Case No.

1499

Application, Transcript,
Small Exhibits, Etc.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 1499

TRANSCRIPT OF HEARING

NOVEMBER 13, 1958

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BEFORE THE
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IN THE MATTER OF:

CASE 1499: Application of Sinclair Oil & Gas Company for a hearing de novo before the Oil Conservation Commission of New Mexico on its application for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 240-acre non-standard gas proration unit in the Tubb Gas Pool comprising the SW/4 and the S/2 SE/4 Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to applicant's J. R. Cone "A" Well No. 1 located 660 feet from the South and West lines of said Section 26.

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: The Commission will take up next Case 1499.

MR. PAYNE: Case 1499. Application of Sinclair Oil & Gas Company for a hearing de novo before the Oil Conservation Commission of New Mexico on its application for a non-standard gas proration unit.

MR. McGOWAN: James McGowan, on behalf of Sinclair Oil & Gas Company. If the Commission please, at the trial examiner hearing in this case, they were consolidated. However, they do in-

volve different Pools and slightly different acreages, and I believe that one of the reasons that it was not as clearly presented before as possibly it should have been is the consolidation. We will, however, be able to shorten the second one a great deal by incorporating the testimony of the first hearing in it. I would like to hear them separately. These are de novo hearings, and with that I have three witnesses that I would like sworn in at this time.

(Witnesses sworn)

MR. PORTER: Are there other appearances to be made in this case, Case 1499? Anyone else desire to make an appearance in this case? You may proceed.

C. S. TINKLER,

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

DIRECT EXAMINATION

BY MR. McGOWAN:

Q Will you state your full name, by whom you are employed and in what capacity?

A C. S. Tinkler. I am superintendent of exploration for the Midland Division, which includes part of New Mexico; possibly the east half.

Q Now, you are superintendent of exploration for the Midland Division. Do you have under your jurisdiction, among other things, the problem of forming units and getting the royalty interest owners together when it is necessary to form units for gas at-

tribution or any other purposes?

A Yes, sir.

Q You are familiar, then, with the units under question?

A Yes, sir.

Q Do you have an exhibit that you wish to refer to in your testimony?

A Yes, sir. Exhibit No. 1. I believe each one of the parties have copies of that. And the acreage colored in yellow on the Exhibit which covers Section 26, Township 21 South, Range 37 East is the acreage in which Sinclair has a working interest. And in this connection on the S/2 of Section 26 we show the working interest and royalty interest ownership. In -- the existing Tubb gas units are colored -- outlined in red while the proposed Tubb gas unit is outlined in green.

Q Now, as I understand it, Mr. Tinkler, the W/2 of the SW, the SE of the SW, and the SW of the SE of the said Section 26 is now assigned to the Cone "A" No. 1 Well which is located in the center of SE of the SW, is that right?

A That's right.

Q And this application is seeking to add to that unit, the NE of the NW, and the SE of the SE?

A Yes, sir.

Q Now, what do all these names represent on this Exhibit?

A Well, these are the parties that we had contacted in order to form a hundred and sixty acre gas unit, and in that connec-

tion, while we were contacting the royalty owners in order that we wouldn't have to go back to them, we secured pooling agreements which would provide for at least 240-acre pooling, and there are twenty-seven, I believe, royalty owners in the whole tract. That's all 240 acres, and of that amount, I would say that we commenced in about June '56 attempting to have them execute pooling agreements, and actually we probably got about 75 percent of them executed in about four or five months, and the other 25 percent, it took us a little over a year. And --

Q Now then, at the present time, then, you do have a unitization agreement from all royalty owners and between Sinclair Gulf Oil Corporation and J. R. Cone, the operating interest, to form this 240-acre unit?

A That's correct.

Q Now then, if this application is denied, and the NE of the SE and the SE of the SE is not attributed to the J. R. Cone "A" No. 1 Well, it would appear that there are several other things that you might possibly do, one of which would be maybe to rearrange this unit and attribute some of the acreage to the Olson Well located in the N/2 of the SE of Section 26. Would you comment to the Commission on the possibility or probabilities of that?

A Well, in that connection, that would entail contact -- recontacting the majority of the royalty owners, and, as I stated before, it took us about a year and a half to get them all signed on this one, so it would be time-consuming, and money would be ex-

pended, and we would not be sure of a success then. We might get 80 percent of them signed, and the last 20 percent would never execute the agreements.

Q That also would then involve trying to reach an agreement between Gulf, Sinclair, Mr. Cone and Olson concerning not only the unit but ownership in and participation in the well?

A That is right.

Q Have you made any investigation as to the possibility of that?

A We have contacted Olson Oil Company in connection with their No. 1 Cone Well, which is shown as the north -- the 80 acres dedicated. That Well is shown as the N/2 of the SE/4 of Section 26, and as of this date, we have been unsuccessful in negotiating any type of a unit.

Q Well then, it would be your opinion, from your testimony, I gather, that to attempt to do that might be impossible as well as improbable and certainly would take a long period of time?

A That's right.

Q Now, it would appear also that you could drill additional wells to develop this acreage, could you not?

A Yes, sir, but in that connection, if we drilled a new well, it would cost us approximately seventy-five thousand dollars, and that being additional expenditures when we have wells at the present time that are capable of draining that acreage.

Q That would just be money spent, then, for no added re-

covery of gas?

A That's right.

Q Would that same answer be true in connection with attempting to recomplete and thus dually complete any of these wells on this land?

A Yes, sir, and in that connection you run the risk of losing the hole, and we have oil wells now that are producing, and in addition to that your dual completion with the Drinkard oil zone would also probably run around twenty-five thousand dollars.

Q Again, it means expenditure of money and time, and even the possibility of loss of another hole with recovery of no additional oil?

A Yes, sir.

Q Other than that, the only alternative left would be to leave this acreage undeveloped?

A That's right. In that case, Sinclair, Gulf, Cone and royalty owners could be drained by the existing wells in the area.

MR. McGOWAN: I believe that's all I have.

MR. PORTER: Any questions of the witness? Mr. Utz.

CROSS EXAMINATION

BY MR. UTZ:

Q I didn't get your name.

A T-i-n-k-l-e-r.

Q Mr. Tinkler, when Sinclair was going about unitizing this 240 acres, were you not aware of the spacing provisions of R-586?

A Yes, sir, we were, but the way we felt about it, we had to contact these royalty owners for 160 acres, and we -- at the same time we did get them to agree to at least unitize an additional 80, and we weren't trying to be presumptuous in that respect, but the fact that we got them to go for 240 would keep us from having to go back and be out money and time again.

MR. UTZ: That's all I have.

MR. McGOWAN: One further question, Mr. Tinkler.

REDIRECT EXAMINATION

BY MR. McGOWAN:

Q In doing that, you also were aware that the Commission had theretofore granted unorthodox units in this pool of acreage equal to or greater than 240, were you not?

A Yes, sir, we were.

QUESTIONS BY MR. COOLEY:

Q Mr. Tinkler, under your present authorization from all interested parties, would it be possible to dedicate the SW/4 of Section 26 to your well --

A The SW/4 --

Q -- and form a standard unit?

A No, sir, not under the present, it would not. We would have to recontact; I believe there is twenty that we would have to recontact.

Q Well, what 160-acre unit are you authorized to --

A Well, it is outlined in red. It is the W/2 SW SE of

the SE, and SW of the SE, and in addition 200 of the NE to the SW and the SE of the SE.

MR. COOLEY: Thank you.

MR. PORTER: Anyone else have a question?

QUESTIONS BY MR. STAMETS:

Q Mr. Tinkler, in the event that this application were denied, and you maintained your 160-acre unit, would the additional recovery from 80 acres be enough to pay out the drilling of additional wells?

A Well, in that connection I feel that I am not qualified to answer that. We will have another witness.

MR. STAMETS: That's all I have.

MR. PORTER: Any further questions? The witness may be excused. This Exhibit was prepared by you and under your supervision?

A Yes, sir.

MR. PORTER: Without objection, the Exhibit will be admitted. The witness will be excused.

(Witness excused)

H. A. MERRILL,

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

DIRECT EXAMINATION

BY MR. McGOWAN:

Q Will you state your name, by whom you are employed, in

what capacity, please?

A H. A. Merrill, district geologist for Sinclair Oil in Roswell.

Q And the area, the subject of this application, is under your jurisdiction?

A Yes, it is.

Q And you are familiar with it?

A Yes, sir.

Q Now, you have previously testified as an expert geologist before this Commission, have you not?

A Yes, sir, I have.

MR. McGOWAN: Are his qualifications acceptable to the Commission?

MR. PORTER: They are.

Q Now, Mr. Merrill, do you have an opinion concerning this Tubb gas reservoir, with particular attention to the area surrounding Section 26 as to whether or not it is an uninterrupted interconnected gas reservoir?

A All geological work we have done in this area indicates no particular structure barrier or any formational change which would prove very damaging.

Q You have prepared a structure map of this Tubb gas pool, then?

A Yes, sir, I have.

Q And that is what you are asking the Reporter to mark as

Exhibit No. 2?

A That is right.

Q Now, do you feel that this Pool is sufficiently developed so that you have information that allows you to accurately contour the Tubb gas zone?

A We have a well penetrating the formation on nearly every 40-acre tract in this area.

Q That is not necessarily producing from that 40-acres, but does penetrate it?

A That is right.

Q You do have logs on most every 40-acre in the Pool?

A Yes.

Q You feel that gives you sufficient information to pinpoint your contcurs?

A Yes.

Q On the board there are two cross sections, one marked "AA" prime and one "BB" prime which we ask the Reporter to mark as Exhibits No. 3 and 4. Will you point out to the Commission how those Exhibits strengthen your conviction that this is an uninterrupted, interconnected reservoir?

A This is a west to east cross section based on logs in the proposed gas unit.

Q That follows the line marked "AA" on the Exhibit 2, the contour map?

A Yes, it is identified as "AA" prime.

Q And goes right through the well that we seek to attribute this acreage to?

A It goes through our 1 "A" Cone.

Q And also includes one or more wells offsetting it in the east and west direction, is that right?

A That is right.

Q Now, that's -- do the logs indicate any interruption whatsoever in this formation?

A The Tubb formation is readily identified and all logs in this section. Curves at approximate depth of 6100 feet.

Q Now then, of the 240 acres that we seek to attribute to this well, that goes -- that cross' section goes right through the middle of 160 of it, is that correct?

A That's correct.

Q And shows no interruption?

A That is right.

Q Will you refer to cross section "BB" Prime, that is the one that is so marked in on the contour map, Exhibit No. 2?

A This cross section is also a west to east cross section through the northern part of the proposed gas unit. It is labeled "BB" Prime on the structural plat. It shows, in effect, the same presence of the Tubb formation across the north part of the unit with no particular structural barrier or any formation change to prevent drainage.

Q Then, between the two cross sections, you have gone

through wells in the center of each of the 40's we seek to attribute to this well?

A That is right.

Q And they each showed no interruption?

A Right.

Q Then, from a geological standpoint, Mr. Merrill, is there any reason, in your opinion, why the drainage area of this well would be restricted?

A None whatsoever.

MR. McGOWAN: I believe that's all I have.

MR. PORTER: Any questions of Mr. Merrill?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Merrill, I wonder if you could tell me what formation the E. C. Hill No. 1 Well in the SE of the SW 26 is presently completed in?

A That is a Blinebry Oil Well.

Q Could you tell me what formation the Sinclair Cone No. 2 "A" is presently completed in?

A That is a dual completion, Blinebry gas and Drinkard oil.

Q I see. This E. C. Hill No. 1 which is presently a Blinebry oil well was drilled beyond the Blinebry originally, was it?

A Yes, that went through the Tubb and Drinkard formations.

Q Has it been plugged back to the Blinebry now or what?

A Yes, it is plugged back.

Q With cement or what? Do you know?

A I am not familiar with that. It is plugged back to 5740 feet.

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

MR. PORTER: Mr. Utz.

QUESTIONS BY MR. UTZ:

Q Mr. Merrill, the S. E. Cone No. 1 Well, as shown on your Exhibit No. 1, what formation is that completed in?

A Which well do you refer to?

Q The S. E. Cone.

A Is that in the NE of the SW/4?

Q That's in the NE SW.

A That is the Gulf No. 1 Cone, I believe. It is a Drinkard Well.

Q Drinkard Well. Thank you.

MR. PORTER: Any further questions of Mr. Merrill?

QUESTIONS BY MR. COOLEY:

Q Mr. Merrill, the studies you have made and the testimony which you have given here in no way indicates what the drainage rate is of the proposed unit well, does it?

A No, it shows the presence of the formation uninterrupted throughout the area.

Q But would have no bearing on whether it would drain 160,

or more than 160, or less than 160?

A No, it doesn't.

MR. COOLEY: Thank you.

MR. PORTER: Anyone else have a question of the witness?

REDIRECT EXAMINATION

BY MR. McGOWAN:

Q Mr. Merrill, Exhibits Nos. 3 and 4 were prepared by you and/or under your superivision, were they not?

A Yes, sir.

MR. McGOWAN: I offer Exhibits 3 and 4 in evidence.

MR. PORTER: Without objection, the Exhibits will be received.

R. R. MARMOR,

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

DIRECT EXAMINATION

BY MR. McGOWAN:

Q Will you state your name, address and by whom you are employed, please?

A R. R. Marmor. I am employed by Sinclair Oil & Gas Company, and I am assistant division engineer for the Midland division, which handles Southeast New Mexico and West Texas.

Q Now, as part of your duty, you also oversee and supervise the reservoir engineering section of the Midland division, do you not?

A Yes, sir.

Q I believe you have never testified before this Commission before. have you, Mr. Marmor?

A That's right.

Q Will you very briefly give the Commission your education and experience background?

A Yes, sir. I obtained an engineering degree in petroleum engineering from the University of Oklahoma in 1951. Upon graduation, I joined Sinclair, and I have been with Sinclair since.

Q You have been practicing your profession since?

A Yes, sir.

MR. McGOWAN: Are his qualifications acceptable?

MR. PORTER: They are.

Q Mr. Marmor, you are familiar with this application, the acreage covered thereby?

A Yes, sir.

Q Now, Mr. Marmor, you stated that you oversee and supervise the reservoir engineering section. Is one of their funcations to study the mechanics and performance of reservoirs to determine possible drainage areas?

A That is correct.

Q Will you briefly advise the Commission of your ideas and reasons, therefore, concerning the drainage of gas from an uninterrupted interconnected gas reservoir?

A As long as a reservoir has continuity and transmissibility

of fluid, a single well could drain a whole reservoir.

Q In other words, then, there is actually no limit to the size area that one well might drain in any gas reservoir, so long as it is continuous and is interconnected with permeability?

A That is correct.

Q Would you go so far, then, as to say that given sufficient time, one well will drain the entire Tubb reservoir?

A Given sufficient time, it could be done.

Q Now, is that belief or opinion pretty well accepted in the industry, Mr. Marmor?

A I believe so.

Q Is that belief, was that taught you in school, for instance?

A Yes, sir.

Q You have available to you various authorities which advocate such a belief and opinion?

A It is part of the basic engineering background that you must get to study in engineering.

Q Now, if you were taught that in school, you came out of school to see if that is so, did you not?

A That is correct.

Q Has your work in gas reservoirs and study of gas reservoirs performance convinced you that that is correct?

A Yes, sir; as long as you have transmissibility of fluid, as long as you have continuity of the reservoir, there is

no doubt in my mind that you can deplete a gas reservoir, given sufficient time.

Q So then, the size of a gas unit is actually a matter of time and economics, rather than reservoir drainage?

A That is correct.

Q Well, then, I assume that you are of the opinion that this Cone "A" 1 Well will drain far in excess of 240 acres?

A Yes, definitely.

Q Now, have you studied this reservoir to see if there was any reason why, in this particular area, this particular reservoir, the drainage theory you just discussed is not true?

A I don't see any reason why it shouldn't.

Q There is no infomation, then, available to you on the reservoir that indicates any question about it?

A No, sir.

Q Do you have anything further you would like to discuss or present in connection with the drainage of this pattern of this well?

A Yes, I have an Exhibit prepared which shows the pressure behavior of a gas well while producing. We have taken -- in this particular case, we have taken the J. R. Cone "A" Well No. 1 for the Tubb, and we see in case 1 that thepressure drop from the furthest point in the present proration unit to the well bore will be 275 pounds. The pressure drop from the farthest point in the requested proration unit will be 281 pounds. That means that to

move from the furthest point, and in the requested proration unit, to the furthest point in the present proration unit, will require only 6 pounds of pressure to move the allowable of a 240-acre well.

Q Is what you are saying, then, in effect, that it would only take a six-pound greater pressure drop to drain 240 acres by this well than it is now taking to drain 160 acres?

A That is what it shows.

Q So, then, the further you go from the well bore, the less pressure drop you have per acre assigned to it, for drainage purposes?

A That is correct. For example, in this particular case, it would be,approximately 86 percent of the pressure drop would occur within 50 feet of your well bore. Then, from there on out, your pressure drop is very small.

Q Now, does this mean, then, that on a 160-acre unit, giving this well a 160-acre allowable,so that it is in theory, at least, draining a circular area equal to 160, there is 244 pounds difference between the pressure at the bottom hole and at the edge of the 160-acre circle?

A Well, assuming the periphery of a 160-acre circle, the pressure -- well, let me back out a little bit. The pressure drop from the periphery of a 240-acre circle to the well bore will be 249 psi; from the periphery of a 160-acre circle, it would be 244. Therefore, from the periphery of 240 acres to a periphery of 160-acre circle, it would be six-pound pressure drop to move the allow-

able of a 240-acre well.

Q Now, just exactly how does that further support or illustrate the theory of draining?

A It indicates that away from the well bore you require very small pressure drops to move the gas that you are required to produce. Now, your major drop always occurs within just a near distance of the well bore.

Q Now, I would assume, then, Mr. Marmor, that you recommend to your company that they attempt to form this unit because you were of the opinion that the well would recover all the gas that Sinclair had a right to recover out of the Tubb Pool, is that correct?

A That is correct.

Q Now, in making that recommendation, you realized it would have to be approved by the Commission, did you not?

A That is correct.

Q Did you give any consideration to the Field Rules themselves and what the Commission had heretofore done in similar matters, in making that recommendation?

A Yes, sir.

Q Do you have an exhibit prepared which illustrates the information you obtained in that investigation and led you to the conclusion the Commission would probably grant this application?

A Yes, I have an exhibit.

MR. McGOWAN: We will ask the Clerk to mark this Exhibit

No. 6.

Q Now, I notice on this Exhibit, Mr. Marmor, that you have included Sinclair's J. R. Cone "A" No. 1 unit, which is the one we are here seeking approval for. That was included, was it not, solely for comparison purposes?

A Yes, sir.

Q Now, will you briefly explain to the Commission what this Exhibit shows?

A This Exhibit shows a number of Commission-approved non-standard units which have deliverabilities either less --

Q It shows those units together with their deliverabilities and the maximum distance of any acreage assigned to the well for each of the units listed, does it not?

A That is correct.

Q Now then, I note that two of those units have 240 acres assigned to the well and one of them -- and one has 320 acres, is that correct?

A Well, the Ohio Wortham 9 and 11 are each 160-acre units, but --

Q Let's talk a minute about the Hunt and Skelly unit shown on this Exhibit, which have 240 acres attributed to them, as we are seeking here. For instance, how far is the farthest boundary of the unit we seek to attribute to the J. R. Cone "A" No. 1 Well from that well?

A 4667 feet.

Q And how far is it from any other well to the farthest boundary attributed to it?

A Well, for example, the Sunray State 15 No. 4, which is a 160-acre unit. However, the farthest point on that unit to the well is 4667 feet. The Ohio Wortham No. 2, which is actually a 160-acre unit originally, actually has a distance right now of 5365 feet to the farthest point in the unit.

