doesn't tie in to anything. When we come out here to Pan American Tribal H-2, we had so much gas that it necessitated an entire change in the system up here, so we had to drop this line, which was scheduled for construction, the right-of-way was cleared; actually the right-of-way permits had been obtained and right-of-way cut across it. Then we had to deviate from that, go back and change that, increasing the size of this line. We came back down here, this all ties in to it, we had this all scheduled for six-inch; we come back in here, we had ten-inch here and eight-inch here, and extended the six-inch, which was originally four, to be able to take all of this, which leaves this piece isolated until we can clear this construction.

Q You have been discussing the northern portion of the Northwest system in Totah?

A Yes.

Q I believe that change in design or addition in design was necessitated by connecting up our Navajo Tribal H lease, which you used as an example earlier, as an example of an extension area?

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A Yes, there are now eight wells up here, which represent a very sizeable portion of the total in this particular Northwest section, so that necessitated actually a complete change out of our pipe sizes and thinking on this one situation.

Q Would it be fair to say that when you considered not only the change in the size of the pipe that has been necessitated in Totah, but as well as the extension areas themselves, that you have actually increased the size of your system about fifty percent in Totah? Would that be a fair observation?

A That's just about right, yes.

Q With the exception of that portion of the Northwest system shown in yellow, the remainder of the system is complete?

A Yes, it is complete.

Q Do the two green dots at the southern portion of the Northwest system again show compressors installed and on the line?

A Yes, sir, those are installed and operating today.

Q Are you delivering to El Paso there now?

A Yes, we're delivering here, as, again, of eight o'clock, 2.9 million feet a day, according to our meter, into El Paso's lines, at the purple arrow. This again is the cash register or El Paso's meters.

Q When you consider the gas that you are delivering in Cha Cha and Totah, what was the total delivery from both fields?

A The total delivery at eight o'clock was 4.4 million.

Q I believe you stated that you expected that to increase



before the day is over?

A Yes.

Q Do you have an estimate of the rate that you will be delivering by this afternoon?

A We should pick up close to another million before nightfall.

Q Mr. Knight, so we can get some idea, will your deliveries to El Paso remain at the rate that you have just discussed until you complete your system, or is it going to be a day by day incremental increase in deliveries to El Paso?

A Well, this will be almost a day by day increase, because every time we set a new compressor, it will increase the delivery, and all that we have to do on this system, outside of adding these extensions, are to add compressors as fast as we can do that. That will increase our delivery every day, so it will be a daily growth now, and not waiting for more system or more anything. The same thing, this work can go ahead and progress, and when that's done we can start producing there as well as here and over here. So actually, from now on this thing will grow every day.

Q How are you selecting the batteries you are connecting to first, Mr. Knight? Do you have any method in your selection?

A We are trying to select at the moment batteries that we can obtain the most gas from and get the most conserved. That's our attitude at the moment. We are, therefore, picking separators not necessarily that make the most gas, but ones that

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they're holding the most pressure, that enable us to make the maximum delivery and save the maximum amount of gas.

Q From the standpoint of compressors, as I recall your testimony in July and August, I believe you said you planned on putting in thirty-three, is that correct?

A That's roughly correct, yes.

Q The exhibit in your testimony shows that five are installed and on the line. Could you give the Commission some idea of your scheduled tie-in of compressors on the system?

A Yes, our compressors should be tied in at the rate of about two and a half to three per week. Now we've had to make some more changes here in our compressors, in that we have increased the system. In other words, this thing is growing so rapidly, and Mr. Mallarney is at the Farmington site now doing some re-engineering on sizes needed, and we are increasing the size per machine. We are trying to put in the large ones first and we have increased that by one size. We should be able to average about two and a half to three of those per week from now on.

Q How many crews or how many people do you have installing your compressors now?

A We have three of our key personnel that are doing the fine work, the precision work. We are using all the contract labor that we can use well, but contract labor, of course, is not available to do the precision work.

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Q You mean the ordinary roustabout or roughneck can't hook up a compressor?

A He can only go so far and then our men must finish, because at that point you can use labor that isn't good or it isn't quite competent, and you will run into headaches a little later down the line that you would have avoided had you done it with your own people. We have these three men out there working as hard as they can go.

Q Are they working seven days a week?

A I think they are working eight, from the reports I hear from them. They're telling me that, anyhow.

Q The July and August portion of this case, Mr. Knight, you estimated a target date of October 1 of being complete. Do you feel that you are going to need to revise that target date?

