

Case 1923: Application of SUNRAY
OIL CO. for creation of the
SUNRAY OIL FIELD AND SUN POOL, SUTHER

CASE No.
2925

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

DRAFT

GMH/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

RECORDS CENTER

CASE No. 2925

Order No. R-2598-A

APPLICATION OF SUNRAY DX OIL COMPANY (*Now Sun Oil Co, DX Div*)
FOR THE CREATION OF A STRAWN GAS POOL
AND FOR SPECIAL TEMPORARY POOL RULES,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 4, 19670,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of February, 19670, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That by Order No. R-2598, dated November 13, 1963,
temporary Special Rules and Regulations were promulgated for the
South Hope Strawn-Gas Pool, Eddy County, New Mexico, establishing
640-acre spacing units for a period of one year after first pipe-
line connection.

(3) That by Order No. R-3662, effective February 1, 1969,
the South Hope-Strawn Gas Pool was redesignated as the South Hope-
Pennsylvanian Gas Pool.

(4) That pursuant to the provisions of Order No. R-2598,
this case was reopened to allow the operators in the subject pool
to appear and show cause why the South Hope-Strawn Gas Pool, now
designated the South Hope-Pennsylvanian Gas Pool, should not be
developed on 160-acre spacing units.

(5) That the Special Rules and Regulations promulgated by Order No. R-2598 have afforded and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the gas in the pool.

(6) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-2598 should be continued in full force and effect until further order of the Commission.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the South Hope-Strawn Gas Pool, now designated the South Hope-Pennsylvanian Gas Pool, Eddy County, New Mexico, promulgated by Order No. R-2598, are hereby continued in full force and effect until further order of the Commission.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 30, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Sunray DX Oil Company for the
creation of a Strawn Gas Pool and for Special
Temporary Pool Rules, Eddy County, New Mexico.)
Applicant, in the above-styled cause, seeks the
creation of a new Strawn Gas Pool for its New
Mexico State "AH" Well No. 1, located in Unit
K of Section 30, Township 18 South, Range 23
East, Eddy County, New Mexico, and the estab-
lishment of temporary pool rules therefor, in-
cluding a provision for 640-acre proration
units and for fixed well locations.

Case No. 2925

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

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ALBUQUERQUE, N. M.
PHONE 243-6891

SANTA FE, N. M.
PHONE 983-3971

FARMINGTON, N. M.
PHONE 313-1182

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MR. NUTTER: We will call Case 2925.

MR. DURRETT: Application of Sunray DX Oil Company for the creation of a Strawn Gas Pool and for Special Temporary Pool Rules, Eddy County, New Mexico.

MR. WHITE: If the Commission please, Charles White, Santa Fe, New Mexico, and I have associated with me Mr. William R. Loar, of the Oklahoma Bar. Mr. Loar will present the testimony.

MR. LOAR: We have two witnesses to be sworn.

(Witnesses sworn.)

(Whereupon, Applicant's Exhibits Nos. 1 through 8 marked for identification.)

PAUL J. BEAVER,

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

DIRECT EXAMINATION

BY MR. LOAR:

Q Will you please state your name and occupation?

A Paul J. Beaver, Division Exploitation Geologist for Sunray DX, Southwest Division, Midland, Texas.

Q Have you testified before the New Mexico Oil Conservation Commission of New Mexico previously?

A No, I have not.

Q Would you briefly state your educational and professional background?



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A I received a Bachelor of Science Degree in Geology from Texas Technological College in 1948, and since that time have been a practicing geologist.

Q Have you made a study of the area that's the subject of Case Number 2925?

A Yes, I have.

Q Would you please refer to Sunray's Exhibit No. 1 and state what that is?

A Exhibit No. 1 is a land plat of a portion of Eddy County, New Mexico, covering Townships 18 and 19 South, Ranges 21 through 23 East. Range 22 East being omitted through some previous surveying practice. All of the Sunray DX acreage is shown on this map in yellow and a portion of the acreage around the wells in Section 36, 18-21, Section 30-18-23, are partly owned by the Atlantic with one-sixth interest in Sunray DX having a five-sixths working interest.

Q Would you also point out the wells that have been drilled penetrating the Strawn formation?

A We have completed a gas well from the Strawn formation in the northeast-northeast of Section 36-18-21, and a Strawn gas well in the northeast-southwest of Section 30-18-23; and we drilled a dry hole in the southeast-northwest of Section 29-18-23.

Two dry holes have been drilled in the area subsequent to discovery of gas; one being in the northeast-northeast of Section 12-19-21, drilled by Tom Brown Drilling Company, and a dry hole



drilled in the southwest-southeast of Section 9, Township 18 South, Range 23 East, and prior to the discovery of gas a dry hole being drilled in the southwest-southwest of Section 23-18-23, and a dry hole being drilled in the southeast-southeast of Section 10-19-23.

MR. NUTTER: All those went to the Strawn?

A Or deeper, yes, sir.

Q (By Mr. Loar) Would you refer to Exhibit Number 2, Mr. Beaver?

A Exhibit Number 2 is an induction-electrical log survey of the Sunray DX New Mexico State "AH" Number 1, the discovery well, located in Section 30-18-23; and thereon we have, with red lines marked the tops of the formations from the top of the Pennsylvanian down; the Cisco being encountered at a depth of 6,021 feet; the Canyon at a depth of 6,466; the Strawn at a depth of 6,935; the Strawn Sand Pay zone at a depth of 7,318 minus 3,250; the base of the Pennsylvanian, top of the Mississippian Chester encountered at 7,395; Meramec at 7,530. The well was total depthed as 8,104 in the Devonian formation, which was encountered at 7,980 and was water bearing.

The Strawn Sand Pay zone, as is illustrated here with yellow on the left-hand side of the log perforations immediately to the right thereof, from 7,326 to 7,368; we encountered 43 feet of pay sand and potentialled the well through perforations for 20,000,000 cubic feet of gas per day.

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Phone 243-6691

Q This was the discovery well, was it not, Mr. Beaver?

A Yes.

Q And the best one so far?

A Yes, sir.

Q Would you please refer to Exhibit Number 3 now?

A The next electrical log is on the New Mexico State "AJ" Number 1, which is a dry hole we drilled in Section 29, which is similarly marked as the first log, and in the interest of time I will point out the Strawn formation being topped at 7,032 feet in depth; the Strawn Sand pay equivalent zone encountered at 7,442 minus 3,421, and which at this particular location was a sandy loam portrayed in blue and yellow, and a sand zone encountered at 7,503 Atokan age, which was not present in the other well, and we quit the well immediately below the top of the Mississippian Chester.

Q This was a second well that Sunray drilled in the area?

A Yes, sir.

Q Would you now go to Exhibit Number 4?

A The next exhibit is an electrical survey of the Sunray State "AM" Number 1 which is a gas well located in the northeast-northeast of Section 36-18-21. Top of the Strawn formation was encountered at 6,889; the Strawn Sand pay zone encountered at 7,277, being 12 feet thick in the subject well, and we perforated from 7,277 to 7,297, and potentialled the well for 680 MCF of gas per day.



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Q Have you done any work on the structure map in this area?

A Yes, sir.

Q What does the structure map show, if anything?

A The structure map shows east to southeast regional dip with the strike being northeast-southwest in this area.

Q Does the structure seem to have any bearing on the development of the formation?

A No, sir, it does not.

Q Does the formation underlie the general area?

A Yes, sir.

Q Isn't one of the \$64.00 questions here whether or not the formation is productive?

A Yes, sir, it appears to me that the sand will probably be deposited in the northeasterly-southwesterly strike. In other words, a transgressive sea on a higher land mass to the northwest.

Q Is it rather difficult to do accurate correlation, at least at this stage of the game, Mr. Beaver?

A Yes, sir.

Q As a matter of fact, have you submitted samples of what we are calling Strawn to a paleo lab?

A Yes, we submitted the samples on the discovery well to a paleo lab in Midland, Texas, and got two conflicting reports on the same well.

Q What were the two nomenclatures?



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A The first report being that the reservoir rock was Strawn in age and the second report being that it was Atoka. It is our opinion that it is probably Strawn.

Q Have you seen any indication of faulting in this general area?

A No, sir, I have not.

MR. LOAR: That's all we'll have of this witness. We'll have an engineering witness.

MR. NUTTER: Any questions of Mr. Beaver?

CROSS EXAMINATION

BY MR. NUTTER:

Q If this trend is from northeast to southwest, it appears that the well in Section 25 may have established the end of the trend or do you think it's trending farther to the north there?

MR. LOAR: You mean the one in 29?

MR. NUTTER: Section 29, the dry hole.

A It appears that the easterly direction of the reservoir has been established, yes, sir, but not to the northeast. The dry hole in Section 9 encountered sand and had a show of gas estimated at between 50,000 and 250,000 cubic feet.

MR. LOAR: The well in 9 that you are referring to.

Q That's the well way up there?

A Yes.

Q It did have a show of gas?



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A Yes, sir.

Q In the Strawn?

A Yes, sir. It's out opinion it's the trend, and is Strawn.

Q Have any of these other wells penetrated the Devonian except the original discovery well, of these three?

A Not these three.

Q The "AH" Number 1 is the only one?

A No, sir, that's the only one.

MR. NUTTER: Any other questions of the witness? He may be excused.

(Witness excused.)

VIRGIL R. MAYABB,

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

DIRECT EXAMINATION

BY MR. LOAR:

Q Will you please state your name and occupation?

A Virgil R. Mayabb, District Engineer of Sunray DX, Hobbs Office.

Q Have you testified before the New Mexico Oil Conservation Commission previously?

A No, sir.

Q Would you briefly state your educational and professional background?



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A I was graduated from the University of Oklahoma in 1956 with a Bachelor of Science Degree in Geological Engineering, and since this time I have been employed in an engineering capacity with Sunray DX.

Q In the last few months you have been in the Hobbs District Office concerned with this area and other areas of Southeastern New Mexico?

A Yes, sir.

Q Have you made a study of what we are calling the South Hope Area?

A Yes, sir.

Q Did you hear the testimony of Mr. Beaver, and do you concur with that?

A Yes, sir.

Q Have you prepared an exhibit reflecting the reservoir data and the reserve calculations for this area?

A Yes, sir, Exhibit 5. We tabulated the average reservoir data obtained from our two wells, the New Mexico State "AH" Number 1 and the New Mexico State "AM" Number 1. The porosity obtained here, 11.6 percent was obtained by weighting the two wells. The water saturations were obtained the same way, and these were both from log calculations inasmuch as we have no cores available. The reservoir pressure average 2705 psia, and the reservoir temperature 146 degrees. The compressibility factor was obtained from empirical data and our gas-liquid ratio was



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measured, separated from the original test of our "AH" Number 1. Inasmuch as we do not have much information we have used the volumetric calculation here and worked up the reserves on an acre-foot basis and show we have 670 MCF reserves per acre foot, and condensate recovery of 1.55 of gas. On gas reserves we're using a hundred pound abandonment pressure which will be a 90 percent recovery factor.

Q Now then, Mr. Mayabb, considering the data available to you, would you express an opinion as to what area a well can drain?

A Yes, in my opinion a well can drain in excess of 640 acres.

Q Why do you say that?

A Our New Mexico State "AH" Number 1 on the original potential test indicated through the high flowing rates and tubing pressures that the area has good permeability, and calculations, using this data of the openflow potential test, indicates a permeability around 30 millidarcies, and this, of course, is at near the original completion, and we feel that there was some skin damage, probably in excess of that.

