Santa Fe Copy

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

The following proceedings before the Oil Conservation Commission, State of New Mexico, came on for hearing pursuant to legal notice of publication, and at the time and place as set out below.

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

The State of New Mexico by its Oil Conservation Commission hereby gives notice, pursuant to law, of the following public hearing to be held October 28, 1948, beginning at 10:00 o'clock A. M. on that day in the City of Santa Fe, New Mexico, in the House of Representatives.

CASE 159

In the matter of the application of Magnolia Petroleum Company, a corporation for approval of a proposed unit agreement for the development and operation of the Lindrith Unit Area described as follows: Covering 28,459.39 acres situated in townships 24 and 25 North, Ranges 2 and 3 West, N.M.P.M., Rio Arriba County, New Mexico.

CASE 160

In the matter of application of Phillips Petroleum Company, Bartlesville, Oklahoma for exception to Order No. 72, effective August 1, 1937, amending Order No. 52 and for an order authorizing a central tank battery for certain leases in Section 32, Township 12 South, Range 32 East, Lea County, New Mexico.

CASE 161

In the matter of application of Magnolia Petroleum Company for an order approving a proposed unit agreement for the development and operation of the Cass Ranch Unit Area consisting of 10,230.27 acres situated in Townships 19 and 20 South, Ranges 23 and 24 East, N.M.P.M., in Eddy County, New Mexico.

CASE 162

In the matter of the application of the New Mexico Oil Conservation Commission upon its motion at the suggestion of the Lea County Operators Committee that Paragraph "G" of Section 2 of Commission Order 637 known as State Wide Proration Order be amended so as to read as follows:

(g) At the beginning of each calendar month, the distribution or proration to the respective units in each pool shall be changed in order to take into account all new wells which have been completed and were not in the proration schedule during the previous calendar month. Where any well is completed between the first and last day of the calendar month, its unit shall be assigned an allowable in accordance with whether such unit is marginal or non-marginal, beginning at 7 A. M. on the date of completion and for the remainder of that calendar month.

CASE 163

In the matter of the petition of Stanolind Oil and Gas Company for the adoption of regulations establishing the 640 acre spacing in the Blanco Field in San Juan County, New Mexico; establishing the location of the initial well on each 640; fixing regulations as to the setting of pipe; and for back pressure tests of the various stratas.

CASE 164

In the matter of the application of Grayburg Oil Company of New Mexico, and Western Production Company, Inc. for an order granting permission to unitize certain tracts within the boundaries of the Grayburg Cooperative and Unit Area, in Township 17 South, Ranges 29 and 30 East, N.M.P.M., in the Grayburg-Jackson Pool of Eddy County, New Mexico for proration and allowable purposes.

CASE 165

In the matter of application of Jenkins and McQueen for order granting permission to drill unorthodox location designated as Well No. 1 on their Cassidy lease, described as NW¼NE¼SE¼ (2970 feet south of the north line and 990 feet west of the east line) Section 19, Township 29 North, Range 11 West, N.M.P.M., in the Kutz Canyon-Fulcher Basin Field of San Juan County, New Mexico.

Given under the seal of the Oil Conservation Commission of New Mexico at Santa Fe, New Mexico on October 13, 1948.

(Seal)

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

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

BEFORE: Hon. R. R. Spurrier, Secretary and Member

REGISTER:

Don McCormick, Carlsbad, N. M., George Graham, Santa Fe, N. M., Frank C. Barnes, Santa Fe, N. M., Roy O. Yarbrough, Hobbs, N. M., Al Greer, Aztec, N. M., for the Oil Conservation Commission.

Hervey, Dow & Hinkle (By Mr. Clarence E. Hinkle), Roswell, N. M., S. P. Hannifin, Roswell, N. M., R. R. McCormick, Midland, Texas, for Magnolia Petroleum Company.

H. N. Riddle, Albuquerque, N. M.

H. A. Kiker, Santa Fe, N. M., C. L. Jenkins, Blackwell, Oklahoma, Sherman A. Wengard, Albuquerque, N. M., for Jenkins & McQueen and Jenkins Supply.

Frank A. Schultz, Dallas, Texas, Alfred E. McLane, Dallas, Texas, for the Delhi Oil Corporation.

L. C. Morgan, Wichita, Kansas, for the Wood River Oil & Refining Co.

J. R. Modrall, Albuquerque, N. M., Thomas B. Scott, Jr., Albuquerque, N. M., for Brookhaven Oil Co.

Frank J. Gardner, Midland, Texas, Cecil A. Darnall, Albuquerque, N. M., for Sinclair Prairie Oil Co.

Jack G. Coates, Midland, Texas, for Cities Service Oil.

O. H. Beshell, Midland, Texas, for Magnolia Pipe Line Co.

Sid W. Binian, Midland, Texas, for Atlantic Pipe Line Co.

J. D. Boatman, Jr., Dallas, Texas, S. J. Henry, Jr., Dallas, Texas, for the Atlantic Refining Co.

S. B. Christy, Jr., Roswell, N. M., for Sun Oil Co.

Cliff C. Mowry, Farmington, N. M., for Standard Oil Company of Texas.

George E. Kendrick, Jal, N. M., for El Paso Natural Gas Company.

Scott R. Brown, Midland, Texas, Roy C. Jeter, Durango, Colorado, for Western Natural Gas Co.

Fred Feasel, Fostoria 4, Ohio.

Glenn Staley, Hobbs, N. M., for Lea County Operators Committee.

Frank R. Lovering, Hobbs, N. M., L. B. Berry, Midland, Texas, M. T. Smith, Midland, Texas, for Shell Oil Company.

William E. Bates, Midland, Texas, for The Texas Co.

Seth & Montgomery (By. Mr. J. O. Seth and Mr. Oliver Seth), Santa Fe, N. M., for Stanolind Oil and Gas Company.

Caswell Silver, Aztec, N. M., for M. J. Florance Drilling Company.

J. N. Dunleavy, Hobbs, N. M., For Skelly Oil Company.

Paul C. Evans, Hobbs, N. M., for Gulf Oil Company.

Carl Jones, Midland, Texas, Russell Hayes, Midland, Texas, for Phillips Petroleum Company.

John E. Cochran, Jr., Artesia, N. M., for Grayburg Oil Company.

COMMISSIONER SPURRIER: Gentlemen, the Commission is in session. First, we will let the record show that the minutes of the meeting of the Commission will show that I was authorized to sit for the purpose of taking the record only. There will be no decisions made, no opinions given, and all cases will be taken under advisement. Mr. Graham, will read the first case, please?

(Reads the notice of publication in Case No. 159.)

MR. HINKLE: May it please the Commission, I represent Hervey, Dow & Hinkle. We are attorneys for the Magnolia Petroleum Company. This is the application of the Magnolia Petroleum Company for the approval of the Lindrith Unit Area in Rio Arriba County, New Mexico. The agreement covers--the proposed agreement covers a total of 28459.39 acres situated in Townships 24 and 25 North, Ranges 2 and 3 West, Rio Arriba County. 22,379.49 acres of the lands involved are lands of the United States. 6,039.90 are fee or privately owned lands, and only forty acres belong to the State of New Mexico. We have filed with the application the proposed form of unit agreement, which is in substantially the same form as unit agreements heretofore approved by the Commission. Under the terms of the proposed unit agreement, the Magnolia Petroleum Company would be the unit operator. Magnolia, in this case, holds substantially all the acreage involved. This particular area has heretofore been designated by the Director of the United States Geological Survey as one suitable and proper for unitization.

