CASE 2788: Application of RALPH LOWE
for the dual completion of its [illegible]

CASE NO.
2186

Application,
Transcripts,
Small Exhibits
ETC.

DRAFT

JMD/esr
April 16, 1963

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. 2788

Order No. R- 2468

APPLICATION OF RALPH LOWE
FOR A DUAL COMPLETION, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on April 10, 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 April, 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, Ralph Lowe, seeks authority to complete his Indian Basin "A" Well No. 1, located in Unit J of Section 22, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, as a dual completion (conventional) to produce gas from the Indian Basin-Upper Pennsylvanian Gas Pool and the Indian Basin-Morrow Gas Pool through parallel strings of 2 3/8-inch tubing, with separation of zones by a packer set at approximately 9050 feet.

(3) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.

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

IT IS THEREFORE ORDERED:

(1) That the applicant, Ralph Lowe, is hereby authorized to complete his Indian Basin "A" Well No. 1, located in Unit J of Section 22, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, as a dual completion (conventional) to produce gas from the Indian Basin-Upper Pennsylvanian Gas Pool and the Indian Basin-Morrow Gas Pool through parallel strings of 2 3/8 -inch tubing, with separation of zones by a Permanent Type packer set at approximately 9050 feet.

PROVIDED HOWEVER, That the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order.

PROVIDED FURTHER, That the applicant shall take packer leakage tests upon completion and annual ~~gas-oil ratio~~ Testing thereafter during the ~~Test~~ Period for the Indian Basin-Morrow Gas Pool.

(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

JACK M. CAMPBELL, Chairman

E. S. WALKER, Member

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

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Wildcat Formation (Penn) Canyon Dol. County Eddy

Initial X Annual Special Date of Test 1/9-10/1963

Company Ralph Lowe Lease Indian Basin "A" Well No. 1 (Upper)

Unit J Sec. 22 Twp. 21S Rge. 23E Purchaser None

Casing 7 Wt. 26.0 I.D. 6.276 Set at 9385 Perf. 7505 To 7572

Tubing 2"10-RD Wt. 4.70 I.D. 1.995 Set at 7280 Perf. To

Gas Pay: From 7505 To 7572 L 7280 xG Mix =.667 -GL 4856 Bar.Press. 13.2

Producing Thru: Casing Tubing X Type Well Gas-Gas Dual
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 12-24-62 Packer Baker "K" 7280 Reservoir Temp. 146°F

OBSERVED DATA

Tested Through ~~(Prover)~~ ~~(Choke)~~ (Meter) Type Taps Flange

	Flow Data					Tubing Data		Casing Data		
No.	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	Duration of Flow Hr.
SI						2354				Over 72
1.	3.068	1.750	655	14.5	67	2306				6
2.	3.068	1.750	655	30.0	77	2256				6
3.	3.068	1.750	655	60.0	79	2154				6
4.	3.068	1.750	655	90.0	69	2018				6
5.										

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.	20.15	98.43		.9933	.9721	1.063	2036
2.	20.15	141.58		.9840	.9721	1.059	2890
3.	20.15	200.23		.9822	.9721	1.059	4079
4.	20.15	245.23		.9915	.9721	1.063	5062
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 83,831 cf/bbl.
Gravity of Liquid Hydrocarbons 58.4 deg.
F_c 9.936 $(1-e^{-s})$ .284

Specific Gravity Separator Gas .635
Specific Gravity Flowing Fluid .7451
P_c 2367.2 P_c^2 5603.6

No.	Pt (psia) ***	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	2319.2	5378.7	20.23	409.3	116.2	5494.9	108.7	2344.1	.9902
2.	2269.2	5149.3	28.72	824.8	234.2	5383.5	220.1	2320.2	.9801
3.	2167.2	4696.8	40.53	1642.7	466.5	5163.3	440.3	2272.3	.9599
4.	2031.2	4125.8	50.30	2530.1	718.5	4844.3	759.3	2201.0	.9298
5.									

Absolute Potential: 14,250 MCFPD; n .500

COMPANY Ralph Lowe

ADDRESS P. O. Box 832, Midland, Texas

AGENT and TITLE [signature] Archie P. Farr, Petroleum Engineer

WITNESSED

COMPANY

Point No.	Distillate, bbl/day
1	28.6
2	30.5
3	45.7
4	63.0

REMARKS - Perforations: 7505-7517
7524-7533
7539-7572

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

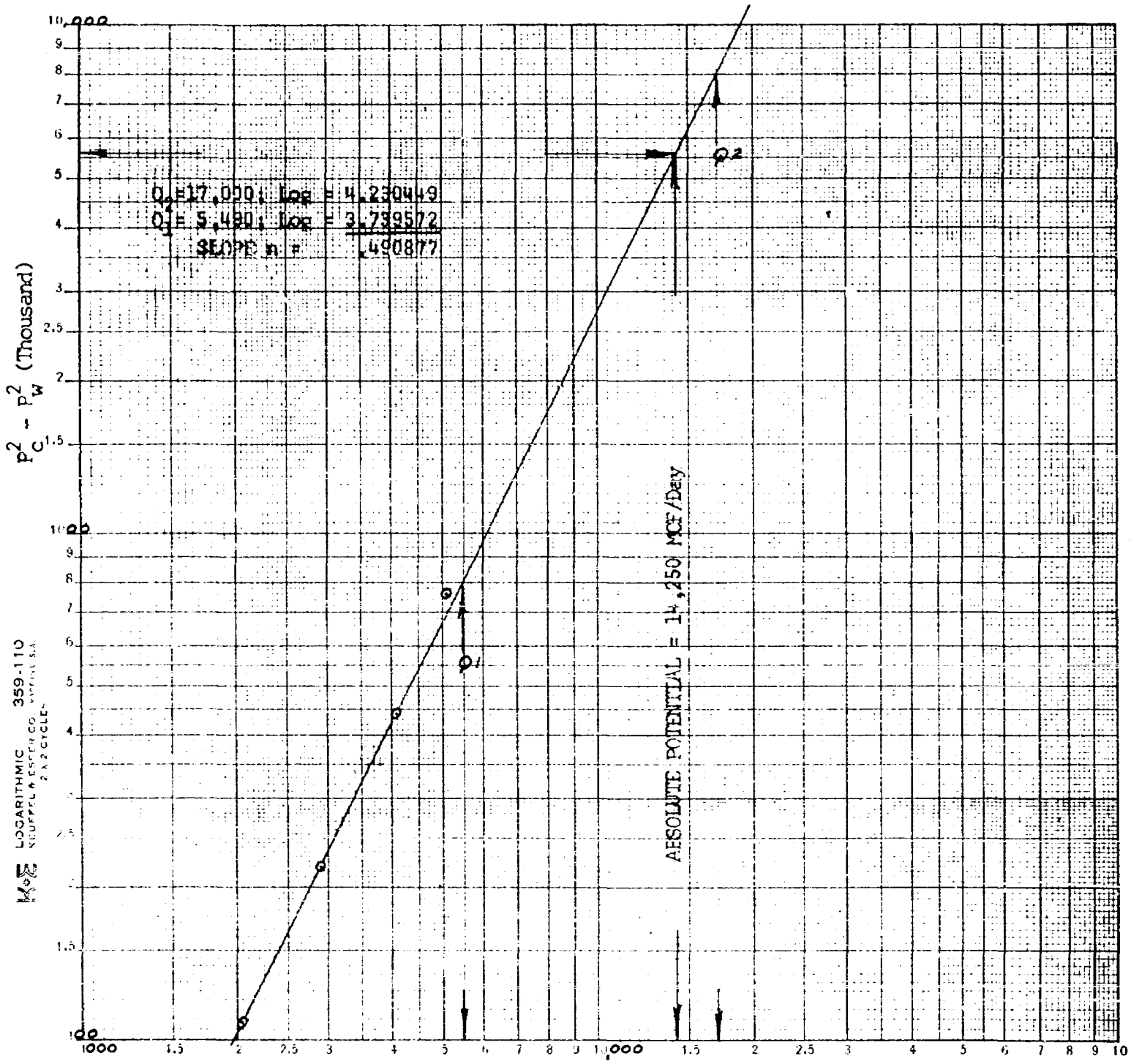
F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.