Q How close is the closest market for this production?

A Approximately 20 miles.

Q Other than the type of data that you have available, isn't it going to require either production to a market or the flaring of substantial quantities of gas to go any further with



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your opinion of the ability of one well to drain an area?

A Yes, sir.

Q Would it require the flaring of a substantial volume to adequately prove the area of drainage?

A Yes, sir, that is true. Our New Mexico State "AM" Number 1, after completion we noticed that we have considerable amount of formation damage there and we are unable to conduct interference tests at this time. The well originally tested 2,800,000 prior to completion, and after completion the highest flow rate has been 680 MCF a day.

Q Have you done any artificial stimulation on these wells?

A No, sir, not above the normal breakdown after cleanup job which is in the neighborhood of 500 gallons. 500 gallons on "AH", and then we went into the "AM" in an effort to break our block with an additional 2,000 gallons, but as of this date we haven't accomplished the objective there.

Q Have you discussed this problem of market with our gas contracts people?

A Yes, sir.

Q And what do they estimate will be the time that we can expect a market here?

A They feel that between two and three years would be as early as we can anticipate gas service.

Q Will it require additional development in order to get a market here?



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A Yes, sir.

Q What pattern of development are you recommending to the Commission?

A We are recommending 640-acre spacing and due to the topography of the area, it's pretty rough, we would recommend that the wells be located in or on a 40-acre surrounding a center of the 640-acre tract. In other words, that would give a 160 acre area in the center of the section.

Q In your application you suggested a four forty acre spots surrounding the center of the section, did you not?

A Yes, sir.

Q Either of these patterns would be acceptable, but the one that you are now recommending would fit better with the topography?

A Yes, sir, we feel that it would.

Q Would you refer to Exhibit Number 6 and state what that is?

A Exhibit 6 is a reserve calculation for New Mexico State "AM", utilizing the data as shown on Exhibit 5; we have used the net footage as determined from our sonic log here, and we feel that this well is, or I feel that this well is more representative of the reservoir than the New Mexico State "AH". Here we see this comparison between 320-acre and 640-acre spacing. Showing 640-acre spacing the total recoverable reserves are at 5,398 MMcf. For the 320, 2,699 MMcf. We're utilizing the same recovery factor



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PHONE 983-3171

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so it's just half.

Q Would you refer to Exhibit Number 7?

A Yes, sir. Exhibit Number 7 is an economic analysis for this same well, using the reserves as was calculated on Exhibit 6 for 320 and 640 acre spacing. We have used a value of our gas at 10.5 cents per Mcf, and our well costs is \$117,000. An operating expense of three and a half cents per Mcf and we are including our compression charge on that; less our production taxes, and come up with a net profit before income tax, federal income tax, and discounting this -- Let me back up a little bit here. This net profit would be over a 27 year life, based on a pipeline take of one million per day per 10 million cubic feet of reserves. On a present worth basis on 640 acre spacing, our net profit would be worth \$178,500; where on 320-acre spacing the present worth is \$58,200; giving us discounted profit for 640 acres of \$1.53 and 320 of \$0.50 discounted profit per dollar invested.

Q Have you included any of the cost of acreage exploration, overhead, dry holes or things of that nature?

A No, sir.

Q In your opinion, would you recommend the additional development based on a \$1.53 profit per dollar invested?

A Yes, sir, we feel that this is the minimum that we could recommend.

Q You could not recommend additional development based



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PHONE 913-3971

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on 320 acre spacing, or fifty cents per dollar invested?

A No, sir.

Q Have you allowed any money in here for any portion of laying a line to market?

A No, sir.

Q In your three and a half cents, have you allowed any investment charge for compression facilities?

A No, sir.

Q Would you refer to Exhibit Number 8?

A Exhibit 8 is a detailed cost analysis to drill and complete in the Strawn reservoir in the subject area. This figure was utilized on Exhibit 7 in the economic analysis. The cost as depicted here are not representative of our initial well, inasmuch as they were a little more expensive; we were doing additional testing and logging, and we feel that this is more representative of the future drilling in the area.

Q Mr. Mayabb, to your knowledge, has the Commission established a field or pool designation for this area?

A No, sir.

Q Would you recommend that this be known as the South Hope Strawn Gas Pool?

A Yes, sir.

Q If the Commission sees fit to grant our application, do we propose to drill a well in Section 19 of 18, 23?

A Yes, sir.



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PHONE 393-3971

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Q Will that be in cooperation with Southern Minerals, who owns the northeast quarter of that section?

A Yes, sir.

Q Depending on the outcome of that, do we propose to move then to probably Section 25 of 18, 21?

A Yes, sir.

Q And depending on the outcome of those two wells, to additional locations in the area?

A Yes, sir.

Q To summarize your testimony you are recommending 640-acre units for this field?

A Yes, sir.

Q And you are recommending these as temporary rules so that additional orderly development can take place?

A Yes, sir.

MR. LOAR: Mr. Nutter, I would like to refer you to R-2440 and 2441, which were orders given on the application of Ralph Lowe, in an area about another 18 or 20 miles south of this.

MR. NUTTER: Indian Hills and Indian Basin?

MR. LOAR: Indian Hills. It is my understanding that he's caught with the same type of problem that Sunray is. The same market that he's looking forward to is the market that we're looking for.

MR. NUTTER: Your market is only 20 miles, his is 40.



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MR. LOAR: He's another 20 miles south of us. It's going to take the development on our part and his part and a few other people in this area to get a market, and our best guess is that we're looking forward to a market in two or three years. We would like to have the same type of provision if the Commission gives us this order, that upon the initial sale we will notify the Commission and they can then set a time to reconsider and see if this area will substantiate 640-acre drainage. That's all we have of this witness.

MR. NUTTER: Are there any questions of Mr. Mayabb?

MR. LOAR: At this time perhaps I should move the introduction of Exhibits 1 through 8.

MR. NUTTER: Sunray's Exhibits 1 through 8 will be admitted in evidence.

(Whereupon, Applicant's Exhibits 1 through 8 were admitted in evidence.)

MR. DURRETT: I have one question.

MR. NUTTER: Mr. Durrett.

CROSS EXAMINATION

BY MR. DURRETT:

Q I realize that you did ask for limited well locations in your application?

A Yes.

Q I believe you stated on direct examination that you have an alternative request, and I missed it.



A Yes, that we allow the wells to be drilled within an area of the 40 acres surrounding the center.

MR. LOAR: The 160, each 40.

A Well, yes, sir, 40 acres of 160 surrounding the center of the 640 would give us 160 acres in the center of the section.

Q Within the 160, you don't have any footage requirements though.

MR. LOAR: We could recommend some, if you would like.

MR. DURRETT: Well, in general is what I was interested in.

MR. LOAR: What's the diagonal of the 40, 1,980?

MR. BEAVER: It would be 1,980 from any two lease lines in the center of the section.

A Does that get it?

MR. DURRETT: I think I have it, in general.

MR. LOAR: I should point out that the well in 36 of 18, 21 would not conform to that pattern. The additional wells that Sunray has would conform to, naturally, any pattern that the Commission adopts.

MR. DURRETT: This would be an exception to the well in Section 36-18-21?

MR. LOAR: Yes, our "AM".

MR. DURRETT: Would it be an exception to the well requirements that you requested in your application?

MR. LOAR: It still would be.

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BY MR. NUTTER:

Q This State Well "AM" Number 1, isn't it too good a well, is it your opinion that the reason for the low productivity is the skin damage to the well bore?

A Yes. Prior to completion it tested 2,100,000 on quarter inch choke. We feel that the capacity would be much more. Our initial test on the well, upon completion and our potential test, the openflow potential was only 680 Mcf per day, which is a quarter of what it actually tested during drilling operations.

Q Once you establish a market in this area, do you plan to try to clean that well out?

A Yes.

Q And increase the productivity?

A In fact we have a permanent packer in there and we have four and a half inch casing, it's quite a problem to do anything right now, Mr. Nutter. That's the main reason we have held off, we're required in drilling the packer out in all probability.

Q Your "AH" Number 1 had a calculated openflow of 20,000,000, didn't it?

A Yes, sir.

Q In computing your economic analysis here on Exhibit 7, you show a present net worth, discounted at five percent, of \$58,200.00 on the 320 and \$178,500.00 on the 640 --

A Yes, sir.

Q --which is based on a 27 year life?

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A Yes, sir.

Q Being a million a day per ten million reserves, you have got, for your 640 acre spacing you have five million reserves there?

A Yes, sir.

Q And you have a well that calculates 20,000,000 a day?

A Yes, sir.

Q Is it sincerely your opinion that a well that makes 20,000,000 a day would be restricted by the pipeline to 500,000, which would be the rate that you'd have to reduce that?

A Yes, sir, I feel that.

Q Who are you negotiating with for the sale of this gas that would take it at that rate?

A I am not familiar with it, Mr. Nutter, who we are negotiating with. There are two pipeline companies in the area and they have been dealing, or talking to them. I'm not familiar with that particular end of it.

Q Have they indicated that there takes would be at that rate of this one to ten thousand ratio?

A In that general area, yes, sir. This is more of a rule of thumb. There is nothing definite, nor have we had a commitment from them.

Q Either the 640 or the 320, even discounted 27 years though represents some profit?

A Yes, sir.



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Q You went by rather hurriedly your testimony there as to why you believe that one well will drain 640 acres or in excess thereof. Would you elaborate on that just a little bit?

A Well, with our New Mexico State "AH" this is the comparison we are making, the flow rates on the particular well, we had 7,000,000 at 1,700 pounds -- I had better get my notes. 7,688,000, flowing tubing pressure of 1,619 pounds, and by utilizing this drawdown data, we have calculated the permeabilities to be, I don't have it, 25 millidarcies is the calculation for the permeability, and we feel that is sufficient to drain the area.

Q You don't actually have any drawdown tests yet?

A No, sir, our data is incomplete, and we are working on it.

Q Do you have any core analysis at all?

A No, we do not.

Q Do you contemplate taking cores on any future wells?

A No, we haven't set up a program. I'm sure we will. We drilled, the last one was drilled with gas, and consequently wasn't cored, but now that we have a little, we have additional data in the area we may be able to correlate the formation.

MR. NUTTER: Are there any other questions of the witness? He may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Loar?



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MR. LOAR: No, sir, that's all we have, Mr. Nutter.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2925? We'll take the case under advisement and take a 15 minute recess.

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission Examiner at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 14th day of November, 1963.

Ada Dearnley
Notary Public - Court Reporter

My Commission Expires:
June 19, 1967

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing of Case 2925, held on 10/30, 1963.

James, Examiner
New Mexico Oil Conservation Commission



Case 2925

GILBERT, WHITE AND GILBERT
ATTORNEYS AND COUNSELORS AT LAW

MAIN OFFICE OCC

BISHOP BUILDING

SANTA FE, NEW MEXICO

CARL H. GILBERT (1891-1963)
L. C. WHITE
WILLIAM W. GILBERT
SUMNER S. KOCH
WILLIAM BOOKER KELLY
JOHN F. MCCARTHY, JR.

October 8, 1963

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TELEPHONE 983-4324
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New Mexico Oil Conservation Commission
PO Box 871
Santa Fe, New Mexico

Attention: Mrs. Ida Rodriguez

Dear Ida:

Enclosed herewith please find Sunray Oil
Company application which I spoke to you about
this afternoon.

