

Application of LEONARD  
for location,  
and Pool - CO. 1000.

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Case No.

1815

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Application, Transcript,  
Small Exhibits, Etc.

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

December 10, 1959

Mr. Jack Campbell  
Box 766  
Roswell, New Mexico

Dear Mr. Campbell:

On behalf of your clients, Leonard Oil Company and  
Hamilton Dome Oil Company, we enclose two copies  
of Order No. R-1543 and Order No. R-1545 issued by  
the Oil Conservation Commission this date.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

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Y

*Copy to Hobbs*

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. 1815  
Order No. R-1543

APPLICATION OF LEONARD OIL  
COMPANY FOR APPROVAL OF AN  
UNORTHODOX GAS WELL LOCATION  
IN THE JALMAT GAS POOL, LEA  
COUNTY, NEW MEXICO

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 24, 1959, at Santa Fe, New Mexico, before Elvis A. Utz, 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 10th day of December, 1959, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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, Leonard Oil Company, is the owner and operator of the E/2 NW/4 and W/2 NE/4 of Section 21, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the applicant's B. T. Lanehart Well No. 4, located in the NW/4 NE/4 of said Section 21, is presently serving as the unit well for the above-described non-standard gas proration unit in the Jalmat Gas Pool.

(4) That the applicant seeks approval of an unorthodox gas well location in the Jalmat Gas Pool for its B. T. Lanehart Well No. 1-A, located 2310 feet from the North line and 2310 feet from the East line of said Section 21, which well the applicant proposes to utilize as the unit well for the above-described non-standard gas proration unit in the Jalmat Gas Pool.

-2-

Case No. 1815  
Order No. R-1543

(5) That approval of the subject application will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That an unorthodox gas well location for the B. T. Lanehart Well No. 1-A, located 2310 feet from the North line and 2310 feet from the East line of Section 21, Township 25 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico, be and the same is hereby approved.


(2) That at such time as the said B. T. Lanehart Well No. 1-A is recompleted in the 3100-foot zone and goes on the line as a Jalmat gas well, it may serve as the unit well for a 160-acre non-standard gas proration unit in the Jalmat Gas Pool consisting of the E/2 NW/4 and W/2 NE/4 of said Section 21.

(3) That when the said B. T. Lanehart Well No. 1-A goes on the line as a Jalmat gas well, the B. T. Lanehart Well No. 4, located in the NW/4 NE/4 of said Section 21 must be shut-in until such time as it is recompleted in the 2900-foot zone as a Jalmat oil well.

(4) That the said B. T. Lanehart Well No. 1-A shall be assigned an acreage factor for allowable purposes in the proportion that the acreage in the non-standard gas proration unit bears to a standard gas proration unit in the Jalmat Gas Pool, subject to the provisions of the Special Rules and Regulations for said Pool.

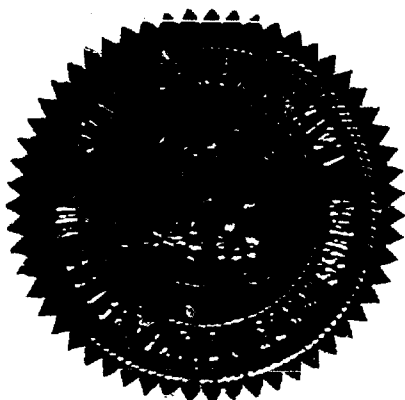
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
JOHN BURROUGHS, Chairman

  
MURRAY E. MORGAN, Member

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



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BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 1815

TRANSCRIPT OF HEARING

NOVEMBER 24, 1959

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
NOVEMBER 24, 1959

IN THE MATTER OF:

CASE 1815 Application of Leonard Oil Company for an un-  
orthodox gas well location. Applicant, in  
the above-styled cause, seeks an order auth-  
orizing an unorthodox gas well location in  
the Jalmat Gas Pool at a point 2310 feet from  
the North and East lines of Section 21, Town-  
ship 25 South, Range 37 East, Lea County, New  
Mexico. Applicant proposes that said well  
serve as the unit well for a non-standard gas  
proration unit in the Jalmat Gas Pool con-  
sisting of the E/2 NW/4 and W/2 NE/4 of said  
Section 21.

BEFORE:

Elvis A. Utz, Examiner.

T R A N S C R I P T    O F    P R O C E E D I N G S

MR. UTZ: The hearing will come to order. Case 1815.

MR. PAYNE: Case 1815. Application of Leonard Oil  
Company for an unorthodox gas well location.

MR. CAMPBELL: Jack M. Campbell, Campbell & Russell,  
Roswell, New Mexico, appearing on behalf of the applicant. We  
have one witness.

(Witness sworn)

FOWLER HICKS,

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

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PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO



follows:

DIRECT EXAMINATION

By MR. CAMPBELL:

Q Will you state your name, please?

A Fowler Hicks.

Q Where do you live, Mr. Hicks?

A Roswell, New Mexico.

Q By whom are you employed and in what capacity?

A Leonard Oil Company as general manager.

Q Have you previously testified before this Commission or one of its Examiners?

A No, sir.

Q Will you give the Examiner a brief resume of your educational and professional background?

A I graduated from Texas Technological College at Lubbock with a B. S. degree in geology in 1950. Directly after graduating, I went to work for Urice Drilling Company in the capacity of roughneck and relief driver. In 1952 I went to work for Permean Engineering Company as a logging engineer. Duties consisted of running well samples and some core analyses as well as gas analyses of drilling mud. In 1954 I went to work for El Paso Natural Gas as a geologist. Work consisted of well setting as well as some well completion work on gas wells. Went to work for Leonard Oil Company in 1956 as production superintendent. Duties consisted of supervising the drilling, completion and producing of both oil

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ALBUQUERQUE, NEW MEXICO





and gas wells. Since February of this year, I have been general manager for Leonard Oil.

MR. CAMPBELL: Are the witness' qualifications as a geologist and production engineer acceptable to the Examiner?

MR. UTZ: Yes, sir.

Q Mr. Hicks, are you acquainted with the Leonard Oil Company's Lanehart lease?

A Yes, sir.

(Whereupon, Applicant's Exhibit No. 1 was marked for identification.)

Q I hand you what has been identified as Applicant's Exhibit No. 1 in this case, and ask you to state what that is, please?

A Exhibit No. 1 is a portion -- a plat of a portion of Township 25 South, Range 37 East, Lea County, New Mexico. On this plat the Leonard Oil Company's non-standard proration unit consisting of the Lanehart lease is encircled in red with the well which we propose, and our unit well encircled in red, and the Jalmat gas wells are encircled in green.

Q It appears, Mr. Hicks, that this is a non-standard proration unit in the Jalmat Gas Pool. By what Order of the Commission was this non-standard proration unit approved originally?