Q Now then, let's take, for instance, the "E" No. 1 Well, which has 240 acres attributed to it, and compare the deliverability of the Cone "A" No. 1 Well and the Hunt Well.

A Well, the Cone "A" No. 1 has a deliverability against a 500-pound line of 4,600,000 cubic feet per day. The Hunt Weatherly No. 1 has a deliverability of 2,759,000 cubic feet per day.

Q In other words, then, the Cone Well, to which we seek to attribute 240 acres, has close to twice as much productive capacity as the Hunt Weatherly Well, to which 240 acres is attributed to in the same Pool, is that correct?

A That is correct.

Q Will this J. R. Cone No. 1 "A" Well make the allowable?

A Yes, based on the allowable for the last year. This well is capable of producing seven times the allowable of a 240-acre unit.

Q Well then, is it your opinion that it will drain a 240-acre area, and that it will make far in excess of the total allowable that is or probably ever will be assigned to it, or are you of the

opinion that this well will recover all gas from the Tubb, that Sinclair and Mr. Cone and all royalty owners are entitled to from their 240 acres?

A That is correct.

Q Now, Mr. Marmor, I would like to direct your attention back to Exhibit No. 2, I believe it is, which is the contour map. Now, you are familiar with the Field Rules that were adopted in 1954 by this Commission for the Tubb Gas Pool, are you not?

A Yes, sir.

Q The J. R. Cone "A" No. 1 Well is properly located as prescribed in those Field Rules, is it not?

A That is correct.

Q The Field Rules themselves recognize and provide a method for the establishment of non-standard units, do they not?

A Yes, sir.

Q They ever in some instances, under certain circumstances, provide for them being approved without a hearing, do they not?

A They do.

Q Now, the offset operators of this acreage well were all given notice of this application, were they not?

A Yes, sir.

Q And I believe they all executed waivers with the exception of Continental and Olson Oil Company, is that correct?

A That is correct.

Q And I believe Continental wrote a letter to the Commiss-

ion, in effect, stating it is a matter of policy, they feel that it should be restricted to standard units?

A That is correct.

Q It, however, is further apparent from your Exhibit No.6 that the Commission has already deviated, to some extent, from that policy?

A Yes, sir.

Q Now then, in thinking in terms,for a moment,of correlative rights, and looking at this map, it would appear that this acreage is offset in all directions by Tubb Gas wells, is that correct?

A That is correct.

Q And they all have assigned to them an allowable as set forth in the Field Rules, do they not?

A Yes, sir.

Q Now, the proration formula set forth in the Field Rules applicable to the Rubb Pool is on 100 percent acreage, is that correct?

A That's correct.

Q As over simplified practice, is the effect of that to determine that the allowable from the Tubb Gas Pool is so many MCF's of gas that there are so many acres in it and give to a well,then, the MCF per acre allowable times the number of acres assigned to it?

A That is correct.

Q So if that well has been on acres assigned to it, then it gets the allowable assigned to 80 acres?

A If they are capable of producing the allowable.

Q And if it has 240 or 300 acres, it gets the allowable equal to those acres?

A Yes, sir.

Q And if a well is capable of producing the allowable based on 100 percent acreage, so long as it is producing the allowable, it obviously would be producing that operator's share and none other, is that correct?

A That is correct.

Q Now, to simplify that a little further, let's assume for the moment that the S/2 or 26 was the entire Tubb Gas Pool. Mr. Olson and his associates, if he has any, I have no knowledge of it, own 80 acres within that 320-acre gas pool, do they not?

A Yes, sir.

Q Sinclair, Gulf and Cone own 240 acres, do they not?

A Yes, sir.

Q Then, Mr. Olson is entitled to 80/320ths of the gas under that 320 acres, isn't he?

A That's correct, based on--

Q On the acreage allowable formula in the Field Rules?

A Yes, sir.

Q And Sinclair, Gulf and Cone are entitled to 240/320ths?

A That's correct.

Q Now, Mr. Olson has assigned an allowable to his well or 80 acres, has he not?

A Yes, sir.

Q And it can produce that allowable?

A Yes, sir.

Q And is producing it?

A Is producing right now.

Q So he is getting his 80/320ths of gas under that half section?

A Yes, sir.

Q Now, Sinclair's well is capable of producing 240/320ths, is that correct?

A It is.

Q However, under the present form it is only getting 160/320ths, is that correct?

A That is correct.

Q Without the granting of this application, Sinclair, Gulf and Cone will never be able to get the fair share of gas under that section?

A No, sir, they will get a small percentage of that gas.

Q Do you see any way of granting this application so that Sinclair, Gulf and Cone could get any of Mr. Olson's gas?

A No, there is no way.

Q He will still be allowed to produce his 80/320ths, is that correct?

A That's correct.

Q Could you see, then, in any respect how the granting of

this application would violate Mr. Olson's or anybody else's correlative rights?

A No, sir.

Q would you be of the opinion, then, that the Sinclair and royalty owners' correlative rights would be denied by the denial of that application?

A Yes, sir, they would be.

MR. McGOWAN: That's all.

MR. PORTER: Anyone else have a question of the witness?

CROSS EXAMINATION

BY MR. COOLEY:

Q Mr. Marmor, at the outset of your testimony, you testified that in your opinion, that when you have a continuous uninterrupted reservoir, one well will drain the entire pool, if given sufficient time?

A That is correct.

Q What do you suppose sufficient time would be in the Tubb Gas Pool?

A It would be a very long time.

Q About how many years?

A I have no idea. It would be a very long time.

Q A thousand years?

A It could be as long as that.

Q Now, you testified also that you are convinced since you got out into the Field that this theory was correct. Wouldn't

it take more than a thousand years to become convinced?

A Well, the main thing -- I said this -- is that if you have transmissibility and if you have continuity, you are going to deplete it. Now, transmissibility means that if the gas can go through it, you will produce it. Therefore, you should be able to get it out. If you create a pressure sink you will have pressure away from the well bore, which will bring in the gas to the well bore, so sooner or later you will produce everything until that pressure is completely depleted.

Q Now, Mr. Marmor, our Rules require that we space wells so that they will efficiently drain and develop the acreage. You wouldn't say that one well would efficiently develop the entire Tubb Gas Pool, would you?

A Well, efficiently, if you can afford to wait that long.

Q Well, that is interpreted efficiently and economically.

A Well, then, it would not be economically feasible.

Q Then we come to the question of economic limits, do we not?

A Yes, sir.

Q What is your opinion of appropriate abandonment pressure in the Tubb Gas Pool?

A Well, it depends on the line pressure. Of course, you can always set a compressor at the depth of the well which will keep the hydrostatic head of your gas. It will probably be in the

lower pressure range. I would say somewhere around 100 to 300 pounds.

Q Now, if you had one well located as near the center at an advantageous a position as possible, that when the pressure declined to this abandonment pressure, whatever it might be at the well bore, at the outer periphery of this main drainage radius, the pressure would be extremely high, wouldn't it?

A Now, are we talking on economic terms or time?

Q Just talking about what the pressure would be at the outer periphery or outer boundaries of the Tubb Gas Pool, since that is the area which you say the well will drain.

A When?

Q Well, we are going to give it a thousand years?

A The pressure at the outer periphery will be practically the same as it is at the well bore.

Q When the pressure at the well bore drops to 125 pounds for the first time, what will the pressure be at the outer periphery of the Pool at that time?

A For the first time?

Q Yes.

A It would be somewhat -- as you are producing it, it will be somewhat greater, away. At periphery.

Q As you progress away from the well?

A As you are producing it. If you shut in the well, let it sit for a while, and open it again, the pressure will build up,

equalize throughout the reservoir, and then there will be the average of pressure at the periphery when you first shut it in and the pressure at the well bore. Then, as you shut it in, it will average out, and you will have a somewhat average pressure and produce some more --

Q It would never stabilize completely again, would it, if you shut it for a hundred years?

A You could open that well out, and the gas would come out slowly, and it would be a long time.

Q Any consideration of appropriate spacing, we must take into consideration the questions of sufficient development and economic limits?

A Yes, sir.

Q On your Exhibit -- it is not marked here, the one that portrays the pressure at the periphery of your drainage area -- what number is that?

A That would be 5, I believe.

Q Your Exhibit No. 5, I believe, you indicate that the pressure differential between the 160-acre periphery -- drainage periphery and the 240-acre drainage periphery, would that be it, of 6 pounds per square inch?

A Yes, sir.

Q Now, when your well reached abandonment pressures on a 240-acre unit rather than 160, you would leave the amount of gas that is represented by this six pounds psi?

A It will be three pounds. In other words, it is six pounds from one corner to the other corner, so the average in that area will be three pounds.

Q So whatever amount of gas this represents would be left in the reservoir?

A Yes, sir. Would be three pounds worth.

Q As compared to development on 160?

A Yes, sir.

Q And --

A There would be about three pounds, would be about one-tenth of a percent of the original pressure.

Q Would be about one-tenth of a percent of the original pressure?

A Yes, .15.

Q Now, Mr. Marmor, on this question of correlative rights, you have adequately considered the relative positions of the various operators in the Pool with regard to the acreage that they have dedicated to their wells?

A Yes, sir.

Q That is, the individual should share in proportion that his acreage bears to the total acreage in the Pool?

A That is correct.

Q But also in the matter of correlative rights, must we not also consider the question of where your well is located; wouldn't it make some difference on how much gas you are going to

recover, how close another operator's well is located to you?

A No, sir. In a gas field, the location of a well has no bearing on the recovery as long as you have uniformity of the well.

Q Is it your testimony that the Tubb Pool -- that the wells which directly offset the proposed unit well here will not experience any decline in production -- ultimate production as a result of your well producing 240-acre allowable?

A Well, there will be a small decline, that is, because of this -- at this time, if we don't get the 240 acres, they would get a share of the gas reserves underlying the 240-acre leases. There would be a small decline.

Q I don't want to go into whether you are entitled to this or not, I want to know whether there will be a decline in the offsetting production?

A There will be that small decline, yes, sir.

Q Now, would you please explain to me why you feel that Sinclair is entitled to bring about this decline in this offset operators' --

A That decline actually belongs to us, that percent that they are getting right now, that they will ultimately get actually belongs to Sinclair.

Q Did you feel that is so because you have an additional 80 acres in the Pool?

A That is correct.

Q Isn't it ordinarily required that you develop your 80

acres before you are entitled --

A This is proven development.

Q You haven't developed.

A Well, we have developed 240-acre. Actually, it is proving productive, and that is developed, is it not?

Q Acreage can be proven productive and yet not developed. You can drill on a 40-acre prorated oil pool, you can go around the particular 40-acre tract; until you drill a well on it, it is not developed.

A We don't have a well under the SE of the SW of 26.

Q We consider a 160-acre spacing thus far as being efficient and economic?

A Well, if the Commission does not grant the proposed unit, then it is not developed.

MR. COOLEY: That's all the questions I have. Thank you, sir.

MR. PORTER: Mr. Stamets.

QUESTIONS BY MR. STAMETS:

Q Would it be an economic venture to drill an additional well to get the gas from, say, an 80-acre tract? I wouldn't be bothered to try to tell you which way to divide this up.

A It would not be economical if we can do it with one well right now that we already have completed in the reservoir.

Q What I mean is, will you get enough gas to pay out seventy-five thousand dollars?

A That's kind of hard to tell. It may be. We don't have any cores in this area. We know they are continuous. We can tell the continuity, but the logs are hard to evaluate for porosity and net pay, and it will be hard for me to put an actual reserve value to the gas.

Q Your answer seems to indicate to me that you feel it would be somewhere near?

A It could possibly be.

Q So, in that event, a dual completion, if successful, would be a profitable venture?

A Any place in the field?

Q On an 80 acre of your selection.

A Yes, it could be.

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

QUESTIONS BY MR. UTZ:

Q Mr. Marmor, in your theoretical conclusions as to one well draining an entire pool, is that not based on the fact that the reservoir has to be completely homogenous?

A That's what I say. Not necessarily homogenous as long as you have transmissibility of fluid, as long as -- if you have permeability regardless of what degree of permeability, then, and you have pressure, the pressure will level off in time.

Q Is the Tubb Gas Pool, in your opinion, such a pool?

A Yes, sir.

Q There is no lengthening out and the communication, you

feel, is perfect throughout the Pool?

A At lease the area we have studied, it looks fairly good.

Q In regard to another part of your testimony, to the effect -- I believe your testimony was to this effect, that you felt that correlative rights would be protected because of the fact that your well can produce 240-acre allowable, is that your testimony?

A Yes, sir.

Q If that well was capable of producing 180-acre allowable, do you think it should have any?

A Yes, I think it should, if it is able to produce it economically. We have to weigh the economics. It might be that we prefer to get the gas faster, and then we would want to drill some more wells.

Q I am speaking from the standpoint if this well were capable of producing the 240-acre allowable?

A If it were capable of producing it, I think I would recommend it.

Q If it were capable of producing a 5000-acre allowable, would you?

A If the well is capable of producing 5000-acre allowable, I'd rather just drill one well because it is the economics. If I can do with one well what I have to do with ten other wells, and get the same allowable, there wouldn't be any use for me to drill the other nine wells.

Q Then, I gather from your statement, then, that you feel somewhat that a well should have a spacing comparable to the ability to produce?

A Actually, I feel this, that a well should have an allowable that is as near as possible to the underlying reserves on the acreage that a person owns.

Q If this well would not produce a 240-acre allowable, you would not be asking for it, is that true?

A That's true. There wouldn't be any need for it.

MR. PORTER: Anyone else have a question of the witness?

RECROSS EXAMINATION

BY MR. COOLEY:

Q Mr. Marmor, isn't it true that in determining the efficiency of a well in any given reservoir draining a certain amount of acreage, that the permeability is one of the primary factors that you consider?

A Permeability, rate of production, versus viscosity, and the thickness of the pay, that's the things that everyone of them has a direct bearing, the same weight. In other words, if you double one and divide the other one, you will have the same answer.

Q I am talking about efficiency of drainage. You say if you double the pay thickness and divide the permeability by half that you would have the same efficiency of drainage?

A Yes, sir.

Q I mean that you would drain the same amount of distance away from the well bore?

A Yes, sir.

Q As your permeability increases, is it not true that the pressure at the periphery of drainage radius, when the pressure at the well bore is at abandonment level, it would be higher?

A It would be somewhat higher.

Q And as the pressure at the periphery increases, the amount of gas left in the reservoir increases, does it not?

A Yes.

Q This is what I mean by efficiency, Mr. Marmor, when you drain a lesser percentage of the gas in place, then you have a less efficient drainage pattern.

A To go back to your original question, you say if we have permeability and double the thickness, we will have the same effect?

Q You will produce the same amount of gas?

A Yes.

Q But you wouldn't drain as fast, would you?

A No. Your drainage radius is the same, it doesn't change. The pressure at the outer boundry that you select -- let's assume that the pressure is at original conditions, so many feet away, 2000 feet away, --

Q Yes.

A If you change the net pay, that is, if you double the pay and have the permeability, the pressure at the periphery will

be the same, it will not change.

Q Mr. Marmor, I don't believe we are talking about the same thing because if I understand this correctly, as the permeability factor decreases, the abandonment pressure -- at the time you have an abandonment pressure at the well bore, your pressure at the periphery of the drainage area will be much higher, will it not? It will increase?

A If your net pay is the same, if you don't change the net pay.

Q If you don't change the net pay.

A Then it will be higher, if you change it.

Q We can't change it, the net pay. It is a set affair.

A That's right.

Q It is going to remain constant. Now, remaining so, as your permeability increases, you are going to increase your drainage radius of the well, are you not, your efficient drainage radius of the well?

A The ultimate pressure at the outer boundary will be somewhat higher under those conditions, yes.

Q And to the extent that it is higher as a result of low permeability; then you have left that much more gas in the ground, have you not?

A That is correct.

Q If you drill on denser pattern, you will recover that gas?

A That is right.

Q Now, do you have any information as to what the permeability characteristics of the Tubb reservoir are in the general area of the proposed unit?

A No, sir, we don't have any cores available at all.

Q Then, is it not logical to conclude, in the absence of permeability data, that you cannot determine whether a well can efficiently drain in excess of 160 acres?

A Well, it seems to me that -- for example, in this particular case, we used the permeability of one milladarcey, which is in the low range; that's in the, right to the bottom economically of a commercial well. If you have a well which has permeability which is much lower than one milladarcey and not fractured, then it may not be commercial.

Q Aren't there several wells in the cores that have been taken throughout the Tubb Pool which show areas of permeability of substantially less than one milladarcey?

A I have no cores available.

Q None at all in the Tubb Gas Pool?

A We've searched and tried to contact some of the operators, and haven't been able to obtain any.

MR. COOLEY: Thank you very much.

MR. PORTER: Anyone else have a question of the witness?

MR. McGOWAN: I have a few questions I would like to ask.

REDIRECT EXAMINATION

BY MR. McGOWAN:

Q Mr. Marmor, in stating that, given sufficient time, one well would drain a gas field, you were not in any way intending to recommend that the gas field, like the Tubb, be spaced for one well, were you?

A No, sir, not at all.

Q You recognize that drainage from an engineering standpoint has been adjusted to the economic and realistic application of every day business?

A Definitely. We compare what we believe the reserves are against the cost of drilling a well, and arrive at a conclusion.

Q Would you be of the opinion that one well would, however, economically and efficiently drain 240 acres in the Tubb Pool?

A Yes, sir.

Q Do you feel that it would recover essentially the recoverable gas under 240 acres?

A Yes, sir.

Q Now, in Mr. Cooley's questions concerning the decline of offset wells, ultimate recovery, if this application were granted, I believe you stated that their ultimate recovery would decline to some extent?

A Yes, sir.

Q Would that same decline take place if this application

were denied, and we drilled an additional well on each of these 40's we seek to attribute to this well?

A Same decline.

Q So, in either instance, we would simply be getting the gas to which we are entitled?

A That's right.

Q The decline would not result from the -- would result from us not being allowed to produce the gas?

A That's right.

Q Then, would you say that, in your opinion, the 240 acres we seek to attribute to this well will be developed if this application is granted?

A Yes, sir.

Q Now, in discussing the possibility of a second well, or possibly even a dual completion being economical in that there would be enough gas under that 40 or 80 acres to pay the cost of it, I believe you stated you felt it would be for a dual completion and possibly might be for the drilling of additional wells on 80 acres?

A Yes, sir, it could.

Q Would that, however, in your opinion, recover any gas that the Cone "A" 1 Well will not recover?

A No, sir.

Q So it would increase the cost of the gas to the operator, would it not --

A Yes, sir.

Q -- and make it more noncompetitive in today's market?

A Yes, sir.

Q Now, you stated you had no definite information concerning permeability. You do have, however, the potential of the wells and their production history, do you not?

A Let's see. I --

Q You have had that available to you, for study, at least?

A Yes.

Q Can you not draw a conclusion from such information as that over a period of time, maybe not as to the exact measurement of the permeability, but as to the sufficiency of the permeability?

A Yes. As to the degree of permeability, I say that it is of fair quality.

Q This study information, then, has convinced you that whatever the permeability may be, it is of sufficient value to allow a well to drain at least 240 acres?

A Yes, sir.

MR. McGOWAN: I believe that's all I have.

MR. PORTER: Any further questions?

MR. McGOWAN: Exhibits 5 and 6 were prepared by you and under your supervision?

A Yes, sir.

MR. McGOWAN: I offer them in evidence.

MR. PORTER: Without objection, the Exhibits will be admitted. Mr. Cooley.

MR. COOLEY: Mr. Marmor, you testified on redirect examination that the drilling of additional wells would recover no additional gas whatsoever. Would you like to reconsider that answer in view of your testimony in cross examination?

A Well, it will recover that additional gas we would have lost to the other operators.

MR. COOLEY: Thank you, sir.

MR. PORTER: No further questions, the witness may be excused.