Sincerest regards,

L. C. White

L. C. WHITE

SECRET MAILED

LCW:bg

Date *10-15-63*

[Signature]

MAIN OFFICE OCC

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO
1953 OCT 9 AM 8:24

IN THE MATTER OF THE APPLICATION OF SUNRAY DX OIL
COMPANY FOR AN ORDER ESTABLISHING THE VERTICAL
AND HORIZONTAL LIMITS OF AN UNNAMED STRAWN POOL
AND TEMPORARY FIELD RULES INCLUDING UNIFORM
PRORATION UNITS, FOR THE FURTHER DEVELOPMENT
OF THE STRAWN FORMATION UNDERLYING PORTIONS OF
TOWNSHIPS 18 and 19 SOUTH, RANGES 21 and 23
EAST, EDDY COUNTY, NEW MEXICO

CASE NO. 2925

A P P L I C A T I O N

TO THE HONORABLE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO:

COMES NOW Sunray DX Oil Company and respectfully states and alleges as
follows:

1. It is the owner and operator of certain oil and gas leases among
others within the following described area located in Eddy County, New Mexico:

Section 36, Township 18 South, Range 21 East, N.M.P.M.
Sections 19 and 30, Township 18 South, Range 23 East, N.M.P.M.

2. Applicant has drilled and completed its New Mexico State "AH" Lease
Well No. 1 at a location 1980 feet from the south line and 1980 feet from
the west line ($NE\frac{1}{4}SW\frac{1}{4}NE\frac{1}{4}SW\frac{1}{4}$) of Section 30, Township 18 South, Range 23 East
to the Strawn Formation. The Strawn Formation was encountered at a depth of

6935 feet below the surface of the ground and is productive of gas and gas
condensate. Applicant has also completed its New Mexico State "AM" Lease Well
No. 1 within the $NE\frac{1}{4}$ of Section 36, Township 18 South, Range 21 East in the
Strawn Formation which is also productive.

3. Applicant believes that the Strawn Formation underlies all or a major
portion of the above-described area and constitutes a new and previously
unencountered common source of supply.

4. In the interest of preventing waste of gas and gas condensate, the
elimination of unnecessary wells, the recovery of the greatest amount of gas
and gas condensate, and the protection of correlative rights, the vertical
and horizontal limits of the Pool should be defined and designated and
temporary special pool rules established, including a provision for uniform
640 acre proration units.

GILBERT, WHITE AND GILBERT
ATTORNEYS AT LAW
SANTA FE, NEW MEXICO

GILBERT, WHITE AND GILBERT
ATTORNEYS AT LAW
SANTA FE, NEW MEXICO

1 5. Applicant suggests that a uniform proration unit may be achieved by
2 designating each governmental section as such a unit, and that the permitted
3 wells should be located on a unit within any one of the following tracts:

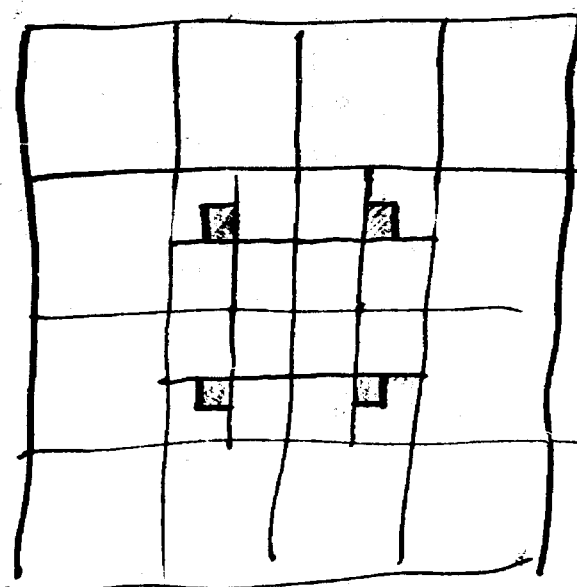
4 SW-NE-SW-NE
5 SE-NW-SE-NW
6 NE-SW-NE-SW
NW-SE-NW-SE

7 6. Attached hereto is a list of the names and addresses of all principal
8 lessees or operators known to applicant to be interested in this application
9 and the requested hearing.

10 7. This application may be set for hearing by an Examiner of the New
11 Mexico Oil and Gas Conservation Commission if it is so desired.

12 WHEREFORE, applicant prays that this application be set for hearing,
13 that notice thereof be given according to law, and that upon the hearing
14 of this application an order be entered establishing this unnamed Strawn Pool
15 and temporary special pool rules, including 640 acre proration units for the
16 development and production of gas and gas condensate from the Strawn Formation
17 common source of supply, and for such other relief as the Commission may deem
18 proper in the premises.

19 DATED at Santa Fe, New Mexico this 8th day of October, 1963.



SUNRAY IX OIL COMPANY

BY W. R. Loar
William R. Loar

GILBERT, WHITE & GILBERT

BY L. D. T.
Counsel

GILBERT, WHITE AND GILBERT
ATTORNEYS AT LAW
SANTA FE, NEW MEXICO

1 LIST OF INTERESTED LESSERS OR OPERATORS

2

3 The Atlantic Refining Company
4 Box 1610
5 Midland, Texas

6 Bell Petroleum Company
7 PO Box 1538
8 Midland, Texas

9 Ralph Lowe
10 Box 832
11 Midland, Texas

12 Marathon Oil Company
13 PO Box 552
14 Midland, Texas

15 W. L. Morrison
16 Address Unknown

17 Pan American Petroleum Corporation
18 PO Box 1410
19 Fort Worth 1, Texas

20 Paul Short
21 Address Unknown

22 Sinclair Oil & Gas Company
23 PO Box 1470
24 Midland, Texas

25 Southern Minerals Corporation
26 Somico Building
27 807 North Broadway
28 Corpus Christi, Texas

29 J. H. Trigg
PO Box 106
Maljamar, New Mexico

C. H. Woods
466 Cameron Building
Oklahoma City, Oklahoma

25

26

27

28

29

EXHIBIT NO. 1
SUNRAY OIL COMPANY
RESERVOIR DATA AND RESERVE CALCULATION
HOPE AREA, STRAWN RESERVOIR
UNDESIGNATED FIELD, EDDY COUNTY, NEW MEXICO

Reservoir Data

Porosity	ϕ (1)	11.6	%
Water Saturation	S_w (1)	21.0	%
Reservoir Pressure	P_r	2705	psia
Reservoir Temperature	T_r	116	Deg. F
Compressibility Factor	Z	0.829	
Gas Liquid Ratio	GLR	330,000	cf/bbl

(1) From log analysis of Sunray OX New Mexico State "AH" #1 and New Mexico State "AM" #1 *by weighting the two wells*

Volumetric Calculation of Recoverable Reserves per Acre Foot

Gas Reserves

$$V = 43560 (\phi) \frac{(1-S_w) (T_s) (P_r) R}{T_r P_s Z}$$

$$V = 43560 (0.116) (1-0.21) \frac{(520) (2705) (.90)}{(606) (15) (0.829)} = 670 \text{ Mcf/af}$$

R = Recovery factor using 100 psia abandonment pressure is 90 percent

Condensate Reserves

$$C.R. = \frac{\text{Recoverable Gas Reserves (R)}}{\text{Gas Liquid Ratio}}$$

$$C.R. = \frac{670 \text{ Mcf/af} (.75)}{330,000 \text{ cf/bbl}} = 1.55 \text{ bbl/AF}$$

R = Recovery factor assumed at 75 percent

BEFORE EXAMINER FILTER	
OIL CONSERVATION COMMISSION	
<i>Appl</i>	EXHIBIT NO. 5
CASE NO.	2925

Docket No. 30-63

Docket No. 31-63

DOCKET: EXAMINER HEARINGS OCTOBER 18, 1963, AND OCTOBER 30, 1963

BOTH HEARINGS 9:00 A.M. OIL CONSERVATION COMMISSION CONFERENCE
ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

Examiner: Daniel S. Nutter; Alternate Examiner: Elvis A. Utz

DOCKET NO. 30-63 - OCTOBER 18, 1963:

CASE 2910: (Continued from the October 9, 1963, examiner hearing)

Application of Big (6) Drilling Company for extension of an existing oil pool and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the extension of the Scharb Bone Spring Oil Pool to comprise the W/2 of Section 5, all of Section 6, and the N/2 of Section 7, Township 19 South, Range 35 East, Lea County, New Mexico, and for special rules therefor, including 80-acre spacing and proration units to comprise any two contiguous 40-acre tracts, and for fixed well locations.

DOCKET NO. 31-63 - OCTOBER 30, 1963:

CASE 2678: (Reopened and continued from the October 9, 1963, examiner hearing)

In the matter of Case No. 2678 being reopened pursuant to provisions of Order No. R-2359, which order established temporary 160-acre proration units for the East Saunders Permo-Pennsylvanian Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

CASE 2903: (Continued from the October 9, 1963, examiner hearing)

Application of Coastal States Gas Producing Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Gulf State Well No. 1, located in Unit F of Section 20, Township 17 South, Range 36 East, Lea County, New Mexico, to produce oil from the Double-A Abo Pool and an undesignated Lower Leonard pool through parallel strings of tubing.

CASE 2921:

Application of Robert G. Hanagan for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a non-standard gas proration unit comprising the S/2 SW/4 of Section 1 and the N/2 NW/4 of Section 12, Township 12 South, Range 34 East, Four Lakes-Devonian Gas Pool, Lea County, New Mexico, to be dedicated to a well to be drilled 660 feet from the South and West lines of said Section 1.

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Docket No. 30-63

Docket No. 31-63

CASE 2922:

Application of Consolidated Oil & Gas, Inc. for an unorthodox location and a dual completion, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Jicarilla No. C-1-11 to produce gas from the Blanco Mesaverde and Basin Dakota Gas Pools. Said well is at an unorthodox Blanco Mesaverde Pool location 890 feet from the South line and 990 feet from the East line of Section 11, Township 26 North, Range 4 West, Rio Arriba County, New Mexico.

CASE 2923:

Application of Cities Service Oil Company for a special gas-lift gas allocation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce Blinebry gas from its State "S" Well No. 1 located in Unit E of Section 15, Township 21 South, Range 37 East, Lea County, New Mexico, and to utilize said gas for Hare Pool gas-lift operations on its State "S" Well No. 4 located in said Unit E. Gas produced from said State "S" Well No. 1 would be metered and charged to the Blinebry Oil Pool casinghead gas production from applicant's State "S" Well No. 6 also located in the said Unit E.

CASE 2924:

Application of Socony Mobil Oil Company for a dual completion and for a tubing exception, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State Bridges No. 58-DD in Unit M of Section 24, Township 17 South, Range 34 East, Lea County, New Mexico, to produce oil from the Vacuum Glorieta and Vacuum Blinebry Oil Pools through parallel strings of tubing. Applicant further seeks an exception to Commission Rule 107(d)4 to produce the Glorieta formation through the casing-tubing annulus from perforations at approximately 6000 feet up to 2 3/8-inch tubing landed in a dual packer at approximately 4020 feet.

CASE 2925:

Application of Sunray DX Oil Company for the creation of a Strawn Gas Pool and for Special Temporary Pool Rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Strawn Gas Pool for its New Mexico State "AH" Well No. 1, located in Unit K of Section 30, Township 18 South, Range 23 East, Eddy County, New Mexico, and the establishment of temporary pool rules therefor, including a provision for 640-acre proration units and for fixed well locations.