A By NSP Order No. 19, dated 10/20/1954.

Q Now, referring to the plat, Exhibit 1, will you point out to the Examiner the oil wells presently situated on this unit?



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A The oil wells presently on this unit are the No. 1 Well and the 1-A Well located in the SW/4 of the NE/4; our No. 2 Well, in the SE NW, and our No. 3 Well, in the NE NW, all of Section 21.

Q And where is the gas well for this unit presently situated?

A The gas well is in the NE NW as our Lanehart No. 4, NW NE, our Lanehart No. 4, which is the present unit well.

Q Mr. Hicks, I notice that there are two oil wells situated in the SW/4 of the NE/4 of Section 21. Will you explain that situation?

A The No. 1 well was originally drilled in 1956. And we drilled our 1-A well in an effort to make an oil -- a better oil well on that 40-acre tract, and since then we have had two oil wells on the forty acres.

Q And you have been producing two oil wells for one 40-acre unit allowable within the limitations of gas-oil ratio restrictions in the Jalmat Gas Pool, have you?

A Yes, sir.

Q Where is that Lanehart 1-A well located with regard to distances from section lines?

A It is located 2310 feet from the East line and 2310 feet from the North line of Section 21.

Q It was situated as a 330 foot oil well location originally, was it?



A Yes, sir.

Q When was this Lanehart 1-A well completed?

A It was completed in October of 1955.

(Whereupon, Applicant's Exhibit No. 2 was marked for identification.)

Q Mr. Hicks, I hand you what has been identified as Applicant's Exhibit No. 2 in this case, and ask you to state what that is, please?

A Exhibit No. 2 is a gamma ray neutron log of the Lanehart No. 1-A well.

Q Will you refer to that log, please, and state how the Lanehart No. 1-A was completed as an oil well?

A The well was drilled to a total depth of thirty-one forty-three. And during the drilling of this well, seven-inch casing was set at twenty-seven fifty-seven. Upon reaching thirty-one forty-three, a five and a half inch liner was installed in the well and cement circulated on the line. Then the well was perforated from three thousand ninety-four to thirty-one ten, treated with ten thousand gallons of sand oil. After recovery of load oil, the well tested three million four hundred thousand cubic feet of gas and a small amount of oil per day. Since we were attempting to make an oil well out of it and this is tested as a gas well above a hundred thousand to one, we set a packer at twenty-nine ten, and perforated from twenty-eight ninety-four to twenty-nine zero six. Treated with ten thousand gallons



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of sand oil, after recovery of load oil, tested three hundred and eighty-five thousand cubic feet of gas per day and eleven barrels of oil, this well was produced from this zone from then until October of this year.

Q What did you do with the well in October of this year?

A In October of this year we received permission from the Oil Conservation Commission in Hobbs to pull the tubing and rearrange the packer so that out tubing perforations were below the packer which was set at twenty-nine ten, so that we could produce the zone from three thousand ninety-four to three thousand one hundred ten, so that we could test that zone.

Q And did you test that zone after that recompletion?

A Yes. We ran a four point back pressure test on the zone.

(Whereupon, Applicant's Exhibit No. 3 was marked for identification.)

Q I hand you what has been identified as Applicant's Exhibit No. 3, and ask you to state what that is, please?

A Exhibit No. 3 is a multipoint back pressure test on the Lanehart 1-A Well, showing the absolute potential as four million five hundred and seventy-five thousand cubic feet per day.

Q Was that multipoint test filed with the Commission?

A No, it has not been filed with the Commission. It was only taken to get the information to request that this well be changed to the unit well.



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Q And what does that represent with regard to the gas production?

A It reflects that there was a four point run in the test. It reflects that the absolute potential is four million five hundred seventy-five cubic feet per day.

Q Did you take a one point back pressure test or calculate the deliverability on the basis of one point back pressure test on this well?

A We took one point within this multipoint test and calculated the deliverability from this test.

(Whereupon, Applicant's Exhibit No. 4 was marked for identification.)

Q I refer you to what has been identified as Applicant's Exhibit No. 4, and ask you to state what that is?

A Exhibit No. 4 is a calculated deliverability take from this four point back pressure test showing a deliverability of one million one hundred and forty-one thousand cubic feet per day.

Q Based upon the testing that you have done on this well, do you believe that this well may reasonably be expected to make what has been the normal unit allowable for this hundred and sixty-acre tract?

A Yes.

Q What is the present unit well on this hundred and sixty-acre non-standard unit?

A The present unit well is our Lanehart No. 4, which is



shown on Exhibit No. 1.

Q And what do you propose to do with that well if this application is approved?

A We propose to recomplete it as an oil well in the Jalmat Pool.

Q Will you state what you will do with regard to that well?

A That well is completed in a similar manner to the well in question. In other words, it is producing from beneath the packer from open hole zone at approximately thirty-one hundred feet. And there is an oil producing zone at about twenty-nine hundred feet, which we propose to pull the packer and produce from the upper zone as an oil well.

Q Mr. Hicks, what you are seeking, then, by this application is approval of the unorthodox well location for your Lanehart 1-A well, and its designation as the unit well for this non-standard proration unit, is that correct?

A That is correct.

Q You will then have four oil wells and one gas well on this unit?

A Yes.

Q Will all of those oil wells be produced as oil wells within the limiting gas-oil ratio provided by the Jalmat Gas Pool Rules?

A Yes.

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MR. CAMPBELL: That's all the questions I have at this time.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Hicks, did I understand you to say that the Lanehart 1-A well was completed in the twenty-nine hundred foot zone as well as the thirty-one hundred foot zone?

A Both. It was originally perforated in the lower zone and after testing, and it tested as a gas well, we completed it in the -- at twenty-eight ninety-four to twenty-nine zero six. And the method of producing it was producing it with a packer set at twenty-nine ten below the upper perforations, and the tubing perforations were above the packer, so that the packer had the lower zone shut off. It was produced that way until October of this year.

Q That was the 1-A Well?

A That's the 1-A Well, yes, sir.

Q How is it producing now, --

A It is not --

Q -- or how do you propose to produce it?

A We propose to produce it -- this is the installation that is in it now. A packer set at twenty-nine ten with the tubing perforations below the packer, so that we can produce it from three thousand ninety-four to thirty-one ten. At present, it is not being produced. The No. 1 Well is being utilized as the oil



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well, and this well is shut in at the present time.

Q You've got me a little confused here. Your packer is set at twenty-nine ten?

A Yes, sir.

Q And you propose to produce it with perforations below the packer?

A Yes, sir. That's the installation that is in it now after we received permission from Hobbs to put this installation in it, so that we could test the gas zone in the lower part of the zone.

