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BEFORE THE

OIL CONSERVATION COMMISSION      RAILROAD COMMISSION OF TEXAS

State of New Mexico      Oil and Gas Division

State of Texas

JOINT PROCEEDINGS

The following matter came on for consideration before a joint hearing of the Oil Conservation Commission of the State of New Mexico and the Railroad Commission of Texas, Oil and Gas Division, State of Texas, pursuant to legal notice, at Santa Fe, N. M., on May 27, 1948, at 10:00 A. M.

NOTICE OF PUBLICATION  
STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

PUBLIC NOTICE OF JOINT HEARING OF THE NEW MEXICO OIL CONSERVATION COMMISSION AND THE TEXAS RAILROAD COMMISSION RELATING TO THE RHODES POOL, LEA COUNTY, NEW MEXICO:

Public Notice is hereby given that a joint meeting of the New Mexico Oil Conservation Commission and the Texas Railroad Commission will be held in Santa Fe, New Mexico, at 10:00 o'clock A. M. on the 27th day of May, 1948 for the purpose of considering matters and things relating to the Rhodes Pool, which lies both within Lea County, New Mexico, and Winkler County, Texas, and for the purpose of issuing such orders, field rules and regulations with respect thereto, within the respective jurisdictions of either Commission, as the evidence presented may justify.

Done at Santa Fe, New Mexico this 14th day of May, 1948.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

By /s/ R. R. Spurrier  
R. R. SPURRIER, Secretary

RAILROAD COMMISSION OF TEXAS  
OIL AND GAS DIVISION

OIL AND GAS DOCKET NO. 126  
#8 - 12,381

IN RE: CONSERVATION AND  
PREVENTION OF WASTE  
AND NATURAL GAS IN  
WINKLER COUNTY, TEXAS

Austin, Texas  
May 4, 1948

NOTICE OF HEARING PERTAINING TO THE ADOPTION OF A COMMON SET  
OF FIELD RULES TO APPLY TO THE SCARBOROUGH AND NORTH SCAR-  
BOROUGH FIELDS, WINKLER COUNTY, TEXAS, AND THE RHODES FIELD,  
LEA COUNTY, NEW MEXICO

NOTICE IS HEREBY GIVEN to all operators in the Scarborough and North Scarborough Fields, Winkler County, Texas, that at the hearing held March 10, 1948, on the application of the Ohio Oil Company for a new field designation and field rules to govern their Scarborough Estate Lease and surrounding area in Winkler County, Texas, testimony showed that the production from Ohio Oil Company's Scarborough Estate Wells Nos. 1 and 2, Winkler County, Texas, is coming from the same horizon as oil wells now completed in what is known as the Rhodes Field, Lea County, New Mexico. For this reason, the Commission rules that they would hold in abeyance the matter of promulgating field rules for this area calling for 20-acre spacing with an allocation formula of 100 per cent per well until word could be received from the New Mexico Oil Conservation Commission as to whether it would be feasible to adopt a common set of field rules to apply to production coming from a common source of supply.

The Railroad Commission of Texas greatly appreciates the consideration given to this matter by the New Mexico Oil Conservation Commission and their consent to such joint hearing.

THEREFORE, NOTICE IS HEREBY GIVEN to the public and all interested parties that the Railroad Commission of Texas, in a joint meeting with the New Mexico Oil Conservation Commission, will hold a hearing at ten A. M., May 27, 1948, in the Senate Chambers, Capitol Building, Santa Fe, New Mexico, for the purpose of determining what field rules should be adopted by Texas and New Mexico to cover production and drilling operations in what is now known as the Scarborough and North Scarborough Fields, Winkler County, Texas, and the Rhodes Field, Lea County, New Mexico.

PURSUANT to said Hearing, the Commission will enter such rules, regulations, and orders as in its judgment the evidence presented may justify.

RAILROAD COMMISSION OF TEXAS

Ernest O. Thompson, Chairman

W. J. Murray, Jr., Commissioner

Olin Culberson, Commissioner

(SEAL)

ATTEST:

K. C. Miller, Secretary

BEFORE:

Ernest O. Thompson, Presiding (Texas)  
John E. Miles, Member (New Mexico)  
R. R. Spurrier, Secretary (New Mexico)

REGISTER:

Robert W. Ward  
Santa Fe, N. M.  
For the Attorney General, State of New Mexico

Frank C. Barnes  
Santa Fe, N. M.  
For the New Mexico Oil Conservation Commission

Roy O. Yarbrough  
Hobbs, N. M.  
For the New Mexico Oil Conservation Commission

Betty Wistrand  
Santa Fe, N. M.  
For the New Mexico Oil Conservation Commission

H. N. Sweeney  
Hobbs, N. M.  
For the New Mexico Oil Conservation Commission

James D. Smullen  
Austin, Texas  
For the Attorney General, State of Texas

L. J. Meyer, Senior Engineer	Jack Baumel
Austin, Texas	Chief Engineer
For the Railroad Commission of Texas	

Foster Morrell  
Roswell, N. M.  
For the U. S. Geological Survey

Clayton L. Orn  
Houston, Texas  
For Ohio Oil Company

E. Paul Ward  
Houston, Texas  
For Ohio Oil Company

R. E. McMillan  
Midland, Texas  
For Ohio Oil Company

L. C. Morgan  
Wichita, Kansas  
For Wood River Oil & Refining Co., Inc.

S. B. Fowler  
Midland, Texas  
For Wood River Oil & Refining Co., Inc.

C. S. Mitchell  
Bartlesville, Oklahoma  
Cities Service Oil Co.

O. V. Adkins  
Midland, Texas  
For Cities Service Oil Co.

Bert Fields  
Dallas, Texas  
For himself

A. T. Gurney  
Hobbs, N. M.  
For Shell Oil Company

L. W. Jernigan  
Hobbs, N. M.  
For Fullerton Oil Co.

M. A. Hugg  
Hobbs, N. M.  
For Fullerton Oil Co.

Glenn Staley  
Hobbs, N. M.  
For Lea County Operators

COMMISSIONER MILES: Gentlemen, it is certainly a pleasure, an extreme pleasure, to me this morning to have present with us Colonel Ernest Thompson. He is one of my long-time friends and one of my very dear friends. And I don't think it is necessary for me to introduce him to you people because I am sure you know him almost as well as I do, perhaps even better. However, I have a lot in common with him. He ran for governor at the same time I was governor. I sent him a wire and he said it was the cruelest wire he ever received, but he came out and campaigned for me. It is also a pleasure to have him presiding. He presides better than any man I have ever known. I will ask him to preside.

CHAIRMAN THOMPSON: Thank you, Governor. I am deeply grateful for those kind remarks. And I will say we are delighted always to come out and associate with the people of New Mexico, also renew our association in conservation matters, and whenever a joint meeting is indicated, the Texas Commission can always be depended upon to ask the New Mexico Commission to be kind enough to let us come to Santa Fe because we love to hold our meetings in this delightful, beautiful place of contentment and happiness.