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Docket No. 30-63

Docket No. 31-63

CASE 2926:

Application of Sinclair Oil & Gas Company for an exception to Order No. R-1670, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order permitting its Barber Gas Unit Well No. 1, located in Unit E of Section 8, Township 20 South, Range 37 East, Eumont Gas Pool, Lea County, New Mexico, to produce 600 MCF of gas per month in exception to the shut-in provisions of Rule 15(A) of Order No. R-1670, Southeast New Mexico Gas Pool Rules, said gas to be utilized in the oil well gas-lift system on applicant's B. J. Barber Lease.

CASE 2927:

Application of Skelly Oil Company for gas commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 21(A) of Order No. R-1670, Northwest New Mexico Gas Pool Rules, to permit the commingling of gas produced from its Jicarilla "C" Wells Nos. 3, 7, 4, 8 and 6, located in Units M and P of Section 21, Unit A of Section 28 and Units E and J of Section 27 respectively, Township 25 North, Range 5 West, South Blanco-Pictured Cliffs Pool, Rio Arriba County, New Mexico, allocating said gas to the individual wells on the basis of periodic testing. Applicant further proposes to meter said commingled gas and to commingle it with commingled casinghead gas produced from seven Otero-Gallup oil wells on its Jicarilla "C" lease.

CASE 2928:

Application of Texaco Inc. for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the triple completion (combination) of its State of New Mexico "O" NCT-1 Well No. 14, located in Unit J of Section 36, Township 17 South, Range 34 East, Lea County, New Mexico, to produce oil from the Vacuum-Wolfcamp and North Vacuum-Abo Pools through parallel strings of 2-7/8 inch casing and to produce oil from the Vacuum-Blaine Pool through 1-1/2 inch tubing run inside 3-1/2 inch casing, all casing strings to be cemented in a common well bore.

CASE 2929:

Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Basal San Andres formation through its State of New Mexico "O" NCT-1 Well No. 12 located in Unit J of Section 36, Township 17 South, Range 34 East, Vacuum Field, Lea County, New Mexico.

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Docket No. 30-63

Docket No. 31-63

CASE 2930:

Application of William G. Ross for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the South Wilson Deep Unit Area comprising 3,920 acres, more or less, of State and Fee lands in Township 21 South, Range 34 East, Lea County, New Mexico.

State of New Mexico
Oil Conservation Commission

ir/

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 11/4/62

CASE 2925

Hearing Date 9am 10/30/63
35N @ SF

My recommendations for an order in the above numbered cases are as follows:

Enter an order creating the South Hope
Strawn gas Pool comprising all of Secs 25 &
36, T18S, R21E and all of Secs 30 & 31,
T18S, R23E. Pool by discovered by
Dunaway DX Oil Company & M State "AH"
Well no 1 located in Unit K of 30-18S-23E.
It was completed 1-22-63.

Provide special rules for said pool
almost identical w/ those for the
Indian Basin Upper Permian Pool promul-
gated by Order No R-2440.

Require 640 acre plats, also letters for
off-pattern wells, by Dec 1, 1963

Reopen case one year after ^{1st} pipeline
connection for the pool.

James H. ...
Staff ...

DRAFT

JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 2925

Order No. R-2598

NOMENCLATURE

APPLICATION OF SUNRAY DX OIL COMPANY
FOR THE CREATION OF A STRAWN GAS POOL
AND FOR SPECIAL TEMPORARY POOL RULES,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 30, 1963, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this day of November, 1963, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Sunray DX Oil Company, seeks the creation of a new gas pool for Strawn production and the promulgation of temporary special rules and regulations governing said pool, including provisions for 640-acre ^{spacing} ~~production~~ units and ~~for fixed~~ ^{limited} well locations.

(3) That a new gas pool for Strawn production should be created and designated the South Hope-Strawn Gas Pool; ^{that said} ~~this~~ pool was discovered by the Sunray DX Oil Company New Mexico State "AH" Well No. 1, located in Unit K of Section 30, Township 18 South, Range 23 East, NMPM, Eddy County, New Mexico. ~~Said well was completed January 22, 1963. The top of the perforations in the Strawn formation is at~~ ⁶⁴³⁵ feet.

(4) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 640-acre ~~preparation~~^{ceding} units should be promulgated for the South Hope-Strawn Gas Pool.

(5) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(6) That special rules and regulations should be established for a temporary period to expire one year from the date that a pipeline connection is first obtained for a well in the pool; that during this temporary period all operators in the subject pool should gather all available information relative to drainage and recoverable reserves.

(7) That this case should be reopened at an examiner hearing one year from the date that a pipeline connection is first obtained for a well in the South Hope-Strawn Gas Pool, at which time the operators in the subject pool should appear and show cause why the South Hope-Strawn Gas Pool should not be developed on 160-acre ~~preparation~~^{ceding} units.

(8) That the first operator to obtain a pipeline connection for a well in the South Hope-Strawn Gas Pool should notify the Commission in writing of such fact, and that the Commission should thereupon issue a supplemental order designating an exact date for reopening this case.

IT IS THEREFORE ORDERED:

(1) That a new pool in Eddy County, New Mexico, classified as a gas pool for Strawn production is hereby created and designated the South Hope-Strawn Gas Pool, consisting of the following-described area:

TOWNSHIP 18 SOUTH, RANGE ~~2~~²¹ EAST, NMPM
Section 25: All
Section 36: All

TOWNSHIP 18 SOUTH, RANGE 23 EAST, NMPM

Section 30: All

Section 31: All

(2) That Special Rules and Regulations for the South Hope-Strawn Gas Pool are hereby promulgated as follows, effective

December 1, 1963.

**SPECIAL RULES AND REGULATIONS
FOR THE
SOUTH HOPE-STRAWN GAS POOL**

RULE 1. Each well completed or recompleted in the South Hope-Strawn Gas Pool or in the Strawn formation within one mile of the South Hope-Strawn Gas Pool, and not nearer to or within the limits of another designated Strawn pool, shall be spaced, drilled, operated and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the South Hope-Strawn Gas Pool shall be located on a standard unit containing 640 acres, more or less, consisting of a single governmental section.

RULE 3. The Secretary-Director may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Lands Survey, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a single governmental section and contains less acreage than a standard unit.
- (c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such

operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well completed or recompleted in the South Hope-Strawn Gas Pool shall be located no nearer than 1650 feet to the outer boundary of the section and no nearer than 330 feet to any governmental quarter-quarter section line.

RULE 5. The Secretary-Director may grant an exception to the requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed unorthodox location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

IT IS FURTHER ORDERED:

(1) That any well presently drilling to or completed in the Strawn formation within the South Hope-Strawn Gas Pool or within one mile of the South Hope-Strawn Gas Pool that will not comply with the well location requirements of Rule 4 is hereby granted an exception to the requirements of said rule. The operator of any such well shall notify the Artesia District Office of the Commission in writing of the name and location of the well on or before December 1, 1963.

(2) That any operator desiring to dedicate 640 acres to a well presently drilling to or completed in the South Hope-Strawn Gas Pool shall file a new Form C-128 with the Commission on or before December 1, 1963.

(3) That this case shall be reopened at an examiner hearing one year from the date that a pipeline connection is first obtained for a well in the South Hope-Strawn Gas Pool, at which

time the operators in the subject pool may appear and show cause why the South Hope-Strawn Gas Pool should not be developed on 160-acre proration units.

(4) That the first operator to obtain a pipeline connection for a well in the South Hope-Strawn Gas Pool shall notify the Commission in writing of such fact, and that the Commission will thereupon issue a supplemental order designating an exact date for reopening this case.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
C. B. JOHNNY WALKER
MEMBER

P. O. BOX 871
SANTA FE

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - COMMISSIONER

November 13, 1963

Mr. Charlie White
Gilbert, White & Gilbert
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: Case No. 2925
Order No. R-2598
Applicant:
SUNRAY DX

DOCKET MAILED
Date 1-23-70

Dear Sir:

Enclosed herewith are two copies of the above-referenced
Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC x

Antec OCC

OTHER Mr. Bill Loar

Docket No. 4-70

DOCKET: EXAMINER HEARING - WEDNESDAY - FEBRUARY 4, 1970

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or
Elvis A. Utz, Alternate Examiner:

CASE 4302: Application of El Paso Natural Gas Company for suspension and amendment of certain provisions of Rules 14(A), 15(A), and 15(B), of the General Rules and Regulations for the prorated gas pools of Northwestern New Mexico. Applicant, in the above-styled cause, seeks suspension for a period of one year from February 1, 1970, of those provisions of Rules 14(A), 15(A), and 15(B) of the General Rules and Regulations for the prorated gas pools of Northwestern New Mexico promulgated by Order No. R-1670, as amended, that provide for the cancellation of unproduced allowable and the shutting-in of over-produced wells.

CASE 4303: Application of El Paso Natural Gas Company for a waterflood project, ~~Lea County, New Mexico.~~ Applicant, in the above-described cause, seeks authority to institute a waterflood project in the Rhodes (Yates-Seven Rivers) Pool by the injection of water into the Yates-Seven Rivers formation through its Moberly "C" Wells Nos. 6, 9, and 10, located respectively, in Units K and M of Section 21 and Unit I of Section 20, Township 26 South, Range 37 East, Lea County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.

CASE 2925: (Reopened)

In the matter of Case 2925 being reopened pursuant to the provisions of Order No. R-2598, which order established 640-acre spacing units for the South Hope-Strawn Gas Pool, now designated the South Hope-Pennsylvanian Gas Pool, Eddy County, New Mexico, for a period of one year after first pipeline connection in the pool. All interested persons may appear and show cause why said pool should not be developed on 160-acre spacing units.

Examiner Hearing - February 4, 1970
-2-

Docket No. 4-10

CASE 4263: (Continued from the December 17, 1969 Examiner Hearing)

Application of Wynn & Brooks for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Federal "E" Well No. 3, to be located 590 feet from the South line and 1590 feet from the West line of Section 13, Township 27 North, Range 8 West, Blanco-Mesaverde and Basin-Dakota Pools, San Juan County, New Mexico.

CASE 4264: (Continued from the December 17, 1969 Examiner Hearing)

Application of Wynn & Brooks for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Federal "J" Well No. 1, to be located 2390 feet from the South line and 2410 feet from the East line of Section 11, Township 27 North, Range 8 West, Blanco-Mesaverde and Basin-Dakota Pools, San Juan County, New Mexico.

CASE 4297: (Continued from the January 21, 1970 Examiner Hearing)

Application of Anadarko Production Company for lease commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Langlie-Mattix production from the Langlie-Mattix Penrose Sand Unit Tracts 2, 16 and 28, comprising, respectively, the W/2 NW/4 of Section 23, the SW/4 SW/4 of Section 23, and the S/2 NW/4 and SW/4 of Section 28, Township 22 South, Range 37 East, Lea County, New Mexico, with Langlie-Mattix production from other tracts in said unit, allocating the production to each of said Tracts 2, 16 and 28 on the basis of monthly well tests.

CASE 4304: Application of Continental Oil Company for an unorthodox oil well location and amendment of Order No. R-2403, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its MCA Unit Well No. 251 as a producing oil well at an unorthodox location 1100 feet from the South line and 2600 feet from the West line of Section 21, Township 17 South, Range 32 East, as an infill well in the MCA Unit Project Area, Maljamar Grayburg-San Andres Pool, Lea County, New Mexico. Applicant further seeks the amendment of Order No. R-2403 to permit the adoption of a procedure whereby additional producing wells and injection wells at unorthodox locations in said project may be approved administratively.