COMPANY Ralph Lowe
WELL Indian Basin "A" 1 (Upper)
LOCATION J-22-21-S-23E

COUNTY Eddy
DATE 1/9-10/1963



NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Wildcat Formation Morrow Sand County Eddy

Initial X Annual _____ Special _____ Date of Test 1/10-11/1963

Company Ralph Lowe Lease Indian Basin "A" Well No. 1 (Lower)

Unit J Sec. 22 Twp. 21S Rge. 23E Purchaser None

Casing 7 Wt. 26.0 I.D. 6.276 Set at 9385 Perf. 9118 To 9266

Tubing 2" 10-RD Wt. 4.70 I.D. 1.995 Set at 9053 Perf. _____ To _____

Gas Pay: From 9118 To 9266 L 9053 xGMix = .608 -GL 5504 Bar.Press. 13.2

Producing Thru: Casing _____ Tubing X Type Well Gas-Gas Dual
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 12-24-62 Packer Baker "K" 7280 Reservoir Temp. 171
Baker "D" 9050

OBSERVED DATA

Tested Through ~~(Prover)~~ ~~(Choke)~~ (Meter) Type Taps Flange

No.	Flow Data (~~Prover~~) (Line) Size	(~~Choke~~) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						2969				Over 72
1.	3.068	1.750	900	11.0	55	2857				6
2.	3.068	1.750	905	24.0	57	2773				6
3.	3.068	1.750	900	43.0	57	2651				6
4.	3.068	1.750	900	67.0	63	2515				6
5.										

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.	20.15	100.23		1.0048	.9975	1.083	2193
2.	20.15	148.45		1.0029	.9975	1.083	3241
3.	20.15	198.16		1.0029	.9975	1.083	4327
4.	20.15	247.35		.9971	.9975	1.081	5360
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 530,560 cf/bbl.
Gravity of Liquid Hydrocarbons 53° @ 60 deg.
P_c 9,936 $(1-e^{-s})$ .315

Specific Gravity Separator Gas .603
Specific Gravity Flowing Fluid .7669
P_c 2982.2 P_c^2 8893.5

No.	Pt (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	2870.2	8238.0	21.79	474.8	149.6	8387.6	505.9	2896.1	.9711
2.	2786.2	7762.9	32.20	1036.8	326.6	8089.5	80 .0	2844.2	.9537
3.	2664.2	7098.0	42.99	1848.1	582.2	7680.2	1213.3	2771.3	.9293
4.	2528.2	6391.8	53.26	2836.6	893.5	7285.3	1608.2	2699.1	.9051
5.									

Absolute Potential: 20,000 MCFPD; n .763

COMPANY Ralph Lowe

ADDRESS P. O. Box 832, Midland, Texas

AGENT and TITLE Archie P. Farr, Petroleum Engineer

WITNESSED _____

COMPANY _____

Point No.	Distillate, bbl/day
1	3.8
2	7.6
3	7.6
4	9.5

REMARKS - Perforations: 9118-9130
9252-9266

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

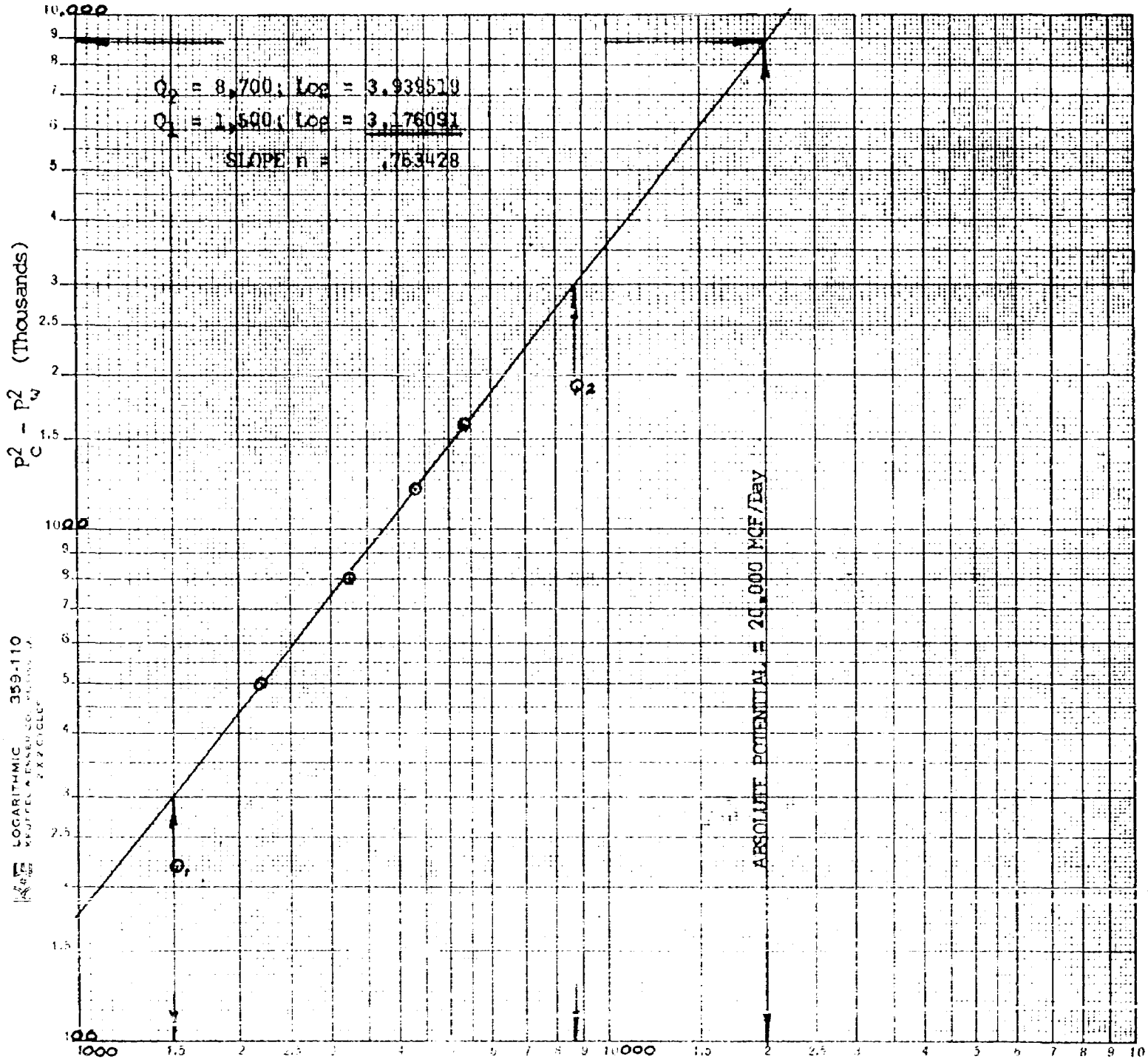
F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.

COMPANY Ralph Lowe
WELL Indian Basin "A" 1 (Lower)
LOCATION J-22-21S-23E
COUNTY Eddy
DATE 1/10-11/1963

Case 2788



Q-MCF/Day @ 15.025 PSIA - 60°F

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool _____ Formation _____ County _____

Initial _____ Annual _____ Special _____ Date of Test _____

Company _____ Lease _____ Well No. _____

Unit _____ Sec. _____ Twp. _____ Rge. _____ Purchaser _____

Casing _____ Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____

Tubing _____ Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____

Gas Pay: From _____ To _____ L _____ xG _____ -GL _____ Bar.Press. _____

Producing Thru: Casing _____ Tubing _____ Type Well _____
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: _____ Packer _____ Reservoir Temp. _____

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps _____

No.	Flow Data (Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI										
1.										
2.										
3.										
4.										
5.										