We have filed with the petition a geological map and report, which are the same as filed with the United States Geological Survey and used as the basis for the designation of the area. It is proposed under the agreement to drill a test well to the depth of approximately 6,500 feet to test the area for the oil and gas possibilities. I have here Mr. S. P. Hannifin of the Magnolia Petroleum Company whom I would like to have sworn, and I will ask him a few questions.

S. P. HANNIFIN, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. HINKLE:

Q. Your name is S. P. Hannifin?

A. Yes, sir.

Q. Are you employed by Magnolia Petroleum Company?

A. Yes, sir.

Q. In what capacity?

A. District land man.

Q. Are you familiar with the proposed agreement for unitization of the Lindrith Unit Area?

A. Yes, sir.

Q. Tell the Commission whether or not, in your opinion, the agreement would be in the interests of the conservation of oil and gas and the prevention of waste?

A. I do.

MR. HINKLE: That is all, unless you would have some questions.

COMMISSIONER SPURRIER: Does anyone care to cross-examine the witness? If not, the witness is excused.

(Witness dismissed)

COMMISSIONER SPURRIER: Call the next case, Mr. Graham, please.

(Reads the notice of publication in Case 161.)

MR. HINKLE: If it please the Commission. Let the record show that Clarence E. Hinkle is appearing on behalf of the Magnolia Petroleum Company. This is the matter of the application of the Magnolia Petroleum Company for the approval of the unit agreement for the Cass Ranch Unit Area, Eddy County, New Mexico. This proposed agreement would cover 10,230.27 acres in Townships 19 and 20 South, Ranges 23 and 24 East, Eddy County, New Mexico. The total acreage involved is 9,270.27 in lands of the United States, 640 acres belonging to the State of New Mexico, and 320 privately owned or fee lands. The unit agreement which has been filed with the application is in substantially the same form as unit agreements heretofore approved by the Commission. Under the terms of the agreement, the Magnolia Petroleum Company would be designated as the unit operator. The proposed unit area has heretofore been approved by the United States Geological Survey as one suitable and proper for unitization. We have filed with the application the geological map and report which were the basis for the designation of the area. It is proposed under the terms of the unit agreement to commence a test well for oil and gas within six months of the date of the approval of the agreement, and to drill it to a depth of approximately 3,900 feet.

S. P. HANNIFIN, having previously been sworn, testified as follows:

DIRECT EXAMINATION BY MR. HINKLE:

Q. Your name is S. P. Hannifin?

A. Yes, sir.

Q. You are employed by Magnolia Petroleum Company?

A. Yes, sir.

Q. In what capacity?

A. District land man.

Q. Are you familiar with the application of the Magnolia Petroleum Company for designation of the Cass Ranch Unit Area?

A. I am.

Q. You are also familiar with the proposed unit agreement?

A. I am.

Q. State whether or not, in your opinion, the agreement would be in the interests of the conservation of oil and gas and the prevention of waste?

A. I believe it would.

MR. HINKLE: That is all.

MR. McCORMICK: I have no questions.

COMMISSIONER SPURRIER: Does anyone care to examine the witness? If not, the witness is excused. Mr. Graham, will you call the next case?

(Reads the notice of publication in Case 160.)

MR. JONES: Let the record show that the applicant is represented by Carl W. Jones, attorney for Phillips Petroleum Company at Midland, Texas. Case No. 160 is the application of Phillips Petroleum Company for exception to Order No. 72, effective August 1, 1937, amending Order No. 52, and for an order authorizing Phillips Petroleum Company to set a central tank battery for certain of its leases in Section 32, Township 12 South, Range 32 East, Lea County, New Mexico. The particular units within Section 32 will be brought out later by testimony and by exhibit. I will ask that Mr.Russell Hayes be called and sworn to testify.

(The witness is sworn)

MR. JONES: Prior to the testimony of Mr. Hayes, I would like to read Order No. 72, to which the applicant requests an

exception. (Reads the order) Now, the order states that exceptions may be made at the discretion of the Commission. The exception that the applicant asks is that their four basic leases--they are state leases, the ownership of the royalties being all in the common school fund. The fact is that the applicant asks that the central tank battery be authorized for nine units instead of the five described in the order.

RUSSELL HAYES, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. JONES:

Q. Your name is Russell Hayes?

A. Yes, sir.

Q. Where do you reside?

A. Midland, Texas.

Q. Are you employed by Phillips Petroleum Company?

A. Yes.

Q. In what capacity?

A. Assistant division superintendent.

Q. Have you ever previously qualified as a witness before this Commission?

A. No.

Q. Will you state your profession, please?

A. Petroleum engineer.

Q. And you have a degree in petroleum engineering?

A. Yes.

Q. Where and when did you receive that degree?

A. A. and M. College of Texas in 1932.

Q. Will you state your experience in the field of petroleum engineering since receiving your degree?

A. Four years employed by Shell in the refinery department in

Houston; for approximately five years by the Gulf Oil Corporation in west Texas. The last six and a half years by Phillips in west Texas and New Mexico.

Q. In your position with the Phillips Petroleum Company, are you familiar with the operations of Phillips in Lea and Chaves County, and in particular in the Caprock Pool in Lea and Chaves County, New Mexico?

A. Yes.

MR. JONES: Is the Commission satisfied as to the qualifications of the witness?

COMMISSIONER SPURRIER: Yes.

Q. Mr. Hayes, I will ask you to take this map and glance at it and state whether or not it accurately represents the leasehold ownership and the operations of the Phillips Petroleum Company in Section 32, Township 12 South, Range 32 East?

A. Yes.

Q. Was that map prepared under your supervision with reference to the ownership and operations of the Phillips Petroleum Company in Section 32?

A. Yes.

Q. I will ask the reporter to mark this Applicant's Exhibit A, please. Mr. Hayes, will you take that map which has been marked Applicant's Exhibit A and indicate to the Commission the leases owned by the Phillips Oil Company in Section 32?

A. There are four basic leases, B-10,213, comprised of two 40-acre units in the SW¼NW¼ of Section 32, in the SE¼NW¼ of Section 32, and also in the same basic lease, B-10,213, the NE¼NE¼ of Section 32, the SE¼NE¼ of Section 32, and the NE¼ SE¼ of Section 32. The second basic lease is B-10,283, the NE¼NW¼, a 40-acre tract (Reporter's note: This probably is

by the witness. This tract bears the number B-10,839 on the exhibit.) B-11,330, the NW¼NE¼, and the SE¼NE¼ of Section 32. And the fourth basic lease, B-10,357, the SE¼SE¼ of Section 32.

Q. Those are the four basic leases. Now, is it a fact that those leases that you enumerate are outlined in this exhibit A in red?

A. That's right.

Q. I notice that this (indicating on map) 40-acre unit is outlined in yellow. Will you explain that?

A. It is outlined in yellow because this 40-acre tract is not a part of this application for consolidation. It is not continguous to the other leases at all.