-3-

Examiner Hearing
February 4, 1970

Docket No. 4-70

CASE 4301: (Continued from the January 21, 1970 Examiner Hearing)
In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Robert T. Smith and all other interested persons to appear and show cause why the following Robert T. Smith wells located in Section 32, Township 20 North, Range 9 West, McKinley County, New Mexico, should not be plugged and abandoned with a Commission-approved plugging program:

State Well No. 1 located 487 feet from the North line and 990 feet from the East line;

State "A" Well No. 1 located 400 feet from the North line and 990 feet from the East line;

State Well No. 3 located 330 feet from the North line and 330 feet from the West line;

State Well No. 6 located 220 feet from the North line and 1485 feet from the East line;

State Well No. 6-Y located approximately 5 feet West of the above-described Well No. 6;

State Well No. 8 located 1155 feet from the North line and 2475 feet from the East line.

SOUTH HOPE PENN GAS POOL

Production Data

	<u>MONTHLY PRODUCTION</u> MMscf	<u>CUMULATIVE PRODUCTION</u> MMScf
January 1969	68.94	68.94
February	84.66	153.60
March	79.10	232.70
April	56.45	289.15
May	79.38	368.53
June	71.11	439.64
July	81.21	520.85
August	42.98	563.83
September	26.07	589.90
October	10.08	599.98
November	6.94	606.92
December	1.91	608.83

*2 1/2 blks/million
compressor at S Hope #1
others are dry*

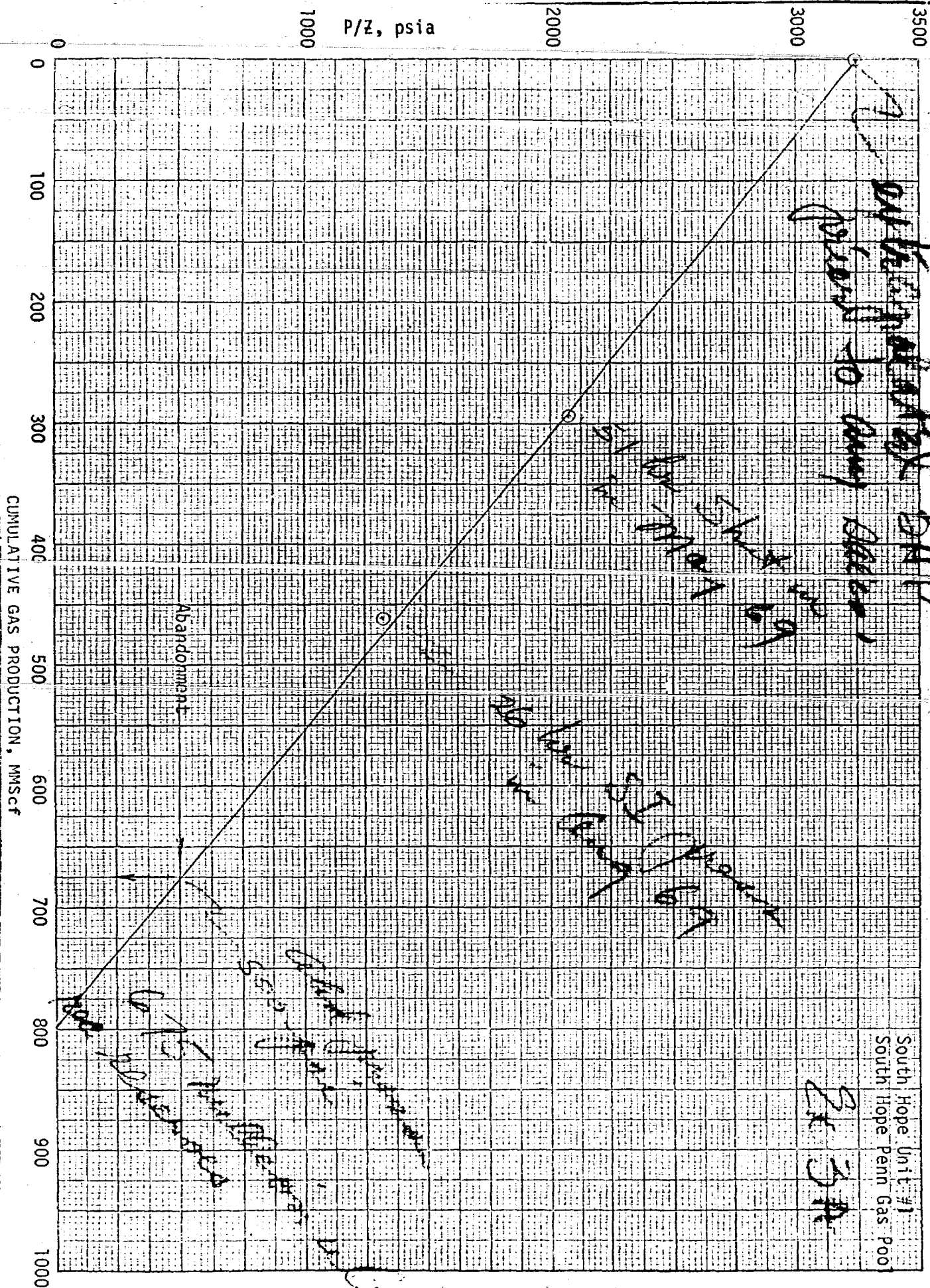
*S Hope #1 in 30 has produced
80% of total*

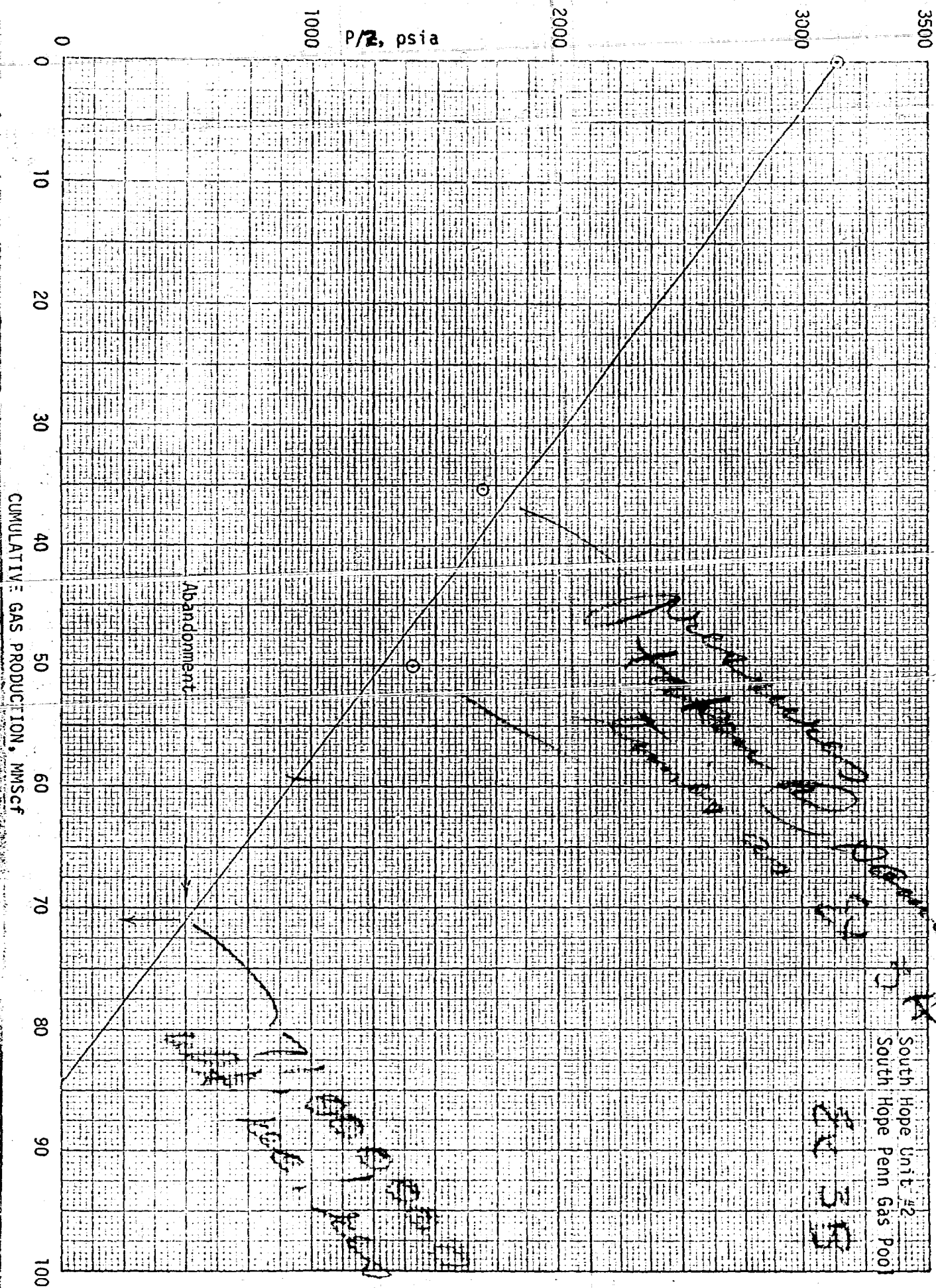
" " #2 in 36 " 10%

S Hope #1 in 19 " 10%

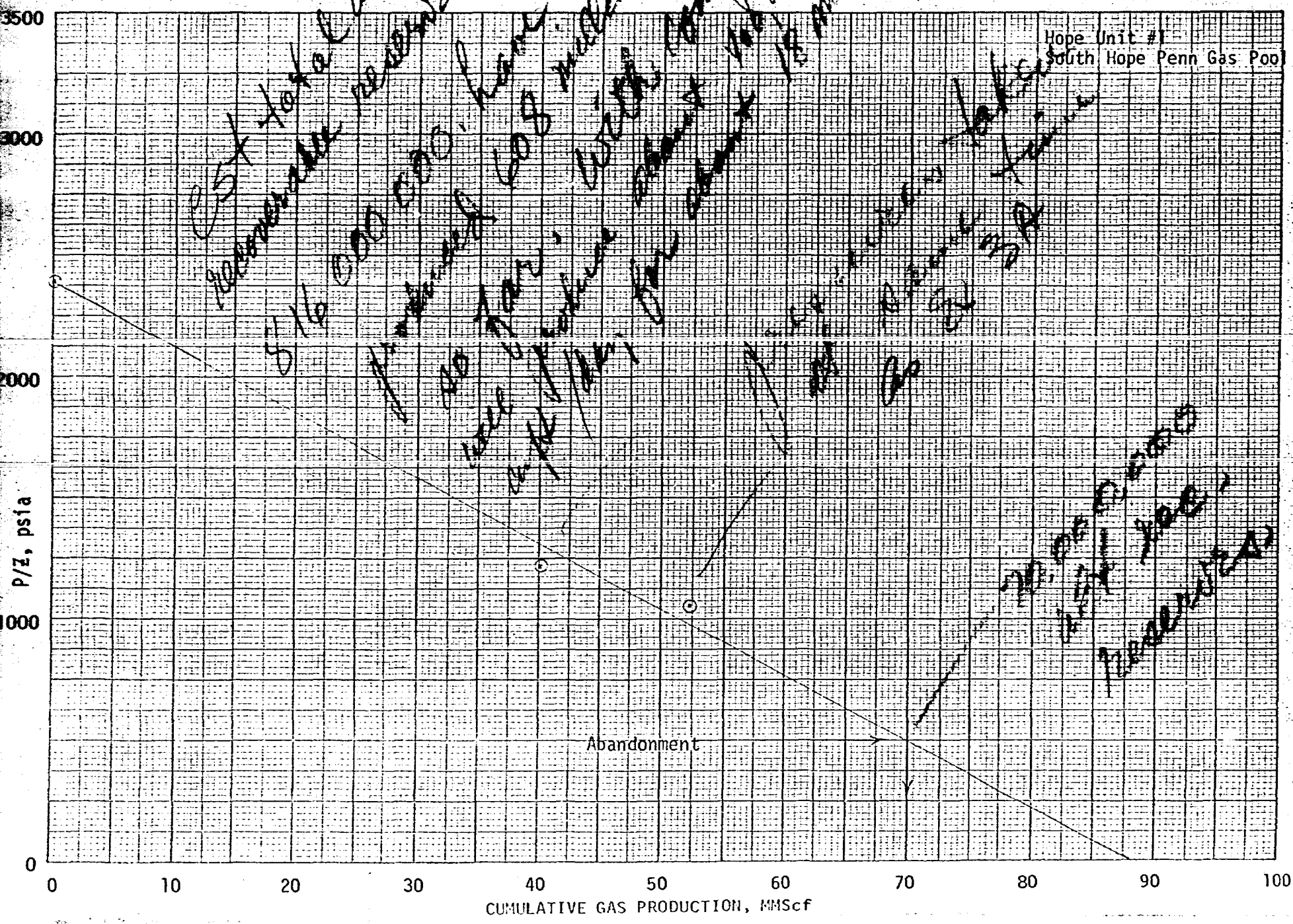
*Compressor is presently
being installed*