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.							
2.							
3.							
4.							
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl. Specific Gravity Separator Gas _____
Gravity of Liquid Hydrocarbons _____ deg. Specific Gravity Flowing Fluid _____
P_c _____ $(1-e^{-s})$ _____ P_c _____ P_c^2 _____

No.	P_w F_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.									
2.									
3.									
4.									
5.									

Absolute Potential: _____ MCFPD; n _____

COMPANY _____

ADDRESS _____

AGENT and TITLE _____

WITNESSED _____

COMPANY _____

REMARKS

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

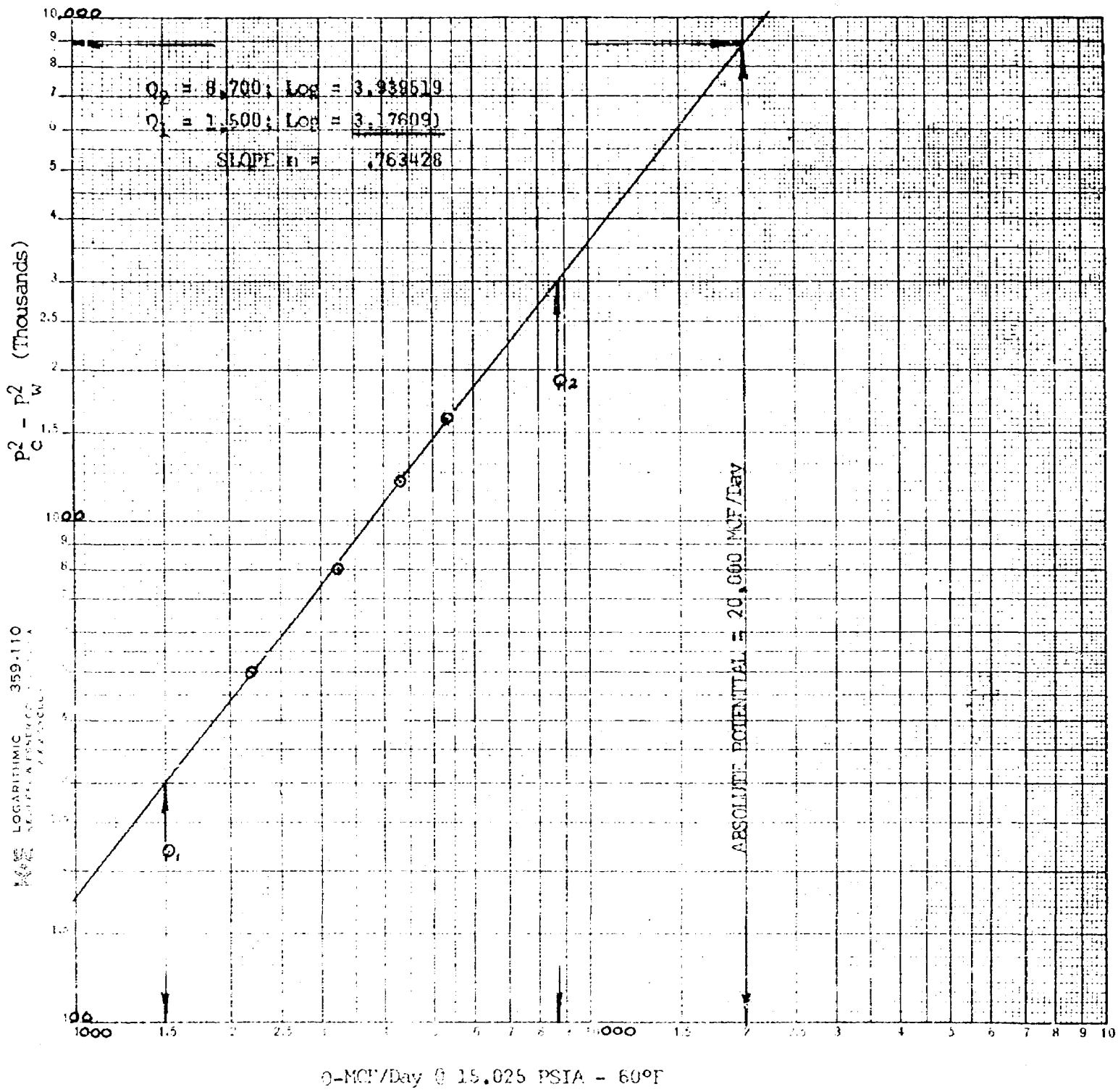
F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.

COMPANY Ralph Lowe
WELL Indian Basin "A" 1 (Lower)
LOCATION J-22-21S-23E
COUNTY Eddy
DATE 1/10-11/1963

2788



NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Wildcat Formation (Penn) (Cooper Sd.) County Eddy

Initial X Annual Special Date of Test 12-30-1963

Company Ralph Lowe Lease Indian Basin "28" Well No. 3 (Upper)

Unit J Sec. 22 Twp. 21S Rge. 23E Purchaser None

Casing 7 Wt. 26.0 I.D. 6.276 Set at 9394 Perf. 7505 To 7572

Tubing 2 3/8 OD Wt. 4.70 I.D. 1.995 Set at 7280 Perf. To

Gas Pay: From 7505 To 7572 L 7280 xBix .667 GL 4656 Bar.Press. 13.2

Producing Thru: Casing Tubing X Type Well Gas-Gas Dual Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 12-24-62 Packer Baker "K" 7290 Reservoir Temp. 166°F

OBSERVED DATA

Tested Through ~~(Prover)~~ ~~(Choke)~~ (Meter) Type Taps Flange

No.	Flow Data (Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						2358				72
1.	3.068	1.750	655	14.5	67	2306				6
2.	3.068	1.750	655	30.0	77	2256				6
3.	3.068	1.750	655	60.0	79	2250				6
4.	3.068	1.750	655	90.9	69	2018				6
5.										

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.	20.15	98.43		.9933	.9721	1.063	2036
2.	20.15	141.58		.9840	.9721	1.059	2890
3.	20.15	200.23		.9822	.9721	1.059	4079
4.	20.15	245.29		.9815	.9721	1.063	5062
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 83,831 cf/bbl.
Gravity of Liquid Hydrocarbons 58.4 deg.
F_c 0.936 $(1-e^{-s})$ .284

Specific Gravity Separator Gas .635
Specific Gravity Flowing Fluid .7451
P_c 2367.2 P_c^2 5603.6

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	2319.2	5378.7	20.23	409.3	116.2	5494.9	108.7	2344.1	.9902
2.	2284.2	5218.3	27.27	826.3	234.2	5383.5	220.1	2320.2	.9801
3.	2169.2	4705.8	40.53	1643.7	466.5	5172.3	431.3	2272.3	.9599
4.	2048.2	4195.3	50.90	2590.1	735.5	4930.3	673.3	2201.0	.9293
5.									