Q. Going back to your testimony a moment ago, this lease B-10,213 is divided into two units which are not continguous with each other, is that correct?

A. That is correct.

Q. The reason that no consolidation of tank batteries for this 40-acre unit outlined in yellow is requested is for the reason that it is not contiguous to the other units?

A. That's right.

Q. The nine units which are the subject of this application for which a consolidated tank battery is requested are those nine 40-acre units continguous.

A. They are contiguous to each other.

Q. Now, in your experience with these leases do you know the royalty owners of the four basic leases which you have outlined?

A. Yes.

Q. What is that royalty ownership?

A. The common school fund of the State of New Mexico.

Q. And the common school fund owns the royalty under all four basic leases?

A. That is correct.

Q. Is it a fact that these four basic leases in so far as they cover land in Section 32 also cover units which are not in Section 32?

A. That's right.

Q. But no consolidation is requested for those particular units?

A. That's right.

Q. It is only the units in Section 32 for which consolidation is sought?

A. That is correct.

Q. Now, will you explain of the nine units which you have described and for which this application is made, what wells have been completed and what wells are now being drilled by Phillips Petroleum on the nine-forty-acre units?

A. In the S½NW¼, comprising two 40-acre tracts, which is commonly referred to as the Rock lease. Rock No. 1 and No. 2 have been completed. And in the NE¼NW¼, the 40-acre tract known as the Ostia, this well has been completed. And in the SW¼NE¼ well Alden No. 1 is in the process of being completed.

Q. But not yet completed?

A. That's right. And in the quarter section tract outlined in yellow ....

Q. .... let's don't get the record involved with that because it is not the subject of this application. Now, Mr. Hayes, in the event there were no consolidated tank battery on these nine units and under the four leases which you have described,

how many tank batteries would it be necessary to set, assuming that production is obtained in the future from all units?

A. Necessary to set five of these tank batteries.

Q. Explain why.

A. It will be necessary to set a tank battery on each basic lease, excepting the basic lease known as B-10,213. It contains two tracts in the same section which are not contiguous to each other. Therefore, it would require two tank batteries for that basic lease. A total of five.

Q. In other words, according to Exhibit A, the two portions for the B-10,213 are separated by what is known as the Alden lease?

A. That's right.

Q. And it will be necessary to set ....

COMMISSIONER SPURRIER: .... excuse me, Mr. Jones. Gentlemen, I think you should direct your attention to the witness. If you care to have a conference, I suggest that you go outside. Hearing is bad enough at best. Those who care to hear what the witness has to say will appreciate your being as quiet as possible.

Q. You stated that there would be required five separate tank batteries. How many different tanks would there have to be set in these five separate tank batteries in the event there were no consolidated tank battery, and assuming all units drilled and found to be productive? How many individual tanks in the five batteries would be required?

A. It would require thirteen tanks.

Q. Thirteen tanks. And what size?

A. 210-barrel tanks.

Q. Can you give a close estimate of what the cost would be?

A. Approximately $13,000.00.

Q. In the event the Commission sees fit to grant this application, then how many individual tanks would be required to care for production, again assuming that the units are all drilled and found to be productive?

A. Eight tanks.

Q. Can you give the Commission an estimate of the cost of those eight tanks?

A. Approximately $8,000.00.

Q. They also would be 210-barrel tanks?

A. Yes.

Q. In other words, the difference in the initial cost of the tanks would be $5,000.00?

A. That is correct.

Q. Now, in the event the consolidated tank battery were allowed by this Commission, would there also be a saving in the pipe required to bring the production to the battery?

A. Yes, there would be a substantial one.

Q. As between the five separate tank batteries and one single consolidated battery?

A. There would be a substantial saving in the pipe.

Q. Would there be any other saving in the initial cost of a consolidated battery over the five separate tank batteries?

A. I didn't get the question.

Q. Would there be any other saving in the initial cost of a consolidated battery over the five separate tank batteries? Instead of five separate tank batteries as would otherwise be required, according to your testimony?

A. In addition to the saving of the pipe, of course, the required amount of separation equipment would be reduced in

in the consolidated tank battery over five. The estimated cost as already given includes the tank battery.

Q. Over a period of years, is it your opinion, in the event a consolidated tank battery is allowed, that there would be a saving in the operation of these leases?

A. Yes.

Q. Is it your opinion that the operation would be more efficiently performed by the use of the consolidated tank battery?

A. That's right.

Q. Assuming that is true, that there there would be a saving over the years in the operation of the leases, is it your opinion that the economic life of these wells would be prolonged by the use of a consolidated tank battery?

A. Yes.

Q. Explain how their life would be prolonged?

A. By a saving in the initial cost of equipment and more efficient utilization of field personnel to operate the consolidated tank battery over the five tank batteries required unless consolidation is allowed. It would extend the economic life of the properties, thereby allowing a greater recovery and extending the producing period of the life of the properties.

Q. In other words, with dedreased cost of operation, it is your opinion that the wells could be produced longer, and be commercial wells longer, than if you had five separate tank batteries?

A. They could be operated at a profit longer.

Q. Getting back to the initial installation, can you give an estimate of the amount of steel which would be required to construct the thirteen separate 210-barrel tanks, which you

testified would be necessary in the event you were not permitted to set a consolidated tank battery?

A. The average weight of a 210-barrel tank is three tons. If consolidated were allowed, there would be an approximate saving of fifteen tons of steel in the installation of tanks alone.

Q. Five tons of steel.

A. Fifteen tons.

Q. That doesn't include the saving in steel in the connecting system and the pipe that would be necessary otherwise?

A. No.

Q. Then to briefly summarize your testimony, is it your opinion that in the event this application is granted and a consolidated tank battery authorized, that there would be a savings in initial cost, conservation of steel, more efficient operation, and as a result a longer economical life per well?

A. That's right.

MR. JONES: That is all I have.

MR. McCORMICK: How about overiding royalties? Is there any out on these leases?

MR. JONES: No, sir. Mr. Hayes, you understand, I believe, that even though this application be granted by the Oil Conservation Commission, these being state leases, this matter of the tank batteries is also subject to approval by the Commissioner of Public Lands?

A. That's right.

Q. In the event this application is granted and the Commissioner of Public Lands approves the use of a consolidated tank battery, where, with reference to Exhibit A, would the consolidated tank battery be located?

A. As near as practical in the SW¼of the NE¼, as near to the center of the lease as possible, on what is presently known as the Alden lease.

Q. Is that as near the center of the 40-acre tract as possible?

A. Yes.

MR. McCORMICK: How will you gauge each well to see how much each well will produce?

A. Facilities will be provided to take individual well tests at any time.

MR. McCORMICK: Do you plan to keep an accurate record of what each well will produce as distinguished from the nine wells?

A. They will be produced into a consolidated tank battery, but periodic tests of the ability of each well would be determined.

MR. McCORMICK: Will you be able to determine just exactly how much each well is producing for purposes of unit proration?

A. We will be able to file the forms presently filed on the consolidated tank battery showing each well.

MR. McCORMICK: And it will be accurate as to the production for each well?