(Witness excused)

MR. McGOWAN: With permission of the Commission, I would like to make a few closing remarks. I desire to -- at the second case, they will be applicable to both cases, which again, will be in the ineterest of time because the same remarks I have will be applicable to both cases.

MR. PORTER: That will be permissible, Mr. McGowan.

MR. COOLEY: Make the Reporter make a notation that the concluding remarks in the other case will be applicable to this case.

MR. McGOWAN: I will be able to cut these witnesses' testimony considerably shorter by being able to ask questions, "Would your answer concerning certain thingsbeessentially the same as in the previous docket," which I also assume will be acceptable.

We are ready, then, for the next case, if the Commission is.

ATTENTION: A L PORTER JR RE SINCLAIRS CASES 1499 AND 1500 WHICH ARE SCHEDULED FOR REHEARING ON THE NOVEMBER 13TH DOCKET. GULF OIL CORPORATION IS THE OPERATOR OF THE 40-ACRE UNIT CONSISTING OF THE NE/4 OF THE SW/4 OF SECTION 26, T-21-S, R-37-E. IN WHICH GULF OWNS A FIVE-EIGHTHS OR 25-ACRE INTEREST. IF THE ABOVE-DESCRIBED 40-ACRE UNIT IS NOT INCLUDED IN THE EXPANDED BLINEBRY AND TUBB NON-STANDARD GAS PRORATION UNITS AS PROPOSED BY SINCLAIR, GULF'S PROPERTY WILL SUFFER DRAINAGE IN EACH CASE

H M BAYER GULF OIL CORPORATION

C E R T I F I C A T E

STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, J. A. TRUJILLO, 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 by me and/or 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, the 25th day of November 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
Notary Public

My Commission Expires:

October 5, 1960.

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

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WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

1201

SYMBOLS
DL = Day Letter
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The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

LA033 DA172 = Case 1499 + 1500 1956 NOV 11 AM 9 06

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NEW MEXICO OIL CONSERVATION COMMISSION=

STAE CAPITOL BLDG SANTAFE NMEX=

ATTENTION; A L PORTER JR RE SINCLAIRS CASES 1499 AND 1500 WHICH ARE SCHEDULED FOR REHEARING ON THE NOVEMBER 13TH DOCKET. GULF OIL CORPORATION IS THE OPERATOR OF THE 40-ACRE UNIT CONSISTING OF THE NE/4 OF THE SW/4 OF SECTION 26, T-21-S, R-37-E. IN WHICH GULF OWNS A FIVE-EIGHTHS OR 25-ACRE INTEREST. IF THE ABOVE-DESCRIBED 40-ACRE UNIT IS NOT INCLUDED IN THE EXPANDED BLINEBRY AND TUBB NON-STANDARD GAS PRORATION UNITS AS PROPOSED BY SINCLAIR, GULF'S PROPERTY WILL SUFFER

RECD NOV 12 STATE OFFICE

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

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DRAINAGE IN EACH CASE=

H M BAYER GULF OIL CORPORATION==

1499 1500 40 NE/4 26 T-21-S R-37-E 25 4 G=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

No. 31-58

DOCKET: REGULAR HEARING NOVEMBER 13, 1958

Oil Conservation Commission 9 a.m. Mabry Hall, State Capitol, Santa Fe, NM

ALLOWABLE: (1) Consideration of the oil allowable for December, 1958.

(2) Consideration of the allowable production of gas for December, 1958, for six prorated pools in Lea County, New Mexico, and also presentation of purchasers' nominations for the six-month period beginning January 1, 1959; consideration of the allowable production of gas for seven prorated pools in San Juan and Rio Arriba Counties, New Mexico, for December, 1958.

NEW CASES

CASE 728: Application of El Paso Natural Gas Company for an order extending the vertical limits of the Justis Gas Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order extending the vertical limits of the Justis Gas Pool in Lea County, New Mexico, to a datum 270 feet below the top of the Glorieta formation. The vertical limits of the Justis Gas Pool, as presently designated, extend from the top of the Glorieta formation to a point 200 feet below the top of said formation.

CASES 1253 & 1254:

In the matter of the hearing ordered to be held by Order No. R-1011 to permit the operators in the Kemnitz-Wolfcamp Pool in Lea County, New Mexico, to appear and show cause why the Special Rules and Regulations set forth in said order should be continued in effect beyond December 31, 1958.

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.

CASE 1545: In the matter of the hearing called on the motion of the Oil Conservation Commission at the request of certain operators in the Verde-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 Verde-Gallup Oil Pool should be granted an exception to the daily tolerance provisions of Rule 502 I (a) of the Commission Rules and Regulations.

CASE 1499: Application of Sinclair Oil & Gas Company for a hearing de novo before the Oil Conservation Commission of New Mexico on its application for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 240-acre non-standard gas proration unit in the Tubb Gas Pool comprising the SW/4 and the S/2 SE/4 Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit

CASE 1499 continued:

to be dedicated to applicant's J. R. Cone "A" Well No. 1 located 660 feet from the South and West lines of said Section 26.

CASE 1500: Application of Sinclair Oil & Gas Company for a hearing de novo before the Oil Conservation Commission of New Mexico on its application for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 200-acre non-standard gas proration unit in the Blinebry Gas Pool comprising the SW/4 and SW/4 SE/4 Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to applicant's J. R. Cone "A" Well No. 2 located 1980 feet from the South line and 660 feet from the West line of said Section 26.

CASE 1546: Southeastern New Mexico nomenclature case calling for an order for the creation of new pools and extension of existing pools in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico.

(a) Create a new gas pool for Seven Rivers production, designated as the Laguna-Seven Rivers Gas Pool, and described as:

TOWNSHIP 20 SOUTH, RANGE 35 EAST, NMPM
Section 11: NE/4

(b) Create a new oil pool for Pennsylvanian production, designated as the North Shoe Bar-Pennsylvanian Pool, and described as:

TOWNSHIP 16 SOUTH, RANGE 35 EAST, NMPM
Section 15: SE/4

(c) Extend the Acme Pool to include:

TOWNSHIP 8 SOUTH, RANGE 27 EAST, NMPM
Section 5: N/2

(d) Extend the Artesia Pool to include:

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM
Section 23: SE/4

(e) Extend the Blinebry Gas Pool to include:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
Section 32: SE/4

(f) Extend the Hare Pool to include:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 4: S/2

(g) Extend the Hume-Queen Pool to include:

TOWNSHIP 16 SOUTH, RANGE 34 EAST, NMPM
Section 8: S/2 NW/4

(h) Extend the Jalmat Gas Pool to include:

TOWNSHIP 22 SOUTH, RANGE 35 EAST, NMPM
Section 3: SE/4
Section 10: SE/4

(i) Extend the Kemnitz-Wolfcamp Pool to include:

TOWNSHIP 16 SOUTH, RANGE 34 EAST, NMPM
Section 22: NW/4

(j) Extend the Milnesand-San Andres Pool to include therein:

TOWNSHIP 8 SOUTH, RANGE 34 EAST, NMPM
Section 23: NE/4

(k) Extend the Tubb Gas Pool to include:

TOWNSHIP 22 SOUTH, RANGE 38 EAST, NMPM
Section 31: NE/4 & NE/4 SE/4

CASE 1547: Northwestern New Mexico nomenclature case calling for an order for the extension of existing pools in Rio Arriba and San Juan Counties, New Mexico.

(a) Extend the Aztec-Pictured Cliffs Pool to include:

TOWNSHIP 30 NORTH, RANGE 10 WEST, NMPM
Section 36: W/2

(b) Extend the South Blanco-Pictured Cliffs Pool to include:

TOWNSHIP 25 NORTH, RANGE 3 WEST, NMPM
Section 20: S/2
Section 21: N/2

TOWNSHIP 25 NORTH, RANGE 4 WEST, NMPM
All of Sections 9, 10 and 11
Section 14: All
Section 15: N/2 and SE/4
Section 16: N/2

(c) Extend the Tapacito-Pictured Cliffs Pool to include:

TOWNSHIP 25 NORTH, RANGE 3 WEST, NMPM
Section 14: W/2

(d) Extend the West Kutz-Pictured Cliffs Pool to include:

TOWNSHIP 29 NORTH, RANGE 13 WEST, NMPM
Section 20: SE/4
Section 21: SW/4

(e) Extend the Angels Peak-Dakota Pool to include:

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM
Section 2: NW/4

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM
Section 35: SW/4

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM
Section 27: W/2
Section 28: E/2

(f) Extend the North Los Pinos-Dakota Pool to include:

TOWNSHIP 32 NORTH, RANGE 7 WEST, NMPM
Section 12: SW/4

(g) Extend the Horseshoe-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM
Section 32: SE/4
Section 33: SW/4 SW/4

(h) Extend the Otero-Gallup Oil Pool to include:

TOWNSHIP 25 NORTH, RANGE 5 WEST, NMPM
Section 32: NW/4 NE/4

(i) Extend the Verde-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 15 WEST, NMPM
Section 26: SW/4
Section 27: SE/4
Section 35: NW/4

CONTINUED CASES

CASE 1522: Application of Lea County Drip Company, Inc. for the revision of certain of the Commission Statewide Rules and Regulations and for the revision of certain of the Commission forms. Applicant, in the above-styled cause, seeks an order to revise Rules 311, 312, 1116 and 1117 of the Commission Rules and Regulations, to replace the present Commission Form C-117 with two forms to be designated as C-117-A and C-117-B, and to revise Commission Form C-118.

CASE 1526: Northwestern New Mexico nomenclature case calling for an order for the extension of an existing pool in San Juan County, New Mexico.

(h) Extend the Angels Peak-Dakota Pool to include:

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM
Section 2: NW/4

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM
Section 35: SW/4

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM
Section 27: W/2
Section 28: E/2

ir/

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

December 4, 1958

COPY

Mr. James McGowan
Sinclair Oil & Gas Company
P.O. Box 521
Tulsa 2, Oklahoma

Dear Mr. McGowan:

We enclose two copies of Order R-1254-A and Order R-1255-A issued December 4, 1958, by the Oil Conservation Commission in Cases 1499 and 1500, respectively.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 1489
Order No. R-1254-A

APPLICATION OF SINCLAIR OIL & GAS
COMPANY FOR ESTABLISHMENT OF A 240-
ACRE NON-STANDARD GAS PRORATION UNIT
IN THE TUBB GAS POOL, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 10, 1958, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the New Mexico Oil Conservation Commission in accordance with Rule 1214 of the Commission Rules and Regulations, and Order No. R-1254 was entered denying the subject application, and this cause came on for hearing de novo at 9 o'clock a.m. on November 13, 1958, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 4th day of December, 1958, the Commission, a quorum being present, having considered the application, and the evidence adduced and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Sinclair Oil & Gas Company, is the co-owner and operator of the SW/4 and the S/2 SE/4 of Section 26, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the applicant is the operator of the J. R. Cone "A" Well No. 1, located 660 feet from the South line and 660 feet from the West line of said Section 26.

(4) That the applicant proposes the establishment of a 240-acre non-standard gas proration unit in the Tubb Gas Pool for the said J. R. Cone "A" Well No. 1, to consist of the SW/4 and the S/2 SE/4 of said Section 26.

(5) That the evidence disclosed that applicant has not made every effort to communitize the acreage in this area thereby forming standard 160-acre Tubb gas proration units.

(6) That the development of the Tubb Gas Pool on 160-acre standard gas proration units has been relatively uniform and that such uniform development is highly desirable from the standpoint of conservation and the protection of correlative rights.

(7) That in Case No. 728 the Commission determined that the Tubb Gas Pool could be drained and developed most efficiently on a 160-acre spacing pattern; that accordingly it is the present policy of this Commission not to approve proration units substantially in excess of 160 acres.

(8) That there is a reasonable probability that approval of the subject application would cause waste and impair correlative rights.

(9) That, therefore, the subject application should be denied.

IT IS THEREFORE ORDERED:

That the application of Sinclair Oil & Gas Company for a 240-acre non-standard gas proration unit in the Tubb Gas Pool, consisting of the SW/4 and the S/2 SE/4 of Section 26, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, be and the same is hereby denied.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

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

ir/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF SINCLAIR OIL & GAS COMPANY FOR AN EXCEPTION TO ORDER NO. R-586 AND APPROVAL OF A 240-ACRE NON-STANDARD PRORATION UNIT IN THE TUBB GAS POOL COMPRISED OF THE SOUTHWEST QUARTER (SW/4) AND SOUTH HALF (S/2) OF SOUTHEAST QUARTER (SE/4) OF SECTION 26, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO

CASE NO. _____

ORDER NO. _____

DE NOVO APPLICATION

Comes now Sinclair Oil & Gas Company and respectfully shows to the Conservation Commission as follows:

1. That applicant heretofore filed an application in captioned matter, requesting an exception to Order No. R-586 and approval of a 240-acre non-standard gas proration unit in the Tubb Gas Pool for its J. R. Cone "A" Well No. 1; said proration order to consist of the -

Southwest Quarter (SW/4) and South Half (S/2) of Southeast Quarter (SE/4) of Section 26, Township 21 South, Range 37 East, Lea County, New Mexico.

2. That said application was assigned Case No. 1499 and set for hearing on September 10, 1958 before Daniel S. Nutter, as Examiner.

3. That said application was denied by Order No. R-1254 dated September 29, 1958; that said order, among other findings, found applicant failed to prove that said well can efficiently drain and develop 240 acres in the Tubb Gas Pool and that an allowable, as requested for said well, would impair the correlative rights of offset operators.

4. That applicant believes such findings were in error, and has additional information it desires to submit in connection therewith.

WHEREFORE, applicant prays that this matter be set for a De Novo Hearing before the Commission, as provided in Rule No. 1220 of the New Mexico Oil Conservation Commission Rules and Regulations; that notices be issued according to law and that, upon hearing, the above described non-standard unit be approved.

DATED this 22nd day of October, 1958.

SINCLAIR OIL & GAS COMPANY

By _____
Horace N. Burton

James H. McGowan

James H. McGowan

Its Attorneys

JHMcG:mlb

SINCLAIR OIL & GAS COMPANY
J. R. Cone "A" Well No. 1
Tubb Gas Pool
Lea County, New Mexico
Steady State Analysis of Pressure Behavior

Basic Factors	
Present Reservoir Pressure (psi)	1850
Bottom-Hole Temperature (°F)	96
Gas Viscosity (cp.)	0.018
Well-Bore Radius (Ft.)	0.58
Estimated Net Pay (Ft.)	100
Estimated Permeability to Gas (md.)	1.0
Estimated Gas Allowable, 160 ac (MCFD)	500
Estimated Gas Allowable, 240 ac (MCFD)	751
Distance to furthest point-Present Proration Unit (Ft.)	3250
Distance to furthest point-Requested Proration Unit (Ft.)	4667
Radius of 160-ac. Circle (Ft.)	2190
Radius of 240-ac. Circle (Ft.)	1824

Case I

a.	Pressure drop from furthest point in present proration Unit	275 psi
b.	Pressure drop from furthest point in requested proration Unit	281 psi
c.	Pressure drop from furthest point in requested Unit to furthest point in present Unit	6 psi
d.	Percent of reservoir static pressure	0.32%

Case II

a.	Pressure drop from periphery of 160 Acre Circle	244 psi
b.	Pressure drop from periphery of 240 Acre Circle	249 psi
c.	Pressure drop from periphery of 240 Acre Circle to periphery of 100 Acre Circle	5 psi
d.	Percent of reservoir static pressure	0.27%

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT No. 5
Case No. 1492

Exhibit No. 5
Case No. 1492

SINCLAIR OIL & GAS COMPANY

A SELECTION OF COMMISSION
APPROVED NONSTANDARD UNITS
TUBB GAS POOL

Operator	Lease & Well No.	Order Number	Size Unit	Section	Maximum Distance From Well	Deliverability Date	Deliverability MCFPD/600#
Sinclair	J. R. Cone "A" #1		240 Acres *	26-21S-37E	4667 Feet	12-13-56	4600
Skelly	Baker "B" #15	R-590A	240 Acres	10-22S-37E	4055 Feet	9-27-57	6222
Hunt	Weatherly "E" #1	R-519	240 Acres	21-21S-37E	4000 Feet	8-16-57	2759
Sunray	State "15" #4		160 Acres	16-21S-37E	4667 Feet	12-2-55	4169
Ohio	Wortham #9	R-545	~~160~~ 162.5 Acres	11-22S-37E	5365 Feet	6-7-57	1031
	" #11	R-796	162.5		3750 Feet	8-2-56	9862

* Requested Proration Unit

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT No. 6
CASE 1199

Exhibit No. 6
Case No. 1199

Case No.

1499

Application, Transcript,
Small Exhibits, Etc.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASES NOS. 1499 and 1500

TRANSCRIPT OF HEARING

SEPTEMBER 10, 1958

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

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
SEPTEMBER 10, 1958

IN THE MATTER OF:

CASE 1499: Application of Sinclair Oil and Gas Company for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 240-acre non-standard gas proration unit in the Tubb Gas Pool consisting of the SW/4 and the S/2 SE/4 of Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to applicant's J. R. Cone "A" Well No. 1, located 660 feet from the South and West lines of said Section 26.

CASE 1500: Application of Sinclair Oil and Gas Company for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 200-acre non-standard gas proration unit in the Blinebry Gas Pool consisting of the SW/4 and the SW/4 SE/4 of Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to the applicant's J. R. Cone "A" Well No. 2, located 1980 feet from the South line and 660 feet from the West line of said Section 26.

BEFORE:

Mr. Daniel S. Nutter, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: The hearing will come to order, please. The first case we will consider now will be Case 1499 and Case 1500.

MR. PAYNE: Application of Sinclair Oil and Gas Company for a non-standard gas proration unit. Also application of Sinclair

Oil and Gas Company for a non-standard gas proration unit.

MR. BURTON: I am Horace N. Burton of Midland, Texas appearing for the applicant, and may we ask that these cases be consolidated for the purpose of the hearing?

MR. NUTTER: Is there objection to the consolidation of the Cases 1499 and 1500 for the purpose of taking testimony only? If not, they will be consolidated.

MR. BURTON: We will have two witnesses and about ten exhibits, Mr.Examiner.

MR. NUTTER: Will you please proceed, Mr. Burton?

(Witnesses sworn)

J. W. HODGES,

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

DIRECT EXAMINATION

BY MR. BURTON:

Q What is your name?

A J. W. Hodges.

Q And where do you live?

A Roswell, New Mexico.

Q By whom are you employed and in what capacity?

A I am employed by the Sinclair Oil and Gas Company as a senior geologist.

Q Have you previously given testimony in your professional capacity before the Commission?

A No, sir, I have not.

Q State briefly your training and experience as a geologist.

A I was graduated from Texas Technical College in 1950 with a B. S. degree in petroleum engineering. I was employed by the Barold Oil Well Service for approximately two years, and approximately seven years for Sinclair.

Q How long have you worked in the Lea County area?

A I have worked in the Lea County area for approximately three and a half years.

Q Have you had occasion to become familiar, in general, with the Tubb and Blinebry gas fields?

A Yes, sir, I have.

Q Is that area under the supervision of your office?

A Yes, sir, it is.

Q Have you made a study and investigation of the geologic structure underlying the two proposed units which are the subject of these hearings?

A Yes, sir, I have.

MR. BURTON: Is there any objection to the qualifications of the witness?

MR. MUTTER: Mr. Hodges is qualified. Please continue.

Q Have you prepared a cross section and structure map of the formations?

A Yes, sir, I have.

Q Is this the Exhibit which is -- will you produce that Exhibit and identify it?

A Yes, sir. This top cross section is our Exhibit 1. It is a west-east cross section and accompanying structure maps contoured on top of the Blinebry and on top of the --

Q Just one second. Let him get those distributed over there. If you will -- first, will you indicate the outline of the proposed Blinebry unit?

A The proposed Blinebry unit is indicated by a red dashed line on the Blinebry structure map, and the proposed Tubb unit is indicated by a red dashed line on the Tubb structure map.