Absolute Potential: 19,250 MCFPD; n .861

COMPANY Ralph Lowe

ADDRESS P. O. Box 632, Midland, Texas

AGENT and TITLE Archie M. Payne, Petroleum Engineer

WITNESSED

COMPANY

REMARKS

John W. Runyan, Midland
2
3
4
5

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

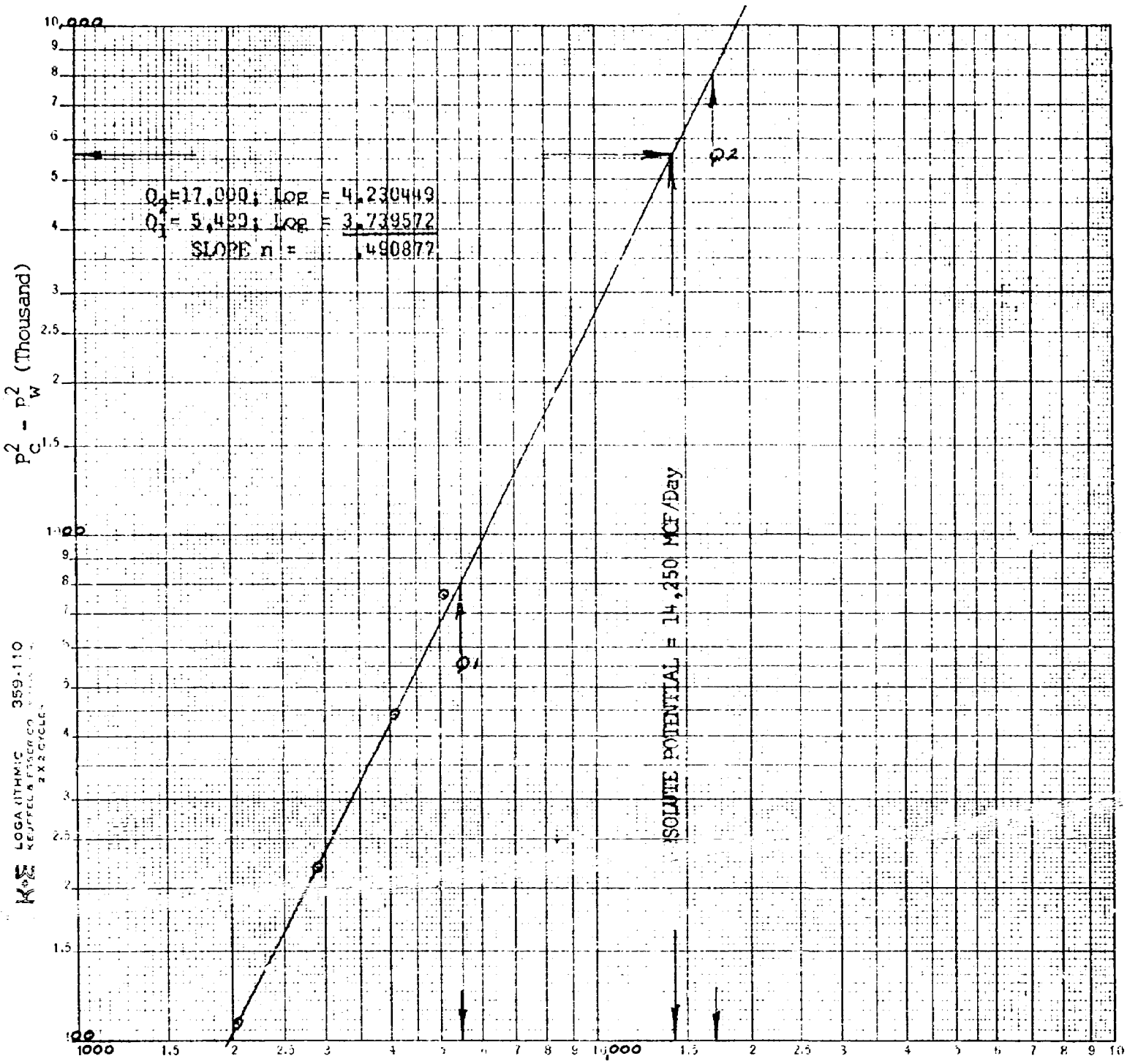
n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.

COMPANY Ralph Lowe
WELL Indian Basin "A" 1 (Upper)
LOCATION J-22-21-S-23E

COUNTY Eddy
DATE 1/9-10/1963

Case 2760



NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

7-3-58

APPLICATION FOR DUAL COMPLETION

Field Name: Indian Basin (Upper Penn.) ~~Indian Basin (Morrow~~		County: Eddy	Date: April 4, 1963
Operator: RALPH LOWE		Lease: Indian Basin "A"	Well No.: 1
Location of Well — Unit: J	Section: 22	Township: 21-S	Range: 23-E

1. Has the New Mexico Oil Conservation Commission heretofore authorized the dual completion of a well in these same pools or in the same zones within one mile of the subject well? YES _____ NO X

2. If answer is yes, identify one such instance: Order No. _____ ; Operator, Lease, and Well No.:

3. The following facts are submitted:	Upper Zone	Lower Zone
a. Name of reservoir	Upper Penn.	Morrow
b. Top and Bottom of Pay Section (Perforations)	7505' Top. Bottom 7572' 7505-17', 7524-33', 7539-72'	9118' Top. Bottom 9266 9118-30', 9252-66'
c. Type of production (Oil or Gas)	Gas	Gas
d. Method of Production (Flowing or Artificial Lift)	Flowing	Flowing

4. The following are attached. (Please mark YES or NO)

Yes a. Diagrammatic Sketch of the Dual Completion, showing all casing strings, including size and setting, top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.

Yes b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.

No c. Waivers consenting to such dual completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.*

Yes d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed, it shall be submitted as provided by Rule 112-A.)

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

No offset operators. All leases are in a working interest unit.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 2786

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES _____ NO _____. If answer is yes, give date of such notification not applicable.

CERTIFICATE: I, the undersigned, state that I am the Agent of the RALPH LOWE (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