A. As accurate as possible.

MR. McCORMICK: How accurate do you mean?

A. As determined by individual well tests.

MR. McCORMICK: How often will the individual well tests be taken?

A. I don't know that I can state a period of time. We will be able to take the tests upon request, and at periodic

intervals for our own information.

MR. McCORMICK: If each well were allowed to produce forty barrels a day, say, you had nine wells, that would be 360 barrels a day, if they all made their maximum. You would be able to determine and report exactly what each well produced each month?

A. Every attempt--I say every attempt--the wells will be produced in such a manner as to take the daily allowable from each well.

MR. McCORMICK: That will be accurate?

A. As accurate as they can get.

MR. McCORMICK: I have no more questions.

Q. In other words, in the event--in the absence of this exception, you have the same situation on this lease on the NE¼NE¼, the SE¼NE¼, and NE¼SE¼. You would determine then, in the event that the application is granted, from the nine wells as accurately as you could determine the production from the three wells without the exception and without the consolidated tank battery. Is that the case?

A. That's right.

Q. In the event this application is granted, is it contemplated that these four basic leases, insofar as they cover these units in Section 32, will be really carried as a section lease?

A. Yes.

Q. Do you have a suggested name for that lease?

A. We suggest the name Caprock.

Q. That would cover the nine units and not cover any other unit under these basic leases which are not in Section 32?

A. That is correct.

Q. In the event that lease B is redesignated as the Caprock lease, would you then rename the wells which have been completed and are now drilling?

A. Yes.

Q. How would they be renamed?

A. All necessary correcting forms would be filed to identify them as being in the consolidated Caprock lease. What is presently known as our Rock No. 1 in the SW¼NW¼ would be known as Caprock No. 1. What is presently known as Rock No. 2 in the SE¼NW¼ would be Caprock No. 2. And what is presently known as Ostia No. 1 in the NE¼NW¼ would be Caprock No. 3. And the present Alden No. 1 in the SW¼NE¼ will be known as Caprock No. 4. Subsequent drilling would follow along that line.

Q. Up to Caprock No. 9 if all were drilled?

A. That's right.

Q. You understand, Mr. Hayes, that these leases are not unitized and insofar as drilling operations and perpetuating the life in particular of drilling they will still be drilled as four separate leases?

A. Yes.

Q. Mr. Hayes, do you have any other information that you think should be brought to the attention of the Commission with respect to this application?

A. No.

MR. JONES: Does the Commission have any questions to address to the witness?

COMMISSIONER SPURRIER: The Commission has none. Does anyone care to cross-examine the witness? In connection with Case No. 164, which is a Grayburg application for something not

the same and involving different basic leases, I wonder if anyone has any comment to make on the similarity of these two cases? Mr. Morrell, do you have any comment?

MR. MORRELL: The only comment I could offer is that the applications speak for themselves to indicate a direct similarity.

COMMISSIONER SPURRIER: Mr. Staley, do you have any comment?

MR. STALEY: No, I do not.

COMMISSIONER SPURRIER: If no one else has anything, the witness is excused, and Mr. Graham will call the next case.

(Reads the notice of publication in Case 162.)

COMMISSIONER SPURRIER: Now this case, gentlemen, if someone cares to appear, that is all right, but I thought I would explain ~~explain~~ to everyone present that the intention of this is to put a well on proration schedule the day it is completed, and thereby gain that much production,rather than waiting until the first of the month or 16th of the same month, whichever the case may be. In our allowable system the fact that we have completed wells off the proration schedule until the 16th or first of the month has been responsible for certain losses of production which we need very badly these days. Mr. Staley, if you have anything to add, we will be glad to hear it.

MR. STALEY: The only thing that I have to add is that the fact is there just doesn't seem to be any justification for a well completed on the first or second of the month having to wait until the 16th to get an allowable. Due to the system used in allocating and running oil, if we have one well that is down during the month, the state is short that amount of oil. And by giving an allowable to all newly completed wells, it gives us an opportunity to make up the amount of shortage

that is now occurring each month in the State of New Mexico, which amounts on an average to about seven per cent.

COMMISSIONER SPURRIER: Thank you.

MR. MCCORMICK: How did the old system happen to get started? To be worked out that way?

MR. STALEY: At the time the system was inaugurated we really had pipe line proration. The pipe lines could only take a certain amount of oil during the month. Therefore, there was no--what you would call slack of such allowable. And all of the oil allocated to the State of New Mexico was allocated on the first and fifteenth of each month and each pipe line took that portion they could handle. That condition doesn't exist at this time, and we have plenty of pipe line room and plenty of market, and the nation needs the oil.

MR. MORRELL: Mr. Spurrier, I was wondering if Mr. Staley might not add to his remarks that granting of this additional oil immediately upon completion of the well would not be charged against the state allowable by reason of the fact that you have a shortage, and that, therefore, it could not be charged. By that I mean it wouldn't reduce the daily allowable to all presently producing oil wells.

MR. STALEY: At the present time, the system of allocating, the oil wells capable of producing it are given a top allowable; and so-called marginal wells, the wells incapable of producing top allowable, they have been added to the total of the top allowable wells, and that is the outlet for the State of New Mexico. This allocation to the newly completed wells on the day that they come in will be in addition to that allowable, so that the amount run short by overestimating of the operators of their marginal wells, and allocating top

allowable to wells capable of purducing it, will allow the state to cut down materially that seven per cent of shortage we have each month. Does that cover it?

MR. MORRELL: I think so.

MR. GRAHAM: Is that an actual or statistical shortage?

MR. STALEY: Actual.

MR. LOVERING: Mr. Lovering, representing Shell Oil Company. It seems in this case the order as written requires a definition. I think in the minds of many of us the question arises when is a well completed? In our old Case 146 we had that definition which stated that for the purpose of this order the well shall be considered completed on the day that the first oil is run into the lease and/or tanks. I think this should be included for clarity.

COMMISSIONER SPURRIER: Mr. Staley, would you care to add anything to that?

MR. STALEY: That, it seems to me, is an administrative order on the part of the Commission, and the Commission can determine what, in their opinion, constitutes a completed well. And the original definition given by the Commission of a well was completed when tubed--total depth reached--and tubed and the oil turned into the tank ....

MR. LOVERING: Where is that definition?

MR. STALEY: I couldn't tell you. That was the definition that was originally set out by the Commission in 1935.

MR. McCORMICK: What happens to oil that is recovered on a drill stem test so far as proration is concerned?

MR. STALEY: If the oil is saved that is produced on a drill stem test, the oil is charged against the allowable of the well when it goes on production--proration--schedule.

MR. McCORMICK: That is not really a very big factor, is it?

MR. STALEY: No.

COMMISSIONER SPURRIER: Does anyone have anything further?

MR. MORRELL: Mr. Spurrier, I would merely like to add that whatever the final order the Commission might issue, I do second the thought by Mr. Lovering that some definition of the word "completion" should be incorporated. We have found that for years to be a source of argument as to when a well is completed. As long as it is very specifically written in the order, everyone can proceed accordingly.

COMMISSIONER SPURRIER: If no one has anything further, Mr. Graham will call the next case.

(Reads the notice of publication in Case 164.)