COMMISSIONER MILES: It is always a pleasure to have you.

CHAIRMAN THOMPSON: Thank you. So, when this Rhodes field extended into Texas, it seemed highly proper that we should contact you and your Conservation Commission with the view that we should get together in a joint meeting to hear evidence on

the facts of this filed. We recognize, of course, that nature under the ground takes no cognizance of statelines or county lines or property lines.

COMMISSIONER MILES: We would like to extend that line over into Texas and bring that entire field into New Mexico.

CHAIRMAN THOMPSON: Well, we are glad to share it with you, Governor. It gives us a chance to work together and demonstrate that the states can adequately organize the ground of oil and gas conservation. I think the feeling is getting stronger day by day throughout the industry and in Government circles also that the states are the ones to handle oil and gas conservation. As you know, Governor Miles, you and I participated, along with our colleagues in forming the Interstate Oil Compact. The Compact, if there be those that do not know about it, is a treaty between the oil producing states whereby, under the terms of the treaty, the oil producing states each agreed with the other to pass adequate conservation laws in their respective states. Laws that are satisfactory to each of the states. The passage of that conservation law qualifies an oil producing state for membership in the Compact. I know you take great satisfaction, Governor, along with the rest of us who signed it, that it started out with three states; Texas, New Mexico, Oklahoma, and Kansas; that now it has twenty-one states. The map of the compacting states covers a big part of the Union. I think nothing has happened in oil and gas conservation that has been so readily accepted as the theory and principle set out in the treaty, the oil conservation treaty, called the Interstate Oil Compact. The Constitution wisely provided that the states could make compacts with each other on common problems. And if you remember, after we got together and formed the Compact, we took it to Washington, and the President and Secretary of State sent

it to Congress and the Congress approved it. It has been approved each time it has gone up. The first time for two years and the last time for four years. It has worked so well that I feel sure that the next time it expires we will have ample justification to ask the Congress to make it permanent. The reason it was ratified for two years in the beginning was solely because the Texas laws were two year statutes, experimental laws. Your laws had already been made permanent, but we only asked the Congress to approve it for the length of time the state statutes supporting it were for. And then later on the Texas statutes were found to be good and acceptable to our legislature and to the industry, and the legislature was asked to make the Texas laws permanent, which was done. So, all of the states now have permanent statutes, and on that basis I think we can go acceptably before the Congress and ask it to give the Compact its permanent approval.

I would like at this time to introduce to you, Governor, and to the Attorney General and to your state geologist and commissioner the staff that we brought along with us. We have Assistant Attorney General James Smullen, Mr. Jack Baumel, our Chief Engineer, and Mr. Myer, our Senior Engineer.

COMMISSIONER MILES: We are very glad to have you here with us.

CHAIRMAN THOMPSON: Are there witnesses who expect to testify, or who are willing to testify? Will you be sworn?

MR. MORGAN: I intend to appear in behalf of the Blount Drilling Co. and the Wood River Oil & Refining Co. and offer some evidence.

CHAIRMAN THOMPSON: If there are other witnesses, will you rise and be sworn?

(E. Paul Ward also sworn.)

CHAIRMAN THOMPSON: Since this field is more thoroughly developed in New Mexico than in Texas, I think it would be

well, if agreeable to you, Governor, and to the other members of the New Mexico Commission, that someone from New Mexico would put into the record, this joint record, what the rules and regulations are up-to-date as to spacing, and some basic testimony as to permeability and porosity and gas- oil ratios and findings you have made as to the effective drainage.

Someone from the New Mexico industry, from the Commission?

Mr. Spurrier, perhaps you could do that better than anyone?

COMMISSIONER SPURRIER: Well, if no one else cares to, Colonel Thompson.

COMMISSIONER MILES: Mr. Staley might like to.

COMMISSIONER SPURRIER: Mr. Staley, would you like to contribute this?

MR. STALEY: Yes, I will do what I can. I am not prepared to give any information regarding the porosity and permeability in the area, but I can, however, outline the general rules and regulations in New Mexico. Our spacing program is one well to forty acres.

CHAIRMAN THOMPSON: Is that the state-wide practice?

MR. STALEY: State-wide practice. The law reading that no well shall be drilled closer than 330 feet to a legal subdivision line, and the smallest legal subdivision that we have under Government survey is forty acres. The allocation to wells in general is to a forty-acre unit and based entirely upon acreage. We have two deviations from that. One is the Hobbs Pool, where one of the factors is bottomhole pressures. The other is the north end of the Eunice-Monument area, formerly the Monument Pool, and that is a bottomhole pressure factor.

CHAIRMAN THOMPSON: In this particular pool, the rule is what?

MR. STALEY: Acreage only; and at the present time the allocation top allowable is forty-four barrels.

CHAIRMAN THOMPSON: Forty-four barrels. Did you have any testimony in the hearing when the rules were set how the field is on permeability and porosity and the effective drainage area?

MR. STALEY: We do not have what we term separate field rules. The general rules are applicable unless the Commission is requested by the operators to change those rules.

CHAIRMAN THOMPSON: And you have had no such request?

MR. STALEY: No, sir.

CHAIRMAN THOMPSON: Any questions anyone wishes to ask?

MR. ORN: I am division attorney for the Ohio Oil Co. Mr. Staley, is your spacing rule--it is 330, as read in the general order, from the unit line and 660 feet from another well?

MR. STALEY: That is it.

MR. ORN: Does that mean that you could drill four well on the unit but get a unit allowable?

MR. STALEY: There is no restriction on the number of wells. But they cannot be closer than 330 feet to the legal subdivision line, and regardless of the number of wells, the allocation would be the same.

CHAIRMAN THOMPSON: Drilling additional wells then doesn't increase the allowable for the unit?

MR. STALEY: It doesn't.

CHAIRMAN THOMPSON: What is the practice? Do they drill more than one on forty acres generally?

MR. STALEY: Except in areas of shallow fields. Over in the Pecos Valley we have a few cases where it takes a number of wells to produce enough for the top allowable. In those cases they do drill more than one.

CHAIRMAN THOMPSON: Drill additional wells where one or two or three wells wouldn't make the allowable?

MR. STALEY: That is true.

CHAIRMAN THOMPSON: On the basis of need as well as demand.



MR. MORGAN: In other words, the only basis of your spacing allocation in the Rhodes Pool at the present time is a purely theoretical assumption of reservoir pressure?

MR. STALEY: That is true.

CHAIRMAN THOMPSON: Anyone have any other question? Any of our staff have questions?

MR. BAUMEL: Mr. Staley, could you tell us what formation the Rhodes Pool is producing from?

MR. STALEY: I believe the San Andres.

MR. BAUMEL: Is that the same formation the North Scarborough is producing from on the Texas side?

MR. STALEY: I believe so. But that is purely hearsay.

MR. MORGAN: We are not prepared at this time to present evidence, but we will subsequently, if necessary, at a Texas Railroad Commission hearing be prepared to show this a sand here sometimes called by geologists a second Yates or an upper Grayburg, and above the San Andres, with all consideration to you.