Q And where are the unit wells?

A The Blinebry unit well is located in the northwest of the southwest of Section 26. The unit well for the Tubb is in the southwest, southwest of Section 26.

Q Do you know the original -- are those wells dually completed?

A Yes, sir, they are.

Q And do you know the original completion date of the wells?

A Yes, sir. The No. 1 "A" Cone is a Tubb gas Drinkard oil dual, and the original completion from the Drinkard was November 16, 1946. The Sinclair No. 2 "A" Cone is a Blinebry gas Drinkard oil dual producer. The original completion from the Drinkard was completed May 23, 1947.

Q They originally drilled in 1946 and '47, which was before the promulgation of the Blinebry and Tubb Field gas rules, is that correct?

A I believe that is correct.

Q And the wells, then, have they been dually completed since that time or the last year or two in the Tubb and Blinebry zones?

A Yes, sir. The Blinebry completion in our 2 "A" Cone was dually completed with the Drinkard. The Blinebry section was completed on January 20, 1956. The Tubb gas, or the Tubb Drinkard dual producer was completed November 26, 1956.

Q All right. Will you proceed to state the -- describe the wells which are used in your cross section and relate what is shown by the Exhibit?

A Yes, sir. Exhibit 1 is a west-east cross section extending from the Humble No. 7 "B" Hardison eastward through the Sinclair 1 "B" Cone, Sinclair 1 "B" Cone, Sinclair No. 1 "C", and the Olsen No. 1 Owen. This cross section is indicated on either of the structure maps by a solid line, letters AA prime. The first solid line from the top of the page is the Blinebry marker, and the second solid line from the top of the cross section is a Tubb marker. The limits of production, as defined by the Commission, are indicated by dashed lines in both reservoirs.

Q What is shown on your structure map?

A The structure map shows the structural relationship of the wells in this area contoured on top of the Blinebry marker, using contour interval of twenty feet, and the top of the Tubb marker or the Tubb structure map is contoured on top of the Tubb marker, using a contour of twenty feet.

Q What do you find -- what did your Exhibit show with reference to the plain or dip formation of the structure?

A The cross section indicates that between the Humble No. 7 "B" Hardison and Humble "B" Owen there is an eastern dip of 67 feet and a dip of 66 feet on top of the Tubb marker.

Q Does that show a relatively flat formation in each zone?

A Yes, sir, it does.

Q Do you have anything else to point out on that Exhibit?

A I have also shown the completion data and the completion dates of each of the wells, the total depth perforations, and plug-back depth on each of the wells.

Q Now, is any one of those wells an oil well in the Blinebry?

A Yes, sir. Our Sinclair No. 1 Hill is a Blinebry oil producer.

Q What is your next Exhibit, Mr. Hodges?

A Exhibit No. 2 is a west-east cross section extending from the Humble No. 8 "B" Hardison eastward through the Sinclair No. 2 "A" Cone, the Gulf No. 1 Cone, and the Olsen No. 1 Cone. The information contained in Exhibit 1 is also reflected on this cross section.

Q Does it show the same eastward dip?

A Yes, sir, it does. The four well sections indicated that between the Humble 8 "B" Hardison and A "B" 1 there is an eastward dip on the Blinebry of approximately 39 feet, and Tubb Marker, a dip of 41 feet.

Q Does that indicate the same relatively flat picture of the

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Q Does that indicate the same relatively flat picture of the

formation?

A Yes, sir, I believe that it does.

Q What do you find with reference to faulting in the area? Do you find any faulting?

A In my study of this area, I have found no faults, and I believe that the cross sections indicate that both the Tubb and Blinebry reservoirs are continuous throughout this area, and that there are no impermeable zones which might impede the flow of hydrocarbons.

Q Do you believe, or what is your opinion as to whether or not the proposed area in both zones may be considered a common source of supply?

A Yes, sir, I believe that the continuity of the reservoirs would indicate that the areas outlined would be considered a common source of supply.

Q You mentioned that one of the wells used in the cross section shown on Exhibit 1 was an oil well in the Blinebry. Which well is that?

A It's the Sinclair No. 1 E. C. Hill located in the southeast, southeast of Section 26.

Q Do you have any explanation as to why that well is producing oil rather than gas?

A Yes, sir. I believe that the Blinebry reservoir itself has a gas cap with an oil rim and that the Hill Well is located in the oil rim.

Q Is the depth of completion, would that have anything to do with the fact that it might be producing oil?

A Yes. It's completed slightly lower on the flanges than some of the gas producers. However, I don't believe that it would indicate that it would be a gas or an oil well.

Q What is your opinion as to whether or not that well could produce gas in the Blinebry?

A I believe that without any question that the Hill Well could be made into a gas well by perforating higher in the section.

Q Now, have you had occasion to become familiar, in general, with the remainder of the Tubb and Blinebry gas fields?

A Yes, sir.

Q You have worked with other wells in that area?

A Yes, sir.

Q Do you think that the area of these proposed units is similar or dissimilar to what you would expect to find in the remainder of these reservoirs?

A I believe that the lithological characteristics in both of the Blinebry and Tubb reservoirs is very consistent with that found over the entire field.

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

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

MR. UTZ: I have some questions.

MR. NUTTER: You may proceed.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Hodges, with reference to your cross sections, I believe it is Exhibit No. 1, you stated that the E. C. Hill was in the oil rim, did you not?

A Yes, sir, I believe that it is.

Q Where is that oil rim located in relation to the Olsen No. 1 Owen?

A I might indicate that in the completion of the Sinclair Hill which was in 1948. I am advised that our company made every effort to make this into an oil well since there was no great demand for gas at that time. And the Olsen No. 1 Owen is a gas well in this area, and I believe that this may be due to the difference in treatment of the formation. The Olsen Well was completed, naturally, and the Sinclair Well was completed after four thousand gallons acid, and with the less viscose fluids flowing through the formation, I believe that it would be more reasonable to assume that gas and distillate would be made from the Olsen No. 1 Owen rather than the more viscose oil.

Q You attribute it, then, to the manner of completion?

A Well, I think also it is quite possible that there might be a minor fluxation in this very localized area of oil rim.

Q Was the Olsen Well perforated higher than the E. C. Hill No. 1?

A The Olsen Well is perforated higher, yes, sir.

Q How about the lower part?

A There is one difference between the subsea of the bottom perforations on the No. 1 Hill and the No. 1 Owen.

Q Do you know from what perforation the Olsen Well produced?

A At the present time I don't believe it is reporting any distillate at all. In June and in August of 1957 it reported making distillate, I believe, as I recall, something in excess of two hundred barrels for that month. And in April of this year, well, between August of 1957 and April of this year, there was no reported distillate. And in April of this year they reported making some distillate, and for May and June they reported no distillate.

Q Are the other wells on your cross sections, "BB" prime and "AA" prime, all gas wells except this one well?

A No, sir. The Gulf No. 1 is a Drinkard oil well, and our No. 1 "B" Cone and our No. 2 "B" Cone are Drinkard oil wells, in addition to the Humble No. 7 "B" and the Hardison 8 "B" Hardison being dual completions in the Drinkard formation also.

Q The 8 "B" Hardison is a dual?

A Yes, sir, it is.

Q In the Drinkard and whatever --

A It is a Blinebry gas -- Drinkard gas oil dual.

Q What is the other one?

A The Humble No. 7 "B" Hardison, it is a Tubb gas Drinkard oil.

Q What is the situation as to other Blinebry units in the area covered by this application? Is this surrounded by units?

MR. BURTON: We will show that by our next witness, I believe, Mr. Utz.

MR. UTZ: You will also show the situation as to the Tubb with your next witness?

MR. BURTON: Yes, sir.

MR. UTZ: That's all I have.

MR. NUTTER: Any further questions?

MR. COOLEY: One question please.

MR. NUTTER: Go ahead.

QUESTIONS BY MR. COOLEY:

Q Mr. Hodges, in your direct testimony, I believe you testified that you find no unusual characteristics in the area of the proposed units with regard to the lithology of the two reservoirs?

A I don't find any unusual characteristics.

Q By that, I mean the characteristics are pretty well common --

A Yes, sir.

Q -- as opposed to the remainder of the two pools?

A Yes, sir, lithologically they are very similar.

Q Do you know of any dissimilarity?

A The -- no, offhand I don't believe I do.

MR. COOLEY: That's all. Thank you.

QUESTIONS BY MR. NUTTER:

Q Mr. Hodges, are you prepared to go into the productivity of the various wells in the area, or will the other witness go into

that?

A Somebody else will go into that.

Q What is the present outline of the unit in the Blinebry gas pool assigned to your No. 2 Well?

A I believe it is comprised of the W/2 of the SW/4 of Section 26, and the SE of the SW of Section 26, and the SW of the SE of Section 26.

Q And you have requested the addition of a 40-acre, being the NE of the SW of 26 --

A Yes, sir.

Q -- to the existing unit?

A Yes, sir.

Q Now, in the Tubb Pool, what is the present limit of your unit?

A The present unit outlined is the same as that in the Blinebry.

Q The two units at the present time are identical?

A Yes, sir, I believe that is correct.

Q And you are requesting additional forty acres, being the NE of the SW and the SE of the SE?

A Yes, sir.

Q Two forty-acre tracts?

A Yes, sir.

Q By what reason is the Sinclair E. C. Hill No. 1 classified as an oil well? By virtue of the gas-oil ratio, or gravity of the

fluid it produces or just what?

A I believe it is the gravity of the fluid, although I don't know exactly what the gravity is.

Q Do you know what the GOR is on the well?

A It is around 5,000, as I recall.

MR. BURTON: Our next witness will answer all those questions, Mr. Nutter.

Q As a geologist, Mr. Hodges, do you believe that the Cone No. 2 Well located in the NW/4 SW/4 of Section 26 will efficiently and adequately drain the acreage which you have proposed be dedicated to the well?

A As I have indicated in my earlier testimony, the cross sections indicate that the Blinebry reservoir is continuous throughout that area and that there is no faulting and no impervious zones which would impede the flow of hydrocarbons, but I couldn't say how large an area a well here would drain.

Q Do you believe that a well will drain an area of approximately one hundred sixty acres?

A I am not qualified to say how large an area, really, that a well will drain.

Q I see. Do you feel that the Blinebry formation is productive of gas throughout the area that you have proposed to dedicate to the well, however?

A Yes, sir.

Q Do you think that the completion of the Sinclair 2 "B"

Cone Well in the same manner in which the E. C. Hill No. 1 was completed would result in an oil well in the Blinebry formation?

A No, sir, I don't.

Q Do you think that Mr. Olsen could complete his Owen No. 1 in such a manner to obtain an oil well?

A I think it is possible.

Q Well now, Mr. Hodges, if the gravity of the oil is the basis for which the well is classified as an oil well, the No. 1 Hill and the GOR is only 5,000 to 1, is the difference in the relative permeability as a result of treating one well and producing the other on a natural basis sufficient to cause one well to produce a gravity which would cause it to be classified as a gas well, and the other to produce a gravity which would cause it to be classified as an oil well?

A I believe that the interval from which our No. 1 Hill was completed, which is between a minus 2263 and a minus 2323 -- we do not have the section above this open for production, and the Olsen No. 1 Owen is completed between a minus 2184 and a minus 2324, --

Q Are those subsea --

A Yes, sir, they are.

Q -- perforations indicated on any of these Exhibits?

A No, sir, they are not. The perforations are indicated, but subsea data is not.

Q In other words, the Olsen No. 1 has an interval of per-

forations which is higher than the Sinclair No. 1?

A Yes, sir.

Q It also has an interval of perforation which is the same as the Hill No. 1 perforation?

A Yes, sir. The No. 1 Owen is perforated approximately seventy-seven feet higher structurally than the Sinclair No. 1 Hill.

MR. NUTTER: Thank you. Are there any other -- further questions of Mr. Hodges?

MR. STAMETS: I have a few questions.

MR. NUTTER: Go ahead.

QUESTIONS BY MR. STAMETS:

Q Mr. Hodges, is it your professional opinion that the NE/4 of the SE/4 of Section 26 is productive of gas in the Blinebry and Tubb zones?

A In the NE SE?

Q Right.

A Yes, sir, I believe that a well could be drilled at that location, and it could be safely anticipated that both a Tubb gas and Blinebry gas well could be obtained.

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

MR. NUTTER: Any further questions? If not, the witness may be excused.

(Witness excused)

MR. NUTTER: Let's recess the hearing until one o'clock

at which time we will reconvene with Mr. Anderson on the stand.

(Recess)

MR. NUTTER: The hearing will come to order, please. We will now resume with Cases Nos. 1499 and 1500.

MR. BURTON: Mr. Anderson.

R. M. ANDERSON

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

DIRECT EXAMINATION

BY: MR. BURTON:

Q State your name.

A Richard M. Anderson.

Q And where do you live?

A Midland, Texas.

Q By whom are you employed and in what capacity?

A Sinclair Oil and Gas Company as senior petroleum engineer.

Q Have you previously testified before the Commission as a petroleum engineer and given opinion testimony?

A I have.

Q Is the Lea County area, including the Blinebry and Tubb gas fields, under the supervision of your office?

A It is.

Q Have you made a study of the engineering data to consider pertinent to these hearings?

A I have.

Q Have you an ownership map of the area?

A Yes, I have prepared an ownership map of the area which

I have marked Exhibit 3 in each case.

MR. NUTTER: Let's see, we have Exhibit 3 for Case 1499 and Exhibit 3 for Case 1500, is that correct?

A That is right.

Q (By Mr. Burton) Please state what is indicated on your ownership map.

A I have indicated for each pool the producing gas wells by circling them in red. I've indicated the gas proration units as established by the Commission and as reported in the August 1958 Gas Proration Schedule by outlining said units in red. I've colored certain of these gas wells with green indicating the twenty wells in each gas pool that I have used in a presure decline study that I will refer to later in the testimony.

MR. NUTTER: Excuse me, you have some notes here. It is probably your exhibit. If you will give me another one.

A All of the Sinclair operated acreage is colored in yellow on these exhibits, as a matter of interest. The proposed Tubb and Blinebry units are shown on these exhibits, with a dashed red outline.

The Blinebry Pool, that red dashed outline, encompasses 200-acres consisting of three separate leases; Sinclair's Cone "A" lease, Sinclair's "B" lease, and the Gulf operated S. E. Cone lease.

In the Tubb Pool, the acreage described by the red dashed line, which is the proposed unit in the Tubb, consists of 240-acres

and four separate small leases; Sinclair's one "A" lease and "B" lease, Sinclair's Hill lease, and the Gulf S. E. Cone lease.

I might state in describing ownership that there are several working interest owners involved in both units. The Cone "A" and "B" leases, the working interest is owned by Sinclair and by J. R. Cone, who has a small, approximately six and a half percent interest. In the Gluf operated unit, Sinclair, J. R. Cone, and Gulf own portions of the working interest in that unit. Sinclair roughly has a three-eighths interest in working interest, and Gulf has five-eighths interest, with Cone having about six percent interest in the Sinclair Hill lease. In the Cone lease, Sinclair has a hundred percent working interest. You'll note by -- you'll observe from these exhibits, that in both pools all of the acreage offsetting the proposed units is dedicated to a producing gas well, with the exception of the 40-acres in the Blinebry. The Sinclair Hill lease, which was brought out in the previous testimony, is an oil well in the Blinebry by virture of being completed and perforated low in the section. You'll note another Blinebry oil well shown in this exhibit in Section 25. The Southwest of the Northwest of Section 25 has a 40-acre oil well which is operated by Olsen. I believe that's all.

Q Do you know what has been done with regard to pooling?

A Yes. There has now been executed by all parties, Cone, Sinclair, and Gulf, an operating agreement which provides for the production of gas from these proposed units. The agreement is

executed and it is dependent upon the action of this Commission in establishing the requested unit.

Q Do you know whether or not the segregated ownership has been a problem and has delayed the development of this acreage?

A Yes, in my opinion that is what delayed the development of these properities in the proposed unit, along with the fact that they are small tracts, and examination of the proration schedule reveals very few small proration units in these pools, which indicates that other operators feel the same way concerning development of Tubb and Blinebry reserves. I believe there is one 40-acre Blinebry gas unit and only two 40-acre Tubb gas units in the field.

Q All right. Do you have a, prepared a report of the status of wells within the proposed non-standard units?

A Yes, I have prepared such a tabulation and I have prepared the same tabulation for use in both cases.

Q It is marked your Exhibit No. 4 in each case?

A Yes, I have marked that Exhibit 4 in each case, and it is an identical exhibit in each case. This exhibit shows the individual well information within the proposed non-standard gas units. There are six producing wells as itemized on this tabulation. I have shown the operator, lease, and well number, the completion date, the producing zone or zones, the producing interval in the various formations, I have shown the August allowable from the proration schedule, and I've shown the gas-oil ratio from the proration schedule. We see from that, that the proposed

unit well in the Tubb is the J. R. Cone "A" No. 1 Well, and it was completed in 1946 as a Drinkard oil well and was dually completed in December of '56 as a Tubb-Drinkard dual. The J. R. Cone "A" Well No. 2 is the unit well for the Blinebry unit and it was originally drilled in 1947 as a Drinkard oil well and was dually completed in December of '56 as a Blinebry-Drinkard dual. The E. C. Hill well was completed in August of 1948 in the Blinebry formation and it presently has an allowable of ten barrels of oil per day, which is a pumping allowable. The gas-oil ratio is 1,210 cubic feet per barrel.

Q Can you give the allowable and production history of the unit wells?

A Yes. As a matter of information, I prepared a tabulation on the proposed unit wells showing the allowable and production in the Tubb and Blinebry gas pools from the first production on these wells. The first production is shown on these exhibits on both wells to have been in March, 1957. The gross allowable listed in the second column on the page is the allowable assigned by the Commission each of those months and through April, 1958, including April. Both wells had an 80-acre allowable. As of May 1st, the allowable was increased to 160-acre allowable by virture of a hearing before this Commission, established a 160-acre non-standard proration unit for those wells. The unit consisted of the Cone "A" and "B" leases. They are jointly owned by Sinclair and J. R. Cone. You can see by an examination of these figures

that in the Tubb gas pool, the well is currently underproduced about forty million feet of gas, and in the Blinebry it is underproduced about forty-eight million feet of gas. Most of this underproduction has occurred by virture of the fact that these wells were both shut in completely during the month of May, June, and July. The gas purchaser had no need for the gas, I am advised, and he is accruing this back allowable to produce at a later date. At the last balancing period, that would be July 1st, neither well lost any allowable by virtue of balance. In looking over the figures in the Tubb gas pool, we see the first month the well produced about thirty-three million feet of gas, and at the bottom of the page I have calculated, based on the twelve month production ending July 1st, 1958, exactly what a 240-acre average allowable would be. That would take into account seasonable variations in allowable, and we find it would be about twenty-two and a half million feet per month, or seven hundred and fifty-one MCF per day. I believe this well has demonstrated the ability to produce in excess of that gas, the first month it was in production, and we have not -- the purchaser has not pulled the well that hard since then because it only had an 80-acre allowable to keep up with. In the case of Blinebry well, with the same calculation, it gives the monthly allowable of twenty-seven million, two hundred fifteen thousand cubic feet per month, or nine hundred and seven MCF per day, and we see that, the way that wells are produced, that the well has produced in excess of that amount or slightly under that

amount for two months during its short life, July of '57 and February of '58. However, I believe that the well would have amply demonstrated its ability to produce had it had more than an 80-acre allowable during that time. The purchaser would have had to pull it harder to keep up with the larger allowable.

Q Do these past production figures show that the wells are definitely capable of producing the additional allowable that we would receive?

A I believe that these figures in the Blinebry gas pool would indicate that more so than in the Tubb.

Q Have you prepared an exhibit -- What is your next exhibit?