MR. COCHRAN: If the Commission please, some three and a half months ago during the early part of July Grayburg Oil Company of New Mexico and Western Production Company filed with the Commission an application to drill 28 unorthodox 5-spot locations on leases owned by these two companies within the boundaries of the Grayburg Cooperative and Unit Area. This application was assigned case number 152, and a hearing was had on that application before the Commission on the 29th of July, 1948. At that time the Commission granted permits for the drilling of the 28 unorthodox locations, but no action was taken on the request that basic leases be unitized for proration and allowable purposes. And at the request of the Lea County Operators Committee action was withheld on that pending receipt by Lea County Operators Committee of the transcript of testimony at that hearing. A few weeks following the hearing, after the transcript was received by Lea County Operators Committee, representatives of Grayburg Oil Company

and Western Production Company had a meeting with representatives of Lea County Operators Committee in order to try to work out a proration arrangement that would not be adverse to any oil interests in the state and something that would be practical for Grayburg and Western Production to operate under. As a result of that meeting the application in the present case was filed. And in that application certain areas were marked off, which are shown on the maps which have been before you, as units for proration and allowable purposes. Now, the units are designated as C-1, C-2, W-1, W-5, and so on, designating the ownership of the particular unit. Now, the units vary in size, but in each instance, the areas included in any specific unit contain one or more of the proposed 5-spot locations. Now, at the hearing on July 29 rather extensive testimony was offered, and unless it is the Commission's desire or someone present that additional testimony be given, the unitization of the described tracts as set up in the application and shown on the map will be based solely on the application. The way these units will be produced is not new in that the Commission has on many occasions granted the 5-spot locations and permitted proration units around that to be unitized. In the case of 160 acres, the allowable for the four 40-acre units would be produced from five wells. In this case that is what Grayburg and Western ask; that from each unitized area they be permitted to produce the allowable as assigned by the Commission for the total number of developed 40-acre units in the proration unit from all of the wells located on that unit. It is not our intention to produce any well in excess of top allowable as set by the Oil Conservation Commission. But they will simply take the total

allowable for the number of 40-acre units in that given unit, and that will be produced from the total number of wells on the unit. And in no event would any well exceed top allowable. Now, I have a letter which I would like to introduce in evidence, which is addressed to me from Mr. Foster Morrell, supervisor of the United States Geological Survey, and in which it is stated that his office has no objection to this proposal. I also have a copy of a letter dated October 23, 1948, addressed to Mr. Spurrier of the Commission from Mr. G. H. Card, Chairman of Lea County--the Executive Committee of the Lea County Operators Committee--in which it is stated that the Executive Committee, after reviewing this application and the proposed order that was submitted on behalf of Grayburg and Western, voted six to one that they had no objection. Now, I believe the one who did not vote favorably was Shell Oil Company. And if Shell would like to ask some questions or have some additional testimony on the matter, I would be happy to have Mr. Krauskop testify.

MR. LOVERING: If the Commission please, the Shell company in no way questions the intent or purpose of this application. We do wish to point out that that there are what we consider a few objectionable features of the application and order as written as setting a precedent if applied in like manner to other fields in the state where we have communication between the wells and between the leases and as a matter of fact throughout a pool. The first request is the authorizing of what was comparable lease allowsable, which we consider undesirable, especially in highly competitive fields, more competitive than these. And the feature which permits the shift of allowables from one section of a large tract to another;

which also in highly competitive fields is undesirable. There is nothing in this order that confines the production under that 5-spot well to be allocated to the adjacent wells in that area. You can conceive of a special case where you might have four top allowables--not in this particular tract, perhaps--and you want to put a 5-spot on. They could then produce 200 barrels of allowable instead of 160. This is not analogous to the 160-acre tracts on which we already have 5-spots because in those cases the production is, has to be, allocated to the adjacent wells, which we understand was the original intent of the Grayburg Oil Company and Western Production Company in asking for their 5-spot locations. Again I want to reiterate we do not wish to question this particular case but are wondering about the complications that would be set up in analogous cases in more productive fields where we do have intercommunication and more competitive smaller leases and the malpractices that generally go with this sort of thing. I know in talking with any number of men who come here who were under the impression that these 5-spot locations--the production therefrom--would be allocated only to those adjacent wells in the 160-acre parcel, but there is nothing in the order to so state. As a matter of fact, in this particular case, or any similar case, allowable could be made up for wells that were incapable of making their production as far as a mile or a mile and a half away. In highly competitive fields where we have intercommunication that could happen for wells that weren't even on the structure. So, what we a re wondering about is the precedent that would be set if the order is written as submitted.

MR. McCORMICK: Mr. Lovering, have you read the next to last

paragraph of the proposed order?

MR. LOVERING: I have.

MR. McCORMICK: Well, don't you interpret that to mean that the allowable is limited to the monthly allowable, or daily allowable multiplied by the number of 40-acre subdivisions?

MR. LOVERING: No. If the applied factor whereby the top allowable per well would be reduced in relation to the increased number of wells, that would lessen the objections that we have to that sort of thing.

COMMISSIONER SPURRIER: Mr. Cochran, would you care to state what the intent of your order as it is written shows?

MR. COCHRAN: Yes, sir.

COMMISSIONER SPURRIER: With particular reference to this paragraph Mr. McCormick just mentioned.

MR.COCHRAN: May I read this please? It is further ordered, and the applicants are hereby authorized, to produce from each unitized tract herein above described the total allowable production, as fixed by the Commission for the total number of developed 40-acre proration units comprising such unitized tract, and that the applicants are hereby authorized to produce the total allowable so fixed by the Commission for each unitized tract from all of the wells located upon, or that hereafter may be drilled upon, such unitized tract producing from the Grayburg-Jackson pay. Now, the intent is exactly what that says. For instance, the west half of 26, which is a 320-acre unit, and which at the present time has eight producing wells and three porposed 5-spot wells; and I believe all of those wells are top allowable wells; and when those three porposed wells are drilled, then we would simply produce the allowable set for the number of 40-acre units in

the 320 acres or eight units. We would produce the allowable for eight units from eleven wells, all being top allowable wells, which means that each well will produce at a rate less than top allowable. There are two units that are 160 acres. There are some that are 320. Then in Section 19, and in the S½S½ of Section 18, there is a 640-acre unit. The wells on that tract, I believe, are all marginal wells. The wells that they propose to drill, the 5-spots on that tract, will not be allowable wells. And in most instances in that 640-acre tract the two wells--the well now on the 40 and the proposed 5-spot, which would constitute the second well--the two wells together would not make top allowable. And speaking about putting the allowable on a lease basis, what Grayburg Oil Company and Western Production Company, as the Commission knows, asked for at their first hearing, that was the purpose of the meeting with the Lea County Operators, and that was what we tirelessly worked for. In other words, to set it up in such a way that it would be on a basis that the Commission had granted before and the word or term "lease allowable" would not exist at all. And the units are outlined in such a way that there will be no transfer of any allowable from a top allowable well to a marginal allowable well. In other words, these lines were drawn as to area. This part of the acreage in the S½S½ of Section 18 (referring to map); Section 19. That is the whole area which was drilled a number of years ago, and all of those wells are marginal wells. And that is the way the units are outlined and the wells defined. No allowable can be transferred from a low pressure area to a high pressure area, or vice versa. It simply means that the allowable for the eight wells of a 320-acre unit which are all

top allowable wells will be taken out of eleven wells, and each well will produce at a rate less than the top allowable. Grayburg thinks that by doing that the wells will produce at a more efficient rate of recovery of the oil than otherwise. It is not their idea to have more allowable than at the present time without drilling the wells. But they would like to recover some oil that isn't recoverable without 5-spots. And incidentally, since the last hearing for the permits to drill the wells, one well has been completed, one is in the process of completion, and another well is drilling. One completed well is shut in at the present time waiting for some sort of allowable. The well that has been completed is on a unit on which all the wells are top allowable wells, and this well appears to be capable of producing 250 barrels a day. And the fact of the matter is that when they start to produce that well they won't produce top allowable. It will be cut back. They will take the total allowable.

