

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 14, 1957

TRANSCRIPT OF HEARING

Case No. 1221

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE - SANTE FE
3-6691 2-2211

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 14, 1957

IN THE MATTER OF:

Application of the Oil Conservation Commission)
on its own motion for an order amending Commission)
Order R-586 insofar as it relates to the Byers-Queen)
and Tubb Gas Pools. Applicant, in the above-styled)
cause, seeks an order amending the Special Rules)
and Regulations for the Tubb Gas Pool to make)
provision in said rules for the regulation of oil)
wells completed within the defined limits of said)
pool; and further to consider the deletion of that)
portion of Order R-586 relating to the Byers-Queen)
Gas Pool.)

Case 1221

BEFORE:

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

TRANSCRIPT OF HEARING

MR. PORTER: The Commission will consider next Case 1221.

MR. COOLEY: Application of the Oil Conservation Commission on its own motion for an order amending Commission Order R-586 insofar as it relates to the Byer-sQueen and Tubb Gas Pools.

MR. PORTER: In this case I might say that it is occasioned by the completion of I believe four oil wells within the horizontal limits of the Tubb Gas Pool. On January 28 the Commission appointed an industry committee composed of Amerada, Continental, Amerada, Shell, Penrose, Gulf and Samedan for the purpose of making a study and recommending rules for the handling of oil wells within the

Tubb Gas Pool.

I might say that at the first meeting of the committee in Hobbs we appointed Gulf as chairman of the committee, and I recall that all members of the industry committee were present representatives of each committee. The Commission appreciates very much your interest in this matter and the response to our committee call. I would like to call on Mr. Bumpas for Gulf Oil Company, who is chairman of the committee.

MR. BUMPAS: If it please the Commission, I would like to read into the record some matter in this case. C. M. Bumpas, Gulf Oil Company, chairman of the Tubb Gas Pool industry committee. We wish to advise the Commission that the committee has been active in its assignment and there have been several meetings, the last of which was held 3:00 P. M. March 13. Continuance of this case to the May hearing is requested.

MR. PORTER: Mr. Bumpas, would you mind stating why the committee is requesting a continuance for two months?

A Well, sir, there was some different thoughts on the rules that were being formulated, to fulfill the responsibility that you assigned the committee, we thought that we needed some additional time since there were different opinions on the rules.

MR. PORTER: You ask for a continuance date to May 16?

MR. BUMPAS: Yes, sir.

MR. PORTER: Does anyone have any objection to the motion

BEFORE THE
OIL CONSERVATION COMMISSION
Hobbs, New Mexico
May 16, 1957

IN THE MATTER OF
CONTINUED CASE
No. 1221

TRANSCRIPT OF PROCEEDINGS

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE - SANTE FE
3-6691 2-2211

BEFORE THE
OIL CONSERVATION COMMISSION
Hobbs, New Mexico
May 16, 1957

IN THE MATTER OF:

Application of the Oil Conser-
vation Commission on its own
motion for an order amending
Commission Order R-586 insofar
as it relates to the Byers-
Queen and Tubb Gas Pools. Ap-
plicant, in the above-styled
cause, seeks an order amending
the Special Rules and Regulations
for the Tubb Gas Pool to make
provision in said rules for the
regulation of oil wells completed
within the defined limits of said
pool; and further to consider the
deletion of that proration of Order
R-586 relating to the Byers-Queen
Gas Pool.

CONTINUED CASE
NO. 1221

BEFORE:

The Honorable Edwin L. Mechem
Mr. Porter
Mr. Murray Morgan

TRANSCRIPT OF HEARING

MR. PORTER: We will consider next a continued case, No.
1221.

MR. COOLEY: Case 1221. Application of the Oil Conservation
Commission on its own motion for an order amending Commission Order
R-586 insofar as it relates to the Byers-Queen and Tubb Gas Pools.

MR. PORTER: Mr. Walker.

MR. WALKER: Don Walker with Gulf Oil Corporation, I am

substituting for C. M. Bumpass, the Chairman of the Industry Committee which was appointed recently to study the problem of low ratio wells which have been completed in the Tubb Gas Pool, and since the last statewide hearing, the Study Committee has received yet another proposal as to a method to solve this problem, which we don't think is a very big problem, and we, the Committee, have not yet had sufficient time to completely digest this new proposal, and as a result, they agreed to ask for another continuance, in order to come up with some concrete recommendations which they feel will be the answer, and it has been suggested to me this morning, that since we really don't have anything we have to solve today or tomorrow, possibly July would be a good date to reconvene on this matter, because many members of the Industry Committee would like to go to the Compact Meeting in June, and on behalf of the Committee, I would move for a continuance of the Case 1221.

MR. PORTER: Is there any objection to Mr. Walker's motion for continuance of Case 1221 to the regular July hearing? Case will be continued at the Regular Hearing Date in July.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
July 17, 1957.

IN THE MATTER OF:

Application of the Oil Conservation Commission
on its own motion for an order amending Commission
Order R-586 insofar as it relates to the Byers-
Queen and Tubb Gas Pools. Applicant, in the above- :Case 1221
styled cause, seeks an order amending the Special :
Rules and Regulations for the Tubb Gas Pool to :
make provision in said rules for the regulation :
of oil wells completed within the defined limits :
of said pool; and further to consider the deletion :
of that portion of Order R-586 relating to the :
Byers-Queen Gas Pool. :

BEFORE:

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

TRANSCRIPT OF PROCEEDINGS

MR. PORTER: We will take up next Case 1221.

MR. COOLEY: Case 1221. Application of the Oil Conservation
Commission on its own motion for an order amending Commission
Order R-586 insofar as it relates to the Byers-Queen and Tubb Gas
Pools.