MR. STALEY: Yes, sir.

MR. MORGAN: Or Seven Rivers. We don't know, but we have electrical logs of all of our wells and are prepared to present evidence if necessary to substantiate that.

MR. STALEY: As stated in the beginning, I did not wish to qualify in regard to the producing reservoir in any manner.

CHAIRMAN THOMPSON: You made that clear. Does anyone else have a question? Since eighty per cent of the land on this side of the state line in New Mexico is Federal land, we are honored today by having a representative of the U.S.G.S., Mr. Morrell. I wonder if you would be good enough to give us the benefit of such observations as you could make? To help us in the record. We deeply appreciate your being here.

MR. MORRELL: The only thing that I might present to the meeting is the good results that I think may come from having

the Commission from Texas and the Commission from New Mexico meet jointly. We have a single pool to consider. As you say, it does not recognize state lines. The problems are essentially the same in both states. So far as the proration and production on Federal lands are concerned, we leave that entirely to the State of New Mexico and the Commission and follow their procedures. I would like possibly to add a little background to what Mr. Staley has presented, which I certainly agree with, and that is the state-wide proration was inaugurated primarily by reason of the lack of transportation facilities and market outlet. So, by reason of the marketing conditions is why we have the proration unit as it is today. Without taking into consideration the MER or other details, porosity or permeability of the individual pools, I think in this pool, the Rhodes, is a good place to start the possibility of consideration of field rules that involve two states. It is an older producing area, and by virtue of being older we could I think incorporate everything to get the greatest recovery. And what may come out of the meeting regarding the Rhodes Pool may be helpful with respect to other state-line pools that may be developed in the future, or deeper pools, particularly on the north-south line of the east side of New Mexico, which if possible, would be very helpful from the standpoint of operators and royalty owners--to have the same field rules apply on both sides of the state line, both as to experience and operating conditions.

CHAIRMAN THOMPSON: The rate of taking would be better preserved.

MR. MORRELL: That's right.

CHAIRMAN THOMPSON: If taken rateably across the line.

MR. MORRELL: That is correct.

CHAIRMAN THOMPSON: So that no one owner would interfere with the rights of the other.

MR. MORRELL: That's right, I agree with you.

CHAIRMAN THOMPSON: As you indicate so eloquently this would perhaps become a precedent for other like fields that cross state lines.

MR. MORRELL: I have in mind the Dollar-Hide Pool. We have another well south of Hobbs that is drilled 660 feet from the state line, so the question is fairly imminent, and I think it would be fairly helpful to have the answers in this case.

CHAIRMAN THOMPSON: Are you familiar with the number of wells in the pool?

MR. MORRELL: I am familiar with it. I cannot give you the exact figure at the present time. Roughly, I would say around forty-three oil wells. The land in New Mexico adjoining the extension of the Rhodes Pool into Texas is Federally owned and has been developed on a one well for forty acres.

CHAIRMAN THOMPSON: What do you request the operator to furnish to the U.S.G.S.? Electrical logs?

MR. MORRELL: We require essentially the same information the state regulatory body gets; all notices, summary reports and location. In our capacity of supervising operations on land owned by ourselves, we of course have and receive a lot of confidential information that the state regulatory bodies do not always receive.

CHAIRMAN THOMPSON: Yes, I understand that. Anything else to add?

MR. MORRELL: I have nothing specific here. I was coming here with an open mind, mainly to see what the problem was. We have made detailed studies, particularly in view of the fact that the north end of the Rhodes Pool is in a unit for storage of gas by El Paso Natural Gas Co. However, those are studies in the pool that overlies the oil production.

CHAIRMAN THOMPSON: Storage of gas?

MR. MORRELL: Storage of gas, yes, sir.

CHAIRMAN THOMPSON: To be brought from other areas and

injected into the ground--sands--there for use when needed?

MR. MORRELL: That's right. The gas is essentially overlying and in a different reservoir from the oil itself.

CHAIRMAN THOMPSON: A separate producing horizon?

MR. MORRELL: Yes, sir.

ASSISTANT ATTORNEY GENERAL WARD: For the purpose of the record, you might outline what the present marketing conditions and the prospective marketing conditions are in that area.

CHAIRMAN THOMPSON: If you are familiar with it.

MR. MORRELL: That is something of which I wish we all knew more. However, the new line that is under construction, being built into Winkler and terminating at Jal, that will run into Oklahoma, and provide enough additional volume of oil that can be transported out of New Mexico, I think is the biggest help to marketing in New Mexico that I am aware of at this time. Of course, the bottleneck at Midland has been one of the stumbling blocks, but it is being overcome by looping additional lines in Texas between Midland and Houston.

CHAIRMAN THOMPSON: Any further questions?

COMMISSIONER MILES: I would like to state that Mr. Morrell is always invited to attend our meetings, and does attend most of them, and is most helpful and cooperative at all times. We are always glad to have him present.

CHAIRMAN THOMPSON: I am sure that fine relationship is appreciated by all the operators. Mr. Spurrier, will you read the notice of publication of the hearing? And will the reporter be good enough to put it at the head of the transcript?

(Mr. Spurrier reads the notice of publication.)

CHAIRMAN THOMPSON: Mr. Baumel, will you read the Texas notice?

(Mr. Baumel reads the notice of publication.)

CHAIRMAN THOMPSON: Mr. Spurrier has prepared some notes on the development of the field up to date, and I would be happy

if he would at this time read them into the record, if he would be so good?

COMMISSIONER SPURRIER: Yes, sir, I will.

MR. MORRELL: Colonel Thompson, if I may interpose at this time, here is a plat showing development in New Mexico.

CHAIRMAN THOMPSON: Thank you.

COMMISSIONER SPURRIER: (Reads the following memorandum into the record.)

REVIEW OF THE RHODES FIELD  
T.26 S. R. 37 E. Lea County, N.M.

LOCATION

The Rhodes field is located in southeastern New Mexico in T.26 S, R. 37 E, Lea County. The productive area extends southward to the New Mexico-Texas border. The structure extends into Texas, and there are approximately seven or eight producing wells on the Texas side of the boundary at the present time. The town of Jal, N. M., is eight miles north of the field, and Kermit, Texas, is located about ten miles south.

The New Mexico portion of the Rhodes field is currently defined by the New Mexico Nomenclature Committee and the New Mexico Oil Conservation Commission to include the following area:

Lea County, T.26 S, R.37 E

All sections 4, 5, 6, E/2 sec. 7,  
All sections 8, 9, S/2 section 10,  
All sections 15, 16, 17, N/2 and SE/4  
section 20. All sections 21, 22, S/2  
section 23. All sections 26, 27, 28,  
34, and 35.

HISTORY

The field was discovered during November 1927 upon successful completion of the Texas Company et al, W. H. Rhodes No. 1, for an initial production of 300 barrels of oil and 22,500,000 cubic feet of gas per day. This well was

located in the SE/4 NE/4 NW/4 section 22, T.26 S, R.37 E, Lea County, and was drilled to a total depth of 3,213 feet.