Q So you will be producing gas from the thirty-one hundred foot zone?

A Yes, sir.

Q And the twenty-nine hundred foot zone is the oil zone in this area?

A Yes, sir.

Q And all your other wells on this tract, all the Jalmat oil wells are producing from the twenty-nine hundred foot zone?

A They are producing from above this thirty-one hundred foot zone. They are stringer-lens like affairs which you can't follow from well to well each time.

Q It is a rather unusual situation to have the oil above the gas, isn't it?

A Well, if it were within the same sand body it probably





would be, but there is quite an interval from three thousand foot there to twenty-nine fifteen, which there are several shale breaks in there which are impermeable. We are not within the same sand body on these two completions.

Q However, both zones are within the vertical limit, presently designated limit of the Jalmat?

A Yes, sir, they are within the vertical limit of the Jalmat Pool.

Q What was the deliverability on your No. 4 Well?

A The last calculated deliverability on our No. 4 Well, I don't have the exact figure, but it was in the vicinity of the same deliverability of this, possibly slightly higher.

Q And the reason you are asking for this unorthodox location is so that you can dedicate another forty acres to an oil well?

A Yes, sir.

Q And the No. 4 Well was producing gas from the thirty-one hundred foot zone?

A Yes, sir.

Q And you now are going to produce oil from the twenty-nine hundred foot zone?

A Yes, sir.

MR. UTZ: Are there any other questions?

QUESTIONS BY MR. PAYNE:

Q Mr. Hicks, if your proposed recompletions of your No.



4 Well were unsuccessful as an oil well, if it turns out unsuccessful, --

A Yes, sir.

Q -- then you propose to dedicate eighty acres to each of these wells, I presume?

A Either that or produce -- shut one in -- and produce the hundred and sixty acre allowable from the other well.

MR. PAYNE: Thank you.

MR. UTZ: Are there any other questions of the witness?

MR. CAMPBELL: I would like to offer Applicant's Exhibits 1 through 4 in evidence.

MR. UTZ: Without objection, they will be received.

(Thereupon, Applicant's Exhibits Nos. 1,2,3,4 were received in evidence.)

MR. UTZ: The witness may be excused.

(Witness excused)

MR. UTZ: Any other statements to be made in this case? The hearing will adjourn until one-thirty.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CN 3-6691

ALBUQUERQUE, NEW MEXICO



STATE OF NEW MEXICO )  
 ) ss  
COUNTY OF BERNALILLO )

I, J. A. Trujillo, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 9<sup>th</sup> day of December, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

J. A. Trujillo  
NOTARY PUBLIC

My Commission Expires:

October 5, 1960

I do hereby certify that the foregoing is a correct record of the proceedings in the in the case of Case No. 1865, heard by me on Nov. 24, 1959.  
[Signature], Examiner  
New Mexico Oil Conservation Commission



DRAFT

OEP:vem  
Dec. 1

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. 1815

Order No. R- 1543

APPLICATION OF LEONARD OIL  
COMPANY FOR APPROVAL OF AN  
UNORTHODOX GAS WELL LOCATION  
IN THE JALMAT GAS POOL, LEA  
COUNTY, NEW MEXICO

ORDER OF THE COMMISSION

BY THE COMMISSION:

~~This cause came on for hearing at \_\_\_\_\_ o'clock a.m. on  
\_\_\_\_\_, 1959, at Santa Fe, New Mexico, before the Oil  
Conservation Commission of New Mexico, hereinafter referred to as  
the "Commission."~~

~~NOW, on this \_\_\_\_\_ day of \_\_\_\_\_, 1959, the Com-  
mission, a quorum being present, having considered the testimony  
presented and the exhibits received at said hearing, and being  
fully advised in the premises,~~

This cause came on for hearing at 9 o'clock a.m. on  
November 24, 1959, at Santa Fe, New Mexico, before  
Elvis A. Utz, Examiner duly appointed by the Oil Conservation  
Commission of New Mexico, hereinafter referred to as the "Commis-  
sion," in accordance with Rule 1214 of the Commission Rules and  
Regulations.

NOW, on this \_\_\_\_\_ day of December, 1959, the Com-  
mission, a quorum being present, having considered the application  
the evidence adduced, and the recommendations of the Examiner,  
Elvis A. Utz, 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, Leonard Oil Company, is the  
owner and operator of the E/2 NW/4 and W/2 NE/4 of Section 21,  
Township 25 South, Range 37 East, NMPM, Lea County, New Mexico.

-2-

Case No. 1815

Order No. R-\_\_\_\_\_

(3) That the applicant's B. T. Lanehart Well No. 4, located in the NW/4 NE/4 of said Section 21, is presently serving as the unit well for the above-described non-standard gas proration unit in the Jalmat Gas Pool.

(4) That the applicant seeks approval of an unorthodox gas well location in the Jalmat Gas Pool for its B. T. Lanehart Well No. 1-A, located 2310 feet from the North line and 2310 feet from the East line of said Section 21, which well the applicant proposes to utilize as the unit well for the above-described non-standard gas proration unit in the Jalmat Gas Pool.

(5) That approval of the subject application will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That an unorthodox gas well location for the B. T. Lanehart Well No. 1-A, located 2310 feet from the North line and 2310 feet from the East line of Section 21, Township 25 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico, be and the same is hereby approved.

(2) That at such time as the said B. T. Lanehart Well No. 1-A is recompleted in the 3100-foot zone and goes on the line as a Jalmat gas well, it may serve as the unit well for a 160-acre non-standard gas proration unit in the Jalmat Gas Pool consisting of the E/2 NW/4 and W/2 NE/4 of said Section 21.

(3) That when the said B. T. Lanehart Well No. 1-A goes on the line as a Jalmat gas well, the B. T. Lanehart Well No. 4, located in the NW/4 NE/4 of said Section 21 must be shut-in until such time as it is recompleted in the 2900-foot zone as a Jalmat oil well.

(4) That the said B. T. Lanehart Well No. 1-A shall be assigned an acreage factor for allowable purposes in the proportion

-3-

Case No. 1815

Order No. R-\_\_\_\_\_

that the acreage in the non-standard gas proration unit bears to  
a standard gas proration unit in the Jalmat Gas Pool, subject to  
the provisions of the Special Rules and Regulations for said Pool.