MR. McCORMICK: Mr. Cochran, do you intend to make this map a part of the order so as to definitely fix the location of the 5-spot wells?

MR. COCHRAN: The proposed order that I have for Mr. Graham describes the 5-spot locations, shows the distances from the lines, and the numbers of the leases on which the well is located. And the proposed order that we have offered describes the acreage in each unitized tract. There will be nine units. It identifies the tracts. So, you have the well information as to location and description of these units, which conforms to what is shown on the map.

MR. McCORMICK: I would like to ask Mr. Lovering if he believes that there will be any danger of drainage from adjacent leases

as long as the 5-spot locations are interior locations.

MR. LOVERING: I don't believe so. We don't believe there is much communication in this case. As pointed out in the past testimony, we have never questioned the intention of the operations. It is in the interests of conservation. The only thing we question is the lease allowable in the present setup. Wehther you call it that or not. It is still that, in effect. And another feature I pointed out is setting up a precedent. That is all we would like to have considered. We don't question the unitization in this particular tract.

MR. McCORMICK: If this same system were inaugurated or someone proposed a system like this in Momument, would there be a much different situation?

MR. LOVERING: Yes, I would say there would.

MR. McCORMICK: If the 5-spots were all interior locations, do you think that would be objectionable in Momument?

MR. LOVERING: It could be. For instance, if I have a 160-acre block and you permit me to drill a 5-spot, I am getting the advantage in drainage over a man who has an adjacent 80 who can't have a 5-spot without setting up some sort of offset obligation.

MR. COCHRAN: Is that because of the communication between wells in the particular area?

MR. LOVERING: That's right.

MR. COCHRAN: Does Shell have a lease or leases that have been farmed out within in such an area ?

MR. LOVERING: We have one in Maljamar that is not the center of a 160-acre tract. And as long as the production is allocated to the adjoining wells, we have no objection. We have no objection here or anywhere else, I don't believe.

MR. COCHRAN: You understand, Mr. Lovering, that is exactly what we tried to do in our meeting with the Lea County Operators. Tried to define--

MR. LOVERING: .... we don't question you here at all.

MR. McCORMICK: On this 320-acre unit there is a third 5-spot. And if the 320 acres were considered as two separate 160-acre tracts, the 5-spot on each end would be all right as there is no 160 acres in the middle separate and apart from these two.

MR. LOVERING: That puts it on a 320 acre basis, that's right. So, on that 320 acres it simply would be producing in this manner. The allowable for eight 40-acre units would be taken from eleven wells. Just like you are talking about a state lease in Maljamar to take the allowable from four units from five wells.

MR. GRAHAM: There is no other case exactly like this? In other words, is that an experiment, this deal?

MR. COCHRAN: No, sir, it is not an experiment. Talking about the way this case differs from the usual practice of the Commission is that heretofore unitization has been for some reason unknown to me on perhaps only 160 acres in the tract.

MR. GRAHAM: Smaller tracts?

MR. COCHRAN: That's right. In this proposal, there are some tracts larger than 160 acres. But the principle is identically the same as on the lease that Shell farmed out to Barney Cochran, and last July he drilled a 5-spot unorthodox location in the center of 160 acres and unitized the 40 in the center of the 160. In some of these units there is more than 160 acres.

MR. McCORMICK: How about this 13-D in Section 26, which appears to be a 5-spot? When was that drilled?

MR. COCHRAN: As I recall, it was a deep test and was drilled by Grayburg Oil Company. How deep did that well go, Mr. Heard?

MR. HEARD: 5,170, and it was dry at that depth and plugged back, and they were permitted to produce that well as a part of the allowable for the four wells around it.

MR. GRAHAM: Mr. Lovering's objection possibly will be met if no precedent is set by this proposal.

MR. COCHRAN: That's right.

MR. LOVERING: If the Commission please, I merely want to leave that thought with the Commission and with the operators. I am sure that in future cases regarding unorthodox location or distribution of allowable they will be heard on the merits, and that we don't anticipate upsetting the apple cart here. I just wanted to bring those thoughts to your attention.

COMMISSIONER SPURRIER: Mr. Lovering is exactly right in the statement that the cases are decided upon their merits. Precedent is one thing and merit is another. I wonder if there is anyone ..... I am a little bit confused at this point .... would care to comment on the practice of the transfer of allowable from one well to another on the same basic lease? In a case where one well has a high gas-oil ratio, is there any similarity between these two cases, or am I as confused as I said I was?

MR. LOVERING: The only similarity is that both are in the interests of economy and conservation. You are conserving energy which ultimately is oil. Here they don't have any energy. There is a drainage problem. By so doing, they are getting more oil in the interests of conservation. That is about the similarity of that.

COMMISSIONER SPURRIER: Thank you. In the interests of information for the Commission, and I don't care whether the witness is sworn or not, I would like to have one of Grayburg's men give us a few facts about this well that they have recently completed. Mr. Krauskop, I presume you would like to answer the questions. What was the initial pressure, rock pressure?

MR. KRAUSKOP: The well is shut in right nowfor a bottom hole pressure buildup, and at the end of seventy-two hours pressure plus 800 datum was 783 pounds.

COMMISSIONER SPURRIER: These four surrourding wells, what are the approximate bottom hole pressures?

MR. KRAUSKOP: The average would be less than 700 pounds. We figured the initial static pressure was in the neighborhood of 1,050 to 1,100 pounds. In the last twenty-four hours of this buildup we have had quite a rapid buildup.

COMMISSIONER SPURRIER: Still building up?

MR. KRAUSKOP: That's right, and our experience in this area is that it will take two or three weeks to reach static. So, it will be another week or two before we have the final buildup pressure. So far as gas-oil ratio is concerned, we found that the original pressure has been in the neighborhood of 500 feet of gas per barrel produced. The ratio on this well in the two different tests has averaged right at 600 feet of gas per barrell, which would indicate we haven't reached the--at least the bubble point hasn't been reached in this well. The area hasn't been subjected to sufficient drainage to reach the bubble point.

MR. MORRELL: What is the name and number of the well?

MR. KRAUSKOP: Keeley No. 16-B, located 1,295 feet from the south line and 1,295 feet from the east line of Section 26,

Township 17 South, Range 29 East.