# GEOLOGY

The Rhodes field is believed to be a northwest trending anticline about six to eight miles long but stratigraphic conditions are partly responsible for the accumulation. The surface of the field is mantled by caliche and wind-blown sand. Directly below this cover is some fifty feet of buff Tertiary sandstone. Below the Tertiary is 950 feet of red Triassic sandstones and shales. The general stratigraphy is tabulated below.

AGE	FORMATION	THICKNESS	CHARACTER
Recent	Surface	10 to 20 feet	Caliche and sand
Tertiary		50 feet	Buff sandstone
Triassic	Chinle	950 feet	Red sandstone and shale
	Santa Rosa		
	Tecovas		
Permian	Dewey Lake	150 to 200 feet	Fine red ss. and shale
	Rustler	200 to 300 feet	Anhydrite and red shale
	Salado	1200 to 1500 feet	Anhydrite, red shale & salt
	Tansill	180 feet	Anhydrite and brown dolomitic limestone
	Yates	300 feet	Grey sandstone, brown dolomite and anhydrite. (contains gas and some oil)
	Seven Rivers	400 to 450 feet	Grey dolomitic limestone with thin beds of sandstone. (lower sandstones produce oil)
	Queen	350 feet	Grey dolomitic limestone with sandstone lenses.

The Rhodes field produces from sands in the Yates and Seven Rivers formations, both of Permian age. Production is obtained from an average depth of 3,005 feet and 3,415 feet,

respectively. The deepest test in the area was the Midwest Refining Company, Farnsworth No. 13, located in the NW/4 SW/4 section 14, T.26 S, R.37 E. This well reached a total depth of 3,877 feet.

#### PRODUCTION

Daily production from the Rhodes field averages about 850 barrels of oil. The cumulative production is in excess of 3,175,000 barrels, up to May 1948. The estimated reserves for the same date are more than 7,830,000 barrels.

There are about 63 wells in the field, of which 43 are oil wells and 20 are gas wells. Some of the wells are marginal and produce mostly gas. About forty of the oil producers are flowing wells. Only eighteen of the gas wells are currently producing.

The oil is of 31 to 40 gravity, is sweet and has a parafine base. Water is encountered only locally and gives very little trouble. There is no limiting G.O.R. on this pool. Total current allocation is 30,907 barrels to 45 units.

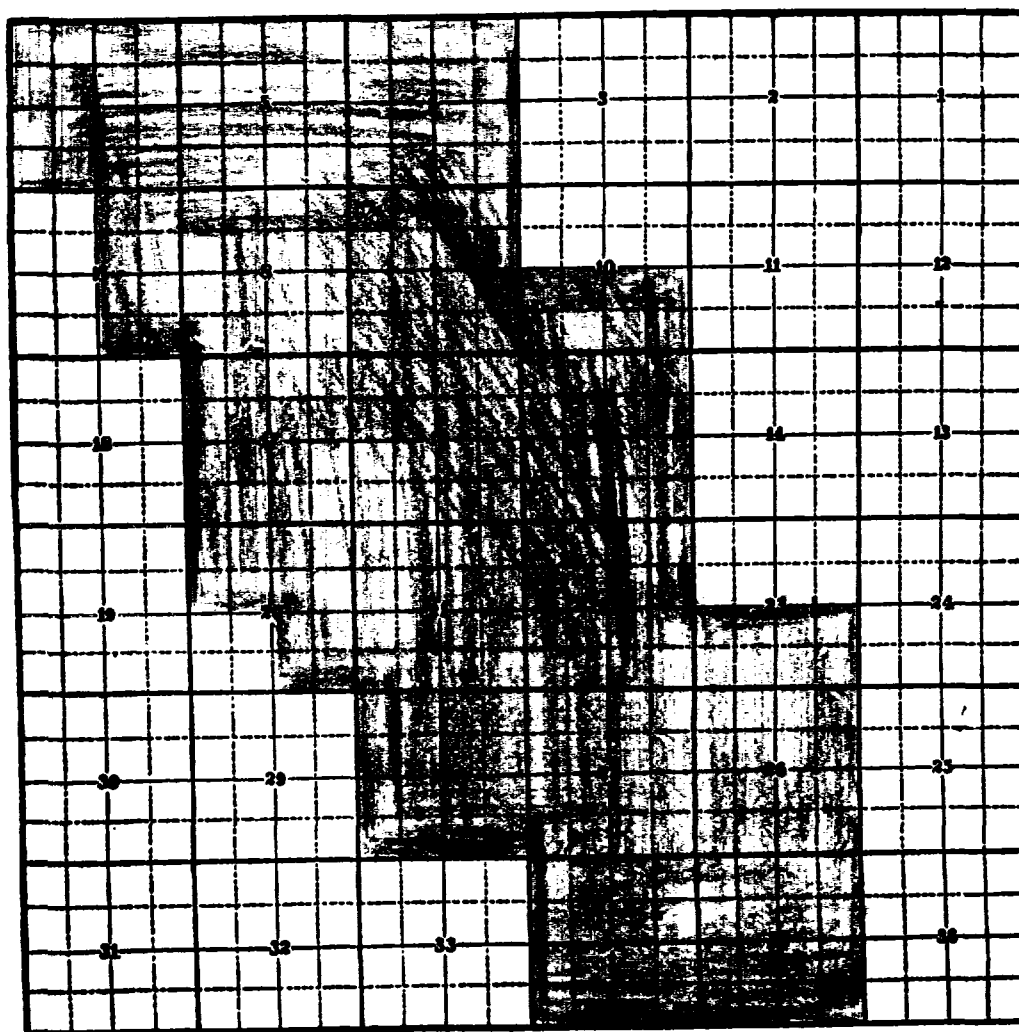
#### LAND SITUATION

In the Rhodes field approximately 80 per cent of the land is Federal acreage, ten per cent is State land, and the remainder is fee land. The principal leaseholders are Amerada, Anderson-Prichard, Krupp Flaherty, Ohio, and The Texas Company. About 2,200 acres are producing oil and 800 acres producing gas. There are approximately 11,000 acres in the pool, as now defined.

FRANK C. BARNES, Geologist

Township No. 26 S of Range No. 37 E

New Mexico Principal Meridian.