A I have prepared an exhibit which I have labelled Exhibit 6 which is a tabulation of the deliverabilities of the wells in the immediate vicinity of the proposed units. There are similar tabulations prepared for both pools. I have picked the direct offset properties going completely around the proposed units, and I have listed the operator, lease, and well number, and I have attempted to determine the relative deliverability of the Sinclair wells compared to the offset wells, and in order to get this information, which was not on record in the Commission's office, except for the Sinclair wells, I calculated that information from the back pressure test which is on file with the Commission's office, we contacted the purchaser of the gas from the wells on these lists. We obtained from him all of the necessary data to calculate the deliverability of that well against six hundred pounds, which

we feel is about what the line pressure is in this area. None of these tests that we got from the purchaser were against six hundred pounds. We corrected them to six hundred pounds by virtue of obtaining from him all of these data that it takes to do that. I have tabulated those deliverabilities and I have shown the date of the test we -- when the data was obtained and some of them are more current than others. However, there is quite a range in time and that should be taken into consideration in examining this data, but it is the best data that I could get. I wish to observe from these tabulations that they show that the Sinclair Well, or Cone "A" No. 1 has approximately a hundred and fifty-four percent more deliverability than the average of the seven other wells in that exhibit. If you go a step further, we are requesting here--by enlarging the Tubb unit--we are requesting fifty percent more allowable for that well. In the Blinebry pool we could not get any data on the two Continental wells that offset the proposed Blinebry unit. There was no data available in the purchaser's file, but we were able to get data from the purchaser on the other four wells that offset the proposed unit. Here again I just make the observation that the Sinclair well has a hundred and thirty-four percent more deliverability than the average of the four wells that we have data on. In the Blinebry pool we are asking for twenty-five percent more allowable. Now, this --

MR. NUTTER: That would be one hundred thirty-four percent more than the four wells?

A The average of the four wells. The arithmetic average. I added them up and divided by four. I further would like to observe from this data that it seems to me reasonable to conclude that the Sinclair wells will be able to produce the increased allowables that we are asking for in competition with these offset wells down to, I would think, to the abandonment pressure. The deliverabilities, of course, are influenced by the amount of section open in the well and the type of treatment and thing like that, and these wells are subject to change from that extent. As the data stands now, it indicates to me that our well will be able to produce the larger allowable in competition with the offset wells.

Q Have you prepared an exhibit to illustrate or demonstrate the theoretical drainage pattern and competing drainage in the area?

A Yes, sir, I have prepared an exhibit which I have labelled Exhibit 7, which is strictly an academic exhibit, but I believe that in some way it does illustrate the principle of drainage and counter drainage. I have inscribed on these exhibits, circles of sufficient radius to enclose about the individual wells the acreage that is presently assigned those wells. Most of those circles enclose 160-acres. The circle about the Olsen well in Section 26 is an 80-acre, is a circle which encloses 80-acres. The circle in our Tubb pool exhibit encloses 240-acres which is the allowable that we are proposing here today, on the Blinebry

pool, Sinclair's "A" Cone 2 Well encloses two hundred acres which we are asking for today. It is interesting to me to observe in the bottom left-hand portion of the Exhibit the relative sizes of the circles which you might call radiuses of influence or drainage areas. In the Tubb Pool circle, we see the 240-acre circle. The radius is only 22.4 percent larger than the 160-acre radius, although the acreage included in the circle is fifty percent more than the 160. In the Blinebry, we see that the radius of the 200-acre circle is only 11.8 percent larger than the 160-acre radius, whereas the acreage in the 200-acre circle is twenty-five percent more acreage than the 160-acres. Now, these circles necessarily assume many things in order to draw them this way. You must assume that the reservoir is uniform in all directions from the individual well bores. The thickness and porosity, permeability, the structural position and the saturation in that reservoir are the same and uniform in all directions. You also must assume that the fluid moving in the reservoir in all directions from the well bore is the same, whether it be oil, water or gas. You must ignore, of course, the interference from offset wells, and you must ignore the time factor, which wells are completed first and producing first. All those qualifications, taking them into consideration, we see that the radiuses of influence academically expressed as I have expressed them, of the offsetting wells in many cases lap over on to the proposed units, and likewise, the radius of influence of the Sinclair wells lap over on to the off-

set wells on the rounded proposed unit. I believe that this situation is analogous to a large pan or vessel containing a fluid with a certain amount of straws in it, and if each straw is permitted to withdraw at a rate comparable proportionally to that straw's interest in the surface area of the pan, why then, every one, assuming they start drawing at the same time, would empty the pan at the same time, and each would receive his fair share of the hydrocarbons under his acreage under his surface interest. And I believe that that is very analogous to the situation we have in this area, and I believe that, as a matter of correlative rights, that if these applications are granted that no offset operator's correlative rights will be impaired in any way, in that we are only asking for that fair share of the total reservoir hydrocarbons that we are entitled to by virtue of our surface acreage in this area. I believe, further, that if the applications were denied, if we were forced to produce at a reduced rate, and that the 40-acre tracts that we propose to add to our present unit were not developed, that the offset operators would drain and receive a portion of the hydrocarbons that are under those 40-acre tracts in addition to their fair share of the hydrocarbons in the reservoir. Therefore, the owners,which are Sinclair, Gulf and Cone, of those 40-acre tracts, their correlative rights, thus, would be impaired.

Q Are you ready to go on to your next Exhibit?

A Yes. I've prepared pressure history in the vicinity of the proposed Tubb and Blinebry units, which I have identified as

Exhibit 8. This Exhibit contains pressures -- all the pressures that were available to me from the New Mexico Oil & Gas Engineering Committee Publications on the twenty wells that are colored in green on my Exhibit 3. There are twenty wells in each pool. I attempted to take every well for several wells deep around the propcsed units in an effort to get as much data together as possible along this line. The top portion of both of these Exhibits shows the number of producing wells at any particular time. You'll see that the first producing well in the Blinebry Gas Pool in this area started producing about the 1st of December, 1949. We have -- it was the only well producing up until the 1st of '53, and then for the next three years, why, there was several wells there added each year. And finally in 1957, three additional wells, making a total of the twenty wells that are colored in the Blinebry. The same thing is true on the Tubb curve except it did not start in the Tubb until the middle of '52, and was completed in the Tubb. All twenty wells were completed in October, '57.

MR. NUTTER: Now, these wells that you used on this pressure study are the ones that are indicated by the green coloring on Exhibit 3?

A Yes, sir. Yes, sir.

MR. NUTTER: Thank you.

A Now, I have plotted all kinds of pressures that were available to me from the Committee Publication. On the Blinebry curve I have indicated in a round solid dot surface pressures that

I have calculated to datum. With a triangle I have plotted instrument pressures that were obtained, bottom hole pressures. The little plus signs are sonic pressures, and I have circled in red initial pressures on wells prior to production. Now, with the exception of the triangle that is circled in red on the left-hand side of this Exhibit, with that exception, all of the other red circles on both Exhibits were obtained from the Commission records in Hobbs, and were calculated to datum from four point or five point back pressure tests. I would like to make a further comment about those pressures at this time. I consider those rather good pressures in comparison with these others in that, usually, in running a back pressure test, the well is particularly free of water or distillate or fluid at the time that the shut-in pressures are ascertained, which is not as liable to be true, in my opinion, for the surface pressures that were calculated to datum, and the sonic pressures, which, of course, are calculated to datum. I do not know the method used in calculating the sonic pressures to datum. I know that they evidenced in this Blinebry Pool, which is the only pool which we had sonic only, they evidenced quite a spread in pressures, more so than the surface pressures that I calculated to datum. It is interesting to note in examining the Blinebry curve that the first red circle of pressure measured at bottom hole pressure instrument, which, of course, would look, in effect, like any fluid levels that might have been found in a test, a rather accurate test was 2372 pounds, and that all of the subsequent

pressures that were taken in other wells after production -- before production from those wells, are less than that pressure shown at the left of the Exhibit. From that, I conclude that the areas were drained prior to production from those particular wells. The second red circle from the left is a double circle. There are two wells there that were within eight pounds of each other, and they just plotted them as one point. In the Tubb formation, we found quite a few less points to plot from. I was at a loss to draw an average decline through those points, and the one that I have drawn I have calculated by the theory of less squares, which is the best straight line that can be drawn through that series of points. I have ignored the pressures that are circled in red in that they were, as I said before, from four point back pressure tests from the Commission's files at Hobbs and were prior to production, and the other points are all shut-in pressures calculated to datum from the Committee reports. The Blinebry pressure decline in this area indicates that the pressure is declining over a period of about ten years shown in this Exhibit, about fourteen and a half pounds per year, where in the Tubb we have a much steeper decline, about eighty-six pounds per year, and pressure history is much shorter in the Tubb. I just have pressures for five years in the Tubb.

Q Have you made an analysis of the spread in pressures?

A Yes, I have, and I have prepared an Exhibit which I have labeled Exhibit 9. I prepared this Exhibit to analyze the last group of pressures that I have plotted on Exhibit 8 in both pools.

In the Blinebry Pool, the last group, is a group of sonic pressures plotted in May of 1958, and with the exception of that highest sonic pressure, which is plotted there in May of 1958, I have ignored that sonic pressure because it is out of line and obviously it is in error. Also I have ignored that sonic pressure, also I think -- correction -- I believe that the sonic pressure -- the highest sonic pressure plotted in October of '57 was also in error as those two pressures were obtained on a well that has earlier pressures plotted on this curve -- earlier sonic pressures much lower and I can't explain an increase in pressure of that magnitude without -- except to say that there was a discrepancy in the measuring of that pressure, and that, I believe, is what explains the spread in pressures on both of my Exhibits and any inaccuracies involved in determining bottom hole pressures from surface measurements. However, that is the only thing that I could use in order to make a pressure study of this area. From this -- from Exhibit 8 -- to go back to Exhibit 8 for a minute, I have concluded that there is a trend shown, and by virtue of the pressures coming in lower rather consistently across the Exhibit, especially the newer pressures prior to production, I have concluded that this area is in some degree of pressure communication, and I believe that these Exhibits indicate that there is a, I would say a considerable degree of pressure communication throughout the area, especially in light of the fact that we are dealing with a compressible fluid here, and the pressure fluids are, in my opinion, rather limited;

they do not extend too far from the particular well bores. To get back to Exhibit 9, in the Blinebry Pool I have analyzed the five lower sonic pressures shown plotted in May of 1958. I have listed the operator and the lease and well number, the acreage assigned, and I have listed them in order of increase in pressure. I have tabulated the cumulatives as of the month that those pressures were reported in. also on this Exhibit, the top portion of this Exhibit. And I see from examination of that data, that if a well were draining a very small area in the neighborhood of, well, some small amount of acreage, then I would expect the cumulatives to vary inversely with the pressures. I would expect that the well that had produced the most would have depleted the reservoir in its area, and if there were no pressure communications, I would expect that pressure to be the lowest. And conversely, a well that had only produced a small amount, I would expect it to have a high pressure if there was no pressure communication throughout this area, and if the area were not in good communication. I do not find that to be true in examining the spread of data on this Exhibit. I find that the second well, for instance, from the top has about 318 pounds less pressure than the last well on the list, and yet it has produced less gas than that last well has produced. I also find that the second and third wells on the list have about the same pressure reported, about 18 -- 1982 and 1983, and yet the third well has produced two and a half times more gas than the second well has, both wells having about the same pressure. I believe that

that is an evidence of pressure communication throughout the area, and the ability of a well to influence a larger area and draining a large area. Now, I certainly would expect in a reservoir of that nature, where a well is influencing a large area, I would expect the cumulative to be proportionate to the age of the well and to time, and we do find that that is true, that the older wells have produced the most gas, and I have listed these same five wells on the bottom half of the Exhibit in order of age with the oldest well first. And we find by looking at the cumulative that the oldest well has produced the most gas and the newest well the least. There is a very good correlation there between time and cumulative. Looking at Exhibit 9 in the Tubb Gas Pool, the same general comments apply. I have taken the last point there where I had six points, that was in August of '56. Those were surface shut-in pressures that I calculated to datum, and I've listed those in the order of increase in pressure, and I have listed their cumulatives as of that time. And here, too, I find that the well with the lowest pressure has almost the same cumulative withdrawal as the well with the higher pressure, and there is 618 pound spread in those pressures, and there is very little difference in their cumulative withdrawals. So, that leads me to believe that the area is extensive in that it had -- the well with the higher pressure had considerably less withdrawn, and the well with the lower pressure, why, then, I would possibly have to assume that it was only influencing a small area. There, again, that 618 pound spread in pressure, I

believe can be attributed to the fact that we don't have any better way of ascertaining the reservoir pressure than what I have used, and calculating from surface pressures is best a hit or miss operation, in my opinion, but I felt that I had to do something, make some sort of a pressure analysis of these areas in order to base my opinion on whether a well could drain the proposed units that were assigned them. From these pressure curves and from the geology in the area where we have tests whereby our geologist has indicated that the reservoirs are continuous throughout both proposed units, and are readily correlatable from well to well, and find no evidences of faulting or impermeable barriers in the area. And with that information and with this pressure analyses, it seems to me very reasonable to assume that a well can drain an area 200 acres in the Blinebry and 240 acres in the Tubb.

Referring back to Exhibit 9 in the Tubb once more, note that the average pressure of those six listed is 2,071, and the average cumulative is 420,000 MCF. In looking up the list, we find the third well on the list has got a pressure of pretty close to the average pressure, 2,077, and we see that it has about half of the cumulative withdrawal on the average well on the list, so there, again, we see we have no correlation. The same comments on the correlation of time versus cumulative apply. I have listed the wells in order of their age and their cumulatives, and they show the older wells have produced more than the newer wells.

Q Do you know of any precedent in the orders of the Commission

for non-standard units in these two fields of a size equal to the ones we are applying for now, or having acreage dedicated to a unit well at a distance equal to or greater than the distance involved in these cases?

A Yes. I felt that the matter of precedent might be involved, and I have made a study of the ownership maps and proration schedules and Commission orders, and I was -- I selected four examples in each pool. I might mention that -- and I have listed them on an Exhibit which I have identified as Exhibit 10, and it is an identical Exhibit for each case. This Exhibit shows non-standard Tubb and Blinebry gas proration units that are in existence at the present time. For purposes of comparison, I have listed the proposed unit first in the Tubb Gas Pool, and I show that we are asking for 240 acres, and the maximum distance from our well to the furthestmost point of the proposed unit is 4,667 feet. Then, I have listed similar examples that the Commission has seen fit to adopt and approve in the past, and this seems to me to be of some interest in that it is my opinion from my general familiarity with the Tubb and Blinebry Gas Pools that the reservoir in the vicinity of the proposed units are in no way, that I can see, different than any other portion of the Tubb and Blinebry reservoirs except for the, possibly for the position on the structure, and that is a rather flat structure with a very gentle tall slope. I believe that what is true, what could be true in one area of this pool without making an extensive study of the entire reservoir, like I

[illegible]

formation units on [illegible]

one other. There is [illegible]

the Skelley Baker "B" Well No. [illegible]

the nearest production [illegible]

are "L" shaped, [illegible]

some such [illegible]

well to the [illegible]

have done in this proposed unit area, I believe, generally speaking, that what is true in the proposed unit area would be true, generally, throughout the entire reservoirs, so I have listed these examples just for the convenience of the Commission, and I find here that in the Tubb Gas Pool there are two 240-acre non-standard gas proration units in existence. There is one 320-acre non-standard Tubb Gas Pool unit in existence. It is interesting to note that the 320-acre unit was established by Commission Order R-545 for Ohio Oil Company's Wortham No. 9 Well. At the time that was established, the maximum distance from that well to the furthest point in the proration unit was 5,365 feet. Approximately a year and a half later, in 1956, Ohio came back and had a hearing of which resulted in Order R-796, and at that hearing they added their Wortham Well No. 11 to this 320-acre non-standard unit, and the furthest distance, then, from that well to the furthestmost point is 3,750 feet. The 320-acre non-standard unit was maintained at this hearing in that wells 9 and 11 are on the same governmental quarter section. It is impractical to assign them each separate proration units of 160 acres. And in the Blinebry Pool, there is one other, there is one 240-acre non-standard unit in existence, the Skelley Baker "B" Well No. 15, and the distance from the well to the nearest proration point is 3,848. There are three units that are "L" shaped, or consist of the S/2 of the S/2 of a section, or some such description, and have rather a great distance from the well to the furthestmost point in the proration unit.

Q As a matter of fact, three of them shown on the tabulation are at distances, including acreage, at distances considerably greater than we are requesting here today?

A Yes, sir, three of them do, and one of them has acreage at that same distance that we are requesting now.

Q Those orders, at least some of them, have been granted since adoption of the field rules providing for standard units, have they not?

A Yes. The 320-acre unit for Ohio, Order R-796, was published in 1956 sometime. I don't have those dates right here. I do have copies of those orders, however, with me. I could look them up.

Q The order will reflect the dates. Based upon the data that you have discussed and your study, what is your opinion as to whether or not the unit well on the Blinebry will drain all of the acreage to be dedicated to that well?

A I believe that the unit -- the Blinebry unit well can effectively and efficiently drain the 200 acres that we propose to dedicate to that well.

Q And with respect to the drainage by the unit well in the Tubb, what is your opinion?

A My opinion, likewise, with respect to the Tubb formation is that, that the unit well can effectively and efficiently drain the 240-acres that we propose to assign to that well.

Q Considering the ownership and the problems of ownership,

and considering the existing wells and economics, do you consider this the most practical proration unit?

A Yes. I've had approximately four years' experience here -- the last four years in putting together Tubb and Blinebry, Eumont, Jalmat units throughout southeast Lea County as well as similar units in Texas. It is my opinion that it is not practical to attempt to further subdivide leases in order to develop them by assignment. I believe that working interest ownership is very important, and whenever there is acreage in the area that is contiguous and is -- and can be drained and produced by a well, that the operator should attempt to assign that acreage to his well. I believe these proposed units are a good example of why it is impractical to attempt to form too many units in -- attempt to put together units unnecessarily. We have had to pool royalty interests in all of these tracts involved, we have had to agree on -- among the working interest owners on operating agreements, terms and conditions of operating agreements. The Gulf operated Cone lease is a unit in itself, it was formed from a 25-acre tract and a 15-acre tract, and that operating agreement which had been in existence for a long time had to be amended. And in order to prevent -- in order to permit the pooling of the Tubb and Blinebry zones with this other acreage that we have requested here today, and all of that takes a considerable amount of time, and, as is evidenced by my Exhibit, this acreage is the last acreage in the area to be developed, and the reason it is, is because it is made up of small

tanks. I believe that this is the most practical solution to this problem, and I believe that it is of considerable importance. Any time that an operator can assign acreage that he holds to his own well, I believe that that is the simplest, most direct and most practical way to do it. That is the way we are attempting here, and even that way, of course, has had considerable delays in getting these units put together.

Q In your opinion, is the formation of standard units for this acreage impractical?

A Yes, in my opinion it would be impractical to attempt to form two standard proration units in the S/2 of this section.

Q Is there any other well located on the proposed unit acreage that might be used for a unit well for a separate unit or unit of lesser size that could be used without resulting in waste or economic waste?

A No, sir. As I have stated before, in my opinion, the unit wells will adequately, efficiently and effectively drain the proposed units, and I consider it would be economic waste to dually complete or twin, as the case might require, wells on these other -- these 40-acre tracts that we are proposing to add, in that the hydrocarbons under those tracts can be produced from the existing wells. We have a problem with the Gulf operated tract. There is one well producing from the Drinkard formation; it could be dualed conceivably in the Tubb and Blinebry zones, but it might be impossible to get a triple completion permit on that well from the regulatory body.

There would certainly be obstacles to attempt to develop that 40-acre tract from that standpoint.

Q And would result in additional costs?