COMMISSIONER SPURRIER: What was the estimated initial production for twenty-four hours?

MR. KRAUSKOP: Based on tube tests, about 250 barrels per day.

COMMISSIONER SPURRIER: Do you have any record of what these four surrounding wells will actually make per day? Top production?

MR. KRAUSKOP: Three of them--one well, Keeley 9-B, is an input well; and the two offsets are top allowable. Keeley 10-B and 12-B, we have had no potential on those since they were completed. Keeley 11-B is a marginal well. It is about a 25-barrel well.

COMMISSIONER SPURRIER: Any questions?

MR. McCORMICK: I have none.

COMMISSIONER SPURRIER: Mr. Cochran, do you have any further statement?

MR. COCHRAN: I have nothing further.

MR. McCORMICK: Do you have a copy of your proposed order?

MR. COCHRAN: Yes, sir.

MR. McCORMICK: Could I have it, please?

MR. COCHRAN: Yes, sir.

COMMISSIONER SPURRIER: Does anyone have anything further in this case? Gentlemen, the case will be taken under advisement along with the others. Mr. Graham, call the next case.

(Reads the notice of publication in Case 165.)

S. A. WENGARD, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. KIKER:

MR. KIKER: This application is controlled by the term order No. 748 made in Case No. 126 on June 22, 1948. Permission is

sought to drill on 160 acres in the Pictured Cliffs pool in the Kutz Canyon-Fulcher Basin area, San Juan County. The application conforms in every respect to the order mentioned, except that the 160 acres is not in the form or shape of a square. Dr. Wengard is called to substantiate the assigned reasons why permission is sought. Permission is sought under the powers reserved to the Commission in Section 2 of the order, which reserve powers are based upon the finding lettered "H" in the findings of fact contained in that order No. 748.

Q. Dr. Wengard, you gave the reporter your initials?

A. Yes, sir.

Q. What is your profession?

A. I am a petroleum geologist.

Q. And you live where?

A. In Albuquerque.

Q. Will you please tell the Commission about your qualifications as a pteroluem geologist?

A. I have worked for ten years with the Shell Oil Company as petroleum geologist, and I am now a consultant as well as professor at the University of New Mexico.

Q. Will you tell the Commission about the location of the proposed well, and the territory where it is to be and the adjoining territory without detailed questioning?

A. The block is an irregular, L-shaped block in accordance with Exhibit A, and has three--has wells on the northwest and west sides owned by Southern Union. This proposed block being irregular fulfills several of the requirements for drilling, but it is impossible to drill in the middle of the block because it is L-shaped. It is proposed that, first, the well offsets no other well directly, and is 990 feet from every unit line excepting the west, that Jenkins-McQueen be given per-

mission to drill the location on the basis of their desire to produce a block of acreage whose initial shape was controlled by irregular acreage purchase in the region. And as such, the gas would be lost in part to the operator and the block could not be drilled unless the application is O. K. 'd. The other wells were drilled on an old order, and we believe that Mr. Jenkins should be permitted to develop the acreage which he owns.

Q. Those other wells were completed prior to June 22, 1948?

A. Yes, sir.

Q. The effective date of the order under exceptions to which we ask permission?

A. Yes, sir.

Q. Is there any likelihood of waste on account of this drilling operation, or injury to others?

A. On the contrary, the waste is highest to the operator now owning the land. It is now being withdrawn from at least the west side, if not the northwest side, of the block. It is imperative that he drill for that reason, Southern Union owning all the surrounding acreage.

Q. Do you have any communication from Southern Union with respect to this matter?

A. Yes, sir. In a wire received yesterday was the following: "New Mexico Oil Conservation Commission. In regard to Case number 165 we recommend that the unorthodox drilling unit be approved. Southern Union Gas Co. Van Thompson."

Q. May I have that, please, sir? This actually belongs to the Commission.

MR. McCORMICK: Let the record show that it is marked as an exhibit.

MR. KIKER: Yes.

MR. McCORMICK: Call it Exhibit B.

A. Yes, sir.

Q. Do you know, Dr. Wengard, whether Jenkins-McQueen are ready to begin immediately to operate if permission is granted?

A. Yes, I understand that they are.

Q. Do you have anything further that you want to add as to why this permission should be granted?

A. Only this. I believe it would work a hardship on a not too irregular block if the operator were not allowed to produce the gas underlying the block from the Pictured Cliffs.

MR. KIKER: That is all.

MR. McCORMICK: Is this Federal land?

A. This is fee land.

Q. It is on the Cassidy lease.

MR. McCORMICK: How is the royalty owned?

A. That I do not know.

Q. May I call Mr. Jenkins?

COMMISSIONER SPURRIER: Does anyone have any further questions of this witness?

MR. MORRELL: I have of Mr. Jenkins.

MR. KIKER: Mr. Jenkins, please stand, please. You haven't been sworn.

C. L. JENKINS, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. KIKER:

Q. Your name is C. L. Jenkins?

A. Yes, sir.

Q. You are a member of the partnership of Jenkins-McQueen?

A. That's right.

Q. Your headquarters are in Blackwell, Oklahoma?

A. Yes, sir.

Q. And you are doing business in the State of New Mexico?

A. Yes, sir.

Q. You have drilled several wells in the State of New Mexico?

A. Yes, sir.

Q. This Cassidy lease. The partnership holds that lease?

A. Yes, sir.

Q. What about the royalty?

A. All owned by Mr. Cassidy.

Q. He is the owner of the fee?

A. No, he is not the owner of the surface. He is the owner of all the royalty.

Q. And all the minerals?

A. Yes, sir.

Q. Are you ready to begin drilling operations on this tract immediately, Mr. Jenkins? If granted permission to do so?

A. Yes, sir.

MR. McCORMICK: How large is the basic lease? Does it cover anything other than 160?

A. No, sir, just the 160.

Q. Have you been able to secure any adjoining land, Mr. Jenkins, so as to make a square?

A. No, sir.

MR. KIKER: I think that is all.

MR. MORRELL: I would like to ask Mr. Jenkins a question. As a representative of the Geological Survey we are directly interested in this location, inasmuch as the lands to the east and west are public lands of the United States on which we have productive gas wells. To the west we have a well com-

pleted by the Southern Union Production Company. Cousins Well No. 4 located 990 feet from the lease boundary line adjoining Mr. Jenkin's lease. To the east the Southern Union Production Company has the Cousins Well No. 5, also located 990 feet from the outer lease boundary adjoining Mr. Jenkin's lease. Those two wells are located in acceptable square--acceptable rectangular 160-acre drilling units. They follow the outstanding order of the Commission for well spacing in the Fulcher Basin field. The location of Mr. Jenkin's 160-acre L-shaped tract, as already testified to before the Commission, is of such shape and location that the Survey would have no objection whatsoever to a well drilled on that 160-acre unit. I think they are entitled to it. The only point I wish to make is that the location, as included in the application, is stated to be 990 feet from the east line of the section, which puts the location 330 feet from the adjoining Federal acreage. Whereas our offset wells are 990 feet. The equitable thing in that case would be to allow Jenkins-McQueen to make their location anywhere they desire in a north-south line, but the location should be 660 feet from their east-west lease boundary line. In other words, in the center of their tier of 40-acre tracts. With that slight amendment, we have no objection to the location at all.