BEFORE EXAMINER NUTTER	
CONSERVATION COMMISSION	
APP	EXHIBIT NO. <u>2</u>
CASE NO. <u>2925</u>	





NO. 46 1322
10 TO 1 1/2 INCH
10 INCHES
KEUFFEL & ESSER CO.



SUN OIL COMPANY
Economic Analysis

SOUTH HOPE PENN GAS POOL
Eddy County, New Mexico

Total Gas Reserves (P/Z vs Cu.) - Gross MMcf	816
Less 1/8 Royalty	102
Net Gas Reserves to Producers - MMcf	714
 Total Condensate Reserves - Gross Bbls.	 2025
Less 1/8 Royalty	255
Net Condensate Reserves to Producers - Bbls.	1770
 Value of Gas @ \$160/MMcf	 \$114,000
Value of Condensate @ \$3.16/Bbl.	5,600
Total Value of Reserves	\$119,600
Less Well Cost	463,200
	<u>-\$343,600</u>
Less Surface Equipment Cost	52,000
	<u>-\$395,600</u>
Less Operating Cost	130,800
Net Profit Before FIT and Production Taxes	<u>-\$426,400</u>

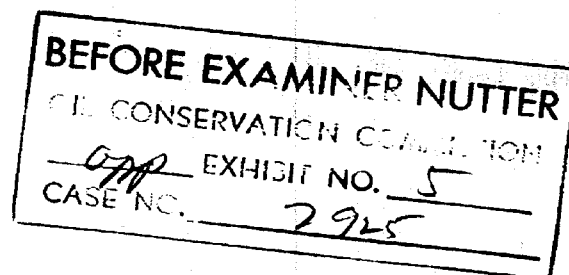
(1) Operating Expense @ \$35/MMcf (includes compression)
and \$0.10/Bbl. for condensate

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
exp EXHIBIT NO. 4
CASE NO. 2925

SUN OIL COMPANY
Economic Analysis (Excluding Well Cost)

SOUTH HOPE PENN GAS POOL

Total Gas Reserves (P/Z vs Cum) - Gross MMCF	816
Less 1/8 Royalty	102
Net Gas Reserves to Producers - MMCF	714
 Total Condensate Reserves - Gross Bbls	 2025
Less 1/8 Royalty	255
Net Condensate Reserves to Producers - Bbls	1770
 Value of Gas @ \$160/MMCF	 \$114,000
Value of Condensate @ \$3.16/Bbl.	5,600
Total Value of Reserves	\$119,600
Less Surface Equipment Cost	52,000
	\$ 67,600
Less Operating Cost	30,800
Net Profit Before FIT and Production Taxes	\$ 36,800



BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 2925
Order No. R-2598
NOMINCLATURE

APPLICATION OF SUNRAY DX OIL COMPANY
FOR THE CREATION OF A STRAWN GAS POOL
AND FOR SPECIAL TEMPORARY POOL RULES,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 30, 1963, at Santa Fe, New Mexico, before Daniel S. Mutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 13th day of November, 1963, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Mutter, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Sunray DX Oil Company, seeks the creation of a new gas pool for Strawn production and the promulgation of temporary special rules and regulations governing said pool, including provisions for 640-acre spacing units and limited well locations.

(3) That a new gas pool for Strawn production should be created and designated the South Hope-Strawn Gas Pool; that said pool was discovered by the Sunray DX Oil Company New Mexico State "AH" Well No. 1, located in Unit K of Section 30, Township 18 South, Range 23 East, NMPM, Eddy County, New Mexico.

(4) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells,

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CASE No. 2925
Order No. R-2598

to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 640-acre spacing units should be promulgated for the South Hope-Strawn Gas Pool.

(5) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(6) That special rules and regulations should be established for a temporary period to expire one year from the date that a pipeline connection is first obtained for a well in the pool; that during this temporary period all operators in the subject pool should gather all available information relative to drainage and recoverable reserves.

(7) That this case should be reopened at an examiner hearing one year from the date that a pipeline connection is first obtained for a well in the South Hope-Strawn Gas Pool, at which time the operators in the subject pool should appear and show cause why the South Hope-Strawn Gas Pool should not be developed on 160-acre spacing units.

(8) That the first operator to obtain a pipeline connection for a well in the South Hope-Strawn Gas Pool should notify the Commission in writing of such fact, and that the Commission should thereupon issue a supplemental order designating an exact date for reopening this case.

IT IS THEREFORE ORDERED:

(1) That a new pool in Eddy County, New Mexico, classified as a gas pool for Strawn production is hereby created and designated the South Hope-Strawn Gas Pool, consisting of the following-described area:

TOWNSHIP 18 SOUTH, RANGE 21 EAST, NMPM

Section 25: All

Section 36: All

TOWNSHIP 18 SOUTH, RANGE 23 EAST, NMPM

Section 30: All

Section 31: All

(2) That Special Rules and Regulations for the South Hope-Strawn Gas Pool are hereby promulgated as follows, effective December 1, 1963.

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CASE No. 2925

Order No. R-2598

SPECIAL RULES AND REGULATIONS
FOR THE
SOUTH HOPE-STRAWN GAS POOL

RULE 1. Each well completed or recompleted in the South Hope-Strawn Gas Pool or in the Strawn formation within one mile of the South Hope-Strawn Gas Pool, and not nearer to or within the limits of another designated Strawn pool, shall be spaced, drilled, operated and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the South Hope-Strawn Gas Pool shall be located on a standard unit containing 640 acres, more or less, consisting of a single governmental section.

RULE 3. The Secretary-Director may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Lands Survey, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a single governmental section and contains less acreage than a standard unit.
- (c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

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CASE No. 2925
Order No. R-2598

RULE 4. Each well completed or recompleted in the South Hope-Strawn Gas Pool shall be located no nearer than 1650 feet to the outer boundary of the section and no nearer than 330 feet to any governmental quarter-quarter section line.

RULE 5. The Secretary-Director may grant an exception to the requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed unorthodox location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

IT IS FURTHER ORDERED:

(1) That any well presently drilling to or completed in the Strawn formation within the South Hope-Strawn Gas Pool or within one mile of the South Hope-Strawn Gas Pool that will not comply with the well location requirements of Rule 4 is hereby granted an exception to the requirements of said rule. The operator of any such well shall notify the Artesia District Office of the Commission in writing of the name and location of the well on or before December 1, 1963.

(2) That any operator desiring to dedicate 640 acres to a well presently drilling to or completed in the South Hope-Strawn Gas Pool shall file a new Form C-128 with the Commission on or before December 1, 1963.

(3) That this case shall be reopened at an examiner hearing one year from the date that a pipeline connection is first obtained for a well in the South Hope-Strawn Gas Pool, at which time the operators in the subject pool may appear and show cause why the South Hope-Strawn Gas Pool should not be developed on 160-acre proration units.

(4) That the first operator to obtain a pipeline connection for a well in the South Hope-Strawn Gas Pool shall notify the Commission in writing of such fact, and that the Commission will thereupon issue a supplemental order designating an exact date for reopening this case.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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CASE No. 2925
Order No. R-2598

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

E. S. Walker
E. S. WALKER, Member

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

QSE/

**BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO**

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

**CASE No. 2925
Order No. R-2598-A**

**APPLICATION OF SUNRAY DX OIL COMPANY
(NOW SUN OIL COMPANY, DX DIVISION)
FOR THE CREATION OF A STRAWN GAS POOL
AND FOR SPECIAL TEMPORARY POOL RULES,
EDDY COUNTY, NEW MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 4, 1970, at Santa Fe, New Mexico, before Examiner Daniel S. Mutter.

NOW, on this 9th day of February, 1970, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That by Order No. R-2598, dated November 13, 1963, temporary Special Rules and Regulations were promulgated for the South Hope Strawn-Gas Pool, Eddy County, New Mexico, establishing 640-acre spacing units for a period of one year after first pipeline connection.

(3) That by Order No. R-3662, effective February 1, 1969, the South Hope-Strawn Gas Pool was redesignated as the South Hope-Pennsylvanian Gas Pool.

(4) That pursuant to the provisions of Order No. R-2598, this case was reopened to allow the operators in the subject pool

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CASE No. 2925

Order No. R-2598-A

to appear and show cause why the South Hope-Strawn Gas Pool, now designated the South Hope-Pennsylvanian Gas Pool, should not be developed on 160-acre spacing units.

(5) That the Special Rules and Regulations promulgated by Order No. R-2598 have afforded and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the gas in the pool.