A Yes, the costs of developing that tract in that manner would be considerable, and, in my opinion, unnecessary, and would be economic waste. Likewise, on the Hill lease, we have a Blinebry oil well, it is possible that we could enter that, but it will have to be plugged and deepened. It has already been drilled through the Tubb formation, so it is possible we could clean it out. I would hate to guarantee that we could do that job, and possibly we could then make an oil over gas dual on our Hill lease. However, that, again, would be considerable expense, and there would be danger of physical waste in that we could have trouble and lose that well through such an extensive workover procedure. Of course, that is in the Gulf 40-acre also.

Q You have already discussed the effect of granting or denial of these applications on correlative rights. Will you restate your conclusions as to how correlative rights will be affected?

A Yes. I believe that the granting of this application will in no way adversely affect the correlative rights of any operator in the area or royalty owner. However, I do believe that the denial of these applications will adversely affect the correlative rights of Sinclair, Gulf and Cone, and their royalty owners, in that their hydrocarbons under the proposed 40-acre addition would be in part drained and produced by offset operators, and those off-

set operators would then produce more than their fair share of hydrocarbons that are in place in these reservoirs. So, therefore, I believe that it is in the interest of the protection of correlative rights to grant these applications.

Q Have you made an effort to contact the offset operators and obtain waivers or ascertain their position?

A Yes. I directed a letter to all of the offset operators on August 14th, asking them for a statement of their position concerning our application here.

Q Do you have waivers that you wish to introduce?

A To date, I have received statements of "no objection" from three of the operators offsetting the proposed unit. I have a waiver from Pan American, Greenbrier Oil Company and Humble Oil & Refining Company. And I would like to --

MR. BURTON: We'll offer those in evidence, Mr. Examiner, unless you have received letters from these companies?

MR. NUTTER: No.

MR. BURTON: We have, I guess, only one copy from each.

A I have several copies of it.

MR. BURTON: I would like to have them marked as an Exhibit in one case or the other.

MR. NUTTER: These are waivers of objection in both cases, are they?

A Yes, sir.

MR. BURTON: If you will mark them as our Exhibits to be

numbered 11, 12 and 13 in each case.

MR. NUTTER: Pan American's letter is being marked Exhibit No. 11. The Greenbher waiver is Exhibit No. 12, the Humble letter is Exhibit No. 13.

A I've also received a letter from Continental Oil Company refusing to execute our waiver.

MR. PAYNE: Did you want to introduce that, Mr. Anderson?

MR. BURTON: You have a copy of that, I believe, Mr. Examiner.

MR. NUTTER: Yes, sir, we have a letter from Continental.

A They indicate they sent the Commission a carbon copy.

MR. BURTON: Would you read the letter that you have received from Continental? I think it --

A It is a short letter. "With reference to your letter of August 14, 1958, in which you request waivers for the formation of a 200-acre Blinebry gas proration unit and a 240-acre Tubb gas proration unit in Section 26, 21 South, 37 East, we regret to advise that we are unable to execute this waiver. It has been Continental's practice in the past to oppose the formation of any gas proration units in these two pools in excess of the standard unit size of 160 acres. Your very truly, Signed by H. L. Johnston. Fort Worth, Texas."

MR. BURTON: We don't offer it in behalf of our case, but we have no objection to it being shown as stating the position of Continental.

MR. NUTTER: The letter that was read into the record is identical to the letter that the Commission has received in this case.

A I have not been advised as to whether Continental is here to oppose this application or not. They don't state in the letter that they are going to oppose.

MR. COOLEY: If I may interrupt at this point. The rules of the Commission permit appearance by letter, and this letter will be considered an appearance by Continental in regard to the two cases.

MR. BURTON: That is all of our direct examination.

CROSS EXAMINATION

BY: MR. NUTTER:

Q Mr. Anderson, referring to your Exhibit No. 4, wherein you have shown the allowable for the month of August for several wells that are located on the same acreage as the proposed units, could you tell me whether these were -- are making their allowables or not?

A With regard to the Sinclair wells, it is my understanding that they are making their allowables. We have made every effort to reduce the allowables in the capacity wells with the Commission, at their request, and I believe these represent the current producing capabilities of the Sinclair wells.

Q You made an analogy and dwelt quite extensively in comparing the pool to some form of a pan. Carrying this analogy

a little bit further, Mr. Anderson, supposing the pan covers a great many acres and each of these individuals has a straw in the pan and the pan rules said that you can have 160-acre allowable out of the pan. If somebody has 240 acres, do you think that it is more justifiable for that man to receive a 280-acre allowable through his straw or to go get another straw?

A My opinion is -- now, to answer your specific question, I believe in that case, if the pan were to say that the maximum withdrawal were 160-acre allowable, then I believe that there would be some questions then as to whether one of the straws should be permitted a greater withdrawal rate than that. However, it is my understanding that the pan has ruled that the allowable will be in proportion to its surface area.

Q So you think that the pan rules have no provision, then, for requiring an additional straw, if you have an excess of 160-acre allowable?

A On the contrary. I believe that they provide for and as is evidenced by the exceptions to the rules, they provide for permitting larger withdrawal rates, larger allowables.

Q One more question, Mr. Anderson. You stated that you felt that it would not be practical to communitize these tracts in the S/2 of Section 26, is it --

A Yes, sir.

Q Yes, sir, 26, to form standard units. Has any effort been made to form such standard proration units?

A No, sir. It was not made because it is considered by myself and my management to be impractical to contribute Sinclair owned acreage to another operator for him to produce our hydrocarbons when we have available in the area a well, suitable well that can do the same job. So no effort has been made by Sinclair, and conversely no effort has been made by any other operator, other than Gulf, Sinclair, and Cone to form any kind of units in the S/2 of Section 26.

Q Olsen made an effort, successfully, I might say so, to form an 80-acre unit in the Blinebry and Tubb, did he not?

A I do not know.

Q He has 80-acre units?

A He has 80-acre assignment. I don't know whether that was by virtue of 240-acre tract.

Q I mean to form an 80-acre proration unit, I don't mean communication unit.

A Yes, he has formed an 80-acre unit in both tracts.

MR. NUTTER: Any questions of Mr. Anderson?

MR. UTZ: Yes, I have one.

MR. NUTTER: Go ahead.

QUESTIONS BY MR. UTZ:

Q Mr. Anderson, you stated in regard to your Exhibit, the pressure -- Exhibit No. 8, that surface pressures taken in both of these pools were somewhat erratic. Do you have any suggestion as to how to take more accurate pressures?

A It is my belief that the Commission has specified, I believe they have done so in writing, that prior to taking these shut-in pressures, that the well be produced in such a manner as to clean the well bore and prevent as much as possible the accumulation, blow out any accumulation of liquid that might exist in that well bore, and I believe that in most cases that is done. However, I don't -- the only conclusion I can come to from analyzing that data to the extent that I have, is that it must not be done in all cases, and I believe that if you are going to attempt to determine the reservoir pressure from surface pressure measurement, I believe it is absolutely necessary that that be done in a reservoir such as these that produce distillate.

Q You would recommend that they be done hereafter?

A I would recommend that in the interest of getting the best possible data that they be done in that manner.

MR. UTZ: That's all I have.

MR. NUTTER: Any further questions of the witness? Mr. Stamets.

MR. STAMETS: I have some questions.

MR. NUTTER: You may proceed.

QUESTIONS BY MR. STAMETS:

Q I believe in answer to Mr. Nutter's question about forming other units, standard or at least more standard, you said it hadn't been tried because you didn't want Sinclair gas necessarily to be produced from other wells. However, in the Blinebry, one

could imagine the communitization unit between R. Olsen and Gulf S. E. Cone lease, and Sinclair gas would not be produced through the Olsen well at all, isn't that correct?

A I am sorry, I don't follow the question. Would you give me that again, please?

Q Take Exhibit No. 3 for the Blinebry Pool, --

A Yes, sir.

Q -- in the N/2 of the SE/4 R. Olsen has an 80-acre unit currently?

A Yes.

Q He could possibly combine that with the Gulf S.E.Cone unit, 40-acre unit, and have a 120-acre non-standard unit, and no Sinclair gas would be produced through the Olsen Well and both units would be standard in size or sub-standard?

A No, that would not be true, in that Sinclair has approximately three-eighths interest in the Gulf-operated well, and also the Sinclair E. C. Hill lease could not be added. I assume, in forming 160-acre unit, you intended to include it, and it is an oil well.

Q That would be 120?

A Yes, sir. No, sir, there is Sinclair gas in the Gulf-operated unit.

Q In the event that these applications were denied, would you recommend to your management that they should look into forming a new unit including R. Olsen, including their well?

A You want my recommendation?

Q Yes.

A I recommend we come back up.

MR. STAMETS: That's all.

MR. PAYNE: Mr. Anderson, in your proposal for 240 and 200-acres in the Tubb and Blinebry, if there were no proration units in either one of these pools in the area at this time -- what I am getting at is, is your proposal based to a large extent upon the fact that you are going to completely develop this entire area by these units?

A That, of course, is a factor, but I believe that prior to Olsen's development, his 80-acre well, it might be practical, then, to attempt to form some sort of a standard unit prior to development in the area. However, now that the area is developed, I consider Sinclair at a disadvantage in attempting to negotiate for a unit with an operator that has a well.

MR. PAYNE: Thank you.

MR. NUTTER: Any further questions?

MR. COOLEY: I have some questions.

MR. NUTTER: Go ahead.

QUESTIONS BY MR COOLEY:

Q Mr. Anderson, were special rules and regulations, which are presently in effect in the two pools in question, in effect at the time the subject wells were recompleted in the Tubb and Blinebry Pools respectively? I know that they were drilled initially prior to the --

A Yes, the special rules were in effect at the time that the --

that these wells were dually completed in the Tubb and Blinebry, and I might add that that recompletion was a necessary first step to forming these proposed units. Due to time involved in getting these units, in getting the instruments circulated, we found it is advisable to first know that you have a well, and that you are going to have something to talk about. So that was the first step in forming these non-standard units, the development of these wells.

Q I just wanted to clarify the point. In your direct examination, I believe it is your direct examination, the statement was made the wells were drilled prior to the promulgation of the rules. I wanted to make clear that while they were drilled to another horizon prior to the promulgation of the rules, they were completed in the subject horizon after the existence of the present rules and regulations.

A We saw fit to bring that out, in that the finding on some of these orders that I had tabulated on my Exhibit 10, found that the applicant's wells were drilled to another formation prior to the establishment of Tubb or Blinebry, as the case might be, rules, and felt that if it were necessary for the Commission to make that finding, we would present the necessary evidence that they could make such a finding from.

Q Mr. Anderson, on Exhibit 6, ... in each case, I would like to point to the fact that the deliverabilities of the subject wells were in the case of the Blinebry Pool 134 percent of the highest --

A Of the average.

Q Of the average;134 percent of the average deliverability of the wells in the area, and in the Tubb Pool 154 percent?

A Yes.

Q The average deliverability of the wells in the area. Why do you feel that the deliverabilities of these wells are in excess of average, to this extent, Mr. Anderson?

A I believe that it is a matter of -- due to the fact that Sinclair wells were more recently completed than the other wells, and we fraced our wells upon completion, and we have increased the deliverability on our wells due to our completion practice.

Q Do you think that,aside from completion practice, that the initial pressure in these wells, or the deliverabilities in these wells would still be in excess of average?

A No, sir.

Q Do you think that they are attributable to the completion practices?

A Yes.

Q What were the initial pressures of these two wells at the time they were drilled, Mr. Anderson? Referring to Exhibit 8 in each case, will you pick the point in time? And they aren't plotted on Exhibit 8, are they, the wells in question?

A Yes, sir, both wells are plotted on Exhibit 8.

Q Would you please point them out?

A In the case of the Tubb Gas Pool, the last red circle going from left to right is plotted at 2,313 pounds, and represents

the pressure in the Sinclair Cone "A" 1 Well prior to producing that well other than the production that the well experienced during the four or five point back pressure test. That is a pressure that was calculated reservoir pressure from surface shut-in pressure of the back pressure test. Likewise, the red -- the last red circle, going from left to right, the right-hand red circle on the Blinebry Exhibit is plotted at 2,211 pounds, and it is the Sinclair Cone "A" 2 Well.

Q How do these initial pressures compare with the initial pressures of the other wells which were completed on earlier dates?

A Looking, again, at the Tubb Exhibit, reading backwards to the left from the Sinclair pressure point, we find the next pressure is plotted at 2,340 pounds, and the Sinclair well, therefore, is some 27 pounds less than that well was prior to its production.

Q Just group the other three.

A The other three are plotted at about 2,475 average, and we see that the Sinclair Well has what, 162 pounds possibly less than that group of three wells, indicating that the acreage immediately around the Sinclair Well had been drained, and the pressure had declined to that extent prior to production, and indicating that there is an excellent, I think, pressure communication throughout this area.

Q Well now, how does the initial pressure of the J. R. Cone No. 1, taking the Tubb first, compare with the pressures of the

other wells, at the time the J. R. Cone was completed?

A We are now comparing pressure calculated from four point tests to a pressure of other wells that was ascertained just from shut-in surface pressure. It was ascertained and reported by the New Mexico Engineering Committee, and we see that the --

Q First, is such a comparison worth while to make?

A It is the only pressures that I have worked with, and so I was forced to see what they would demonstrate. And the fact that those pressures spread as much as they are, indicates to me that there is some discrepancy in calculating the reservoir pressure.

Q Let's put it this way. From your knowledge of the Pool, and your expert analysis of the Pool thereof, how did the J. R. Cone No. 1 initial pressure compare with what you think the pressures of the other wells were at the time it was completed? Was it about the highest in the Pool, or was it higher than anything else?

A It was about as high a pressure as we had reported at about that time in the Pool.

Q Is that also true of the J. R. Cone 2 in the Blinebry?

A No, sir. It represents approximately an average between the shut-in surface pressure calculations, and the sonic pressure reports. It is plotted about -- well, it happened right about on the average line that I drew across this Exhibit.

Q Of tests taken in the same manner, however, it is as high as any of them; in other words, excluding sonic tests?

A No, sir. The next test of that type that we see back to

the left was 2,267. The Sinclair pressure is 2,211. There is a difference of 500 -- of 56 pounds less than the next pressure. Then, if we go on to the left of the Exhibit, we see two points plotted. The next red circle is two wells, and they are average, about 2,270, so the Sinclair well is about 59 pounds less than those wells. Carrying the thing on back to the very left-hand side of my Exhibit, the Sinclair Well pressure is approximately 190 pounds less.

Q In other words,there are about three or four wells as high or higher, and about ten or eleven that are lower, isn't it, in that '56 '57 period?

A Not necessarily wells. Some of these --

Q Tests --

A Yes, some --

Q -- are the same?

A -- had several tests, that is correct.

Q Mr. Anderson, you expressed an expert opinion that the subject well would be capable of draining efficiently and economically the proposed units, and stated as a basis for that opinion, your pressure analysis as shown on Exhibits 8 and 9, and subsequent Exhibits. Was there any other basis?

A Yes, the geological test that we presented.

Q Well now, the geological test wouldn't go affirmatively to prove, just shows the absence of anything that would deter, so to speak?

A In the opinion of our geologist, I believe the record will reflect that his study of the area, based upon his qualifications as a geologist, indicates to him that there were none of those faulting or impermeable barriers present.

Q That is the point I am trying to make. His test only established the absence of factors which might further deter rather than affirmative proof that it would drain it. I think he pointed or refused to answer on the ground that he wasn't qualified to do so, on the ground whether it would or would not drain it. I believe, according to your own testimony, in your own words, I believe you said that the accuracy of tests such as you have had at your disposal -- we understand, of course, that you didn't take the test, and the data available was not of your own making, but I believe your analysis of the data was more or less a hit or miss proposition?

A No, I believe that I have made an analysis of the best data available in the area.

Q And now, let's evaluate what the best -- the evaluation in your own words of what the best data available was, was that such pressures were more or less a hit or miss proposition? I believe I recall your using that terminology.

A I meant to infer that more -- that it would be possible possibly to secure better pressure data. However, these are dual completions; most of these wells are in the annulus, and it is rather difficult to measure bottom hole pressures. And so in another field and another reservoir where you could measure them

with an instrument, I would have much better data to work from, and I feel that the data would more fall in line and more tend to be conclusive. I have attempted to make the best analysis that I am able to make from the data that is available.

Q We understand that, Mr. Anderson. We are just trying to make an evaluation of what data you did have at your disposal to make this study. In your opinion as an engineer, what of the factors such as permeability, porosity, pressure and various reservoir characteristics is the most important in ascertaining the area which one well will efficiently drain?

A Well, I believe that there are several important factors, possibly --

Q I would like for you to give us your opinion, which is the one that carries the most weight? Is it not permeability?

A I would think that permeability probably would be one of the most important factors.

Q Isn't it permeability, for the most part, that will determine the pressure differential between the pressure in the well bore and the outer periphery of the drainage area?

A Yes.

Q -- and that pressure, when calculated down to abandonment pressure at the well head, will tell you how much gas was left in place as a result of the pressure differential?

A Yes, sir. Viscosity and permeability are two of the most important things that go into that type of calculation, and, of

course, in this case we are talking about a gas that is not very viscous. It flows readily through reservoir rock.

Q Did you have any permeability information concerning this immediate area available to you?

A No, sir, and I was unable to find any in our files. I do not believe that there is much in existence in that these wells were all drilled to a deeper zone in the Drinkard when the Tubb and Blinebry zones were not zones of interest, and, therefore, I wouldn't expect to find too much. We have no core analyses to get permeability data.

Q That is certainly understandable, the wells being as old as these. I would like to ask one further point. I would like your expert opinion as to what the -- let's take first the Tubb Pool. You propose there a 240-acre unit, which will give you an allowable of one and one half times the standard 160-acre allowable, is that correct?

A Yes.

Q Now, I would like for you to tell me -- refer, please to Exhibit 3 in the Tubb, --

A Yes, sir.

Q -- to the Hardison Well, I believe it is, in the SE/4 of Section 27.

A Yes, sir.

Q And let's say the Continental Well in the NW/4 of 35.

A Yes, sir.

Q And I would like for you to tell me whether you think the Hardison Wells and the Continental Wells and even the Humble Wells, for that matter, would produce more, the same, or less gas in these two situations; one where your proposed unit well has 160-acre allowable, and the second situation where it has 240-acre allowable?

A Well, sir, just speaking, I, of course, can't tell you to the cubic feet, but generally speaking, I would say that the Humble and Continental Wells that you have referred to --

Q And the Hardison Well, too, please.

A I will even go further, I will say that all of the offset wells to the proposed units, including Continental and Humble's Wells will produce more gas ultimately, if this application is denied, than they will produce if the application is granted, and that difference, not talking about so many cubic feet, but the majority of that difference would be due to the fact that they would partially drain the unassigned 40-acre tracts that would then exist, and would produce more than their fair share of the hydrocarbons in this reservoir.

Q Can you tell me how the Hardison Well could jump over your well and have a greater influence on these undrilled 40 than your own well would have?

A Yes, sir. It's my opinion this situation is analogous to the pan that I referred to before. I believe that you are going to get in proportion to the rates you withdraw from those wells thru the straws. The harder you pull, the more you are going to get.

Q One major difference between the situation here and your hypothetical pan, Mr. Anderson, I believe that the location of the straws in the pan would not have any effect upon the ultimate amount of liquid that would be withdrawn through the straws, while, according to your testimony, increased withdrawals from your No. 1 Well in the Tubb Pool would reduce recovery from the Continental and Humble Wells, and this is the difference that I am trying to get at right here.

A It will produce it before the offset wells can. It will produce because it is allowed to produce at a higher rate, a rate that is comparable to its surface acreage and interest in the reservoir.

Q It will actually take some gas out of the Cone Well that would never come out though, not only with respect to time --

A It may not get the same cubic foot of gas that most of the Gulf Cone 40-acres get, but it would get a cubic foot in lieu of it.