MR. KASTLER: Honorable members of the Oil Conservation
Commission, my name is Bill Kastler, and I am the representative
of the Industry Committee. I am also with Gulf Oil Corporation,
a member of their Law Department, and I am representing the
committee for the reason that Gulf was appointed as the chairman
of this committee. This was the committee which was formed by
letter of January 28, 1957, for the purpose of making a study of

the present rules pertaining to the Tubb Gas Pool and making recommendations to the Commission for the purpose of formulating rules and regulations governing oil wells within the horizontal limits of the Tubb Gas Pool. I wish to state on behalf of the Committee our appreciation for the capable staff assistance given by Mr. Morgan, Mr. Fisher, Mr. Runion, and Mr. Cooley. My intent in presenting this, or my style of presenting it, rather is to present two witnesses, Mr. Guy Swartz, a geologist, and Mr. Bumpass, who is the Area Engineer for the Hobbs Production Office of Gulf Oil Corporation; and I wish also to state that after I have presented this testimony, or elicited it, there will no doubt be some comments from other members, the operators in the Tubb Gas Pool. At this time, may Mr. Bumpass and Mr. Swartz be sworn, please?

(Witnesses sworn.)

MR. KASTLER: Mr. Swartz, please take the stand.

GUY A. SWARTZ

a witness, of lawful age, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

By MR. KASTLER:

Q Will you state your name and position?

A My name is Guy A. Swartz. I am a staff production geologist with the Gulf Oil Corporation in Roswell.

Q Have you previously been qualified as an expert witness and testified before the New Mexico Oil Conservation Commission?

A I have.

MR. KASTLER: Are Mr. Swartz's qualifications approved?

MR. PORTER: They are.

Q Mr. Swartz, did you serve as a member of the Industry Committee and attend Committee meetings of the Committee studying this matter?

A Yes, sir, I attended all the Committee meetings related to this matter and was appointed along with Johnnie Higgins, geologist for Ohio Oil Company as a geological sub-committee for the Committee.

Q Have there been exhibits prepared by members of the Committee with your cooperation?

A Yes, sir.

(Exhibits No. 1, 2, 3, 4, 5 marked for identification.)

I would like to present five exhibits numbered 1 through 5, which were prepared by John Runion, a geologist with the Oil Conservation Commission in Hobbs, and which were examined by John Higgins with Ohio and myself, and were found to be correct.

Q Are you thoroughly familiar with these exhibits and can you testify using them as to what they show?

A Yes, sir.

Q All right. In Exhibit No. 1, would you state what it shows?

A Exhibit No. 1 is a structural map contoured on the Tubb marker as defined by the Oil Conservation Commission, and shows a general north-south gentle anticlinal structure with several depressions on top. It's one of a gentle nature and also indicates, it is also indicated on the map the lines of cross-sections which were prepared as Exhibits 2 through 5.

Q Is the location of the oil wells in the Tubb Gas Pool shown

on Exhibit No. 1?

A Yes, sir. The wells which are producing lower gravity oils are indicated by red dots; and two wells which have drill stem tested within the Tubb zone and which have tested oil, have been indicated by red circles.

Q I see. How is this Exhibit No. 1 correlated with Exhibits No. 2, 3, 4, and 5?

A Exhibits 2, 3, 4 and 5 are indicated by heavy dark lines and designated A, A prime, B, B prime, C, C prime, and D, D prime on Exhibit 1.

Q I see. In the line, now A, A prime, is that the matter that is shown in more detail on Exhibit No. 2?

A Yes, sir.

Q Would you please state what that shows?

A Exhibit No. 2 is a cross-section.

Q I believe the next one is Exhibit No. 2.

A Excuse me. Designated as A, A prime on the map, and is located in Sections 9, 10, and 11 of Township 21 South, Range 37 East, and it shows Humble No.7-N State V, a well which produces low gravity oil; and the Continental No. 2-N Nolan, also a well which is now producing low gravity oil, the relationship to two other gas wells.

Q Mr. Swartz, are these two wells that produce low gravity oil the same two wells as are indicated in lines A, A prime on Exhibit No. 1?

A Yes, sir.

Q All right.

A On Exhibit No. 2 there is also shown a red band which is located in approximate subsea depths of minus 2855 and minus 2875 feet, which indicates a rather narrow oil zone. The perforations of the wells producing the lower gravity oils have, are within or below this interval.

Q I see. Is that a firm interval which might be called a gas-oil contact line?

A No, sir. This is more of an intermediate zone which seems to be erratic and non-continuous throughout the pool, and --

Q (Interrupting) The currents of lower gravity liquids, however, seem to be struck at or below that index line, is that correct?

A That is correct. There is a coincidence, with this zone and the perforated intervals producing lower gravity oils. The cross-section B, B prime is located in Sections 27, 26, and 25, Township 21 South, Range 37 East.

Q Is that the same B, B prime as is indicated on Exhibit No. 1?

A Yes, sir.

Q Thank you.

A This exhibit shows R. Olsen's No. 1 Sarkeys in Section 26, comparison with three gas wells. This well is perforated above and below approximated oil zone, and the initial production was 180 barrels per day, with a gas-oil ratio of 1,035, the gravity of 44 degrees. The production of this well, incidentally, has fallen to approximately 20 barrels of oil per day.

Q Does the well log indicate any existence of high gravity liquid with any certainty?

A Above the minus 2855 point, there seems to be no low gravity oils produced.

Q Please proceed. Go to Exhibit No. 4, if you will.

A Exhibit No. 4 is a cross-section designated C, C prime, which is indicated on Exhibit No. 1, and shows Sinclair No. 2 Rogers, located in Section 12, 22, 37, the relationship to five gas wells extending in an east-west direction across the structure. This well has one set of perforations which lie within the oil zone. Exhibit No. 5 is a cross-section, D, D prime, and is indicated on Exhibit No. 1 and was constructed across the southern end of the structure to compare the oil zone with several gas wells in the area. All wells are perforated above this zone and also produce gas.