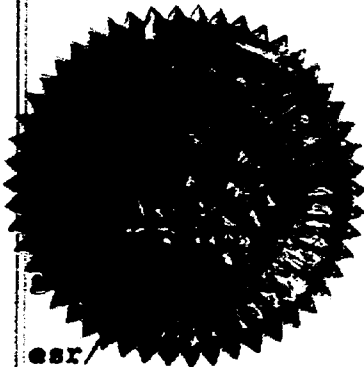
(6) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-2598 should be continued in full force and effect until further order of the Commission.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the South Hope-Strawn Gas Pool, now designated the South Hope-Pennsylvanian Gas Pool, Eddy County, New Mexico, promulgated by Order No. R-2598, are hereby continued in full force and effect until further order of the Commission.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

David F. Cargo
DAVID F. CARGO, Chairman

Alex J. Armijo
ALEX J. ARMISO, Member

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

MAIN OFFICE OCC

1993 DEC 2 AM 8:44

EXHIBIT NO. 1
SUNRAY OIL COMPANY
RESERVOIR DATA AND RESERVE CALCULATION
HOPE AREA, STRAWN RESERVOIR
UNDESIGNATED FIELD, EDDY COUNTY, NEW MEXICO

<u>Reservoir Data</u>			
Porosity	ϕ (1)	11.6	%
Water Saturation	S_w (1)	21.0	%
Reservoir Pressure	Pr	2705	psia
Reservoir Temperature	Tr	116	Deg. F
Compressibility Factor	Z	0.829	
Gas Liquid Ratio	GLR	330,000	cf/bbl

(1) From log analysis of Sunray OX New Mexico State "AH" #1 and New Mexico State "AM" #1

Volumetric Calculation of Recoverable Reserves per Acre Foot

Gas Reserves

$$V = 43560 (\phi) \frac{(1-S_w) (T_s) (Pr) R}{Tr Ps Z}$$

$$V = 43560 (0.116) (1-0.21) \frac{(520) (2705) (.90)}{(606) (15) (0.829)} = 670 \text{ Mcf/af}$$

R = Recovery factor using 100 psia abandonment pressure is 90 percent

Condensate Reserves

$$C.R. = \frac{\text{Recoverable Gas Reserves (R)}}{\text{Gas Liquid Ratio}}$$

$$C.R. = \frac{670 \text{ Mcf/af} (.75)}{330,000 \text{ cf/bbl}} = 1.55 \text{ bbl/AF}$$

R = Recovery factor assumed at 75 percent

BEFORE EXAMINER MUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 5

CASE NO. 2925

MAIN OFFICE OCC
1963 DEC 2 AM 8:44

EXHIBIT NO. 2
SUNRAY DX OIL COMPANY
RESERVE CALCULATION FOR NEW MEXICO STATE "AM" NO. 1
HOPE AREA, STRAWN RESERVOIR
UNDESIGNATED FIELD, EDDY COUNTY, NEW MEXICO

Use average reservoir data and 12 feet of net pay. Reserves for 640 acre and 320 acre spacing would be:

640 Acre Spacing

Gas Reserves

Recovery Mcf/AF (Acres) (Net Pay) = V

$$V = (670) (640) (12) \\ 5,150 \text{ MMcf}$$

Condensate Reserves = Condensate Recovery bbl/AF (Acres) (Net Pay)

$$CR = 1.55 (640) (12) = 11,900 \text{ bbl} \\ 20.8 \text{ mcf equivalent to 1 bbl Condensate} \\ (20.8 \times 10^3) (11,900) = 248 \text{ MMcf}$$

$$\text{Total Reserves } 5150 + 248 = \underline{5,398 \text{ MMcf}}$$

320 Acre Spacing

Gas Reserves = V

V = Recovery Mcf/AF (Acres) (Net Pay)

$$V = 670 (320) (12) = 2,575 \text{ MMcf}$$

Condensate Reserves = CR

$$CR = \text{Condensate Recovery bbl/AF (Acres) (Net Pay)} \\ (1.55) (320) 12 = 5,950 \text{ bbl} \\ 20.8 \text{ Mcf equivalent to 1 BBL Condensate} \\ (20.8 \times 10^3) (5,950) = 124 \text{ MMcf}$$

$$\text{Total Reserves } 320 \text{ Spacing} = 2,575 + 124 = 2,699 \text{ MMcf}$$

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 2925

LAND OFFICE 000

1953 DEC 2 AM 8:44

EXHIBIT NO. 3
SUNRAY OIL COMPANY
ECONOMIC ANALYSIS FOR NEW MEXICO STATE "AM" NO. 1
HOPE AREA, STRAWN RESERVOIR
UNDESIGNATED FIELD, EDDY COUNTY, NEW MEXICO

	<u>640 Acre Spacing</u>	<u>320 Acre Spacing</u>
Total Reserve Gross MMcf	\$ 5,398	\$ 2,699
Less 1/8 Royalty	675	338
Net to Producer	<u>4,723</u>	<u>2,361</u>
Value @ 10.5¢/Mcf	\$ 496,000	\$ 248,000
Less Well Cost (1)	<u>117,000</u>	<u>117,000</u>
	\$ 379,000	\$ 131,000
Less Operating Expense (2)	<u>18,900</u>	<u>9,450</u>
	\$ 360,100	\$ 121,550
Less Production Taxes (3)	<u>25,100</u>	<u>12,550</u>
Net Profit before P.I.T.	<u>\$ 335,000</u>	<u>\$ 109,000</u>
Present Worth Discounted at 5% (4)	\$ 178,500	\$ 58,200
Discounted Profit per Dollar Invested	\$ 1.53	\$0.50

- (1) Does not include investment for pipeline to market outlet.
- (2) Operating expense 3.5¢ per Mcf, includes compression charge.
- (3) Production tax 4.65% gross production.
- (4) Present Worth Based on 27 year life or a pipeline take of 1 MMcf per day per 10,000 MMcf of reserves.

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
EXHIBIT NO.	<u>7</u>
CASE NO.	<u>2925</u>

MAIN OFFICE OGC

EXHIBIT NO. 6
 SUNRAY OIL COMPANY
 DETAILED COST ANALYSIS TO
 DRILL AND COMPLETE IN STRAWN RESERVOIR
 HOPE AREA, UNDESIGNATED FIELD, EDDY COUNTY, NEW MEXICO

1963 DEC 2 AM 8:44

WELL COST	
Location Preparation	\$ 3,000
Contract Drilling 7560'	45,500
Day Work 10 day	10,000
Casing Cementing	4,000
Geological Logging	6,000
Perforating	1,000
Acidizing	1,500
Mud Logging	1,000
Other Specilized Services	1,000
Tool Rental	500
Bits	1,000
Water and Fuel	1,500
Casing Supplies	1,500
Drilling Mud	4,000
Company Supervision	2,000
Testing	1,000
TOTAL INTANGIBLES	\$61,500
Surface Casing 140' 13 3/8"	\$ 1,000
Protective Casing 1800' 8 5/8"	5,500
Production Casing 7560' 4 1/2"	9,900
Tubing 7560' 2 3/8"	5,500
Well head Equipment	4,000
Subsurface Equipment	600
TOTAL TANGIBLES	\$26,500
Total Well Cost	\$ 111,000
Surface Equipment	\$ 6,000
Total Cost	\$ 117,000

BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 8
 CASE NO. 2925

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CONVENTIONS

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 4, 1970

EXAMINER HEARING

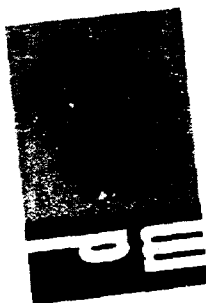
IN THE MATTER OF:

In the matter of Case 2925 being
reopened pursuant to the provisions
of Order No. R-2598, which order
established 640-acre spacing units
for the South Hope-Strawn Gas Pool,
now designated the South Hope-
Pennsylvanian Gas Pool, Eddy
County, New Mexico, for a period
of one year after first pipeline
connection in the pool.

Case No. 2925

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING



MR. NUTTER: We call Case No. 2925.

MR. HATCH: Case 2925.

In the matter of Case 2925 being reopened pursuant to the provisions of Order No. R-2598, which order established 640-acre spacing units for the South Hope-Strawn Gas Pool, now designated the South Hope-Pennsylvanian Gas Pool, Eddy County, New Mexico, for a period of one year after first pipeline connection in the pool.

MR. KELLEY: I am Booker Kelley, Santa Fe, appearing on behalf of the applicant.

We have one witness and we ask that he be sworn.

(Witness sworn.)

FRANKLIN D. LEBO

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

DIRECT EXAMINATION

BY MR. KELLEY:

Q Mr. Examiner, this case when it originally came on for hearing was back in October of 1963 and at that time the operator Sunray DX and the present owner is Sun Oil Company DX Division.

Would you state your name, position and employer, please?

A My name is Franklin D. Lebo. I am employed with Sun Oil Company DX Division and am district engineer in our Roswell, New Mexico office.

Q Have you- -

MR. NUTTER: How do you spell your last name?

THE WITNESS: L-e-b-o.

MR. NUTTER: Thank you.

Q Have you previously qualified as an expert witness in the field of petroleum engineering for this Commission?

A No, sir.

Q Would you give the Examiner a brief resume of your profession and educational background?

A Yes. I graduated from the University of Illinois in 1962 with a Bachelor of Science Degree in Mining Engineering. Upon graduation I was employed by Sunray DX Oil Company, went through their training program in Tulsa and Oklahoma City offices. I spent 1963 to 1968 in Corpus Christi working in the Gulf Coast area. I was transferred as district engineer

to Roswell, New Mexico in August of '68 where I have been since then.

Q And you are familiar with the wells of the subject pool?

A Yes, sir; I am.

MR. KELLEY: Are the witness's qualifications acceptable?

MR. NUTTER: They are.

Q (By Mr. Kelley) Are you familiar with the testimony that was presented to the Commission by Sunray DX back in 1963? Have you had the opportunity to read that transcript?

A Yes. I have read the transcript.

Q Could you give the Examiner a brief history of what occurred in this pool prior to that hearing and up to the present time?

A The pool was discovered in January 1963. The discovery well was the South Hope Unit Number One formerly the New Mexico "AH" Number One, and that well is located in Section 30.

The second well was the South Hope Unit Number Two, formerly the New Mexico "AM" Number One; and that well is located in Section 36.

This well was completed in August of '63. Both wells were shut-in after completion pending a pipeline connection. In October of 1963 the Sun Oil Company formerly Sunray DX, made application for the creation of the South Hope-Strawn Gas Pool and for special temporary rules. This was Case No. 2925, and the temporary rule called for 640-acre spacing and that the case be reopened one year from the date of the pipeline connection. Order No. 2598 was issued granting Sunray's application.

The South Hope -- the Hope Unit Number One, formerly the New Mexico "AQ" Number One was drilled in Section 19 to the north and completed as a selective dual in the Cisco and Strawn sections of the Pennsylvanian formation in March of 1964.

This well was also shut-in after completion pending a pipeline connection and was carried as undesignated. In January, 1969, application was made and approval received for the extension of the vertical and horizontal limits of the South Hope-Strawn Gas Pool to include the entire Penn formation and Section 19.

MR. NUTTER: That made the dual completion

unnecessary then?

THE WITNESS: That's right; and pulled that section into the pool.

A (Continuing) At this time this application was approved on Order Number R-3662, and the pool was redesignated as the South Hope-Pennsylvanian Gas Pool.

In January of 1969, we obtained our pipeline connection and started sales then.

Q (By Mr. Kelley) So despite the fact that the spacing rules were set up in 1963, you have actually only been production for a year now?

A That's right. We have been producing for one year.

Q And only three wells are presently producing?

A That's correct.

Q At -- back in '63 you had planned depending on probably the results of the well in Section 19 to drill in Section 25; is that correct?

A This is correct.

Q But you have not?

A No. Due to the results of our completion up in the Section 19, we didn't feel like we could justify additional drilling.

Q Now, all of the wells that you have been describing are shown on what has been marked Exhibit Number One which is a Plat of the area; is this correct?

A That's right.

Q Turning now to what's been marked as Exhibit Number Two, the production data for the wells; would you briefly summarize that for the Examiner?

A This is our monthly production as reported to the Commission for the three wells in the South Hope Penn Gas Pool in million standard cubic feet per month. We have also shown the cumulative gas production.

When the wells were first put on production and through about July, we were able to maintain a fairly high level of production. Since August our production has continued to decline as we are just riding on the pipeline; just whatever the wells can feed into the seven to eight hundred pounds of pipeline pressure. And we are to the point here to December where it's obvious that our deliveries are quite low and we are in the process and should have complete within a week installing some compressors -- a compressor

for these wells.