Q Well, in your opinion, and when you advised your company as to the protection of their correlative rights with regard to offset drillings, do you not feel that drilling wells opposite each other across property lines,which wells are to have equal allowables, is the most equitable way of assuring each operator recovering his just and equitable share from these two wells?

A Well, in generalization,it depends upon many things. The type of drive mechanism, structural position, there are other things.

Q We have no knowledge concerning these, and we have no reason to believe that they are different. Let's assume it will be common in the two wells.

A In this particular reservoir, I believe that the two mechanisms is the expansion of the gas, and I believe that in reservoirs of this type that it is not necessary to offset across the lease line in order to protect your correlative rights.

Q But isn't that -- wouldn't that be the most ideal way of doing it? I understand that very often you rely upon the theory of counter drainage, and rather than offset directly, you will move to one end of the drilling unit while the offsetting well is in the other end, and thereby counter drain the two tracts?

A From the standpoint of primary recovery in these gas reservoirs, I don't think that it would be any more practical to have your well locations, say exactly in the center of each 160-acres. I don't think it would be any more practical or any more efficient.

Q Here is a precise point I am trying to make, Mr. Anderson. You feel, and I think rightly so, that you have the right to withdraw in terms of allowable 240-acres worth of allowable out of this Tubb gas. My question goes to the place where you are going to procure it, and with regard to that place, who are you going to take the gas from, and my question in particular is, is it not so that you are going to take the gas from the Hardison Well, and you are going to get your 240-acre allowable at the ex-

pense of the offsetting wells that are only on 160-acre allowable, rather than have your well over there where it should be and drain it from that area where possibility of counter drainage exists?

A I believe all drainage will be compensated by counter drainage.

Q How can the Hardison Well counter drain against one and a half allowable on your Cone 1 Well?

A Once again, I believe the entire area is analogous to the pan. I believe that Humble concurs with my belief, or they would not have furnished the waiver of objection to us getting that increased allowable that you are referring to.

Q Well, Continental offsets you there, and they don't concur, so undoubtedly they felt it will have an effect on their wells, and reduce the recovery from the Continental well.

A By the amount that Continental will drain from the undedicated tracts in the proposed unit; an amount that they are not entitled to, in the first place.

Q Is an offset well the only method of protecting yourself against being drained?

A I am sorry.

Q Isn't an offset well ordinarily the accepted method in the oil industry of protecting yourself against drainage?

A No, sir.

Q How else do you protect yourself?

A By allocation formula.

Q Well, even with an allocation formula, Mr. Anderson, you can be drained very properly without offsetting yourself?

A Not without counter drainage.

Q You mean there is no possibility of being drained without counter drainage?

A Not if the allocation formula is 100 percent applicable to the reservoir, an attempt is always made to arrive at such a formula.

Q On your Exhibit No. 7, in the Tubb Pool, could you tell me how the length of the radii of the various circles was ascertained?

A Yes, sir. I calculated that from the formula of the area of a circle. The area of a circle is equal to pi times R squared.

Q Well, you might -- that is true, the one circle could include this whole plat. Is this supposed to be effective drainage radius that you have here in Exhibit 7?

A I explained that this is an academic Exhibit just designed to show that the drainage and the counter drainage about the proposed unit, if you attempt to equalize all differences in the area.

Q The circles have significance in size only as they compare to each other, is that the significance of them?

A Yes, they do, that significance -- they enclose the area that is presently assigned to the well. They also showed what ratio the allowables will be in -- be in the same ratio as the areas within those circles, provided our applications are granted.

Q Well, I note, sir, that there is a substantial portion there of the J. R. Cone lease, the S/2 of the SE/4 of 26 that isn't covered by a circle, and I wanted to know whether you meant to imply from your Exhibit that that area wouldn't be drained at all?

A No, sir.

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

MR. NUTTER: Any further questions of Mr. Anderson? If not, he may be excused.

(Witness excused)

MR. NUTTER: Does anyone have anything further they wish to offer in this case?

MR. BURTON: We will offer all of our Exhibits that have been marked and identified, in evidence.

MR. NUTTER: Is there objection to the receipt of Sinclair Oil & Gas Company's Exhibits 1 through 13 in Case 1499, and Exhibits 1 through 13 in Case 1500? If not, the Exhibits will be received in evidence.

Does anyone have anything further they wish to offer in either of these cases?

MR. PAYNE: I have a statement to read, Mr. Examiner. "In connection with Sinclair Oil and Gas Company's application to be heard September 10, please be advised that the undersigned as an offset operator, objects to the formation of 200-acre Blinebry and 200-acre Tubb non-standard gas proration unit, proposed by

Sinclair Oil and Gas Company in Section 26, Township 27 East. Signed, R. Olsen Oil Company, by Phillip Randolph."

MR. NUTTER: Any further statements?

MR. KASTLER: I am Bill Kastler, appearing on behalf of Gulf Oil Corporation. Gulf has executed a unitization agreement wherein Sinclair has agreed to include the NE/4 of the SW/4 of Section 26, 21 South, 37 East, in which Gulf has an interest. If the Commission does not approve this application in these two cases and this acreage is not included in the expanded units, Gulf will suffer drainage from the NE/4 of the SW/4 and, therefore, Gulf would like to see the application of Sinclair approved.

MR. NUTTER: Any further statements? If not, --

MR. BURTON: I would like to offer a brief statement. We recognize the natural hesitancy of the Commission to grant exceptions to standard proration units; they have been fixed by the field rules. But we feel that this is a fair and reasonable unit for these wells and in this acreage. And I call attention to the field rules themselves, which appear to contemplate exceptions. The Tubb rules contain proviso for exceptions after notice of hearing for acreage more than 160 acres, and the Blinebry rules are almost the same. They do not use the word "more," but they contain the same proviso with reference to exceptions to standard proration units. In addition to that, we have shown in the record here that the Commission on other occasions has granted exceptions to the standard rule. We, therefore, are not asking for a new ex-

ception or a unique order. It is one that the Commission has recognized in the past, and some of those include units which are greater in size than the ones we are applying for. I call attention, also, to the waivers which have been presented by three offset operators, and the two who have sent notices protesting the applications. Neither of them have seen fit to appear and present any testimony in opposition. The only testimony here is that which the applicant has presented, which we feel will warrant and justify the granting of the application.

MR. NUTTER: Anyone have anything further? If not, we will take Case 1499 and Case 1500 under advisement, and take next Case 1501.

C E R T I F I C A T E

STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, J. A. TRUJILLO, 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 by me and/or 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, the 22nd day of Sept., 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

J. A. Trujillo
Notary Public

My Commission Expires:

October 5, 1960.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1479, heard by me on 9-10, 1958.

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

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

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

September 29, 1958

COPY

Mr. Horace C. Burton
Sinclair Oil & Gas Company
P.O. Box 1470
Midland, Texas

Dear Mr. Burton:

We enclose two copies of Order R-1254 and Order R-1255 issued September 29, 1958, by the Oil Conservation Commission in Cases 1499 and 1500, respectively, which were heard on September 10th at Santa Fe before an examiner.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 1499
Order No. R-1254

APPLICATION OF SINCLAIR OIL & GAS
COMPANY FOR ESTABLISHMENT OF A 240-
ACRE NON-STANDARD GAS PRORATION
UNIT IN THE TUBB GAS POOL, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 10, 1958, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 29th day of September, 1958, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Sinclair Oil & Gas Company, is the co-owner and operator of the SW/4 and the S/2 SE/4 of Section 26, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the applicant is the operator of the J. R. Cone "A" Well No. 1, located 660 feet from the South line and 660 feet from the West line of said Section 26.

(4) That the applicant proposes the establishment of a 240-acre non-standard gas proration unit in the Tubb Gas Pool for the said J. R. Cone "A" Well No. 1, to consist of the SW/4 and the S/2 SE/4 of said Section 26.

(5) That a standard gas proration unit in the Tubb Gas Pool is 160 acres, as established by Order No. R-656.

(6) That two operators offsetting the proposed non-standard unit objected to the formation of such non-standard unit.

(7) That applicant failed to prove that the above-described J. R. Cone "A" Well No. 1 can efficiently drain and develop 240 acres in the Tubb Gas Pool.

(8) That the production of a 240-acre allowable from the Tubb Gas Pool by the said J. R. Cone "A" Well No. 1 would impair the correlative rights of offset operators.

(9) That the subject application should be denied.

IT IS THEREFORE ORDERED:

That the application of Sinclair Oil & Gas Company for a 240-acre non-standard gas proration unit in the Tubb Gas Pool, consisting of the SW/4 and the S/2 SE/4 of Section 26, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, be and the same is hereby denied.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

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

ir/

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 9/19/58

CASE NO. 1499 HEARING DATE 9/10/58 9 am
3SN @ SF

My recommendations for an order in the above numbered case(s) are as follows:

Enter an order denying the application of Sinclair Oil and Gas Company for a 240-acre non standard gas proration unit in the Tubb Gas Pool.

The Commission has found that one well will efficiently drain 160 acres in the subject pool and to authorize units substantially in excess of this 160 acres is in violation of the basic finding in the 160 acre spacing order. By means of a couple of communitization agreements all acreage in this area can be dedicated to the 160 acre units in this area.

Staff Member

Daniel S. Nutter

No. 24-58

DOCKET: EXAMINER HEARING SEPTEMBER 10, 1958

Oil Conservation Commission 9 a.m., Mabry Hall, State Capitol, Santa Fe, New Mexico

The following cases will be heard before Daniel S. Nutter, Examiner:

CASE 1196: Application of The Ibex Company for permission to expand a pilot water flood project in the Artesia Pool, Eddy County, New Mexico, and for six unorthodox well locations. Applicant, in the above-styled cause, seeks an order permitting the expansion of its Artesia Pilot Water Flood project No. 2, authorized by Order No. R-966 in the Artesia Pool, Eddy County, New Mexico, to include eight additional water injection wells in Sections 21 and 28 of Township 18 South, Range 28 East, Eddy County, New Mexico. Applicant further seeks an order authorizing six unorthodox well locations in said Sections 21 and 28.

CASE 1498: Application of El Paso Natural Gas Company for permission to conduct maximum pressure build-up tests and for the non-cancellation and/or transfer of allowables for test wells. Applicant, in the above-styled cause, seeks an order authorizing it to conduct maximum pressure build-up tests on seventeen gas wells in the Aztec-Pictured Cliffs, Ballard-Pictured Cliffs, Fulcher Kutz-Pictured Cliffs, South Blanco-Pictured Cliffs, and Blanco Mesaverde Gas Pools in San Juan and Rio Arriba Counties, New Mexico. Applicant further requests the non-cancellation of allowable accruing to test wells during the test period and for authority to transfer said allowables to other wells on the same basic lease, and for such other relief as is necessary to properly conduct said tests.

CASE 1499: Application of Sinclair Oil and Gas Company for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 240-acre non-standard gas proration unit in the Tubb Gas Pool consisting of the SW/4 and the S/2 SE/4 of Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to applicant's J. R. Cone "A" Well No. 1, located 660 feet from the South and West lines of said Section 26.

CASE 1500: Application of Sinclair Oil and Gas Company for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 200-acre non-standard gas proration unit in the Blinebry Gas Pool consisting of the SW/4 and the SW/4 SE/4 of Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to the applicant's J. R. Cone "A" Well No. 2, located 1980 feet from the South line and 660 feet from the West line of said Section 26.

CASE 1501: Application of Continental Oil Company for a dual completion and for permission to commingle the liquids produced from two separate pools. Applicant, in the above-styled cause, seeks an order authorizing a gas-gas dual completion for its Britt B-15 Well No. 9, located 1980 feet from the South and East lines of Section 15, Township 20 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from an undesignated Tubb Gas pool and the production of gas from an undesignated Blinebry gas pool. Applicant further seeks permission to commingle the liquids produced from said well from the two above-named pools.

CASE 1502: Application of The Pure Oil Company for an order authorizing a salt water disposal well. Applicant, in the above-styled cause, seeks an order authorizing the disposal of salt water through its State Lea "E" No. 1 Well, located 1980 feet from the North and East lines of Section 21, Township 16 South, Range 34 East, Lea County, New Mexico. Said well is a producing oil well in the Kemnitz-Cisco Pool and the applicant proposes to inject salt water through the annulus between the 8 5/8" and 5 1/2" casing. The proposed injection zone is from 4,527 feet to 9,450 feet.

CASE 1503: Application of The Pure Oil Company for permission to commingle the production from two separate oil pools. Applicant, in the above-styled cause, seeks an order authorizing the commingling of oil produced from the Kemnitz-Cisco Pool and the Kemnitz-Wolfcamp Pool on its State-Lea "E" Lease located in Section 21, Township 16 South, Range 34 East, Lea County, New Mexico. The applicant proposes to separately meter the production from each pool prior to commingling.

CASE 1504: Application of Gulf Oil Corporation for a dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Learcy McBuffington Well No. 8, located 330 feet from the South line and 1980 feet from the West line of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Fusselman formation adjacent to the Justis-Fusselman Pool and oil from an undesignated Montoya pool through parallel strings of tubing.

CASE 1505: Application of Gulf Oil Corporation for a dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Learcy McBuffington Well No. 9, located 1650 feet from the South line and 1980 feet from the West line of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Fusselman formation adjacent to the Justis-Fusselman Pool and oil from an undesignated Montoya pool through parallel strings of tubing.

CASE 1506: Application of Gulf Oil Corporation for the creation of two non-standard gas proration units in the Tubb Gas Pool and two non-standard gas proration units in the Blinebry Gas Pool. Applicant, in the above-styled cause, seeks an order authorizing the creation of a 160-acre non-standard gas proration unit in both the Blinebry Gas Pool and in the Tubb Gas Pool, each to comprise the NE/4 SW/4, and W/2 SE/4 of Section 28 and the NW/4 NE/4 of Section 33, and to be dedicated to applicant's J. N. Carson "A" Well No. 4, located 554 feet from the South line and 2086 feet from the East line of said Section 28 and J. N. Carson "A" Well No. 6, located 2086 feet from the South and East lines of said Section 28 respectively. Applicant further seeks an order authorizing the creation of a 120-acre non-standard gas proration unit in both the Blinebry Gas Pool and in the Tubb Gas Pool, each to comprise the E/2 SE/4 of Section 28 and the NE/4 NE/4 of Section 33, and to be dedicated to applicant's J. N. Carson "C" Well No. 6, located 330 feet from the South line and 965 feet from the East line of said Section 28 and J. N. Carson "C" Well No. 3, located 640 feet from the South line and 660 feet from the East line of said Section 28 respectively, all of the above being in Township 21 South, Range 37 East, Lea County, New Mexico.

CASE 1507: Application of Lea County Drip Company, Inc., for authority to construct and operate two waste oil treating plants. Applicant, in the above-styled cause, seeks an order authorizing it to construct and operate two treating plants in Lea County, New Mexico, to treat waste oil and tank bottoms collected from leases in Lea, Eddy, Chaves and Rooseveit Counties, New Mexico, said plants to be located at the following points:

(1) Adjacent to the Shell Pipeline Company's Pipeline approximately three miles South of Hobbs, New Mexico.

(2) Adjacent to the Shell Pipeline Company's Eunice Station approximately five miles West of Eunice, New Mexico.

August 25, 1958
ga

BEFORE THE OIL CONSERVATION COMMISSION OF THE

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF SINCLAIR OIL & GAS COMPANY FOR AN EXCEPTION TO ORDER NO. R-586 AND APPROVAL OF A 240-ACRE NON-STANDARD PRORATION UNIT IN THE TUBB GAS POOL COMPRISED OF THE SW¼ AND THE S½SE¼, SECTION 26, T-21-S, R-37-E, N.M.P.M., LEA COUNTY, NEW MEXICO.

CASE NO. 1499

ORDER NO. _____

A P P L I C A T I O N

SINCLAIR OIL & GAS COMPANY, a Maine corporation with offices at Midland, Texas, hereby files application for an exception to Order No. R-586 and approval of a 240-acre non-standard proration unit in the Tubb Gas Pool comprised of the SW¼ and the S½SE¼, Section 26, T-21-S, R-37-E, N.M.P.M., Lea County, New Mexico, and in support thereof shows:

1.

That Sinclair Oil & Gas Company is the co-owner and operator of the proposed 240-acre proration unit under operating agreement with Gulf Oil Corporation and J. R. Cone, as non-operators.

2.

That applicant proposes to assign the 240-acre proration unit to its J. R. Cone "A" Well No. 1, located 660 feet from the South and West lines of said Section 26, which is dually completed in the Tubb Gas Pool and the Drinkard Oil Pool and is now producing from within the vertical limits of the Tubb Gas Pool.

3.

That there is now assigned to said J. R. Cone "A" Well No. 1 a non-standard 160-acre proration unit for the Tubb Gas Pool, comprised of the W½SW¼, SE¼SW¼ and SW¼SE¼ of said Section 26.

4.

That all interests, including the royalty interests, under the proposed non-standard proration unit herein applied for have been pooled and unitized, or the same are subject to pooling and unitizing contingent upon the granting of this application.

Docket Mailed
9-24-54 BP

5.

That the granting of this application will not impair correlative rights and will be in the interest of prevention of waste.

WHEREFORE, applicant Sinclair Oil & Gas Company prays that this Commission set this application for a public hearing before an Examiner in Santa Fe, New Mexico, that notices be issued according to law, and that upon hearing the above described 240-acre non-standard proration unit be approved.

SINCLAIR OIL & GAS COMPANY

By Horace N. Burton

Horace N. Burton
Division Attorney

Case 1499

MAIN OFFICE

SINCLAIR OIL & GAS COMPANY

1958 AUG 4 AM 8:45

P. O. Box 1470

MIDLAND, TEXAS

LEGAL DEPARTMENT

August 1, 1958

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

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

Re: Application of Sinclair Oil & Gas Company for an exception to Order No. R-610 and approval of a 200-acre non-standard proration unit in the Blinebry Gas Pool comprised of the SW¼ & SW¼SE¼, Sec. 26, T-21-S, R-37-E, N.M.P.M., Lea County, New Mexico.

Application of Sinclair Oil & Gas Company for an exception to Order No. R-586 and approval of a 240-acre non-standard proration unit in the Tubb Gas Pool comprised of the SW¼ & the S½SE¼, Sec. 26, T-21-S, R-37-E, N.M.P.M., Lea County, New Mexico.

Gentlemen:

Enclosed in triplicate are Sinclair Oil & Gas Company's applications for the two above captions for non-standard proration units in the Blinebry Gas Pool and Tubb Gas Pool, respectfully.

Very truly yours,

Horace N. Burton

Horace N. Burton
Division Attorney

HNB:my

Encls. 2 (each in trip.)