Q Mr. Swartz, now will you testify, please, as to what your conclusions are concerning these, this geological data you have presented?

A In conclusion, I would like to emphasize that this zone is not a gas-oil contact, but rather a zone from which oil is derived in some instances. In many instances this zone is open, and wells which don't appear to produce low gravity oil; the zone is not believed to be continuous throughout the pool. The Tubb Gas Pool is directly underlain by the Drinkard Vivian Oil Pool. 401 of 450 wells in this Pool are penalized because of excessive gas. It would appear that this Tubb oil zone is one of an erratic nature, which may or may not always be present throughout

the field, and where it is present, it appears to be sandwiched between a main Tubb gas pay and the gas cap of the Drinkard Vivian zone. Where it is present and being produced, it appears to be of minor and uncommercial quantity. It would appear that considered alone a Tubb oil zone won't possess enough dependable oil potential to even warrant consideration as a salvage zone.

Q Is it your conclusion, in other words, that the Tubb Gas Pool is primarily and predominantly a gas pool and should be continued to be developed as such?

A That is correct.

MR. KASTLER: Are there any questions the Commission wishes to ask.

MR. PORTER: Mr. Mankin has a question.

CROSS EXAMINATION

By MR. MANKIN:

Q Warren Mankin with the Oil Conservation Commission. Mr. Swartz, you mentioned a while ago this oil zone is directly above the Vivian, or Drinkard Vivian, which has some high gas-oil ratios, is that correct?

A That is correct.

Q Have you examined a number of the Drinkard wells that are closely associated to the Tubb formation to see if some of these might not be more properly classified as Tubb oil wells, rather than Drinkard oil wells?

A I am aware that the Vivian pay zone is situated somewhat below the legal or the defined limits of the Tubb gas zone, and rarely are any wells open above this point and productive of oil.

I don't believe this is ever the case.

Q What I meant by my question was, do you feel all the Drinkard wells are properly classified as Drinkard wells, and not some of them might not be Tubb oil wells?

A So far as I know, they are properly classified.

Q Properly classified?

A Yes, sir.

MR. MANKIN: That's all.

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

The witness may be excused.

(Witness excused.)

MR. KASTLER: Our next witness is Mr. C. M. Bumpass.

C. M. BUMPASS

a witness, of lawful age, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

By MR. KASTLER:

Q Will you please state your name and position?

A I am C. M. Bumpass, Area Petroleum Engineer for Gulf Oil Corporation in Hobbs.

Q Have you previously been qualified as an expert witness to testify before the New Mexico Oil Conservation Commission?

A Yes, sir, I have.

MR. KASTLER: Are the witness's qualifications satisfactory?

MR. PORTER: They are.

Q Mr. Bumpass, did you serve as a member of the Industrial Committee, or Industry Committee, which was making a study and made

recommendations concerning the Tubb Gas rules?

A Yes, sir.

Q Will you please state what the Committee's activity was and what capacity you served in?

A Well, sir, as a representative of Gulf Oil, chairman of the Committee, I will present the Committee's recommendations in this case.

Since the initial meeting of this Committee, which was held on February 5, 1957, the Committee has been very active in an endeavor to formulate recommendations for additional rules for the Tubb Gas Pool, as requested by the Commission. This has not been an easy task, and the numerous meetings that have been held exemplify the efforts of the Committee to fulfill the obligations to the Commission. I might state the recommendations of the Committee to be presented subsequently are a result of majority vote of the Committee members, and not ^{by} unanimous agreement of those members.

Q In other words, there was not a unanimity of agreement on these rules?

A That is correct.

Q I see.

A It was the consensus of the Industry Committee that the Tubb Gas Pool is a gas pool, and that the five wells listed in the oil proration schedule in the unclassified and wildcat section, Group 3, I believe it is, are a minor evidence in relation to this Tubb Gas Pool. I believe those records, according to my figures through July, these figures were taken from the July proration schedule for gas and the oil proration schedule shows there is

114 gas wells in the Pool, and the 5 aforementioned wells in the limits of the Tubb Gas Pool.

Q Those were classified as wells producing low gravity liquid hydrocarbons, is that correct?

A That's my understanding.

Q Yes.

(Exhibit No. 6 marked for identification.)

A I have here an Exhibit 6, which is a tabulation of the gas liquid ratio tests of the Tubb Gas Pool, conducted in an approximate period survey, I think October, 1956.

Q Is that exhibit one that was prepared and released by the Oil Conservation Commission?

A That is correct.

Q All right.

A I believe this would be Exhibit No. 6. In essence what this tabulation shows as indicated by the name, shows the operators and their respective wells in the Tubb Gas Pool and the gravity of the liquid hydrocarbons produced with the liquid hydrocarbon ratio. At the time this was prepared, there were four wells in that category, Group No. 3, listed as oil wells, and since that time there has been the addition of one. I believe that well is Continental Nolan No. 2. That is not indicated on this exhibit here, but that brings to a total of five wells in this particular category. I would like to state at this time that a detailed engineering study of this pool was not made, on the basis the consensus of the Committee members did not feel the probe warranted such a study.

Q Was it the conclusion of a majority of the Committee that

the Tubb Gas Pool is predominantly a gas pool and should be continued to be developed as such?