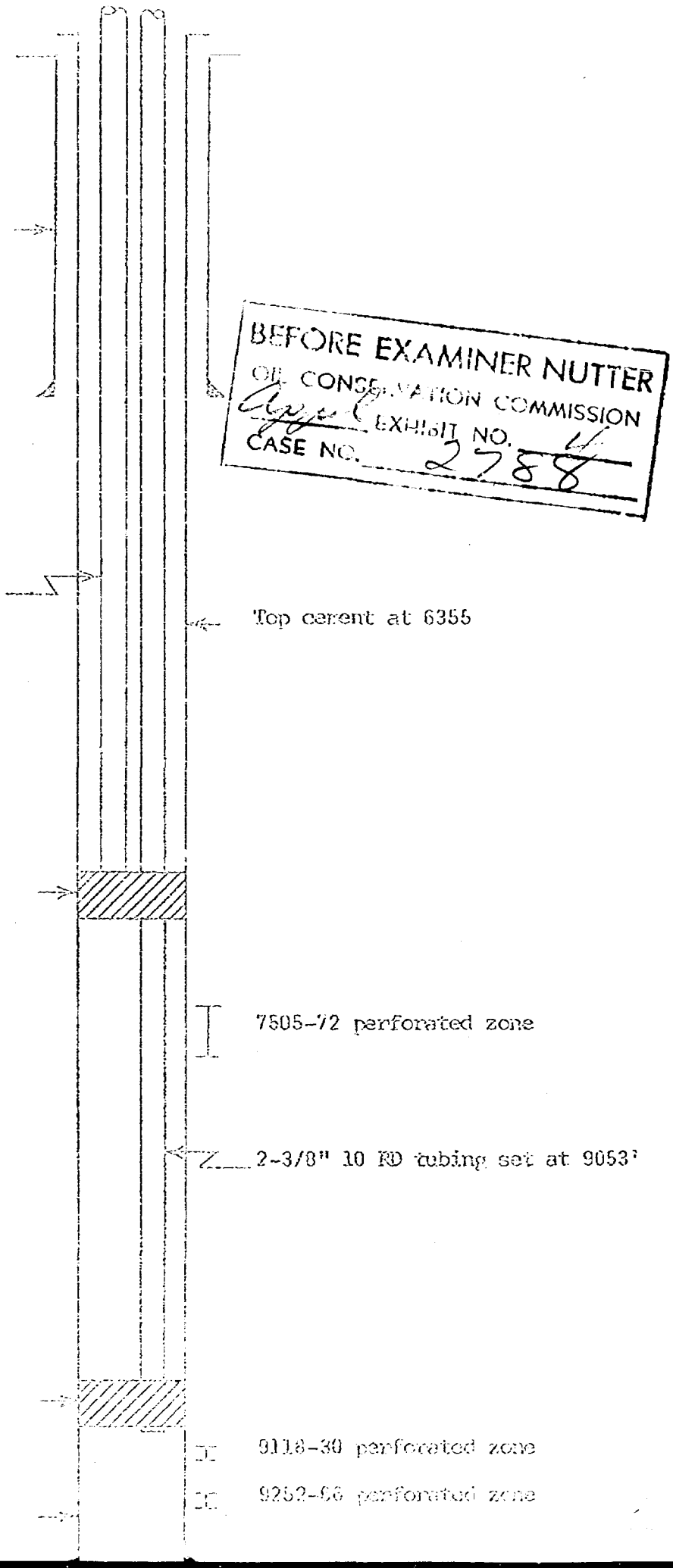
Harvin L Landua

Signature Harvin L. Landua

* Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed dual completion will result in an unorthodox well location and/or a non-standard proration unit in either or both of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

DIAGRAMMATIC SKETCH
OF
DUAL COMPLETION
Ralph Lowe
Indian Basin "A" 1
Undesignated
J-24-21S-23E
Eddy County, New Mexico



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 2286

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool [illegible] Formation [illegible] County [illegible]

Initial [illegible] Annual [illegible] Special [illegible] Date of Test [illegible]

Company [illegible] Lease [illegible] Well No. [illegible]

Unit [illegible] Sec. [illegible] Twp. [illegible] Rge. [illegible] Purchaser [illegible]

Casing [illegible] Wt. [illegible] I.D. [illegible] Set at [illegible] Perf. [illegible] To 7572

Tubing [illegible] Wt. [illegible] I.D. [illegible] Set at [illegible] Perf. [illegible] To [illegible]

Gas Pay: From [illegible] To 7572 L [illegible] xG [illegible] -GL [illegible] Bar.Press. 13.2

Producing Thru: Casing [illegible] Tubing [illegible] Type Well Gas-Gas Dual
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: [illegible] Packer [illegible] Reservoir Temp. [illegible]

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps Flange

No.	Flow Data (Prover) (Line) Size	Flow Data (Choke) (Orifice) Size	Flow Data Press. psig	Flow Data Diff. h_w	Flow Data Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						[illegible]			Over 72	
1.	3.068	1.250	[illegible]	[illegible]	[illegible]	[illegible]				6
2.	3.068	1.250	[illegible]	[illegible]	[illegible]	[illegible]				6
3.	3.068	1.250	[illegible]	[illegible]	[illegible]	[illegible]				6
4.	3.068	1.250	[illegible]	[illegible]	[illegible]	[illegible]				6
5.										

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.	20.35	[illegible]		[illegible]	.9721	1.063	2036
2.	20.35	[illegible]		[illegible]	.9721	1.059	2890
3.	20.35	[illegible]		[illegible]	.9721	1.059	4079
4.	20.35	[illegible]		[illegible]	.9721	1.063	5062
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio [illegible] cf/bbl.
Gravity of Liquid Hydrocarbons [illegible] deg.
F_c [illegible] $(1-e^{-s})$ [illegible]

Specific Gravity Separator Gas. .635
Specific Gravity Flowing Fluid. .7051
P_c 2307.2 P_c^2 5603.6

No.	P_w Pt (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$(F_cQ)^2$ $(1-e^{-s})$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2344.1	.9502
2.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2320.2	.9405
3.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5.									

Absolute Potential: [illegible] MCFPD; n [illegible]
COMPANY
ADDRESS
AGENT and TITLE Robert E. Hare
WITNESSED
COMPANY

REMARKS

6

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

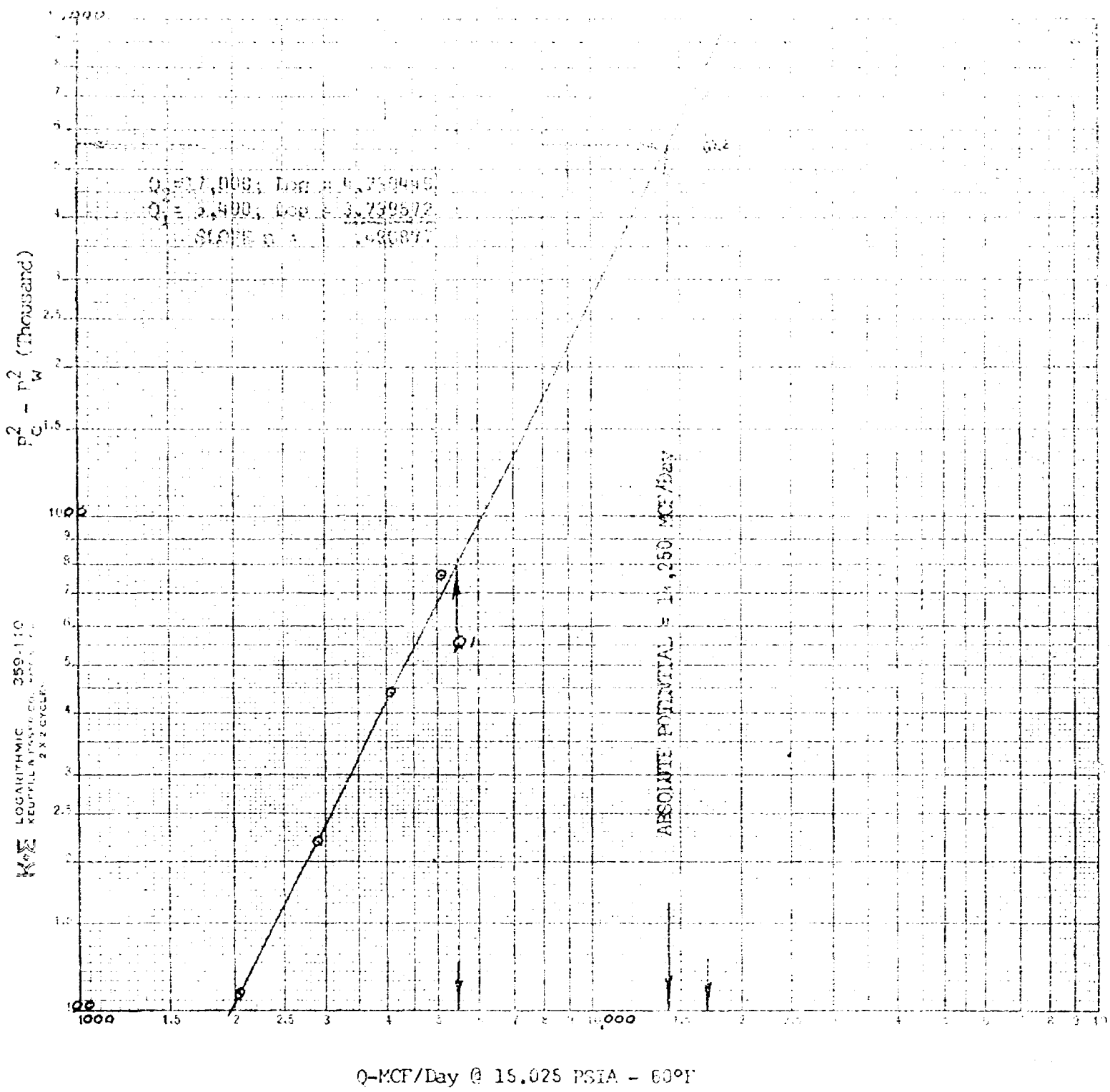
F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner or completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.