MR. McCORMICK: Mr. Morrell, the place where it is located would be substantially in the center of the four 40's, would it not?

MR. MORRELL: If the Commission please, I will spot for you where the location of the Southern Union well is for this 160; which is the northwest corner of the SE$\frac{1}{4}$ of that sec-

tion. Then there is another 990 feet location to the east. In otherwords, the Federal wells are equidistant from the Jenkin-McQueen lease, and we were merely asking that the Jenkin-McQueen well be equidistant within its own proper line.

MR. WENGARD: If that location is made in the middle instead of where it now is, and the blocks will be developed in the future on a more densely spaced pattern, that well of Jenkins-McQueen, as suggested by the Geological Survey, would be totally out of spacing, and give us some difficulty and require petitions for each well drilled in the entire block.

MR. MORRELL: I question the merits of that statement as to what might be drilled on a proper spacing basis. We have a state order for 160 acre wells at the present time. That order was prepared on tests submitted and the tests proved that wells could not be drilled economically on a lesser spacing. I say any further spacing would be a mathematical ....

MR. KIKER: .... would you please consider what would be a central location?

MR. MORRELL: Merely moving it back 330 feet so that it would be 660 feet from each side of the lease, rather than 990 feet from one side and 330 feet from the other.

MR. JENKINS: This would throw you right in this creek here. To move it where he say move it, it would be impossible to drill it there. We could move it about 130 feet and still be all right.

COMMISSIONER SPURRIER: 130 feet?

A. To the east and keep it out of the creek bed.

MR. MORRELL: My point was any place on the north-south line.

A. That's right.

MR. MORRELL: It could be made any place on the north-south

line.

MR. KIKER: Just look at this please, Mr. Jenkins.

A. Yes, sir.

Q. How far does that creek bed extend?

A. Through those three 40's, clear through them. Runs clear up--this creek comes right down to here (indicating on Exhibit A), like this.

Q. In a practically north-south direction?

A. That's right. Isn't that right, Mr. Morrell?

MR. MORRELL: I don't recall.

Q. If you move the well as far as is suggested it would throw you in the creek bed?

A. I could move it 100 odd feet farther and be all right. To center it--I don't think you would have any objection if I just moved out of that creek bed.

MR. MORRELL: That reason would be on account of the local topography and there would be no objection. The thing is moving 330 feet from one line where the offset operator already has a well.

Q. Then, you concede, Mr. Morrell, that if he moved 330 feet he would be in a improper location?

MR. MORRELL: The state as well as the Survey always allows a tolerance on a location for physical reasons.

MR. KIKER: If he moved it eastward as far as 130 feet, would that be satisfactory to you?

MR. MORRELL: I think the exact location on that should be checked in the field. I can't say as to what it could be.

MR. KIKER: Would that be satisfactory, Mr. Jenkins?

A. Yes, sir.

MR. KIKER: I believe that is all.

COMMISSIONER SPURRIER: I have a question. Mr. Morrell, are all these Southern Union wells on Federal acreage about 330 out of the center.

MR. MORRELL: 330 out of the center of the 160. The Cassidy lease makes the remainder of that particular section. And we have worked out in the past with Southern Union to locate their wells in described 160-acre units. It so happens that the Cassidy lease doesn't fit. However, they are entitled to a well and we have no objection. It is just to stay as nearly as possible within the center.

COMMISSIONER SPURRIER: Come up a moment, please. How far--according to the map the location is here (indicating).

MR. MORRELL: The location to the west is 2,310 feet from the south and east lines of Section 19.

COMMISSIONER SPURRIER: All right. How far is this west offset of Southern Union's from Jenkin-McQueen's proposed location?

MR. MORRELL: 1,320 feet.

COMMISSIONER SPURRIER: Then how far would it be from the proposed location of Jenkins-McQueen to the east offset?

MR. MORRELL: 1,980 feet.

COMMISSIONER SPURRIER: And if this well, barring topographical difficulties, were moved easterly 330 feet east of the proposed location, then it would be half way between these east and west offsets?

MR. MORRELL: That is exactly right. It would be equidistant between existing wells 660 feet apart.

COMMISSIONER SPURRIER: All right. I think you have in the record, Mr. Morrell, that anywhere up and down these 40's would be satisfactory. Are you or Mr. Jenkins familiar with where a south offset might come?

MR. MORRELL: There is no south offset to that at the present time. This being somewhat roughly the west edge of porosity.

MR. JENKINS: That's right.

MR. MORRELL: We have a well on a 160-acre block in the NW¼ of Section 20. We have a well ....

COMMISSIONER SPURRIER: .... which is how far from this east offset?

MR. MORRELL: The east offset is located 2,310 feet from the north and 990 feet from the west of Section 20. There is an additional well in the SW¼ of Section 20, which is a communitized block taking eight acres of the S½ of SW of section 20 and the N½ of NW of Section 29. All wells to the south and to the north are drilled on 160-acre spacing with the well essentially 330 out of the center of the 160.

COMMISSIONER SPURRIER: Well, Mr. Morrell, let me ask this question. When the Commission--if and when--writes an order approving this proposed location--or one close to it--if they take into consideration the topographical situation and the distance to the offset wells and get this well within 100 feet of the center, for example, say 150 feet of the center, would that be satisfactory?

MR. MORRELL: There would be essentially no objection. Inasmuch as the application is for an unorthodox location, and this is a single basic lease, I would see no objection if drilled closer than 330 to a 40-acre line. So that gives you considerable leeway. So there would be no question so long as you keep in SENE and NESE of Section 19. There would be no serious question as to its probable production inasmuch as it is between two existing gas wells.

MR. WENGARD: May I ask a question, Mr. Morrell? This well

is equidistant from this one over here. That is, it is as far from here to here at the present time?

MR. MORRELL: I can't speak at to that offhand.

MR. WENGARD: My reference preceded an important one, and that is the matter of equipment. I do not know the status of Mr. Jenkins' drilling or the location of his equipment. But if he should have it on his location already, and it is a matter of 150 feet off, is that a consideration for the operator? I do not know, as I say, what Mr. Jenkins' situation is there.

MR. MORRELL: I won't speak for the Commission, but so far as the Geological Survey is concerned, we have had them plug wells 2,000 feet deep because they were off location.

MR. KIKER: Would 150 feet throw you in that creek bed, Mr. Jenkins?

A. This location could be moved 150 feet, which would be all right.

MR. KIKER: That is all.

COMMISSIONER SPURRIER: As Mr. Morrell stated, both the U. S. Geological Survey and the Commission allow a tolerance of 150 feet in any direction for wells which are, that is an oil field, in oil pools, which are supposed to be located in the center of the 40-acre tract. That is why I posed the question to Mr. Morrell. If you have a tolerance of 150 feet there, possibly you can avoid the topographical trouble, and, at the same time, very nearly fulfill Mr. Morrell's request.

MR. JENKINS: Yes, sir.

COMMISSIONER SPURRIER: Does anyone have anything further in this case? If not, gentlemen, we will recess for lunch. We will return for the remainder of the hearing at two o'clock.

(Noon hour recess)