A I believe that is the contention, yes. It's not intended to enter as an exhibit; however, there was some tabulations on data pertinent to these five wells I have just referred to, such as the producing intervals which have been shown in the geological test. The data was requested and was obtained through, I believe the period was January 31st of '57, and since that time, or just prior to this meeting today I have made some tabulations of the production history of gas and oil of those five wells, and as Mr. Swartz more or less inferred in his testimony, production has dropped. A general statement on these five wells could be that the production has dropped. I think one of the largest producers was around 200 barrels per day when it was completed, and that well is probably producing somewhere around 20 barrels plus or minus at this time. Several of these wells are produced on pump and are apparently producing at capacity. It is also noted that in general the ratios have increased. I recall that one of the wells had an initial ratio of around 700, and that has increased to, I believe around 9,000.

Q Is it your conclusion, therefore, that the oil production record of these wells indicates a rather minor occurrence of oil?

A If the performance as illustrated in this tabulation is an indication, it can be, in my estimation, in view of the fact that this decline has occurred from a year or less period to approximately 20 barrels a day. I think one of the wells has an allowable of 37 on a proration schedule; however, it appears that

its capacity is somewhere in the neighborhood of 600 barrels a month. I might relate that was flowing, maybe some additional production could be obtained and possibly will be in the near future by pumping; however, there are other wells that are pumping and have been for some time. They seem to be stabilized at around ~~forty-six~~ barrels per month.

Q Would you recommend any increase or any continued study on this matter, or do you believe your conclusions are now correct, based on all the evidence now available?

A I feel we should terminate this study at this time. I feel the Committee has done as much as it could.

Q Mr. Bumpass, will you now present the rules and regulations which the Committee has offered?

A I believe this would be Exhibit No. 7.

(Exhibit No. 7 marked for identification.)

MR. KASTLER: I have no further questions of this witness.

MR. PORTER: Does anyone else have a question of Mr. Bumpass?

A There's one other item here. The Committee was also asked by the Secretary-Director to advise the Commission on the necessity for continued proration in the Byers-Queen Pool. We would like to, the Committee would like to recommend that we feel there is no necessity of continued proration in the Byers-Queen Pool.

MR. KASTLER: Would the Commission like Mr. Bumpass to read these rules into the record? There are additional copies that he has.

MR. PORTER: We feel it might clarify matters if you go

ahead and have Mr. Bumpass read it.

MR. KASTLER: Thank you.

A Tubb Gas Pool. Following are the proposed changes in Order No. R-586:

1. Item 7 will be added to Rule 5 (d): "In the event more than one gas well producing from the Tubb Gas Pool should be included in a standard or less than a standard proration unit, the sum of the allowables allocated to the wells shall be equivalent to that volume of gas allocated to a proration unit of the same size. The operator of such wells shall have the option to determine the proportion of the assigned allowable to be produced by each individual well, provided all of said wells are orthodox gas locations. In the event that one or more of the gas wells on the proration unit is an unorthodox location, the Commission shall establish the proportion of the assigned allowable to be produced from each individual well."

2. The third from last paragraph of Rule 8 will be revised to read as follows: "The allowable assigned to any well capable of producing its normal gas allowable in the Tubb Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Tubb Gas Pool except that no well which produces liquid hydrocarbons with a gravity of 45° API or less regardless of the size of the proration unit will be permitted to produce more liquid hydrocarbons than the Statewide oil allowable

for wells on 40-acre units producing at depths between 6,000 and 7,000 feet. Any well subject to such limitation shall be so designated on the Commission's monthly allocation schedule of condensate and other incidental liquid hydrocarbons. Any well subject to this liquid hydrocarbon limitation and which produces more than the allowed volume of liquid hydrocarbons during any one month will make up such overage. Any gas production shortage resulting from application of the liquid hydrocarbon limitation or from shutting in a well because of overproduction of liquid hydrocarbons may be made up under the terms of Rule 9 (underproduction balancing provision) provided the liquid hydrocarbon limits described herein are not exceeded."

3. A rule 8b will be added as follows: "Tests to determine the gravity of the liquid hydrocarbons recovered from each well in the Tubb Gas Pool shall be taken following adoption of these rules and reported to the Commission on Form C-116 not later than the 15th day of the next succeeding month following adoption of these rules. The Commission will then mark on the allocation schedule of condensate and other incidental liquid hydrocarbons the wells which are to be subject to the liquid hydrocarbon limitation. Thereafter, gravity tests on each well not subject to the liquid hydrocarbon limitation will be made during the months of January and February and reported to the Commission on Form C-116 not later than the 15th day of March."

That is the rule, those are the rules.

MR. PORTER: Does anyone have a question of Mr. Bumpass?
Mr. Mankin.

CROSS EXAMINATION

By MR. MANKIN:

Q Mr. Bumpass, do you have knowledge at this time as to whether there is presently any of these low gravity, so-called oil wells which was mentioned as five wells, whether any of these five wells presently ^{are} on acreage presently dedicated to a Tubb Gas well?

A No, sir, I haven't. I haven't looked into that fact. I did check in the gas proration schedule for July, and I don't, I may be incorrect, but I am just trying to answer your question the best I can, I don't believe they are on a gas proration schedule.

Q Then if I tell you that the oil, these so-called oil wells, none of them are ,duly dedicated to acreage dedicated to gas in this Pool; would you feel that would be a correct statement to the best of your knowledge?

A Yes, sir.

Q Do you feel that this small, in other words, this problem that originally was thought to be maybe of larger magnitude, you now find to be, you feel this solution you have proposed in these rules will handle the present situation and any situations that might be developed in the immediate future?

A If there -- I do want to qualify my answer in affirmative to this, degree if it is the same as we have found now, I think it would be workable, yes.

Q Also you indicated in the second proposed change to the rules that such allowable or condensate allowable would not exceed the Statewide allowable. Is it not true at the present time that the allowable for those depths during the current month would be

approximately 68 barrels?

A I know when we first figured it was 78 barrels. It may well be, since the allowable is cut, 68 as you state.