DONE at SFNM-----



IN THE MATTER OF THE APPLICATION OF )  
LEONARD OIL COMPANY FOR APPROVAL OF )  
AN UNORTHODOX GAS WELL LOCATION AND )  
APPROVAL FOR THE USE OF ITS B. T. )  
LANEHART NO. 1A WELL LOCATED 2310 )  
FEET FROM THE NORTH AND 2310 FEET )  
FROM THE EAST LINE OF SECTION 21, )  
TOWNSHIP 25 SOUTH, RANGE 37 EAST, )  
IN THE JALMAT GAS POOL, LEA COUNTY, )  
NEW MEXICO )

Case No. 815

APPLICATION

COMES NOW Leonard Oil Company by its attorneys, Campbell and Russell, and states:

1. Applicant is the owner and operator of a non-standard gas unit in the Jalmat Gas Pool consisting of the  $E\frac{1}{2}NW\frac{1}{4}$  and  $W\frac{1}{2}NE\frac{1}{4}$  of Section 21, Township 25 South, Range 37 East, Lea County, New Mexico, which unit has been approved by the Oil Conservation Commission.
2. Applicant presently is utilizing its B. T. Lanehart No. 4 well in said unit as the unit well.
3. Applicant desires to use its B. T. Lanehart No. 1-A well situated 2310 feet from the North line and 2310 feet from the East line of said Section 21 as the unit well and, for the reason that said well is located as an unorthodox gas well, Applicant seeks an appropriate order of the Commission.

WHEREFORE, Applicant requests the Commission to set this matter down for hearing before an Examiner for the Commission, to publish notice thereof as required by law, and, after hearing, to approve the unorthodox location of its B. T. Lanehart No. 1-A well and authorize its use as the unit well for the above described gas proration unit. Applicant attaches hereto a plat showing the location



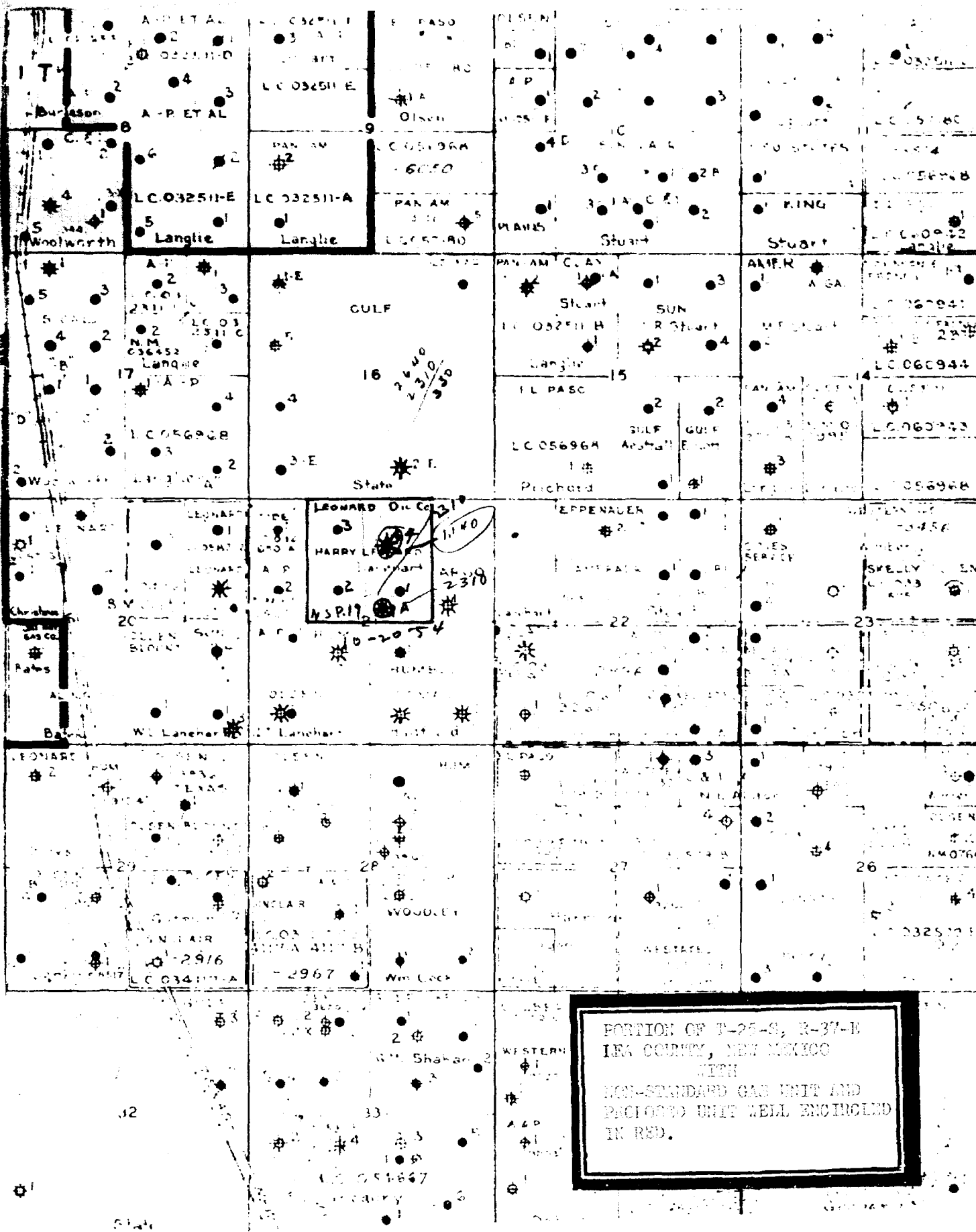
of the gas unit involved and the proposed gas unit well.

Respectfully submitted,

LEONARD OIL COMPANY

By Jack M. Campbell  
Campbell & Russell  
P.O. Box 766  
Roswell, New Mexico

Its Attorneys



MULTI-POINT TESTING COMMISSION  
 One-point Back Pressure Test for Gas Wells  
 (Deliverability)

Form G-122-C  
 4-1-54

Pool Jalisco Formation Yates County Leon  
 Initial Annual Special X Date of test 10-5-10-6-59  
 Company Leonard Oil Co. Lease Leonhart Well No. 1-A  
 Unit 0 Sec. 21 Twp. 25 Rge. 17 Purchaser Hone  
 Casing 7 Wt. 20.0 I.D. Set at 2755 Perf. To  
 Tubing 2 Wt. 4.7 I.D. 1.995 Set at 2910 Perf. To  
 Gas Pay: From 3094 To 3110 L 2910 x G .650 = GL 1892 Bar. Press. 13.2  
 Producing Thru: Casing Tubing X Type Well Single  
 Single- Breckenhead-G.G. or G.O. Dual

Started		Taken		FLOW DATA						
Date	Time	Date	Time	Duration Hours	Type Tape	Line Size	Choke Size	Choke Shocks Press.	Differ- ential	Flow Temp.
10-5	AM	10-6	AM	21	POSITIVE CHOKE Nipples		.375	328		63
	4:00 PM		1:00 PM							