$P_c^2 - P_w^2$ (Thousand)
LOGARITHMIC
359-110
ABSOLUTE POTENTIAL = 14,250 MCF/Day
Q-MCF/Day @ 15.025 PSIA - 60°F

This form is not to be used for reporting packer leakage tests in Northwest New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION

SOUTHEAST NEW MEXICO PACKER LEAKAGE TEST

Operator		Lease	Well No.
Ralph Lowe		Indian Basin "A"	1

Location of Well	Unit	Sec	Twp	Rge	County
	J	22	21S	23E	Eddy

	Name of Reservoir or Pool	Type of Prod (Oil or Gas)	Method of Prod Flow, Art Lift	Prod. Medium (Tbg or Csg)	Choke Size
Upper Compl	Canyon Dolomite (Penn.)	Gas	Flow	Tubing	22/64
Lower Compl	Morrow Sand	Gas	Flow	Tubing	19/64

FLOW TEST NO. 1

Both zones shut-in at (hour, date): 3:30 P.M.; January 11, 1963

Well opened at (hour, date): 11:30 P.M.; January 11, 1963

	Upper Completion	Lower Completion
Indicate by (X) the zone producing	X	
Pressure at beginning of test	2360	2893
Stabilized? (Yes or No)	Yes	Yes
Maximum pressure during test	2360	2914
Minimum pressure during test	2029	2893
Pressure at conclusion of test	2029	2914
Pressure change during test (Maximum minus Minimum)	331	21
Was pressure change an increase or a decrease?	Decrease	Increase

Well closed at (hour, date): 5:30 P.M.; January 12, 1963 Total Time On Production 18.0 Hours

Oil Production During Test: 47.0 bbls; Grav. 58.4; Gas Production During Test 3770 MCF; GOR 80,212

Remarks Ice plugged needle valve on Upper Zone at 3:45 A.M. and 6:00 A.M., January 11th. Heating lamp applied at 1:15 P.M., January 12th. Needle valve cleared at 3:30 P.M.

FLOW TEST NO. 2

	Upper Completion	Lower Completion
Well opened at (hour, date): 9:00 P.M.; January 12, 1963		
Indicate by (X) the zone producing		X
Pressure at beginning of test	2359	2910
Stabilized? (Yes or No)	Yes	Yes
Maximum pressure during test	2371	2910
Minimum pressure during test	2359	2545
Pressure at conclusion of test	2371	2545
Pressure change during test (Maximum minus Minimum)	12	365
Was pressure change an increase or a decrease?	Increase	Decrease

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Oil Exhibit No. 5
CASE NO. 3788

Well closed at (hour, date) 1:00 A.M.; January 13, 1963 Total time on Production 4 Hours

Oil Production During Test: 1.6 bbls; Grav. 53.0; Gas Production During Test 830 MCF; GOR 518,750

Remarks

I hereby certify that the information herein contained is true and complete to the best of my knowledge.

Approved _____ 19____
New Mexico Oil Conservation Commission

By _____

Title _____

Operator Ralph Lowe

By Robert C. Lee

Title Petroleum Engineer

Date January 15, 1963

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool _____ Formation _____ County _____

Initial _____ Annual _____ Special _____ Date of Test _____

Company _____ Lease _____ Well No. _____

Unit _____ Sec. _____ Twp. _____ Rge. _____ Purchaser _____

Casing _____ Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____

Tubing _____ Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____

Gas Pay: From _____ To _____ L _____ xG _____ -GL _____ Bar.Press. _____

Producing Thru: Casing _____ Tubing _____ Type Well _____
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: _____ Packer _____ Reservoir Temp. _____

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps _____

No.	Flow Data (Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI										
1.										
2.										
3.										
4.										
5.										

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.							2193
2.							3291
3.							5327
4.							6360
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
Gravity of Liquid Hydrocarbons _____ deg.
F_c _____ $(1-e^{-s})$ _____

Specific Gravity Separator Gas .603
Specific Gravity Flowing Fluid .7665
P_c _____ P_c^2 1893.5

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.									
2.									
3.									
4.									
5.									

Absolute Potential: _____ MCFPD; n _____
COMPANY _____
ADDRESS _____
AGENT and TITLE Robert L. Lee
WITNESSED _____
COMPANY _____

REMARKS

7

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

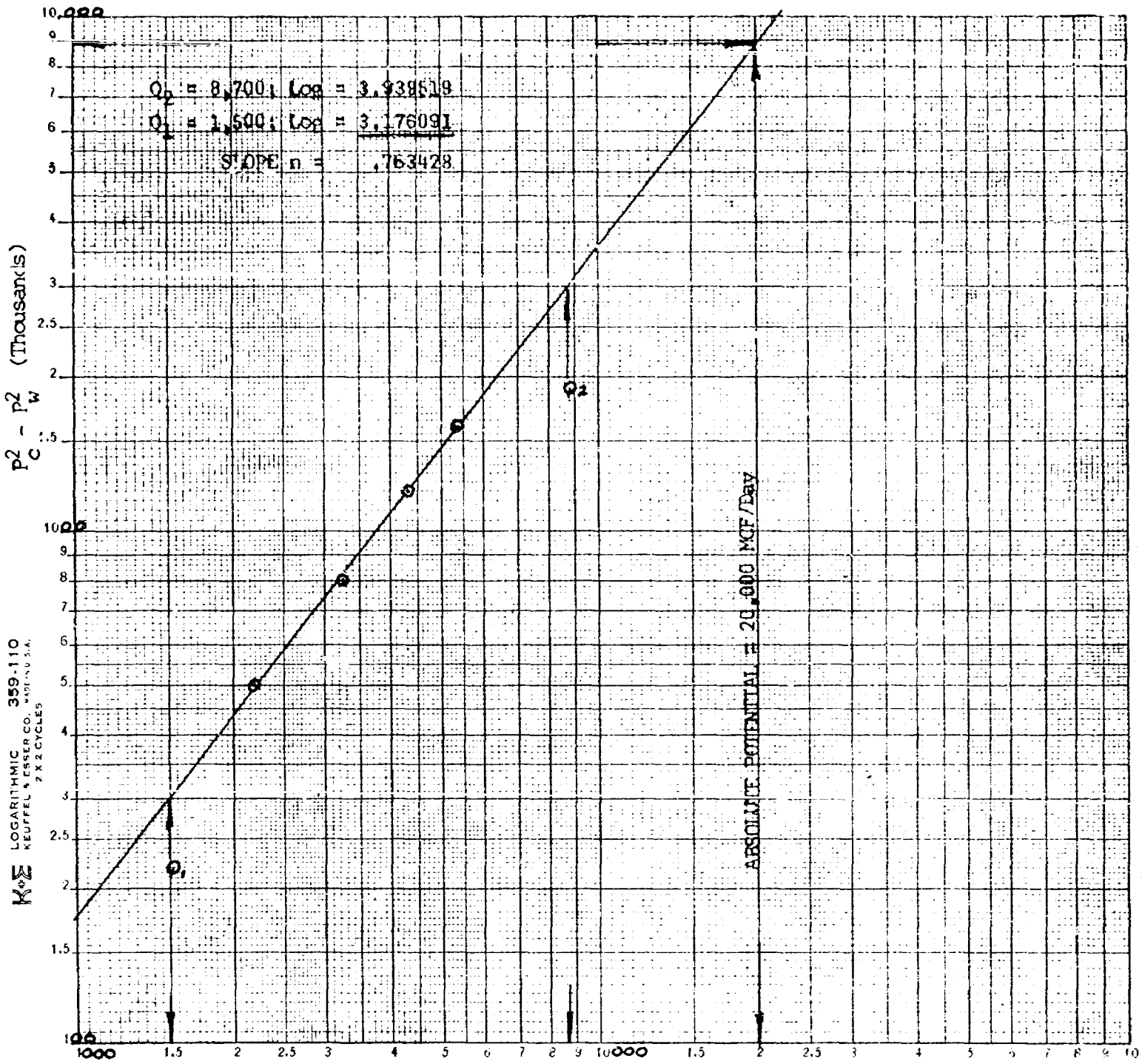
F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.