Q With the top allowable of 68 barrels as has been suggested, there would be no ^{problem} as far as any well exceeding the allowable, due to the low capacity of these five completed wells?

A That is my understanding, yes, sir.

MR. PORTER: Mr. Utz.

By MR. UTZ:

Q Mr. Bumpass, can you tell me, if a well producing, a gas well in the Tubb Gas Pool producing, say twenty million cubic feet of gas and 40 barrels and 46 gravity liquid would void more reservoir space than a gas well in the Tubb Pool which produces only twenty million cubic feet of gas and no liquid?

A I cannot.

MR. UTZ: That's all.

MR. PORTER: Mr. Cooley.

By MR. COOLEY:

Q Mr. Bumpass, in your proposed changes to Rule 8 and your rules and regulations in the Tubb Gas Pool, you suggest a liquid limit equal to 40-acre unit allowable for wells at 6,000 and 7,000 feet on wells producing liquids with a gravity of 45 degrees API?

A Yes.

Q There would be no limit on a well producing 46 gravity oil or 46 gravity liquids?

A That is correct, there hasn't been in the past.

Q Has there been in the past a liquid limit on any wells in the Tubb Gas Pool?

A No, sir, there has not to my knowledge, there hasn't.

Q Do you feel that liquids of 44 gravity oil and 46 gravity liquid would be in competition for the same market?

A If the conditions were right, they possibly could. This, if I might inject a statement here, the 45 is no particular magic number. We feel that, as I recall from this tabulation here, there are six wells that have gravity less than 45. Five of those six are these wells that we are talking about that are on the schedule, probably just as well could have pushed the gravity up to 46 or maybe 47, but we don't think that we even have a problem, even if we did, Mr. Cooley, because the production of those other wells, say that you had a limit set at a 45 and there was a 46 gravity and a 44 gravity well, it doesn't appear that the wells have been producing liquid hydrocarbons to the amounts that you would be competitive. I am sorry if I haven't gotten across the point, but --

Q. I think you have. Then it's your thought that this can cause no harm because it will in effect never be enforced due to the fact there is no well that you know of in the pool at the present time with a gravity of 45 degrees or less that would make the allowable, as we --

A (Interrupting) That's true, yes, sir.

Q But if they did make them and they were limited and weren't capable of making in excess of the allowable, there might possibly be some injustice, wouldn't there?

A There possibly could, still the operator who thought he was

being discriminated against still has the opportunity to go in and maybe try to better his well.

Q Then can you change the gravity of fluids produced from a well by work load?

A No, I wouldn't think so, you might have some influence on what gravity arrives at the surface. Apparently this zone in here is coincidental, or has localized occurrences where it might have some influence on the gravity that you get from the well.

Q Mr. Bumpass, what would you call this well with 45 degrees gravity or less, an oil well or gas well?

A Well, I am not versed on condensate reservoirs, so I don't think I could answer that question, Mr. Cooley.

Q Is this 45 or less liquid still, in your opinion, a condensate?

A No, I don't think so. I think the condensate is somewhere in the neighborhood of 51 gravity as it occurs in the reservoir, to be condensate.

Q Then a well producing 45 degree or less liquids would be producing oil?

A Well, from what I understand, Mr. Cooley, on liquids -- I am not versed on distillate reservoirs, but from my understanding, that 51 is the gravity and if that is so and there are no other elements to classify a reservoir as either oil or distillate, I would say your question you have asked would be yes.

Q It would be. Well, what I am getting to here is the spacing recommendations, under the general rules and regulations of the Oil Conservation Commission, unless they are termed to be

otherwise after special hearing, notice, 40 acres for an oil well, and proration unit in the Tubb Gas Pool is 160 acres for a gas well. What size proration unit would you recommend be assigned to a well producing 45 degree gravity or less?

A The way that we have proposed it here on the rule, I don't know that you would necessarily have to change the gas proration acreage.

Q Then you would leave it at 160 as the spacing for the Tubb Gas Pool.

A Yes, I don't quite understand the line of questioning. It is 160, we are not trying to change that. If we have a gas well on 160 and later someone, due to maybe offset operations, someone goes in with good faith to make a gas well and either drill a gas well to the Tubb or recomplete a Drinkard well, hoping to get a gas well, but they get situations like these five --

Q (Interrupting) That's the precise situation. Now what size proration unit would you give to the offset well that was drilled in good faith as a gas well---

A (Interrupting) In these suggested changes I would think you still have a 160-acre proration unit you can take up to, because it is in a gas pool and the gas pool in the Tubb is defined as 160 acres, but you would either be allowed to take the hydrocarbon equivalent to a volume of a 40-acre unit to the depth of six, seven thousand, or the amount of gas for 640-acre proration unit, whichever came first.

Q Even though there's 160 acres dedicated to this well, you would limit it, as I understand these rules, regardless of the size

of proration unit committed to produce just a 40-acre allowable for oil?

A That's liquid hydrocarbon. It can produce gas.

Q Can produce gas provided it doesn't exceed its thickness?

A That's true.

Q You have both a liquid and gas limit on such a well, whichever it reaches first, you have one or the other?

A You have one or the other, yes, sir.

Q Now you say they drilled this offset well and get -- they drill the offset well, the hypothetical offset well you referred to, and they get oil on a 160-acre unit, there's four other 40-acre tracts there in your unit. Suppose that they drill another well on that same 160-acre unit and get another oil well. Now would the combined production from these two oil wells be one unit allowable, or would you give it two normal unit allowables of oil?

A The way I understand it, you would give, well, let's say that 70 is the depth allowable for that, instead of having to repeat ourselves here so many times, if 70 barrels is the unit allowable and, as you stated, there you have two wells, the operator could take a maximum of 70 barrels out of each well, provided the gas limit was not exceeded for the 160 acres.