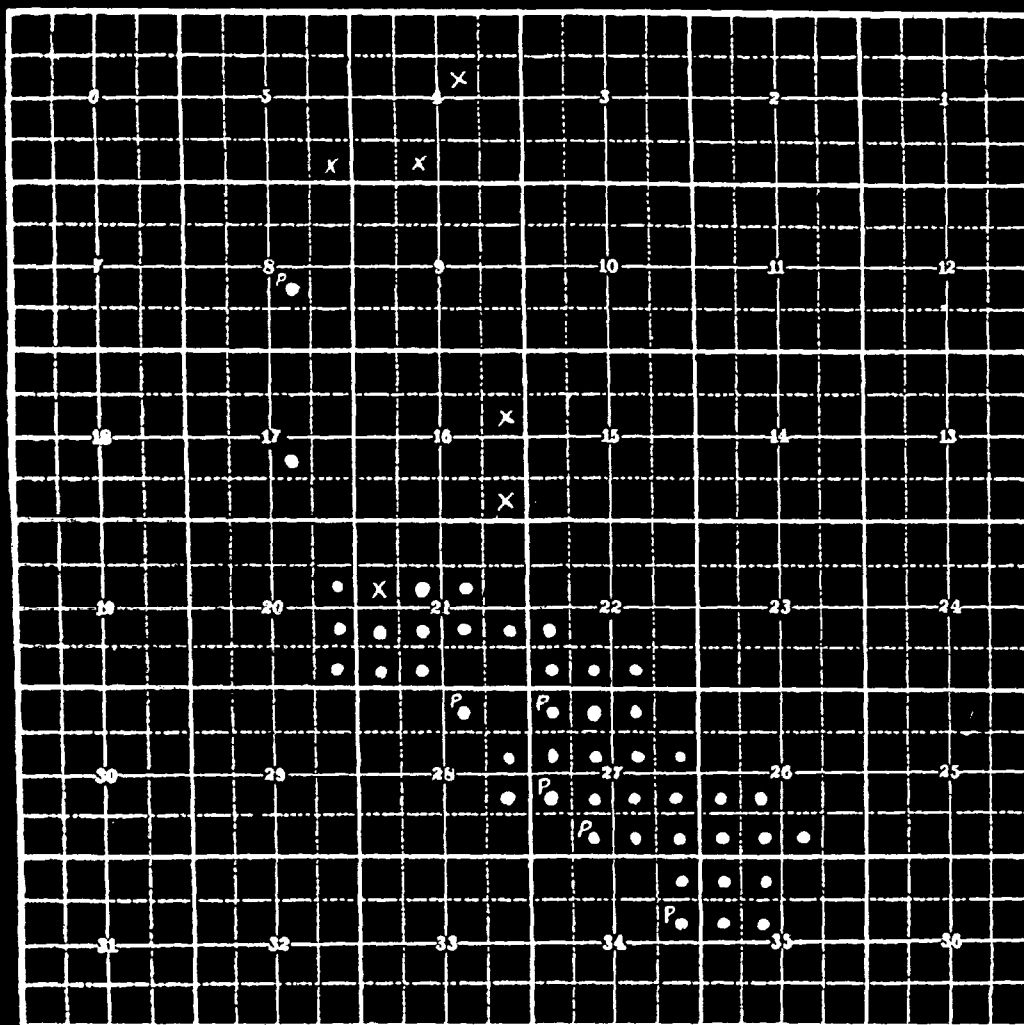


Rhodes Field  
Lea County



Township No. 26 S of Range No. 37 E

New Mexico Principal Meridian.



- Producing oil well (flowing)
- P• Producing oil well (pumping)
- X Producing gas well

Rhodes field

CHAIRMAN THOMPSON: Anyone wish to ask a question about this in addition to the history of the field up to date? Any questions? Without question, it will be received as the authoritative history of the field up to this time.

We have a telegram from The Texas Company, addressed to Mr. Spurrier, Conservation Commission of New Mexico: "Regret that circumstances prevent our being represented at joint hearing on Rhodes field Lea County, New Mexico, and Scarborough fields, Winkler County, Texas, and request that this wire be included in record of hearing.

"The Texas Company drilled the discovery well and operates twenty-two of the fifty-four oil producing wells in the Rhodes field. We and other operators have developed the Rhodes field on a forty-acre spacing plan, which is the unit of proration provided in Order No. 637. Fifty of the fifty-four oil producing wells in this field are located in the center of regular forty-acre units. Bottom hole pressure data on our W. H. Rhodes B lease approximately one-half mile north of the state line shows that the original pressures of wells drilled four and five years after the first two wells on this lease were much lower than the original pressures of the first wells and were, in fact, only slightly higher than the then current pressures of the older wells. This, in our opinion, is proof of a large drainage area for wells in this field, and supports the forty-acre proration unit and spacing program.

"In view of the extensive development which has heretofore been conducted in the Rhodes field in Lea County, New Mexico, on basis of forty-acre proration units and the evidence available from production history of these wells that such development is efficient and affords proper drainage, we urge that no change be made in the spacing of wells or allocation as provided in New Mexico oil Conservation Commission

Order No. 634 "Statewide Proration Order". The Texas Company, C. B. Williams."

Is there any objection to this explanatory telegram going into the record? I hear no objection, and if agreeable, Governor, we will put it in the record.

I believe there is one witness who indicated he would like to give testimony, or would be willing to. Mr. Orn.  
MR. ORN: Before I put Mr. Ward on the stand, I might make a brief introductory statement.

CHAIRMAN THOMPSON: Yes, sir, we will be glad to have it.

MR. ORN: The Ohio Oil Co. owns leases on the New Mexico side and also owns leases on the Texas side. When we drilled our first well on the Texas side, shortly thereafter the Commission had to assign an allowable to that well, and they placed it in the Scarborough field for purposes of proration. That field has been producing for a long time, and it was drilled on a ten-acre spacing, and it has an allocation based upon well potential. The wells are now down, and there are very few that will make much more than the margin allowance. We were of the opinion that the reservoir from which our first well in Texas was produced wasn't a part of the Scarborough Pool. We brought the matter to the attention of the Commission, and we had a hearing in Austin, and the Commission, I think, from the testimony introduced was of the opinion that they certainly should not classify the first well at that time as part of the Scarborough Pool. So, they excluded the well from the Scarborough.

CHAIRMAN THOMPSON: And at the same time we gave an allowable to that well the same as the allowable given to the wells in the New Mexico area.

MR. ORN: On the New Mexico side, that's right.

CHAIRMAN THOMPSON: Namely, forty-four barrels.

MR. ORN: That's right. Now, of course, the Commission after

it had acquired knowledge that the New Mexico pool extended onto the Texas side, felt that it shouldn't write any rules on the Texas side until it had had its hearing with the New Mexico Commission, which I think is a very fine thing. I know that the Texas Commission, having appeared before them, for many years, wants to see conservation in the entire pool and naturally there has to be cooperation between the two states to have it. I know the Texas Commission doesn't want to give any undue advantage on the allowables to the wells on the Texas side. The Commission wants to see equity done by the operators and royalty owners in the two states. The present occasion--the reason for the hearing, I take it--after the Commission, the joint Commission, conclude this, before the Texas Commission can write an order, probably for an order to be valid, may have to have a hearing within its own jurisdiction, but certainly, I suppose, it can consider the testimony developed here, and should cooperate very fully with the New Mexico Commission.

CHAIRMAN THOMPSON: We will be operating with full knowledge, at least, of what is happening across the line.

MR. ORN: That's right.

CHAIRMAN THOMPSON: So that the pool can be treated as one producing horizon.