COMPANY Ralph Lowe
WELL Indian Basin "A" 1 (Lower)
LOCATION J-22-21S-23E
COUNTY Eddy
DATE 1/10-11/1963



NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

6-1-56

PACKER-SETTING AFFIDAVIT
(Dual Completions)

STATE OF Texas)
)ss
County of Midland)

Harvin L. Landua, being first duly sworn according to law, upon his oath deposes and says:

That he is of lawful age and has full knowledge of the facts herein below set out.

That he is employed by Ralph Lowe in the capacity of Agent and as such is its authorized agent.

That on December 23, 19 62, he personally supervised the setting of a Baker Model "D" (Make and Type of Packer) in RALPH LOWE (Operator)'s Indian Basin "A" (lease) Well No. 1, located in Unit Letter J, Section 22, Township 21-S, Range 23-E, NMPM, Eddy County, New Mexico.

That said packer was set at a subsurface depth of 9050 feet, said depth measurement having been furnished by Western Company.

That the purpose of setting this packer was to effect a seal in the annular space between the two strings of pipe where the packer was set so as to prevent the commingling, within the well-bore, of fluids produced from a stratum below the packer with fluids produced from a stratum above the packer. That this packer was properly set and that it did, when set, effectively and absolutely seal off the annular space between the two strings of pipe where it was set in such manner as that it prevented any movement of fluids across the packer.

RALPH LOWE
(Company)

Harvin L. Landua
(its Agent) Harvin L. Landua

Subscribed and sworn to before me this the 7th. day of March, AD, 19 63.

Jeanne Coughran
Notary Public in and for the County of Midland, Texas.

My Commission Expires June 1, 1963.

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

7-3-58

APPLICATION FOR DUAL COMPLETION

Field Name			County		Date
Undesignated			Eddy		March 7, 1963
Operator		Lease			Well No.
RALPH LOWE		Indian Basin "A"			1
Location of Well	Unit	Section	Township		Range
	J	22	21-S		23-E

1. Has the New Mexico Oil Conservation Commission heretofore authorized the dual completion of a well in these same pools or in the same zones within one mile of the subject well? YES ____ NO X
2. If answer is yes, identify one such instance: Order No. _____ ; Operator, Lease, and Well No.:

3. The following facts are submitted:	Upper Zone	Lower Zone
a. Name of reservoir	Upper Penn.	Morrow
b. Top and Bottom of Pay Section (Perforations)	7505' Top. Bottom 7572' 7505-17', 7524-33', 7539-72'	9118' Top. Bottom 9266 9113-30', 9252-66'
c. Type of production (Oil or Gas)	Gas	Gas
d. Method of Production (Flowing or Artificial Lift)	Flowing	Flowing

4. The following are attached. (Please mark YES or NO)

Yes a. Diagrammatic Sketch of the Dual Completion, showing all casing strings, including size and setting, top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.

Yes b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.

No c. Waivers consenting to such dual completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.*

Yes d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed, it shall be submitted as provided by Rule 112-A.)

5. List all offset operators to the lease on which this well is located together with their correct mailing address.
No offset operators. All leases are in a working interest unit.

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ___ NO ____. If answer is yes, give date of such notification Not applicable .

CERTIFICATE: I, the undersigned, state that I am the Agent of the RALPH LOWE (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

DOCKET MAILED

3-24-63-Sa

Harvin L. Landua

Signature Harvin L. Landua

* Should waivers from all [redacted] operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed dual completion will result in an unorthodox well location and/or a non-standard proration unit in either or both of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

No. 11-63

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 10, 1963

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, as alternate Examiner:

CASE 2780: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Petroleum Consultants and all other interested parties to appear and show cause why the State Well No. 1 located 660 feet from the South and East lines of Section 2, Township 1 North, Range 20 East, De Baca County, New Mexico, should not be plugged in accordance with a Commission-approved plugging program.

CASE 2781: Application of John H. Trigg Company for three water injection wells, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to convert its Federal Trigg Wells Nos. 17-9, 26-9, and 28-9, located in Units N, L, and D respectively, Section 9, Township 14 South, Range 31 East, Caprock-Queen Pool, Chaves County, New Mexico, to water injection off-setting Phillips Petroleum Company's West Caprock waterflood project.

CASE 2782: Application of Texaco Inc., for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 320-acre non-standard gas proration unit comprising the E/2 SW/4, S/2 SE/4, NE/4 SE/4, E/2 NE/4, and NW/4 NE/4 of Section 12, Township 21 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, to be dedicated to its Roy Riddel Well No. 1 located in Unit N of Section 12.

CASE 2783: Application of Pan American Petroleum Corporation for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Southland Royalty "A" Well No. 8, located in Unit W, Section 4, Township 21 South, Range 37 East, Lea County, New Mexico, as a triple completion (conventional) to produce oil from the Blinebry Oil Pool, Tubb Gas Pool, and Drinkard Pool through parallel strings of tubing.

CASE 2784: Application of Continental Oil Company for authority to conduct interference tests, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to shut-in one Oil Center Blinebry well on its Meyer B-4 Lease, Section

4, Township 21 South, Range 36 East, Lea County, New Mexico, to observe pressure behavior and to transfer said well's allowable to other wells on said lease for a period not to exceed 90 days.

CASE 2785: Application of DOB Oil Properties, Inc., for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Northeast Anderson Ranch Unit Area, comprising 1680 acres of State land in Township 15 South, Range 32 East, Lea County, New Mexico.

CASE 2786: Application of Apache Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Maljamar North Unit Area, comprising 1600 acres of State land in Township 16 South, Ranges 32 and 33 East, Lea County, New Mexico.

CASE 2787: Application of Cabot Corporation for an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the unorthodox location of its John R. Thompson Well No. 1 at a point 1980 feet from the South line and 330 feet from the West line of Section 23, Township 11 South, Range 33 East, North Bagley-Wolfcamp Pool, Lea County, New Mexico.

CASE 2788: Application of Ralph Lowe for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of his Indian Basin "A" Well No. 1, located in Unit J of Section 22, Township 21 South, Range 23 East, Eddy County, New Mexico, as a dual completion (conventional) to produce gas from the Indian Basin-Upper Pennsylvanian Gas Pool and the Indian Basin-Morrow Gas Pool through parallel strings of tubing.

CASE 2789: Application of Sam Boren Oil for a salt water disposal dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Robinson Well No. 1, located in Unit H, Section 23, Township 9 South, Range 33 East, Lea County, New Mexico, in such a manner as to produce oil from the Bough "C" zone of the Pennsylvanian formation and to dispose of produced salt water through the intermediate casing annulus into the open-hole interval from 4184 feet to approximately 5700 feet.

iqg/

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 4/15/63

CASE 2788 Hearing Date 9am 4/10/63 JEW @ SF

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

Enter an order approving the dual completion of Ralph Lowe's Indian Basin "A" Well No 1, located in T-22-21S-23E Eddy Co NM to produce gas from the Indian Basin Upper Pennsylvanian gas pool & the Indian Basin Morrow Gas Pool thru parallel strings of tubing, separation of the zones to be achieved by means of a permanent type packer set at approximately 9050 feet.

Specify packer leakage tests upon completion and annually during the test period for the Indian Basin Morrow Gas Pool.