Q Now this shows cumulative production for all three wells. Can you give us a breakdown of what wells are responsible for this production?

A Yes. The South Hope Unit Number One located in Section 30 has produced eighty percent of the cumulative gas production.

The South Hope Unit Number Two in Section 36 has produced ten percent; and the Hope Unit Number One in Section 19 has produced ten percent.

Q Now, you haven't shown any condensate production. Is there any significant condensate production from these three wells?

A The only -- the South Hope Unit Number One located in Section 30 produces at sufficient rate that there was sufficient condensate to be recovered where we installed a tank and separation facilities for that particular well and we are talking about two and a half barrels per million.

Q Turning to what has been marked Exhibit Three A, B and C which are production curves for the three wells involved; have you made an estimate of reserves -- recoverable reserves, and could you explain

to the Examiner how you made them, please?

A Yes. Exhibits Three A, Three B and Three C are performance curves for the three wells.

Exhibit Three A is for the South Hope Unit Number One. The original pressure was obtained from extrapolation of buildup pressure tests conducted in January of 1968.

The second pressure was based on a fifty-one hour shut-in pressure in May of 1969; and the third point on the curve was based on a twenty-six hour shut-in pressure in August of '69.

On this performance curve, on Exhibit Three A as of 1-1-1970, we are at a cumulative gas production of four hundred ninety-one million cubic feet.

Extrapolating this curve to an abandonment pressure of approximately five hundred pounds, the indicated recoverable reserves are six hundred and seventy-five million.

Exhibit Three B is the -- a similar curve; the source of information is the same as Exhibit Three A.

MR. NUTTER: The shut-in pressure is taken in the same time?

THE WITNESS: Yes, sir; taken in the same

months and in the same length of time.

A (Continuing) And as of 1-1-1970 we are at a cumulative production of fifty-nine million.

This well is considerably less permeable than the South Hope Unit Number One so that our pressure reading at the end of fifty-one hours and twenty-six hours are probably low somewhat. But considering the indicated reserves with this figure, with using these numbers an additional three or four hundred pounds might give you another fifty to sixty million cubic feet of reserves.

It's hard to tell without some extrapolated pressure reading what kind of pressure you would have or how long you would have to leave them shut-in to get good pressure readings.

But extrapolating this curve to abandonment pressure of five hundred pounds, we have a recoverable reserve figure of seventy-one million.

Exhibit Three C is again similar plot from the same source of information. Extrapolation to five hundred pounds abandonment gives a seventy million cubic feet of recoverable reserves. This well is also a fairly

tight well, and these pressure figures could be low somewhat.

Q Well, even if your figures on Three B and Three C were off, the increase of recoverable reserves would be very slight.

A If they were off -- if our reserves on this extrapolation were off as much as a hundred percent we would be talking about another eighty million per each well, which is not a great deal of gas.

MR. KELLEY: We are afraid we can't offer this pool as a solution for your problems of this morning, Mr. Examiner.

MR. NUTTER: You don't think this is going to meet all this demand then.

Q (By Mr. Kelley) Now what then would be your total estimate of gas reserves for this pool?

A To the three wells our estimated recoverable gas reserves is eight hundred and sixteen million cubic feet.

Q And how much of that have you produced at

this time?

A We have produced six hundred and eight million cubic feet as of January 1, 1970.

Q So you have approximately one-fourth remaining?

A Yes, sir.

Q Do you have any estimate of how long it will take you to produce the remaining part?

A We -- to get our compressors installed we anticipate operating for about eighteen months which would give you an average over the eighteen month period of about four hundred MCF per day.

Q So the outlook for this pool is considerably less optimistic than it was back in 1963; I believe your estimates were considerably higher at that time?

A Yes, they were.

Q Now, if you had had the information you have now would you have recommended to management that these wells be drilled?

A No, we wouldn't.

Q Now, referring to what has been marked as Exhibit Number Four, an economic analysis, would you briefly go through that for the Examiner?

A Yes. This is for the three wells. Our total gas reserves based on our performance curves were eight hundred and sixteen million cubic feet. We subtracted out a one-eighth royalty payment leaving a net gas reserve to the producer of seven hundred and fourteen million cubic feet.

Our condensate recovery we estimated at two thousand and twenty-five barrels less our one-eighth royalty leaving a net condensate reserve to the producer of seventeen hundred and seventy barrels.

The value of the gas is a hundred and sixty dollars per million, which would give us a total value for the reserves of a hundred and fourteen thousand dollars. The value of the condensate at three dollars and sixteen cents a barrel is fifty-six hundred dollars; for a total value of our reserves there of a hundred and nineteen thousand six hundred dollars.

Well costs for the three wells -- these are actual well costs for the three wells -- is four hundred and sixty-three thousand two hundred dollars.

Our surplus equipment costs fifty-two

thousand dollars. Our estimated operating cost to recover this gas is thirty thousand eight hundred dollars; leaving us with a net profit of a minus four hundred twenty-six thousand four hundred dollars for the three wells.

Q Exhibit Five, you have tabulated the same thing; you have just -- washing out your wells costs, is that correct?

A Yes, sir. We considered our well costs as already been spent. We felt like we could still make money by investing in our surface equipment and producing what gas was developed; and this shows our costs excluding well costs. Our reserve and value of our reserve are the same less surface equipment cost, less operating cost; leaves us a net profit of thirty-six thousand eight hundred dollars.

The surface equipment does not include compression.

MR. NUTTER: Does that include the pipeline?

THE WITNESS: No.

MR. NUTTER: Did Sunray build its own pipeline?

THE WITNESS: We did not build the pipeline.

Natural Gas Pipeline of America laid a line to our well located in Section 30.

Q (By Mr. Kelley) In order to get the pipeline in there did you have to acquire some other marginal wells?

A Yes. We bought two wells to the southeast of the Hope area. I don't recall whether they were both from Tom Brown or one from Tom Brown and one from another -- to be able to make some reasonable delivery for the pipeline to come in to us.

Q Now, your Exhibit Number Four, that doesn't include the dry hole that was drilled?

A No, it does not include the dry hole that was drilled in Section 29.

Q Does Sun have any plans to drill any more wells in this area?

A No, we don't.

Q Based on what you know now about this pool, can you say that you are draining six hundred and forty acres?

A No, we cannot.

Q Have you run any interference test?

A No, we have not.

Q Is --

A I might add that due to the extremely low permeabilities encountered in two of the three wells that interference tests would have to be conducted over a great length of time to see interference, if at all.

Q Is it probable that there is an even six hundred and forty productive acres in these wells?

A This is probably true.

Q In your opinion would a prudent operator drill in this area if any acreage was released by returning this to a hundred and sixty acres?

A I don't believe so. I don't believe there would be any money to be made on the basis of what we see in the performance of our wells.

Q Can you envision any waste resulting continuing the six hundred and forty acre spacing?

A No, sir, I believe we will produce all of the recoverable gas available to the three wells that we have drilled.

Q Is this a prorated or non-prorated gas pool?

A It is non-prorated pool.

Q So you are producing everything that's being taken.

A The transmission line will take what we can produce.

Q On what basis does Sun recommend that the six hundred and forty acre spacing remain?

A It's obvious that the -- regardless of the spacing there is little justification for drilling a well; either one sixties or three twenties or six forties. But we do not know how these small gas pools lie with respect to the well. Smaller spacing, someone could come in and drill in to one of these small reservoirs and would be in a competitive situation over not very much gas.

Q Another straw in an almost empty glass.

A That's correct.

Q Now, I believe Sunray had additional acreage in this area that was lost because no drilling; is that correct?

A I believe this is correct, but I'm not fully -- I'm not qualified to -- for land title problems.

Q Well, at any rate, has there been any additional drilling in the area?

A There has not been any additional drilling in the area, no.

Q Were Exhibits One through Five prepared by you or under your supervision?

A Yes, sir.

MR. KELLEY: I move the introduction of Sun Oil Company's Exhibits One through Five.

MR. NUTTER: Sun Oil Company's Exhibits One through Five will be admitted in evidence.

(Whereupon, Sun Oil Company's Exhibits One, Two, Three, Four and Five were admitted in evidence.)

MR. KELLEY: That's all we have on direct, Mr. Examiner.

MR. NUTTER: Mr. Lebo or Lido?

THE WITNESS: Lebo.

MR. NUTTER: Mr. Lebo, what is the red line on Exhibit Number One? Is that the area of the pool as defined by the Commission?

THE WITNESS: Yes. This is the -- I should have pointed that out. This is the horizontal extent of the pool as defined by the Commission.

MR. NUTTER: And the vertical limits of the pool?

THE WITNESS: Include the entire Pennsylvanian formation.

MR. NUTTER: Are the entire Pennsylvanian formation at the present time?

THE WITNESS: Yes.

MR. NUTTER: Now the well in Number 19 -- the well Number 19 -- the well in Section 19 is the one that was the dual completion?

THE WITNESS: Yes, sir.

MR. NUTTER: Which one of these production decline curves is that well?

THE WITNESS: That would be Exhibit Three C.

MR. NUTTER: In other words, that's the well that has the lowest initial pressure. Its initial pressure was only some twenty-three fifty or something like that?

THE WITNESS: Yes, sir; that's correct.

MR. NUTTER: To what do you attribute the fact that its initial pressure wasn't even comparable with the other two wells?

THE WITNESS: We are probably seeing some

crossflow. We were in the Cisco and Strawn in this well, and we are probably not getting -- we are probably getting something of an average pressure between these two zones.

MR. NUTTER: Or possibly the equivalent zone of the other two wells wasn't making any pressure at all in this well.

THE WITNESS: This is true and the- -

MR. NUTTER: And the twenty-two hundred pounds might be coming from the other zone.

THE WITNESS: That's correct.

MR. NUTTER: And in reality there are two completely separate reservoirs.

But we have combined them at the present time?

THE WITNESS: Yes.

MR. NUTTER: And this well has produced about ten percent of the total gas- -

THE WITNESS: Yes.

MR. NUTTER: - -that's been produced?

THE WITNESS: Yes.

MR. NUTTER: And which well was it that you

said makes the condensate?

THE WITNESS: It was the well in Section 30, South Hope Unit Number One.

MR. NUTTER: That's the good well?

THE WITNESS: Yes, sir; that's the good well.

MR. NUTTER: Are there any further questions of Mr. Lebo? He may be excused.

Do you have anything further, Mr. Kelley?

MR. KELLEY: Nothing further.

MR. NUTTER: Does anyone have anything further they wish to offer in Case 2925?

We will take the case under advisement and call Case 4263.

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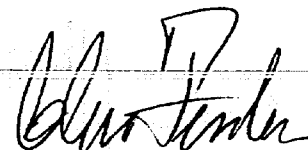
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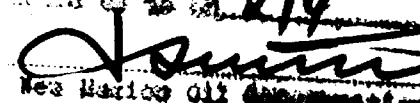
Sun Oil Company's Exhibits Numbers One, Two, Three, Four and Five	18
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STATE OF NEW MEXICO)
) SS
 COUNTY OF BERNALILLO)

I, CA FENLEY, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.



CA FENLEY - COURT REPORTER

I do hereby certify that the foregoing is a correct record of the proceedings in the foregoing hearing at time to 2925 and to 2920.

 New Mexico Oil Conservation Commission