FLOW CALCULATIONS							
Static Pressure $P_r$	Differ- ential $h_w$	Meter Extension $\sqrt{P_r h_w}$	24-Hour Coeff- icient	Gravity Factor $F_g$	Temp. Factor $F_t$	Compress- ibility $F_{pv}$	Rate of Flow MCF/Da. @ 15.025 psia $Q$
341.2			3.0300	.9608	.9971	1.033	1,023

Shut-in		Press. Taken		Duration		Wellhead Pressure		W.H. Working Pressure	
Date	Time	Date	Time	Hours		( $P_c$ ) psia		( $P_w$ ) and ( $P_t$ ) psia	
10-6	AM	10-9	AM	72		433.2		Tubing	Casing
	1:00 PM		1:00 PM					341.2	

FRICITION CALCULATIONS (if necessary)

$$P_w^2 = 341.2^2 + (9.936 \times 1.023)^2 (.122) = 129.0$$

DELIVERABILITY CALCULATIONS

$$P_w = 359.2 \quad P_c = 433.2 \quad P_w + P_c = .8292$$

$$1 - \frac{P_w}{P_c} = .1708 \quad 1 + \frac{P_w}{P_c} = 1.829 \quad \left(1 - \frac{P_w}{P_c}\right) \left(1 + \frac{P_w}{P_c}\right) = M = .3124$$

$$.36 + M = 1.152 \quad \text{Log} = .06145 \quad x (n) = .771 **$$

SUMMARY

$P_c = 433.2$  psia  
 $Q = 1,023$  MCF/Da.  
 $P_w = 359.2$  psia  
 $P_d = 346.6$  psia  
 $D = 1141$  MCF/Da.  
 $= .04738 +$

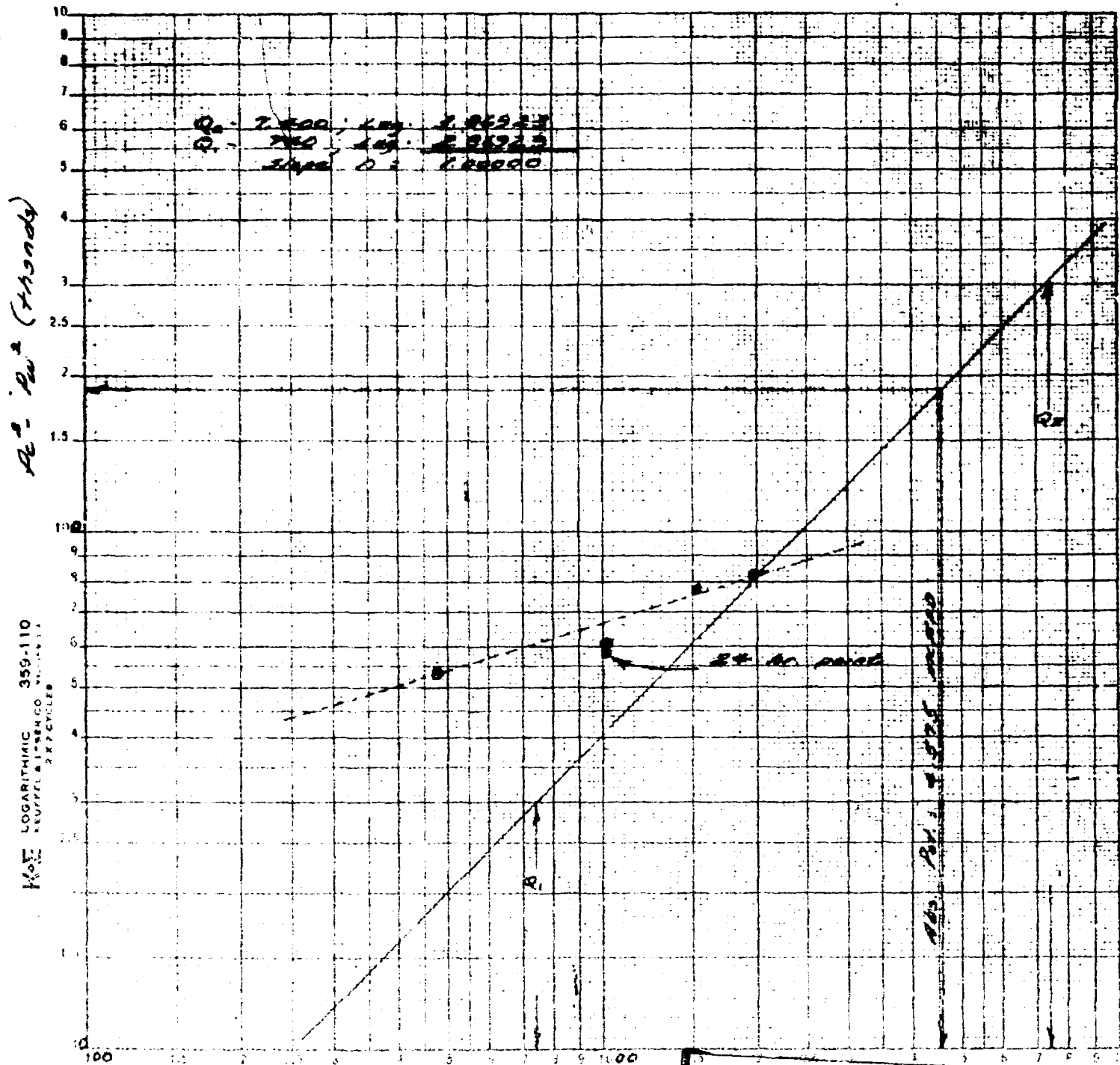
COMPANY Leonard Oil Co.  
 ADDRESS P.O. Box 708, Roswell, New Mexico  
 AGENT and TITLE Fowler Hix, Gen. Manager  
 WITNESSED Herbert H. Kerby  
 COMPANY El Paso Natural Gas Co.

Log Q = 3.00987  
 Log D = 3.05725  
 Antilog = 1141. = D

\* Deliverability Test data calculated from 21 hour point on Multi-Point Test dated 10-5-6-1959  
 \*\* Average Jalisco Slope



LEONARD OIL CO.  
 LANENART 1-A  
 UNIT 6, SEC. 21-25-37; LEA CO., N.M.  
 10. 7. 59



BEFORE EXAMINER UTZ  
 OIL CONSERVATION COMMISSION  
 APP. EXHIBIT NO. 3  
 CASE NO. 1815

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-12

Revised 12-1-5

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Jalnet Formation Yates County Lea

Initial Annual Special X Date of Test 10-5/10-6-59

Company Leonard Oil Company Lease Lanshart Well No. 1-A

Well 0 Sec. 21 Twp. 25 Rge. 37 Purchaser None

Casing 7 In. I.D. Set at 2755 Perf. To

Tubing 2 In. I.D. Set at 2910 Perf. To

Gas Pay: 1100 To 1120 L 2910 to .650 GL 1891 Bar. Press. 13.2

Producing thru: Casing I Tubing I Type Well Single

Date of Completion: 9-30-55 Packer 2910 Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp.