Q By both wells?

A By the total, yes, sir, that's provided in Rule 1.

Q Rating that oil production well by well, give each one a full allowable?

A Yes.

Q And divide 160-acre gas allowable between the two?

A Yes, sir.

Q That's provided in your rules of limits, Rule 5 (d)?

A One well might make 70 barrels and 200,000 cubic feet of gas, and one well might make 70 barrels and 498,000 cubic feet, if the daily gas allowable for the 160 acre unit was 500,000. That is an incentive or advantage to recovery of as much of that liquid as we can.

Q Would it be possible in this reservoir to make a completion where one set of perforations would produce oil and another set of perforations would produce gas, a type of dual completion in the Tubb?

A I don't think I could answer that.

Q Concerning the Byers-Queen Pool, is it your recommendation the special rules and regulations contained in Order R-536 be deleted in their entirety?

A I am a little bit at a loss there. If there is no need for proration, there's no need for the rules, is that the thought?

Q That is correct, and revert back and control the operations under the general rules and regulations contained in Rule 104 of the general rules and regulations of the Commission?

A Yes, sir.

MR. COOLEY: That's all.

By MR. MANKIN:

Q Mr. Bumpass, in general would you not say at the present time that this oil that's been found in the Tubb is primarily a salvage operation? A. It appears to be a localized condition.

Q And is it more of a nature of a salvage operation, rather

than an active development?

A Well, I don't think I understand your question, Mr. Mankin. You mean the person just opens this zone to take it for salvage or each takes it as he can get it?

Q As he can get it, which amounts to a salvage operation.

A Well, to me that's the sequence of operations here.

Q The only other question I have, Mr. Bumpass, is there's one gas well, Sunray Mid-Continent State 15 Well No. 4-P in Section 16, 21, 37 which shows a condensate gravity of 43 degrees, but it also has a gas liquid, gas condensate ratio of 66,600. Do I understand your recommendations in these proposed rules, even though that is a gravity of less than 45 degrees, there would be no decrease of the 160 acres presently dedicated to that well?

A That's true.

Q It would stay the same as it is?

A That is right. That was the sixth well I referred to, and we feel that these rules would not work a hardship.

MR. MANKIN: That's all.

MR. PORTER: Any other questions of Mr. Bumpass? Mr. Kellahin.

By MR. KELLAHIN:

Q Jason Kellahin, representing Continental Oil Company. Mr. Bumpass, if I understand your testimony correctly, you said there were six wells in the pool now which have a gravity of less than 45 degrees API, and that none of these wells are capable of making the allowable that would be currently assigned, is that correct?

A There are six wells.

Q Well, didn't I understand you to say there were six wells that were producing liquids of gravity of 45 degrees API or less?

A There are six wells producing less than 45 degrees, yes, sir.

Q And didn't you testify that none of these wells would be capable of making their allowable?

A I said that, I believe I said or intended to say, that the records from the Engineering Committee records show that they are not producing that, above this figure, as Mr. Mankin pointed out would be 68 barrels per day for that range.

Q They were, in fact, all of them, producing less than this now, are they not, sir?

A I believe they are on the order of 20 some odd barrels per day.

Q On the basis of that information, and assuming they would not be capable of making that allowable, would there be any reason for opposing a limitation on them?

A I don't think these rules are for these specific five wells.

Q You think there will be other wells that would be affected?

A I couldn't answer that. There are some like these, those will not be affected; there are others that could have a longer life, producing life than these have, that will be.

Q Have you any reason to anticipate there would be additional wells that --

A No, I don't have any reason one way or the other, anticipated or not.

Q There are wells in the pool which are producing liquid in excess of 45 degrees API that would be capable of making the

allowable, are there not?

A Possibly there are.

MR. KELLAHIN: Thank you, sir.

MR. PORTER: Anyone else have a question? Mr. Bumpass, you may be excused.

(Witness excused.)

MR. KASTLER: I would like to move for the admission of Exhibits 1 through 7 in evidence in Case 1221, if you please.

MR. PORTER: Without objection they will be admitted.

(Exhibits No. 1 through 7
admitted in evidence.)

MR. PORTER: Anyone have a statement to make in this case?
Mr. Seth.

MR. SETH: Oliver Seth on behalf of Shell Oil Company. I would just like to make a brief explanation. The witness indicated that the Committee was not unanimous. Shell was on the Committee and Shell was in the minority. Shell felt that it would be simpler and still equitable to regard all of the wells as gas wells and to prorate them as gas wells. Shell feels very strongly, too, about the elimination of the Byers-Queen Gas Pool regulations, but we would like the record to show and the Commission's understanding that Shell does support the majority opinion at this point. We certainly go along with the majority of the Committee and its recommendations, but I thought an explanation of the witness's reference to the lack of unanimity was in order.

MR. PORTER: Mr. Seth, you mentioned the fact that Shell feels strongly about the elimination of Byers-Queen, which direction?

MR. SETH: Just the elimination of the proration rules,

that's the same as the Committee recommends.

MR. PORTER: You concur in that, do you?

MR. KELLAHIN: That is right.

MR. LAYHE: Bob Layhe, Samedan Corporation. We were the other member of the minority. I have a statement I would like to read.

Samedan is of the opinion that the Tubb Gas Pool is primarily a gas condensate reservoir, and therefore prorated as such. Any ^{regulation} as to gravity of produced liquids could cause violation of correlative rights, and an order which might be sought in forced drilling obligations, compensatory royalty payments and facilities for separate storage would cause hardships; that in our opinion is not the Commission's intent. Therefore, as a member of the Industry Committee appointed to study the Tubb Gas Pool, we recommend the production of liquid hydrocarbons be considered as incidental to the production of gas, and that the Pool be prorated on gas only. Should future development prove the reservoir to have a definite oil ring, that would be economically feasible to develop, then the Commission could cause another study to be made, based on the new evidence.