MR. ORN: With that background, I have brought Mr. Ward here to give the joint Commission a little factual data, much of which you already have, but at the risk of repetition, I will lay it before the Commission and the Commission on both sides of the line will have it. I have extra copies of the map that we intend to put in. When an order is written on the Texas side, I know the Commission necessarily is going to take into consideration what the neighboring state is doing, and also feel certain that Texas is not going to write--is not going to try to take any advantage, but that they want to do equity

with the New Mexico side.

CHAIRMAN THOMPSON: We have always had that attitude, even to making rules for the pipe lines which haul New Mexico oil. Governor Miles and I remember that so well.

MR. ORN: I remember in the Rhodessa field, which extended from Louisiana into Texas, you finally got together and worked out an equitable arrangement.

CHAIRMAN THOMPSON: Through joint hearings like this. Will you proceed with your witness? We are glad to have you present him.

E. Paul Ward, Houston, Texas, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. ORN:

Q. State your name.

A. Paul Ward.

Q. Where do you live, Mr. Ward?

A. Houston, Texas.

Q. What is your profession?

A. Division petroleum engineer for the Ohio Oil Co.

Q. How long have you been in the employ of the Ohio Oil Co.?

A. Approximately fifteen years.

Q. How long have you practiced as a petroleum engineer?

A. Approximately twelve or thirteen years.

Q. Are you a graduate of any university?

A. University of Oklahoma.

Q. In petroleum geology?

A. Yes, sir.

Q. Mr. Ward, do you have a map of the area that is the subject matter of this hearing?

A. Yes, sir, I do have.

Q. Do you have two copies of it?

A. Three copies here.

CHAIRMAN THOMPSON: Introduce one as an exhibit and give us

one to look at.

MR. ORN: We will introduce the map styled "The Ohio Oil Company, Rhodes Field, Lea County, New Mexico & Winkler County Texas as Exhibit 1.

CHAIRMAN THOMPSON: It will be marked and received by the official reporter.

MR. ORN: We will leave a copy with the Texas and New Mexico Commissions.

Q. Now, Mr. Ward, the area colored in red, the dark red line, what does that indicate?

A. That is a delineation of the Rhodes field in New Mexico as determined by the New Mexico Nomenclature Committee.

Q. Is that the area that the monthly orders issued by the New Mexico Commission include in the Rhodes field?

A. Yes, sir, it is.

MR. ORN: If any of you gentlemen would like to look at this one, I will pass it back?

Q. Now, the area colored yellow. Are those leases of the Ohio Oil Co.?

A. Yes, sir, they are.

Q. And the south line of the red line is the common line between Texas and New Mexico, isn't that right?

A. Yes, sir, it conforms to the state line.

Q. How many wells producing oil are there on the New Mexico side?

A. The proration schedule for May indicated forty-five producing wells. However, I believe Mr. Spurrier stated that there were forty-three wells.

Q. That is, producing oil?

A. That's right.

Q. If there is forty acres allocated to each of the forty-five--let us say forty-five for the purpose here--if there is allocated to each of the wells forty acres, then there would

be 1,800 acres in the Rhodes Pool on the New Mexico side that is productive?

A. Yes, sir, 1,800 acres.

Q. And the area on the New Mexico side has been producing how long?

A. Approximately from the first of this year; to be exact, the first well was completed December 26, 1947.

Q. I think you misunderstood my question. I said the area in New Mexico had been producing how long?

A. I beg your pardon, I thought you were referring to the other side. I believe the Rhodes field was discovered in 1928. It has been producing for approximately twenty years.

Q. When was the first well drilled on the Texas side?

A. December 26, 1947.

Q. By whom was it drilled?

A. That was the Ohio Scarborough State No. 1.

Q. That is an offset to the Ohio Mary E. Wills Well No. 4-A in Section 35?

A. It offsets that well, yes, sir.

Q. When was Well No. 4-A completed, approximately?

A. It was completed in 1947.

Q. Has the development toward the south end of the field been extending over a period of the last two or three years? In other words, you have had development in the south end of the field the last two or three years?

A. There has been slow development up until the first of this year, yes, sir.

Q. You are familiar with the Scarborough field, which the area .....

(Hearing interrupted by a visit from Governor Mabry.)

MR. MORGAN: I want to object to Mr. Ward's testimony, as far as the map is concerned, as being inaccurate as to surveys as to locations of wells Nos. 3, 4, and 5 of the Blount Drilling

Co. Proper surveys and proper data have been filed with the Texas Railroad Commission by Mr. Fowler here on my right.

CHAIRMAN THOMPSON: Showing accurate locations?

A. Yes, sir.

CHAIRMAN THOMPSON: It will be noted and compared.

MR. MORGAN: Yes, sir.

CHAIRMAN THOMPSON: Proceed, Mr. Orn.

Q. Mr. Ward, let us back trail here a minute. You say the first well was drilled on the Texas side on what date?

A. December 26, 1947.

Q. How many wells have now been drilled on the Texas side?

A. Seven wells. I understand the seventh well is in its completion stages at the present time.

Q. The Ohio has drilled two of them and the Blount Drilling Co. has drilled four?

A. That's right.

Q. And with the one that had already been drilled--and with the one that Tidewater has drilled, makes seven?

A. Yes.

Q. Have you made any study of the Scarborough field, which lies to the south of the Rhodes area, to see whether or not it is a common pool with the Rhodes Pool? Whether or not the reservoirs are connected?

A. Yes, sir, I have as to a certain number of points, which shows the penetration from the top of the Yates sand to the top of the pay.

Q. Now, do the red figures there indicate the penetration from the top of the Yates sand?

A. Top of the Yates sand to the top of the pay.

Q. Now, will you point out for the purpose of the record some of those wells and why you think they are in different reservoirs?

A. First, I would like to call attention to a dry hole which



is drilled in Section 3 about midway between the north Scarborough development and the old Scarborough field.

Q. Is that the one circled with the large red circle there, being Well No. 5 W. F. Scarborough, in the SW/4?

A. It is a Scarborough lease. I don't know the operating company's name, but it is well No. 5.

Q. That was a dry hole?

A. Yes, sir, they found no commercial production.

Q. What does the 730 in red beside that well indicate?

A. That indicates penetration from the top of the Yates sand to the total depth of that well.

Q. Now, what do you find generally to be the depth of the producing formation below the top of the Yates and in the Scarborough field?

A. A pproximate average of the wells, as indicated on Ohio No. 1 is two **hundred** feet penetration.

Q. You have three on there?

A. Two wells of 225 and one a total of 234.

Q. Now then, so the dry hole there that is circled in red, the large circle, went below the pay in the Scarborough area?

A. Yes, sir, it did.

Q. Now, let us go up to the Rhodes Pool and point out what you have reference to there.

A. The approximate average of the figures shown in red in the Rhodes field would be 300 feet, as compared to the 200 penetration in the Scarborough field.

Q. Do you have any information as to what the formation is from which oil is being produced in the Scarborough field?

A. Certain classifications classified it as Seven Rivers.

Q. What classifications are you speaking of?

A. I am referring to a report prepared by the North Basin Pool Engineering Committee in which they prepared data as the

A. I. M. E., and such data shows they had oil and gas pro-

duction from the permian basin in eastern New Mexico. For the Rhodes field, under the caption of name and age, it indicates to be Seven Rivers.