DOMESTIC SERVICE

Check the class of service desired; otherwise this message will be sent as a fast telegram

- TELEGRAM
- DAY LETTER
- NIGHT LETTER

$
S
E

WESTERN UNION TELEGRAM

MAIN OFFICE

W. P. MARSHALL, PRESIDENT

1206 (4-55)

INTERNATIONAL SERVICE

Check the class of service desired; otherwise the message will be sent at the full rate

- FULL RATE
- LETTER TELEGRAM
- SHORE-SHIP

NO. WDS.-CL. OF SVC.	PD. OR COLL.		CHARGE TO THE ACCOUNT OF	TIME FILED
			[redacted]	

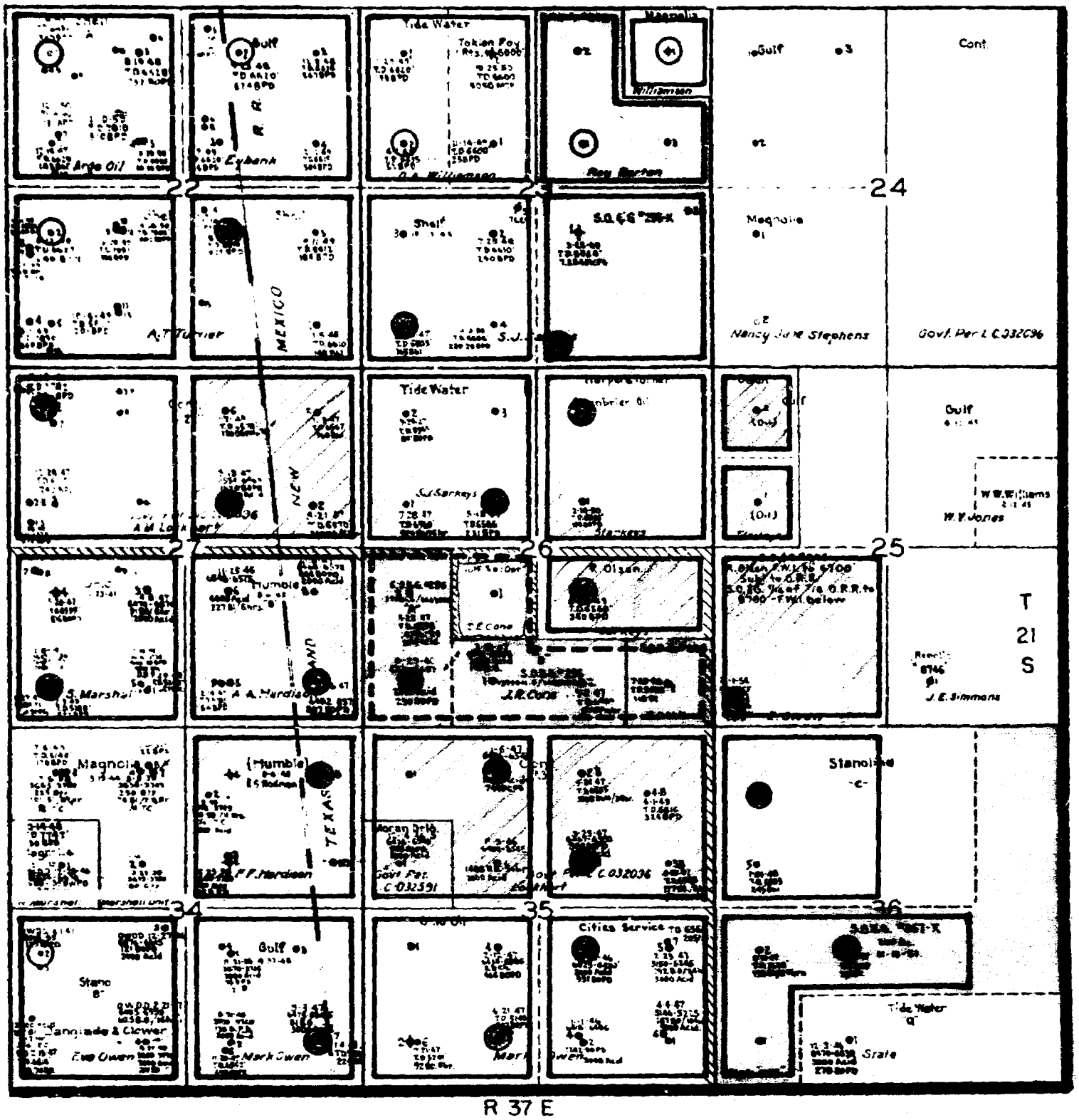
Send the following message, subject to the terms on back hereof, which are hereby agreed to

[redacted]

CONFIRMING COPY

[redacted]

[redacted]



R 37 E

SINCLAIR OIL & GAS CO.

GAS PRORATION UNITS

TUBB POOL

AUGUST 1958

VICINITY SINCLAIR'S

J. R. CONE A & B LEASES

LEA COUNTY, NEW MEXICO

⊙ Tubb Gas Wel

● Wells used in Pressure Study

EXHIBIT NO. 3
CASE NO. 1499

SINCLAIR OIL & GAS COMPANY

Individual Well Information
Within Proposed Nonstandard Gas Units

Operator, Lease & Well No.	Completion Date	Producing Zone (s)	Producing Interval (s)	August Allowable	GOR
Gulf					
S. E. Cone #1	5-31-48	Drinkard	6480-560	5 BOD	19,000
Sinclair					
J. R. Cone "A" #1	12-13-56	Tubb	6066-6191	4836 MCF	
Dual	11-16-46	Drinkard	6471-531	5 BOD	16,960
J. R. Cone "A" #2	12-20-56	Blinebry	5492-630	5488 MCF	
Dual	6-1-47	Drinkard	6404-550	4 BOD	17,550
J. R. Cone "B" #1	3-12-45	Drinkard	6503-44	14 BOD	8,757
J. R. Cone "B" #2	9-1-47	Drinkard	6453-548	15 BOD	8,413
E. C. Hill #1	8-1-48	Blinebry	5649-709	10 BOD	1,210

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Sinc EXHIBIT NO. 4
CASE NO. 1499

Exhibit No. 4
Case No. 1499

SINCLAIR OIL & GAS COMPANY

PRODUCTION HISTORY
J. R. CONE "A" #1
TUBB GAS POOL

Year & Month	Gross Allowable	Production MCF
1957		
March	4,872	33,516
April	5,135	0
May	3,817	0
June	1,837	323
July	1,444	0
August	10,322	416
September	6,850	417
October	5,885	0
November	6,996	0
December	4,040	12,102
1958		
January	6,691	14,511
February	7,362	4,298
March	12,847	17,628
April	8,534	1,876
May	22,345	0
June	8,030	0
July	5,266	0
Total	126,273	85,141

The average 240 acre Tubb Gas Pool allowable for the 12 month period ending July 1, 1958, was 22,539 MCF/Month or 751 MCF/Day.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Sinc EXHIBIT NO. 5
CASE NO. 1499

Exhibit No. 5
Case No. 1499

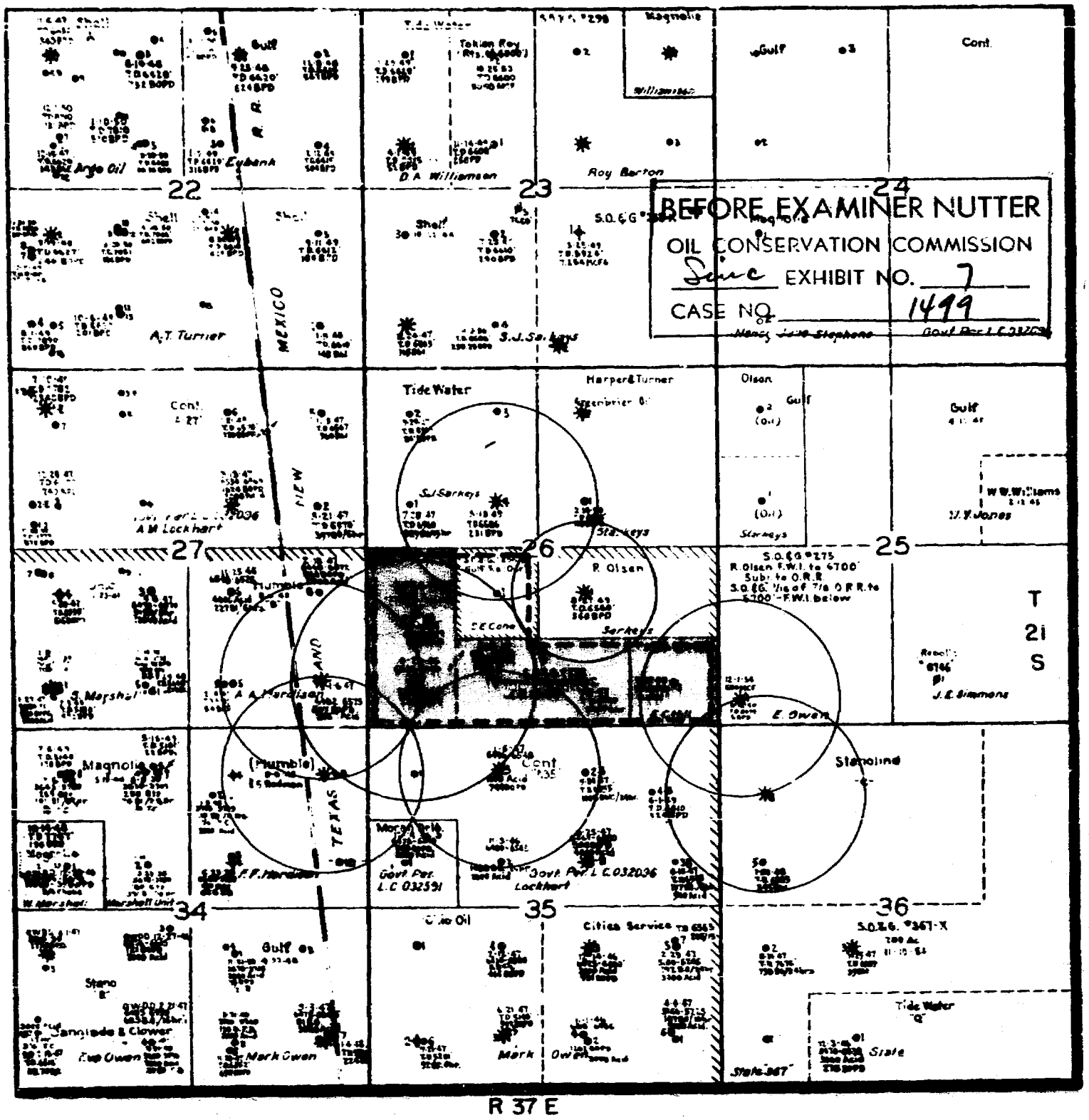
SINCLAIR OIL & GAS COMPANY

J. R. CONE "A" & "B" LEASES
TUBB GAS POOL
DELIVERABILITIES VS. 600# LINE PRESSURE

Operator	Lease Name	Well No.	Date of Test	Deliverability MCF/Day Against 600#
Humble	Hardison	2	6-20-58	730
Humble	Hardison	7	3-7-58	423
Tidewater	Sarkey	4	10-4-57	213
Olson	Cone	1	8-16-57	1,652
Olson	Owen	1	10-11-54	3,725
Pan American	State "C"	8	2-28-56	2,462
Continental	Lockhart "A"	3	7-24-55	3,942
Sinclair	Cone "A"	1	12-13-56	4,600

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 1499

Exhibit No. 6
Case No. 1499



SINCLAIR OIL & GAS CO.

GAS PRORATION UNITS

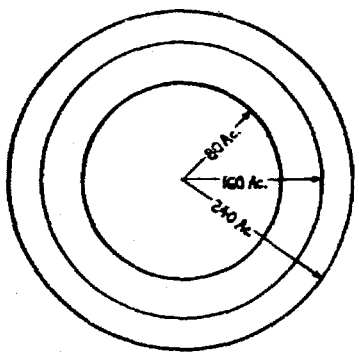
TUBB POOL

AUGUST 1958

VICINITY SINCLAIR'S

J. R. CONE A & B LEASES

LEA COUNTY, NEW MEXICO



radius = 22.4 % larger but acreage is 150 % larger

✱ Tubb Gas Well

EXHIBIT NO. 7
CASE NO. 1499

SINCLAIR OIL & GAS COMPANY

Vicinity J. R. Cone "A" & "B" Lease
Tubb Gas Pool

PRESSURE - CUMULATIVE ANALYSIS

Operator Lease & Wells	Acreage Assigned	August 1956 BHP Pressure	August 1956 Cumulative MCF
Ohio - Marshal #2	160	1712	566,367
Sinclair - State 367 #3	160	1835	133,067
Pan American - State "C" #8	160	2077	223,967
Cities Service - Owen #3	160	2193	592,492
Gulf - Owen #5	160	2280	495,439
Ohio - Owen #3	160	2330	510,128
Average		2071	420,243

TIME - CUMULATIVE ANALYSIS

Operator Lease & Wells	Month First Production	Cumulative MCF
Cities Service - Owen #3	Feb. 1954	592,492
Ohio - Marshal #2	Mar. 1954	566,367
Ohio - Owen #3	Apr. 1954	510,128
Gulf - Owen #5	Jun. 1954	495,439
Pan American - State "C" #8	Jul. 1955	223,967
Sinclair - State 367 #3	Oct. 1955	133,067

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Sinc EXHIBIT NO. 9
CASE NO. 1499

Exhibit No. 9
Case No. 1499

SINCLAIR OIL & GAS COMPANY

A SELECTION OF COMMISSION
APPROVED NONSTANDARD UNITS
TUBB & BLINEBRY GAS POOLS

Operator	Lease & Well No.	Order No.	Size Unit	Section	Maximum Distance From Well
		TUBB GAS POOL			
Proposed Unit			240 Acres	26-21S-37E	4667 Feet
Skelly Barber	Baker "B" #15	R-590A	240 Acres	10-22S-37E	4055 Feet
Hunt	Weatherly "E" #1	R-519	240 Acres	21-21S-37E	4000 Feet
Sunray	State "15" #4		160 Acres	16-21S-37E	4667 Feet
Ohio	{Wortham #9 " #11}	R-545 R-796	320 Acres	11-22S-37E	5365 Feet (3750 Feet)
		BLINEBRY GAS POOL			
Proposed Unit			200 Acres	26-21S-37E	3848 Feet
Skelly	Baker "B" #15	R-590A	240 Acres	10-22S-37E	4055 Feet
Pan American	Southland Royalty #5		160 Acres	4-21S-37E	3848 Feet
Amerada	State DA #4		160 Acres	16-21S-37E	4667 Feet
Olsen	Sims #1		160 Acres	25-22S-37E	4026 Feet

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Sinc EXHIBIT NO. 10
CASE NO. 1499

Exhibit No. 10
Case No. 1499

FORM 934 1-57

PAN AMERICAN PETROLEUM CORPORATION
FORT WORTH, TEXAS

August 27, 1958

File: CME-3660-986.510.1

Subject: Waiver of Objection
Non-standard Proration Units
Tubb and Blinebry Gas Fields
Lea County, New Mexico

Mr. A. L. Porter, Jr.
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Dear Sir:

The undersigned, being an authorized representative of the offset operator, has been duly informed by Sinclair Oil and Gas Company of its application for a 320-acre and a 240-acre non-standard gas proration unit in the Blinebry and Tubb Gas Pools to be assigned to Sinclair's J. R. Cone "F" Well No. 2 and "F" Well No. 1 respectively, and hereby waives all objections.

It is our understanding the proposed 320-acre Blinebry Unit will consist of the SE/4 and SE/4 SW/4 of Section 25-21S-37E, and will be assigned to Sinclair's No. 2 well. It is further understood that the proposed 240-acre Tubb unit will consist of the SW/4 and S/2 NW/4 of Section 25-21S-37E, and will be assigned to Sinclair's No. 1 well.

Yours very truly,

CME:ch

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 11
CASE NO. 1499

COPY

SINCLAIR OIL & GAS COMPANY

P. O. Box 1470

Midland, Texas

August 14, 1958

HUMBLE OIL & REFINING COMPANY, P. O. Box 1600, Midland, Texas
CONTINENTAL OIL COMPANY, P. O. Box 431, Midland, Texas
PAN AMERICAN PETROLEUM CORPORATION, P. O. Box 1540, Midland, Texas
R. OLSEN, 2811 Liberty Nat'l. Bank Building, Oklahoma City, Oklahoma
HARPER & TURNER, 904 Hightower Building, Oklahoma City, Oklahoma
TIDEWATER OIL COMPANY, P. O. Box 1231, Midland, Texas
GREENBRIER OIL COMPANY, 714 Continental Life Building, Fort Worth, Texas

Gentlemen:

Sinclair has made applications to the New Mexico Oil Conservation Commission for approval of a 200 acre and a 240 acre non-standard gas proration unit in the Blinebry and Tubb Gas Pools to be assigned Sinclair's J. R. Cone "A" Well No. 2 and "B" Well No. 1, respectively. The proposed 200 acre Blinebry Unit will consist of the SW and SW SE of Section 26-21S-37E, and will be assigned to Sinclair's No. 2 well located in the center of the NW SW. The proposed 240 acre Tubb Unit will consist of the SW and S/2 SE of said Section 26 and will be assigned to Sinclair's No. 1 well located in the center of the SW SW. (See attached plat.) The royalty under the above acreage is being pooled and operating agreements have been executed.

At present, each well has assigned in the Blinebry and Tubb Gas Pools 160 acre gas units consisting of Sinclair's J. R. Cone "A" and "B" Leases, which occupy the W/2 SW, SE SW and SW SE of said Section 26. The SE SE and NE SW of this section is currently the only unassigned Tubb Gas Pool acreage in the area and the NE SW is the only unassigned Blinebry Gas Pool acreage in the area. All of the offset acreage around our proposed units is assigned in both gas pools.

Sinclair requests that if you have no objection to the formation of the above described non-standard gas proration units that you execute four copies of this letter and return same to undersigned or furnish us with your own statement concerning this matter. We anticipate that the Commission will schedule these applications for hearing during the first week of September; therefore, we would appreciate your early consideration of our request.

Yours very truly,

H. F. Defenbaugh

H. F. Defenbaugh
Division Production Superintendent

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 12
CASE NO. 1499

The undersigned, as an Offset Operator, has no objections to the formation of the above described 200 acre Blinebry and 240 acre Tubb non-standard gas proration units.

Operator _____

Date 8/15/58

By _____

12

SINCLAIR OIL & GAS COMPANY

P. O. Box 1470

Midland, Texas

August 31, 1958

HUMBLE OIL & REFINING COMPANY, P. O. Box 1600, Midland, Texas
CONTINENTAL OIL COMPANY, P. O. Box 431, Midland, Texas
PAN AMERICAN PETROLEUM CORPORATION, P. O. Box 1540, Midland, Texas
R. OLSEN, 2811 Liberty Nat'l. Bank Building, Oklahoma City, Oklahoma
HARPER & TURNER, 904 Hightower Building, Oklahoma City, Oklahoma
TIDEWATER OIL COMPANY, P. O. Box 1231, Midland, Texas
GREENBRIER OIL COMPANY, 711 Continental Life Building, Fort Worth, Texas

Gentlemen:

Sinclair has made applications to the New Mexico Oil Conservation Commission for approval of a 200 acre and a 240 acre non-standard gas proration unit in the Blinebry and Tubb Gas Pools to be assigned Sinclair's J. R. Cone "A" Well No. 2 and "B" Well No. 1, respectively. The proposed 200 acre Blinebry Unit will consist of the SW and SW SE of Section 26-21S-37E, and will be assigned to Sinclair's No. 2 well located in the center of the NW SW. The proposed 240 acre Tubb Unit will consist of the SW and S/2 SE of said Section 26 and will be assigned to Sinclair's No. 1 well located in the center of the SW SW. (See attached plat.) The royalty under the above acreage is being pooled and operating agreements have been executed.

At present, each well has assigned in the Blinebry and Tubb Gas Pools 160 acre gas units consisting of Sinclair's J. R. Cone "A" and "B" Leases, which occupy the W/2 SW, SE SW and SW SE of said Section 26. The SE SE and NE SW of this section is currently the only unassigned Tubb Gas Pool acreage in the area and the NE SW is the only unassigned Blinebry Gas Pool acreage in the area. All of the offset acreage around our proposed units is assigned in both gas pools.

Sinclair requests that if you have no objection to the formation of the above described non-standard gas proration units that you execute four copies of this letter and return same to undersigned or furnish us with your own statement concerning this matter. We anticipate that the Commission will schedule these applications for hearing during the first week of September; therefore, we would appreciate your early consideration of our request.

Yours very truly,

H. F. Defenbaugh
Division Production Superintendent

HFD:RMA:mm

Encl. 2

The undersigned, as an Offset Operator, has no objections to the formation of the above described 200 acre Blinebry and 240 acre Tubb non-standard gas proration units.

Operator Humble Oil & Refining Company

Date September 3, 1958

By

13

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
SINC EXHIBIT NO. 13
CASE NO. 1499