## OBSERVED DATA

Tested Through (Flow) (Choke) (Flow)

Type Taps

No.	Flow Data			Tubing Data		Casing Data		Duration of Flow Hr.
	(Flow) (Line) Size	(Choke) (Line) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	
1.	2	250	362		64	362		72
2.	2	375	338		63	338		3
3.	2	500	285		65	285		3
4.	2	625	236		61	236		3
5.	2	750	189		63	189		21

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_f}$	Pressure psia	Flow Temp. Factor $F_t$	Gravity Factor $F_g$	Compress. Factor $F_{pv}$	Rate of Flow Q-MCFPD @ 15.025 psia
1.	1.3309		362.2	.9962	.9608	1.036	178.0
2.	3.0300		338.2	.9971	.9608	1.033	1001
3.	5.4315		285.2	.9952	.9608	1.027	1320
4.	5.5417		236.2	.9990	.9608	1.022	1980
5.	3.0300		189.2	.9971	.9608	1.033	1023

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio \* cf/bbl.

Gravity of Liquid Hydrocarbons deg.

$P_c$  9.936  $(1-e^{-B})$  .122

Specific Gravity Separator Gas

Specific Gravity Flowing Fluid

$P_c$  433.2  $P_c$  187.7

No.	$P_w$ $P_t$ (psia)	$P_t^2$	$F_c Q$	$(F_c Q)^2$	$(F_c Q)^2 (1-e^{-S})$	$P_w^2$	$P_c^2 - P_w^2$	Cal. $P_w$	$P_w / P_c$
1.	362.2	131.2	4.750	22.56	2.752	133.9	53.8	365.9	.81
2.	338.2	114.4	10.07	101.4	12.37	126.8	60.9	354.1	.82
3.	285.2	81.3	15.10	228.0	27.82	102.1	78.6	330.3	.76
4.	236.2	55.8	19.67	386.9	47.20	103.0	84.7	320.9	.74
5.	189.2	35.7	10.16	103.2	12.59	129.0	58.7	359.2	.82

Absolute Potential: 4.575 MCFPD; n 1.000COMPANY Leonard Oil CompanyADDRESS Box 708, Roswell, New MexicoAGENT and TITLE Fowler Hix - General ManagerWITNESSED H.H. KerbyCOMPANY El Paso Natural Gas Company

## REMARKS

\* The well produced a slight amount of fluid - unable to measure. If well is tied into system, a complete test will be conducted

Fair point alignment, but slope greater than 1.000 slope of 1.000 drawn thru point

NEW MEXICO OIL CONSERVATION COMMISSION  
One-point Back Pressure Test for Gas Wells  
(Deliverability)

Form C-122-C  
4-1-54

Pool Jalnat Formation Yates County Lee  
Initial Annual Special X Date of test 10-5/10-6-59 \*  
Company Leonard Oil Co. Lease Lanehart Well No. 1-A  
Unit G Sec. 21 Twp. 25 Rge. 37 Purchaser None  
Casing 7 Wt. 20.0 I.D. Set at 2755 Perf. To  
Tubing 2 Wt. 4.7 I.D. 1.995 Set at 2910 Perf. To  
Gas Pay: From 3094 To 3110 L 2910 x G .650 = GL 1891 Bar. Press. 13.2  
Producing Thru: Casing X Tubing X Type Well Single  
Single- Bredenhead-G.G. or G.O. Dual

FLOW DATA									
Started		Taken		Duration Hours	Type Taps	Line Size	Choke Size	Choke Press.	Differ- ential
Date	Time	Date	Time						Flow Temp.
10-5	AM	10-6	AM	21	POSITIVE CHOKE Nipples		.375	328	
	4:00 PM		1:00 PM						63

FLOW CALCULATIONS							
Choke Pressure $P_r$	Differ- ential $h_w$	Meter Extension $\sqrt{P_r h_w}$	24-Hour Coeff- icient	Gravity Factor $F_g$	Temp. Factor $F_t$	Compress- ability $F_{pv}$	Rate of Flow MCF/Da. @ 15.025 psia $Q$
341.2			3.0300	.9608	.9971	1.033	1,023

SHUT-IN DATA					FLOW DATA			
Shut-in		Press. Taken		Duration Hours	Wellhead Pressure ( $P_c$ ) psia		W.H. Working Pressure ( $P_w$ ) and ( $P_t$ ) psia	
Date	Time	Date	Time		Tubing	Casing	Tubing	Casing
10-6	AM	10-9	AM	72	433.2		341.2	
	1:00 PM		1:00 PM					

FRICTION CALCULATIONS (if necessary)

$$P_w^2 = 341.2^2 + (9.936 \times 1.023)^2 (.122) = 129.0$$

DELIVERABILITY CALCULATIONS

$$P_w \ 359.2 \quad P_c \ 433.2 \quad P_w + P_c \ .8292$$

$$1 - \frac{P_w}{P_c} \ .1708 \quad 1 + \frac{P_w}{P_c} \ 1.829 \quad \left(1 - \frac{P_w}{P_c}\right) \left(1 + \frac{P_w}{P_c}\right) = M \ .3124$$

$$.36 + M \ 1.152 \quad \text{Log} \ .06145 \quad x(n) \ .771 **$$

SUMMARY

$P_c = 433.2$  psia  
 $Q = 1,023$  MCF/Da.  
 $P_w = 359.2$  psia  
 $P_d = 346.6$  psia  
 $D = 1141$  MCF/Da.

COMPANY Leonard Oil Co.  
ADDRESS P.O. Box 708, Roswell, New Mexico  
AGENT and TITLE Fowler Hix, Gen. Manager  
WITNESSED Herbert H. Kirby  
COMPANY El Paso Natural Gas Co.

$\text{Log } Q = 3.00987$   
 $\text{Log } D = 3.05725$   
 $\text{Antilog} = 1141 = D$

REMARKS

\* Deliverability Test data calculated from 21 hour point on Multi-Point Test dated 10-5-6-1959  
\*\* Average Jalnat Slope

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool                                                                             

Initial            Annual            Special X Date of Test 10-5/10-6-59

Company Leonard Oil Company Lease Lanshart Well No. 1-A

Unit G Sec. 21 Twp. 25 Rge. 37 Purchaser None

Casing 7 Wt. 20 I.D.            Set at 2755 Perf.            To           

Tubing 2 3/8 Wt.            I.D.            Set at 2910 Perf.            To           

Gas Prod. 10% To 3120 L 2910 xG .650 GL 1691 Per. Point 3120

Producing thru: Casing            Tubing X Type Well Single

Date of Completion: 9-30-55 Packer 2910 Single-Bradenhead-G.O. or G.O. Dual Reservoir Temp.           