MR. PORTER: Thank you, Mr. Layhe. Does anyone else have a statement? Mr. Kellahin.

MR. KELLAHIN: If the Commission please, Jason Kellahin representing Continental Oil Company, and we would like to make a statement. In connection with that statement, I would like to call the Commission's attention to some of the testimony given here this morning. In the first place, Mr. Swartz's testimony

shows very clearly, we feel, it would not be economic to drill a well to the oil zone as he referred to it, for oil production, and that this zone is actually accumulations of oil which are erratic throughout the reservoir, and there is no real definite information as to their occurrence except in the wells which have been brought before the Commission; and that some wells are open in this zone and aren't producing oil. Also, Mr. Bumpass's testimony to the effect that the six wells which are producing liquids of less than 45 degree API are not capable, any of them, apparently, of meeting any allowable which might be assigned under their proposed rules; and for that reason, it would seem a futile thing to assign an allowable to those wells, and there's no indication there's going to be any further problem in connection with that at the present time. If such should occur, of course, it could be taken care of at the time the problem arose.

Continental Oil Company is the operator of 15 wells in the Tubb gas pool. Two of these wells produce liquid hydrocarbons of comparatively low API gravity. Our experience to date indicates that there are no wells in the Tubb pool which are capable of producing excessive volumes of liquid hydrocarbon. We recognize, however, the possibility that future wells may change this situation and, in fact, may be capable of producing such volumes of liquids that the statewide oil proration system could be jeopardized unless controls are provided.

We are in general agreement with the intent of the rules proposed by the Industry Committee. We firmly believe, however, that the differentiation between various wells on the basis of

the gravity of produced liquids is unwise and, in fact, discriminatory for the following reasons:

1. It, in effect, provides a definition which infers that some wells are oil wells and raises a question whether that well may legally be allocated more than a standard 40-acre oil unit.
2. It places such wells in a position where their allowable is calculated on a different basis than other wells of virtually identical characteristics.
3. It will not prevent the unlimited production of liquids from wells producing liquids reported to be in excess of the gravity boundary.
4. The proposed system will violate correlative rights because wells on adjoining acreage producing from the same pool will be prorated on different bases.
5. It may violate correlative rights because a well producing liquids below the gravity boundary may be denied the right to have allocated to it an equal amount of acreage that a well producing above the gravity boundary can have.
6. It may cause waste if an operator is limited to a 40-acre allocation because such operator may be forced to drill additional wells which are unnecessary to drain the reservoir but are required by his obligation to protect himself and his royalty owner.

In brief, it is our position that either all wells should have a liquid limit, or none should. It is our opinion that a liquid limit should be provided. The limit we propose will not to our knowledge restrict the liquid production of any well pro-

ducing today, but it will provide a means of limiting gas wells producing large quantities of liquids which could otherwise endanger our statewide oil proration system. We urge the Commission to amend the rules in such a manner as to provide the following features:

1. Classify all Tubb wells as gas wells.
2. Prorate each well on the basis of a gas allowable based 100 per cent on acreage.
3. Place a liquid hydrocarbon limit on all wells equal to a 40-acre oil allowable for wells of this depth.

We submit for the Commission's consideration some proposed additions to the Tubb Pool rules in Order No. R-586, which we believe will accomplish the objectives described.

In this connection, we propose that Rule 5 of gas proration under subsection (a) be amended by inserting some additional matter at the beginning of the rule, reading as follows: "For purposes of allocation of hydrocarbon production all wells in the Tubb gas pool shall be classified as gas wells regardless of the characteristics of fluids produced therefrom." The remainder of Rule 5 (a) will remain as it presently is.

We suggest under Rule 8 that the Commission insert a new paragraph following the fourth paragraph, which will read as follows: "In addition to the gas allowable assigned under the provisions of Rule 5 (a), the monthly production of liquid hydrocarbons shall be limited to a volume equal to the daily allowable assigned to an oil well on a normal 40-acre unit producing from a depth of 6000 to 7000 feet under the provisions of Rule 505 of the

Commission's Rules and Regulations, multiplied by the number of days in the month. A twenty-five per cent overproduction tolerance shall be permitted during any one month. Such overproduction shall be made up by underproduction during succeeding months. Any well which has produced its liquid hydrocarbon limitation plus the twenty-five per cent tolerance for overproduction during any one month shall be shut in for the remainder of the month. All overproduction shall be deducted from the liquid hydrocarbon limitation imposed on such well for the next succeeding month."

MR. COOLEY: Mr. Kellahin, would you care to introduce a copy of your statement as Continental's Exhibit 1 in this case?

MR. KELLAHIN: I would be glad to. You want me to be sworn?

MR. COOLEY: I don't believe your testimony is in the nature of expert testimony. However, will you be sworn here for the purposes of cross examination?

(Witness sworn by Mr. Cooley.)

Governor Mechem: you want to qualify him?

MR. COOLEY: Take the stand.

MR. KELLAHIN: I would like to offer Continental's statement as Continental's Exhibit No. 1 in Case No. 1221.

MR. PORTER: Without objection it will be admitted.

(Continental Oil Company's Exhibit No. 1 admitted in evidence.)

MR. PORTER: You have a question?

MR. KELLAHIN: I didn't appear here as a witness. I want you to know that.

(Discussion off the record.)

JASON KELLAHIN

a witness, of lawful age, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

By MR. COOLEY:

Q I would like to ask you the same questions I asked Mr. Bumpass. You propose a liquid hydrocarbon limit on all wells in Tubb Gas Pool. Tell me, Mr. Kellahin, what would be the effect if you have two wells, two gas wells that you would term on one 160-acre proration unit, what would be the liquid limit on production from the unit?