A Yes, we will have to, because of the extensions and additions that we have made. I think that a real target date for completion now should be around November 1st. We have so much more to complete than we had in August.

Q Were these changes and modifications in the design and the content of your system, were they time-consuming, did they cause you delay?

A Yes, that sort of thing always causes delay, and you reduce your efficiency.

Q And you now estimate a target date of November 1?

A That's for everything, yes. As we have stated before,



this thing will grow every day, but to be complete is another question and I would say that that must be now November 1.

Q Well, Mr. Knight, we -- by "we" I mean all the operators and yourself -- started from scratch on this in March. You estimate target date now of November 1. That's a little less than eight months. In your opinion, do you feel that the progress that has been made in these two pools, when you consider the myriad problems that you and we operators have encountered, do you feel that being as far as we are now and with a completion date by November 1 is a significant conservation achievement?

A I think it's very significant, because at this point we are five and a half months along from the start of negotiations. I have seen many of these things where the negotiations took longer than that. We have completed negotiations, we have put in the majority of the pipe in the ground, and we are actually delivering gas in five and a half months; and I think that's quite an achievement. And then your eight months that you are talking about is a completion date of everything, and that is, I believe, also quite rapid.

MR. BUELL: I believe that's all that we have at this time.

MR. PORTER: Any questions of Mr. Knight?

MR. MORRIS: Yes, sir.

MR. PORTER: Mr. Morris.



CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Knight, you stated that part of the delay that's been caused has been due to the increase in the number of wells that have been brought in in these two pools. After the system that you have is fully installed and completely operative, how long do you think it will take for you to connect new wells that are brought in in these two pools, that might be brought in as normal extensions of the pool?

A In other words, you are talking about a complete new -- not a new well where we already have a battery, you are talking about extending the lines to reach a new battery that's even further away than it is now?

Q Yes, sir.

A I think we should have, from scratch, you've got your survey, permission to survey, of course, depending on which way you are going, whether on Indian lands or Federal lands, and then your permit to construct and your construction. I would think that the very minimum figure there should be sixty days, and would like to have ninety to make any sizeable extensions. If you were just running a few feet, then you might do it in less, but you have quite a lot of paper work that must be cleared before you can actually do anything.

Q Then if you had a normal step-out development, it still might take as much as sixty or ninety days to connect up a new well?



A I think so.

Q As your facility is presently designed, what is the maximum amount of gas per day that you can handle, or is there a maximum figure?

A There's always a maximum. I would hate to state any certain maximum, because there are always little changes that you can make to increase that, but I would say with ease we should be able to process 30,000,000 plus.

Q I believe at the last hearing of this case Mr. Arnold gave us some figures that indicated there were some over 28,000 mcf per day of gas being flared at that time. Now that figure was some 6,000 mcf per day over the figure that he gave us for the month before. Now if the field continues to be developed at that rate, you are going to be over your 30,000 per day figure pretty fast.

A Yes, I think all of those instances merely necessitate running a higher pressure on our main line, and there also is another tie-in with El Paso up in the Northwest end of Cha Cha that can be made, which will help us if we have to go that way. I think that actually we can keep up with this pool.

Q I believe you stated that you had to abandon your ideas of using six-inch pipe in some places and using eight-inch. Do you think that you'll have to revise your program any more, will you have to increase the size of the pipe as new wells are brought in?

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A That was made on the Northwest Totah. Actually there isn't any place for anybody else to drill there, unless they jump the river. If they jump the river, the logical place to bring them in is on the Northwest of Cha Cha. I think we are adequate there, and there can be no extensions of the East end of the Northwest system, so we have no problem there; so I think that system is adequate at this point.

Q If development continues in these two pools at the present rate, do you think you can keep up with it?

A We are going to make every effort to.

Q You say November 1st is now your target date?

A For the extensions, completions, everything.

Q You foresee any more uncharted reefs in your course?

A I think not. I think everything is rolling pretty smooth, actually, and certainly there could be more extensions on the Southeast end up there that by the time of November 1 we're still not through, but I think that this system as it's shown here can be through on November 1st, and personally I hope they keep going down there because it's only money that we're after, and all that adds to it in the long run. I hope they keep drilling and go clear down to -- I don't know what's down here, but I'm ready.

MR. MORRIS: Thank you.

MR. PORTER: We hope it does, too, Mr. Knight. Do you care to make an estimate about how much gas you think you'll be taking into the system by October 1st?