Q. All right.

A. And similarly for the Scarborough field in Winkler County, it, under caption of name and age, classifies it as Yates.

Q. That is a Yates sand?

A. Yes, sir.

Q. Is it truly a sand or is it a lime?

A. It is a sand.

Q. Do you have much information on the Rhodes field about porosity and permeability?

A. No, sir.

Q. Do you know of any core that has been taken in the field?

A. I have no knowledge, no, sir.

Q. You know nothing about the porosity or the permeability?

A. No, sir.

Q. Do you have any information on bottom pressures? Do you know of any information except such as the Texas Company put in this morning?

A. The Ohio Oil Co. has no pressure information or pressure history, and Mr. Staley indicated that he had no pressure history for the field. The only history that is a matter of record this morning I believe is the Texas Company's telegram.

Q. You are not familiar with that? You hadn't heard of that until this morning?

A. No, I had not.

Q. How many acres is there in the leases of Ohio on the Texas side? How many acres? Approximately how many acres?

A. Seventy acres.

Q. And there is two wells on the seventy acres?

A. Yes, sir.

Q. And on the New Mexico side the well density is one well to

forty?

A. Yes, sir, it is.

Q. Now, at this time the state-wide rule in Texas permits a well per twenty acres?

A. Yes, sir, spacing is 933 and 330.

CHAIRMAN THOMPSON: That is the state-wide order?

MR. ORN: Yes, sir.

Q. The State of Texas has different spacing rules for different fields?

A. Yes, sir.

Q. And where there is no such spacing rule for a particular field, then the state-wide rule is applicable?

A. That is usually the general rule.

Q. And in New Mexico the rules permit a well to ten acres, but they prorate on the basis of a forty-acre unit?

A. That's right.

Q. And that is on a surveyed acreage basis?

A. Straight acreage.

MR. ORN: I think that is all.

CHAIRMAN THOMPSON: Would you be willing to give a recommendation on what proration unit you think should be adopted in Texas in view of the number of wells in New Mexico on forty acres?

A. I think the allocation should be similar to what they have in New Mexico.

CHAIRMAN THOMPSON: Does anyone have any question?

MR. MORGAN: The only information which you have offered here regarding the correlations of the pay zones between the Scarborough and Rhodes pools is an A. I. M. E. publication. Is that correct?

A. Such classification plus penetrations.

Q. Not of factual studies or electric logs of the lease?

A. There is very few electrical logs that have been run in

the field.

Q. And The Texas Company data does not give any specific data on bottomhole pressure, pressure drops, or data showing the more economical return--the more economical rate of production for these wells in order to conserve them?

A. It gives nothing specific by way of prospects, but it indicates there is a pretty big drainage in the Rhodes field.

Q. But about that they offer no specific evidence. In other words, we are stumbling around in the dark with no factual data to decide whether a ten-acre or twenty or thirty or forty is the proper spacing? Is that correct? We are only going on political subdivisions.

A. Which question shall I answer?

Q. Either or both.

CHAIRMAN THOMPSON: Take the first question first.

MR. MORGAN: Yes, sir.

A. Both fields--Rhodes field and the old Scarborough field--are lacking in data. They have very little pressure history and gas-oil ratio history. And are lacking in core data and permeability data. And in view of the fact that they are old fields and lack such data as to determine definitely regarding drainage area .....

Q. In the history of other pools, isn't it odd that we should be able to get such good wells by hard shooting of nitro in an old field? If forty-acre spacing is adequate?

A. Well .....

CHAIRMAN THOMPSON: The question was, was it not odd that you could get such good wells by shooting.

Q. That is by heavy shooting.

A. In this particular field?

Q. Correct.

A. I think that would probably be true with the majority of fields. You would find local areas where you would get

such conditions and higher productivity.

CHAIRMAN THOMPSON: Any further questions?

MR. ORN: Mr. Ward, of course the Texas side hasn't been fully developed. How many productive acres do you estimate to be on the Texas side?

A. It is a little difficult to say exactly and definitely as to the number of acres, but I would say approximately 400 acres.

Q. And there is about 1,800 acres on the New Mexico side, assigning one well to forty acres?

A. That 400 acres would compare to 1,800 acres in New Mexico, yes, sir.

MR. ORN: That is all.

CHAIRMAN THOMPSON: Any further questions? Anyone? Of Mr. Ward, the witness? Anybody? Any questions? Baumel, do you have a question?

MR. BAUMEL: No, sir.

CHAIRMAN THOMPSON: Mr. Myer?

MR. MEYER: No, sir.

CHAIRMAN THOMPSON: No further questions? The witness is excused. Thank you very much. Anyone have a witness to offer? We are seeking light and would be glad to have data from anyone and any suggestions that would be helpful. As indicated, the problem is not a tremendously great one here, but we are seeking to set a pattern because I think it is indicated that more of such occasions will come of fields being in two states.

COMMISSIONER MILES: Mr. Morgan, I wasn't sure that I understood you--just what your questioning was trying to bring about. Do you feel that forty acres is not a proper spacing?

MR. MORGAN: Until we have more factual data, I do not feel that forty acres will adequately drain the fields now producing--in the south end at least of the Rhodes Pool. We

hope in the next three months by consistent well studying and bottomhole pressure and gas-oil ratio tests to be able to go before the Texas Railroad Commission and ask for a hearing.

CHAIRMAN THOMPSON: You intend to bring exact data?

MR. MORGAN: We will bring all our factual data in at that time. We don't have it now, haven't had the manpower and materials to do it.

CHAIRMAN THOMPSON: No one is finding any fault.

MR. MORGAN: We have been trying to do our best.

CHAIRMAN THOMPSON: We have a letter from the Skelly Oil Company, signed by J. N. Dunlacey, addressed to Mr. Glenn Staley, Lea County Operators Committee, Hobbs, New Mexico, which reads, "Dear Mr. Staley: In connection with the joint meeting of the New Mexico Oil Conservation Commission and the Texas Railroad Commission to be held in Santa Fe, New Mexico at 10:00 A. M. on the 27th day of May, 1948, for the purpose of considering matters and problems relating to the Rhodes Pool of New Mexico and the Scarborough Pool of Texas, to issue orders, rules, and regulations regarding this common reservoir oil pool in two states.

"Relative to the rules and regulations governing the operation of this common reservoir of two states, while we do not have any production in the Scarborough Pool and have only a small amount of undrilled acreage in the Rhodes Pool, it would be our suggestion and recommendation that the New Mexico rules and regulations, namely a unit of forty-acres spacing and a top allowable, be continued as is the practice throughout the state. The Scarborough Pool in Texas is on a spacing of 330 feet from lease line and 660 feet from offset wells which, in effect, gives to ten-acre spacing and the allowable is on a per well basis of potential.

"Since it will not be possible for Skelly Oil Company to

be represented at this joint meeting, I should appreciate your conveying to this meeting our opinion relative to the operation of this common reservoir."