## OBSERVED DATA

Tested Through (PROV) (Choke) (WELL)Type Taps           

No.	Pipe Data			Tubing Data		Casing Data		Duration of Flow Hr.
	(PROV) (Line) Size	(Choke) (Size) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	
1.	2	250	362		64	362		72
2.	2	275	325		63	325		3
3.	2	300	272		65	272		3
4.	2	325	223		61	223		3
5.	2	375	328		63	328		21

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wp}}$	Pressure psia	Flow Temp. Factor F <sub>t</sub>	Gravity Factor F <sub>g</sub>	Compress. Factor F <sub>pv</sub>	Rate of Flow Q-MCFPD @ 15.025 psia
1.	1.3302		362.2	.9962	.9608	1.036	178.9
2.	3.0300		338.2	.9971	.9608	1.033	101.5
3.	5.1315		285.2	.9952	.9608	1.027	75.20
4.	5.5417		236.2	.9990	.9608	1.023	1980
5.	3.0300		341.2	.9971	.9608	1.033	1023

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio            \*            cf/bbl.

Gravity of Liquid Hydrocarbons            deg.

P<sub>c</sub> 9.936 (1-e<sup>-8</sup>) .122

Specific Gravity Separator Gas           

Specific Gravity Flowing Fluid           

P<sub>c</sub> 433.2 P<sub>c</sub> 187.7

No.	P <sub>t</sub> (psia)	P <sub>t</sub> <sup>2</sup>	P <sub>c</sub> Q	(P <sub>c</sub> Q) <sup>2</sup>	(P <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-8</sup> )	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> <sup>2</sup>	Cal. P <sub>w</sub>	F <sub>w</sub> /P <sub>c</sub>
1.	362.2	131.2	4.750	22.56	2.752	133.9	53.8	365.9	.81
2.	338.2	114.4	10.07	101.4	12.37	126.8	60.9	356.1	.82
3.	285.2	81.3	15.10	228.0	27.82	108.1	78.6	330.3	.76
4.	236.2	55.8	19.67	386.9	47.20	103.0	84.7	320.9	.74
5.	341.2	116.4	10.16	103.2	12.59	129.0	58.7	359.2	.82

Absolute Potential: 4.575 MCFPD; n 1.000COMPANY Leonard Oil CompanyADDRESS Box 708, Roswell, New MexicoAGENT and TITLE Fowler Rix - General ManagerWITNESSED H.H. KerbyCOMPANY El Paso Natural Gas Company

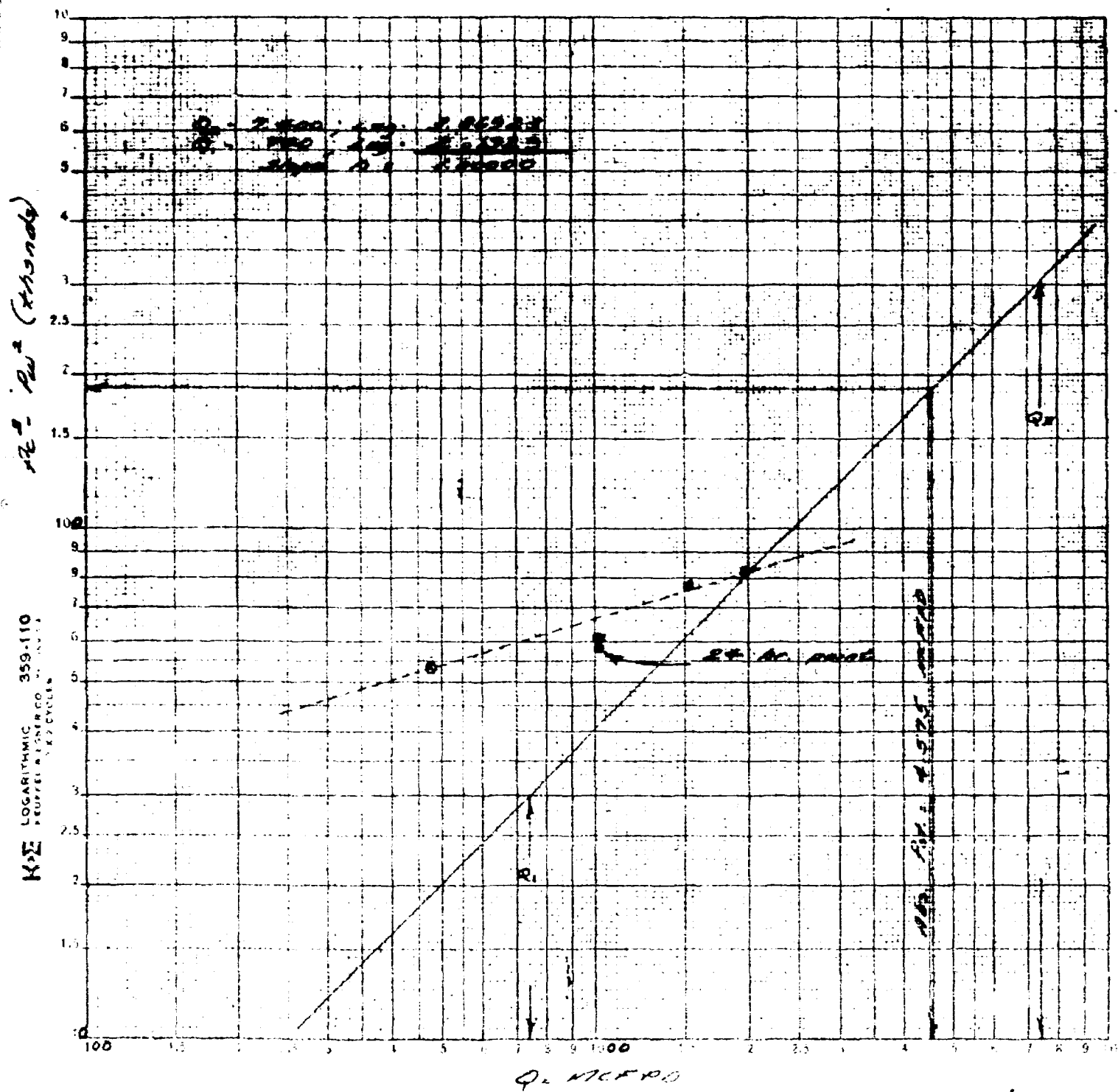
## REMARKS

\* The well produced a slight amount of fluid - unable to measure. If well is tied into system, a complete test will be conducted

Fair point alignment, but slope greater than 1.000 slope of 2.000 drawn thru point corresponding with highest rate of flow.