A I believe that we could add safely here an average of a half million feet per day for the next thirty days without any problem at all. In other words, by -- did you say the end of October?

MR. PORTER: No, sir, I said October 1st.

A October 1st, that's roughly seventeen days. We should have another eight to ten million feet per day going in at that time. I'm being rather conservative in my thinking.

MR. PORTER: Mr. Nutter, did you have a question?

MR. NUTTER: No, sir.

MR. PORTER: Mr. Buell, do you have another question?

REDIRECT EXAMINATION

BY MR. BUELL:

Q I think it's pretty obvious in the record, since you are delivering to El Paso, you did get your F.P.C.?

A Yes, I hope so. So's El Paso. Yes, we received that.

MR. BUELL: That's all I have. I would like to formally offer Operators' Exhibits 4 and 5.

MR. PORTER: Any questions concerning the exhibits? The exhibits will be admitted. If no further questions of Mr. Knight, he may be excused.

(Witness excused.)

MR. PORTER: Mr. Buell.

MR. BUELL: May it please the Commission, in view of the substantial progress that I sincerely feel has been shown here



today in the short interval since the August regular hearing, I would like to move that this case be continued until the regular October hearing. I don't see any sense in burdening the record with statements that we've already put in relative to the marginal nature of the economics of gathering and saving this gas. Actually, it can best be described as a conservation effort, strictly for the sake of conservation.

I believe the record is clear that neither the operators or Mr. Knight are going to make any significant amount of money out of saving this casinghead gas. It is simply a conservation effort. In view of the diligence that I feel the operators have shown, as well as the diligence of Mr. Knight in completing these systems, I would like to move for a continuance.

MR. BRATTON: Howard Bratton on behalf of Humble Oil and Refining. We would concur in the motion of Pan American and the statements of Mr. Buell; and on a personal note, I understand that we are going to have the pleasure of being host to this Commission in its October hearing at Roswell, and we would like to have the pleasure of Mr. Knight's company, and all these gentlemen that are interested in this matter. We urge this Commission to continue the matter until the October hearing.

MR. MASON: John Mason, El Paso Natural Gas Products Company. We likewise would like to support Mr. Buell's motion for continuance, and as has been seen from Mr. Knight's testimony this morning, that since overcoming that uncharted financial reef



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that he encountered, which was back in July sometime, that he has proceeded with diligence, and some gas is being moved today. However, Mr. Knight has been forced to work with some difficult problems and has been faced with these problems and will continue to be faced with them in the next few weeks, I think.

This has been almost an impossible and unprecedented task he has taken on, to try to construct and devise a gathering system in an area that is developing at a rapid pace.

In the past few months, the Commission has exhibited an understanding of the situation, and for that the operators are quite grateful. We would hope that the Commission would continue to recognize that in the Cha Cha and Totah areas we do have an unusual and difficult situation which requires the special consideration which the Commission has been giving it each month, and this month is no exception to that, inasmuch as we're not necessarily looking at the same situation this month as we were looking at last month.

The statements that have been made by Mr. Knight in previous hearings in July and August were not empty promises or predictions on his part, but I'm sure that they were made in good faith in view of the circumstances which were existing at that time.

We feel that the Commission should not base the decision today on the predictions which were made in view of the facts existing back last month. Those conditions have been changed, as



we have seen from Mr. Knight's testimony, and therefore the decision rendered today with respect to this matter should be made after considering the facts as they exist today.

So we, in view of Mr. Knight's testimony and in view of what I have just said, would also like to urge that Pan American and Mr. Buell's request for a continuance be granted.

MR. PORTER: Does anyone else care to comment on counsel's motion?

MR. SWANSON: Clarence Swanson, Aztec Oil and Gas. We concur in the request for continuance of the case and wish merely to say that we have been delighted with the progress that has been made, and feel that it is significant.

We think that all parties have exhibited exceptional good faith, and the work has really gone better than could be expected in view of the changes. We, too, urge the Commission to consider the application for continuance of this case until the October hearing.

MR. PORTER: The Commission was wondering whether Mr. Bratton was speaking for his client or the Chamber of Commerce?

MR. BRATTON: That's an awkward question, because I have with me Mr. John O'Dell, the attorney for Humble out of Denver. I was speaking for my client.

MR. PORTER: The Commission will continue the case until the regular October hearing.

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STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and that the same was reduced to typewritten transcript under my personal supervision, and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

DATED this 20th day of September, 1961, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley

 NOTARY PUBLIC

My Commission Expires:

June 19, 1963.

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