A Well, that question, of course, would have to be resolved by the Commission, but as I see it, the limitation would apply to each well, since the allocation is based on a 40-acre allocation, without limitation on the gas. Now that's my own personal opinion, and I am not at all sure that is the position Continental takes.

Q You were very concerned about the necessity of drilling offset wells?

A Yes, sir.

Q It would certainly be to the advantage of the operator to drill a great number of wells on a 160-acre unit, because he would be able to produce more liquids, would you not?

A Not with the records of production in the pool up to this time, and the testimony of Mr. Swartz clearly shows it's not economical to drill oil wells in this pool.

Q Would the drilling have the effect of imposing an offset obligation on an operator?

A I wouldn't think so, no.

MR. COOLEY: That's all.

MR. PORTER: Mr. Walker.

CROSS EXAMINATION

By MR. WALKER:

Q Don Walker with Gulf. Mr. Kellahin, I just have one question. You think it would be Continental's view that all gas fields should be controlled on the amount of liquids produced?

A I couldn't speak for Continental on what their policy might be on the rules.

Q All right, thank you.

A Yes, sir.

MR. PORTER: Anyone else have a question of counsel?

A I want to make this observation. I don't think it's proper to have an attorney who has made a statement sworn.

MR. SELINGER: Are you objecting to your testimony?

A No.

MR. PORTER: The witness may be excused.

(Witness excused.)

MR. PORTER: Anyone else have a statement to make? Mr. Tomlinson.

MR. TOMLINSON: W. P. Tomlinson, Atlantic Refining Company. We have a working interest in approximately twelve wells in this pool, and some of them are gas wells and some are oil. First we would like to state we were not a member of the Industry Committee, but we do feel that we would like to add a little bit. We would like to urge the Commission not to set up a separate pool for oil wells, since we feel that there will be confusion in the future if you do set up one. Some wells might vary between what some

people would consider to be a gas well and an oil well at that time. Second, we have no objection to the 45 degree gravity limitations that are proposed at this time. However, in the future we think that it might be reconsidered as necessary.

MR. PORTER: Thank you, Mr. Tomlinson. Mr. Bushnell.

MR. BUSHNELL: H. D. Bushnell, attorney with Amerada. Amerada is a member of the Tubb Industry Committee, and I would like to make a statement on behalf of Amerada, with the understanding, however, that I wouldn't be induced to take the witness stand. Amerada, as a member of that Committee, concurs in the findings, conclusions, recommendations, and proposed changes of the rules made by Gulf in its testimony in this case.

MR. PORTER: Thank you, Mr. Bushnell. Mr. Heald.

MR. HEALD: K. C. Heald, representing Humble Oil and Refining Company. Humble was a member of the Industry Committee, and it concurs in the recommendations of the Committee. Further, we feel that there should be no attempt at allocation of any condensate produced from the Tubb gas field, since gas and condensate are in one phase in the reservoir; and since condensate as such does not occupy any reservoir space, the allocation of condensate as well as the allocation of gas would in effect be ^{prorated} non-proration. We wouldn't like to see that. Now we don't want to set a limit on what would be condensate or what would be oil. We feel that that is actually up to the Commission to decide which wells are producing oil and which wells are producing condensates. Since oil does warrant reservoir space as it's produced, some form of allocation should be used to control that reservoir voidage,

just as you control a reservoir voidage by the allocation of gas.

MR. PORTER: Thank you, Mr. Heald. Mr. Walker.

MR. WALKER: Don Walker with Gulf. Speaking separately, as our witnesses were speaking for the Committee, I am speaking for Gulf. We concur with the conclusions of the Committee, and we feel that any attempt to, as suggested by Mr. Heald, any attempt to control gas production by, prorate gas production by distillate control would be a bad precedent, and we would certainly recommend that that method not be adopted. We feel that -- I would like to mention this Committee has worked quite a long time on this problem and it is a little odd in that they do have what might be called oil wells in this Tubb Gas Pool, but for the administrative ease of the Commission, they attempted to set up a rule that would call them all gas wells and give them some means of controlling the production from them; and we would like to underline the Committee's recommendations, and we think this rule would take care of the situation. We also feel that the Byers-Queen proration should be eliminated.

MR. PORTER: Thank you, Mr. Walker. Mr. Steele.

MR. STEELE: Tom Steele, Ohio Oil Company. I would like to read a statement into the record. The Ohio Oil Company favors the purposes indicated in the plan outlined in the Industry Committee's proposed amendments to the Tubb Gas Pool Rules. The Ohio does not choose to make any objection to the text of the rules as proposed by the Industry Committee; likewise we would certainly have no objection to any other reasonable method for solution of the problems, provided an appropriate limitation is placed upon

the liquid hydrocarbon production from any well in the Tubb Pool if such liquid hydrocarbon is in the form generally regarded by the industry as crude oil.

MR. PORTER: Thank you, Mr. Steele. Anyone else have a statement?

Before we take the case under advisement, I would like to express the appreciation of the Commission to the various members of the Industry Committee which have worked on this problem, representing Amerada, Continental, Humble, Ohio, Shell, Penrose, Gulf, and Samedan, and our special thanks to Mr. Bumpass for his service as chairman of that committee.

We will take the case under advisement.

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C E R T I F I C A T E

STATE OF NEW MEXICO)
 : ss
COUNTY OF BERNALILLO)

I, MARIANNA MEIER, 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 reduced to typewritten transcript under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my hand and seal this day of , 1957
in the City of Albuquerque, County of Bernalillo, State of New Mexico.

NOTARY PUBLIC

My commission expires:
April 8, 1960.