LEONARD ON CO.  
LANENARY LA  
UNIT 6, SEC. 21-25-37; LEA CO., N.M.  
10-7-59



# Leonard Oil Company

Box 708  
Roswell, New Mexico

November 2, 1959 1:03

ROBERT J. LEONARD  
PRESIDENT

New Mexico Oil Conservation Commission  
P.O. Box 871  
Santa Fe, New Mexico

Gentlemen:

Please find enclosed three copies of our application for an **unorthodox** gas well location and for its approval as the unit gas well for a non-standard gas proration unit. This unit has already been approved by the Oil Conservation Committee.

Very truly yours,

LEONARD OIL COMPANY

*Fowler Hix*

General Manager

/m

cc.

*Robert  
Hix  
Nov. 12, 1959  
JL*

DOCKET: EXAMINER HEARING NOVEMBER 24, 1959

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

The following cases will be heard before Elvis A. Utz, Examiner, or A. L. Porter, Jr., Secretary.

CASE 1811: Application of The Atlantic Refining Company for permission to commingle the production from three separate pools from three separate leases. Applicant, in the above-styled cause, seeks an order authorizing it to commingle the Tubb, Blinberry, and Drinkard production from three Federal leases in Section 14, Township 25 South, Range 37 East, Lea County, New Mexico.

CASE 1812: Application of Gulf Oil Corporation for permission to commingle the production from two separate leases. Applicant, in the above-styled cause, seeks permission to commingle the production from the Eumont Pool from its Ramsey (NCT-D) Lease consisting of the NE/4 of Section 31 and from its Ramsay (NCT-J) Lease consisting of the SW/4 SW/4 of Section 25, both in Township 20 South, Range 37 East, Lea County, New Mexico.

CASE 1813: Application of Gulf Oil Corporation for a gas-oil dual completion and for permission to commingle the production from two separate pools. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Travis Well No. 1, located 1990 feet from the South line and 660 feet from the East line of Section 21, Township 23 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from an undesignated Abo gas pool and the production of oil from the Teague Pool. Applicant further seeks permission to commingle the oil produced from the Teague Pool from said well with the distillate produced from an undesignated Abo gas pool from said well.

CASE 1814: Application of Leonard Latch for two water flood projects. Applicant, in the above-styled cause, seeks an order authorizing it to institute two water flood projects in the Empire Pool in Eddy County, New Mexico. In one project, applicant proposes to inject water into the Seven Rivers formation through ten wells located in the N/2 of Section 19, Township 17 South, Range 28 East. In the other project, applicant proposes to inject water into the Seven Rivers formation through seven wells located in the S/2 SE/4 of Section 12 and the NE/4 of Section 13, Township 17 South, Range 27 East.

CASE 1815: Application of Leonard Oil Company for an unorthodox gas well location. Applicant, in the above-styled cause, seeks an order authorizing an unorthodox gas well location in the Jalmat Gas Pool at a point 2310 feet from the North and East lines of Section 21, Township 25 South, Range 37 East, Lea County, New Mexico. Applicant proposes that said well serve as the unit well for a non-standard gas proration unit in the Jalmat Gas Pool consisting of the E/2 NW/4 and W/2 NE/4 of said Section 21.

CASE 1816: Application of Shell Oil Company for permission to commingle the production from several separate pools from several separate leases. Applicant, in the above-styled cause, seeks permission to commingle the production from an undesignated Atoka pool and an undesignated San Andres pool from two separate leases in Sections 23, 26, and 35, Township 19 South, Range 35 East, Lea County, New Mexico, and to transport said production from said leases

prior to measurement and to commingle such production with the commingled Pearl-Queen production authorized by Order No. R-1101. Applicant further seeks authorization to expand the automatic custody transfer system authorized by said Order No. R-1101.

- CASE 1817: Application of Sunray Mid-Continent Oil Company for an automatic custody transfer system and for permission to produce more than sixteen wells into a common tank battery. Applicant, in the above-styled cause, seeks an order authorizing it to install an automatic custody transfer system to handle the production from all Bisti-Lower Gallup Oil Pool wells on its Central Bisti Unit comprising certain acreage in Townships 23 and 25 North, Range 12 West, San Juan County, New Mexico.
- CASE 1818: Application of Texaco Inc., for a gas-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its State "BN" Well No. 1, located in the NW/4 SW/4 of Section 25, Township 11 South, Range 32 East, Lea County, New Mexico, in such a manner as to produce gas from the Moore-Wolfcamp Gas Pool and to produce oil from the Moore-Pennsylvanian Pool through the casing-tubing annulus and tubing respectively.
- CASE 1819: Application of Hamilton Dome Oil Company, Ltd., for an order authorizing the commingling of production from two separate pools. Applicant, in the above-styled cause, seeks permission to commingle the Blinbry and Tubb production from a lease consisting of the S/2 SE/4 of Section 23, Township 25 South, Range 37 East, Lea County, New Mexico.
- CASE 1820: Application of Carper Drilling Company, Inc., and T. J. Sivley for permission to commingle the production from two separate leases. Applicant, in the above-styled cause, seeks permission to commingle the Empire-Abo Pool production from that portion of State Lease B-1483 consisting of lot 2 of Section 2 and that portion of State lease 2029 consisting of lot 3 of said Section 2, Township 18 South, Range 27 East, Eddy County, New Mexico.
- CASE 1821: Application of Cities Service Oil Company for establishment of a water flood project allowable. Applicant, in the above-styled cause, seeks an order establishing a project allowable for its Drickey Queen Sand Unit in Chaves County, New Mexico, and providing for the conversion of wells to water injection at the operator's election.
- CASE 1822: Application of Cities Service Oil Company for approval of automatic custody transfer facilities. Applicant, in the above-styled cause, seeks an order authorizing the installation of automatic custody transfer facilities to handle the Caprock-Queen Pool production from the Drickey Queen Sand Unit in Chaves County, New Mexico.

OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

Date 11-27-59

CASE 1815

Hearing Date 11-25-59

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

Grant Leonard Oil as follows:

1. Permit change in well dedication for NB P-19, consisting of W/2 NW and E/2 NE sec. 21-255-37 E. Present well is Leonard-Lanchart # 4. ~~Although~~ Leonard-Lanchart # 1-A, 2300/N 2300/E line of sec. 21-255-37 E to be the unit well.
2. The # 1-A well must be completed in the 3100 foot zone of Jalumat pool in order to be dedicated.

*Christina*