Is there objection to this suggestion going into the record in the form of a letter? I hear no objection. It will be put in the record for such as it is worth.

Another letter from the Shell Oil Company, addressed to Mr. Glenn Staley of the Lea County Operators Committee, Hobbs, New Mexico, which reads, "Dear Mr. Staley: In connection with the joint hearing between the Texas Railroad Commission and the New Mexico Oil Conservation Commission in Santa Fe next Thursday, May 27, we have had some rumors there is a possibility that some operator will request the use of open flow potential as a basis for setting allowables in the Scarborough-Rhodes Field.

"Unfortunately, neither Mr. Lovering, District Superintendent at Hobbs, nor myself can be present at Santa Fe next Thursday, and we therefore ask that, should this method of establishing allowables be proposed, you ask for a continuance so as to permit us to study this problem and present our views properly at the following meeting in June." Signed M. C. Brunner, Area Production Manager. If I hear no objection, we will put that rumor into the record. (Laughter) Anyone else wish to present anything before this meeting? Anybody?

MR. MORRELL: If it might be helpful to the joint Commission, I might make an observation, on the basis of a number of years study of the production in New Mexico. With all due respect to Mr. Morgan's point, which is a good one, where applicable, as to detailed information on porosity, permeability, bottom-hole pressure, gas-oil ratios, and other engineering data, the history of production from the upper permian in New Mexico

over a period of twenty odd years renders as much light as a lot of detailed information, primarily by reason of the fact that we do not have single homogenous reservoir conditions, such as we have in Oklahoma, Kansas, and eastern Texas. We have a condition of structure starting in the Delaware Basin where the formations coming out over the river and over the central basin platform. It is an odd thing in geological history, but all production from Hobbs south to Jal is found at elevations from 150 to 350 feet below sea level irrespective of the formations. So, we have formations coming up at an angle, but we have a productive zone cutting across, so that a bottomhole pressure on an individual test in this well may or may not have any relationship to the adjoining well. Then the next point that I think would be interesting to observe and put in the record is the amount of oil in place. In other words, what quantities are we working with? The Rhodes field is located in what we generally term the sand fields. To the west we have the lime production and the water dry conditions. In the sand fields we have the gas dry. We have found from experience that the rate of production is determined more by the rate at which the oil will enter the well bore, and if production is obtained at a greater rate than will enter the well bore, your gas-oil ratio will increase, and the problem becomes magnified. Some of the studies for purposes of probable secondary recovery in an area twelve to fifteen miles north of the Rhodes Pool--estimates were made on ultimate recovery--and in some of those sand areas, we have records of ultimate recovery as low as 1,500 barrels or less per acre. Operators have found from their own experience to control gas-oil ratios that it is to their best interests to reduce the rate of production less than the State allowable granted by New Mexico. Those are factors



that on the basis of past history of similar production--and we have Seven Rivers and Yates production extending quite a ways north--that should be considered in determining well spacing or allowable for the Rhodes Pool. There is a definite question as to whether one well to forty acres will recover all the oil itself. It does definitely affect the pressures. So, there is a combination that involves the economics of the situation. As to whether the pressure will drop before you get the oil, that will determine the spacing. We have so many cases on the New Mexico side where one well may not even pay out on forty acre spacing, and if it won't pay out on forty, it is hard to justify a smaller spacing. However, with the economics improved by the price of crude oil that the operators now receive we do eliminate waste by allowing the operator to drill additional wells, but in that case the rate of production of the original well has declined to the point that the production from the additional well will still hardly make the normal forty-acre unit allowable.

CHAIRMAN THOMPSON: But he has the opportunity?

MR. MORRELL: He has the opportunity.

CHAIRMAN THOMPSON: Thank you very much. Anyone else have something to offer for this record? Please be free to make suggestions. Anyone? Any operator in the field? Anyone who has an interest? Mr. Fields, do you have something to offer for this record?

MR. FIELDS: No, sir, Colonel.

CHAIRMAN THOMPSON: Mr. Smullen?

MR. SMULLEN: No, sir.

CHAIRMAN THOMPSON: Governor?

COMMISSIONER MILES: No, I don't, but I would be happy if any of these people here do have any statement or facts which they feel would be helpful to this Commission, that they present it.

CHAIRMAN THOMPSON: So often after a meeting is over a fellow will say, "If I had just got up and said it, I would have said it ..." thus and so.

MR. MORGAN: I will say one more thing. When forty-acre spacing was set in New Mexico, oil was selling for seventy cents. Today oil is two dollars and a half. That makes a difference in recovery.

CHAIRMAN THOMPSON: Yes, sir. You know they say in every public meeting there is--those who speak have four different speeches. The one he intended to make, the one he made, the one the newspapers reported that he made, and the one he should have made; and Governor Miles says, the one he wished he hadn't made. Let it be not said at the close of this hearing that anyone didn't have the opportunity to say anything he wanted to say.

COMMISSIONER MILES: Colonel, before you close this meeting, I will say this, and I say it with all the sincerity of my heart, that I have always admired and appreciated and respected the wisdom, integrity, understanding, and sound judgment that Colonel Thompson has used in deciding matters that come before him in his duties as member and chairman of the Railroad Commission. I think he displays more sound judgment and more courage in administering his duties than any man I have ever known on any board. (Applause)

CHAIRMAN THOMPSON: I deeply appreciate those kind remarks, Governor, and I will go back to the hotel and tell my wife what you said. (Laughter) Anything else to come before the meeting? Again, I express our extreme pleasure at being here, Governor, and express the regret of my colleagues that they could not be here today; Commissioner Bill Murray had to go to Washington, and Commissioner Olin Culberson was booked for a hearing and couldn't get away. We will furnish transcripts of any hearing that we hold on this field to your

Commission. How many copies should we send you?

COMMISSIONER MILES: Three will be enough.

CHAIRMAN THOMPSON: I do appreciate deeply this opportunity for inter-state cooperation.

COMMISSIONER MILES: There is always an open invitation for you and your colleagues to come and meet with us.

CHAIRMAN THOMPSON: If there is nothing further to come before this meeting, the hearing is adjourned and the matter will be submitted for cause.

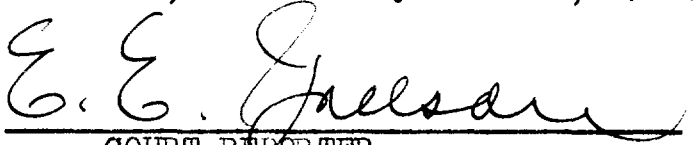
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#### C E R T I F I C A T E

I HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Commission of New Mexico and the Railroad Commission of Texas, in joint session, in Santa Fe, New Mexico, on May 27, 1948, at 10:00 A. M., is a true record of such proceedings to the best of my knowledge, skill, and ability.

I FURTHER CERTIFY that I am the official Court Reporter for the United States District Court for the District of New Mexico.

DATED at Santa Fe, New Mexico, this 2d day of June, 1948.

  
COURT REPORTER