Sam Nutter
Staff Member

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. 2788
Order No. R-2468

APPLICATION OF RALPH LOWE
FOR A DUAL COMPLETION, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on April 10, 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 18th day of April, 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, Ralph Lowe, seeks authority to complete his Indian Basin "A" Well No. 1, located in Unit J of Section 22, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, as a dual completion (conventional) to produce gas from the Indian Basin-Upper Pennsylvanian Gas Pool and the Indian Basin-Morrow Gas Pool through parallel strings of 2 3/8-inch tubing, with separation of zones by a packer set at approximately 9050 feet.

(3) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.

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

IT IS THEREFORE ORDERED:

(1) That the applicant, Ralph Lowe, is hereby authorized to complete his Indian Basin "A" Well No. 1, located in Unit J of Section 22, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, as a dual completion (conventional) to produce gas from the Indian Basin-Upper Pennsylvanian Gas Pool and the Indian Basin-Morrow Gas Pool through parallel strings of 2 3/8-inch tubing, with separation of zones by a permanent type packer set at approximately 9050 feet.

PROVIDED HOWEVER, That the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order.

PROVIDED FURTHER, That the applicant shall take packer-leakage tests upon completion and annually thereafter during the Annual Testing Period for the Indian Basin-Morrow Gas Pool.

(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

Jack M Campbell
JACK M. CAMPBELL, Chairman

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

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

esr/

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

State of New Mexico
Oil Conservation Commission

P. O. BOX 871
SANTA FE

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

April 18, 1963

Mr. Howard Bratton
Harvey, Dow & Hinkle
Attorneys at Law
Post Office Box 10
Roswell, New Mexico

Re: Case No. 2785, 2786 and 2788
Order No. R-2466, R-2467 & R-2468
Applicant:
Dob Oil Properties, Apache Corp., and Ralph Lowe

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.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC x (R-2468)
Aztec OCC
OTHER

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 10, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Ralph Lowe for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of his Indian Basin "A" Well No. 1, located in Unit J of Section 22, Township 21 South, Range 23 East, Eddy County, New Mexico, as a dual completion (conventional) to produce gas from the Indian Basin-Upper Pennsylvanian Gas Pool and the Indian Basin-Morrow Gas Pool through parallel strings of tubing. Case 2788

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: We'll call Case 2788.

MR. DURRETT: Application of Ralph Lowe for a dual completion, Eddy County, New Mexico.

MR. BRATTON: Howard Bratton on behalf of the applicant. We have one witness.

(Witness sworn.)

(Whereupon, Applicant's Exhibits Nos. 1 through 7 were marked for identification.)

ARCHIE P. FARR

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

DIRECT EXAMINATION

BY MR. BRATTON:

Q Will you state your name and occupation?

A Archie Farr with West Texas Oil Reports in Midland, Texas.

Q You have been employed by Ralph Lowe as a consultant in connection with the well in question here?

A I have.

Q Will you state briefly your professional and educational background?

A I'm a graduate of the University of Texas with a B. S. degree in petroleum engineering. I worked for approximately a year with Stanolind Oil and Gas, now Pan American. For the last twelve years I've been associated with West Texas Oil Reports.

Q And you are familiar with the well in question and the matters under consideration in this application?

A I am.

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

MR. NUTTER: Yes, sir.

Q Refer to Exhibit No. 1, Mr. Farr. Is that a plat of the area indicating the well in question?

A Yes, the well in question is circled in red.

Q That's the Ralph Lowe No. 1 "A" in the Southeast Quarter of Section 22?

A Yes.

Q Now, in this application we are seeking approval for a dual completion of this well, is that correct?

A That is correct.

Q And these are dual completions in two formations just recently designated by the Commission in pool rules recently adopted?

A That is correct.

Q Are there other wells that are similarly completed to this well shown on this exhibit?

A Yes. Ralph Lowe is the operator of two other wells, namely the Ralph Lowe Indian Basin No. 1 in Section 23, and also the Indian Basin "B" 1 in Section 14.

Q And both of these wells have encountered the same two formations?

A They did.

Q But this is the first application for a dual completion

of these two formations in the area, is that correct?

A It is correct.

Q This area is under a working interest operating agreement, is that correct?

A Yes.

Q So there are no offset operators?

A That is correct.

Q The potentials of the three wells are indicated on Exhibit 1, is that correct?

A Yes.

Q Refer then to your Exhibit No. 2, Mr. Farr. Is that the form of application for dual completion--

A Yes, it is.

Q -- indicating the reservoirs and the tops and bottoms of the formation?

A Yes.

Q And both zones, both the Upper Penn and the Morrow are gas wells?

A They are.

Q Turn then to Exhibit No. 3, which is the log of the well, Mr. Farr. Would you explain what it indicates and what is marked, are marked on it?

A A Baker Model K packer, a production packer has been

set at 7280, which is, oh, some 70 feet above the top of the Upper Penn formation, shown as a horizontal red line on the log. The perforations in the upper zone are shown as 7505 to 17 and 7524 to 33, 7539 to 72. That is the perforated interval.

Now, going down to the Morrow, which is shown at approximately 8952, we see below this a Baker Model D packer, a permanent type packer, has been set at 9050 feet, and this separates the two zones. The perforations in the Morrow being from 9118 to 30 and 9252 to 66.

Q Turn to your Exhibit No. 4, Mr. Farr, which is your schematic diagram of the actual dual completion. Will you explain what i indicates?

A Exhibit 4 indicates the actual physical condition of the well. It shows 9-5/8" casing set at 1925 feet with cement circulated to surface. The 7" casing is set at 9385 and cemented with 625 sacks, with top of the cement by temperature survey being indicated as 6355, which is well above the top of the Upper Penn. 2-3/8" ten round tubing has been set at 7280 and short string, and at 9053 in the long string. This shows the Baker Model K packer set at 7280, and the Baker Model D packer set at 9050.

Also the perforated interval, it shows just the over-all interval in the upper zone from 7505 to 72 and in the bottom

from 7118 to 30 and 9252 to 66.

Q Is this a standard dual completion, Mr. Farr, is there anything unusual about it?

A No. This is a very standard dual completion.

Q Is there any reason you would anticipate any production difficulties utilizing this method of dual completion?

A None whatsoever.

Q Turn to your Exhibit No. 5, that is your packer leakage test?

A That is correct.

Q What is indicated on it?

A That there is no communication between the Morrow and the Upper Penn zone.

Q Does this indicate your pressure GOR's?

A Yes. It indicates the shut-in pressures at the beginning of the test, the shut-in pressure on the upper was 2360 pounds and on the lower, 2893 pounds. It was flowed on the -- upper completion was opened first and it was flowed on a 22/64 choke for 18 hours. It produced 47 barrels of 58.4 gravity distillate along with 3,770 MCF of gas.

The lower zone was flowed on a 19/64 choke for four hours, and it made 1.6 barrels of 53.0 gravity distillate, 830 MCF of gas.

Q Is there anything else you care to point out in connection with that exhibit?

A Only that the change by dead weight gauge of the pressures on the shut-in zone, while the test was being conducted, was very, very small, most of which can be attributed to temperature change.

Q All right. Turn, then, to your Exhibits Nos. 6 and 7. Are those your multiple-point back pressure tests on the two formations?

A They are. These are the actual test data.

Q And No. 6 is the --

A Is on the Upper Penn.

Q No. 7 is on the Morrow sand?

A At the time these tests were made the pool designation had not been made, and the formation is shown as Pennsylvanian dolomite, and at that time there were several different names for this formation. It has now been established as Upper Pennsylvanian.

Q Mr. Farr, approximately what would be the saving on this well by dual completion rather than by drilling two separate wells?

A I should think it would be in the vicinity of $100,000.

Q Is there any reason in your opinion why the two

reservoirs can not be as efficiently and economically drained under a dual completion as under separate wells?

A No, they can be produced effectively as dual, as separate.

Q Were Exhibits 1 through 7 prepared by you or under your supervision or by companies employed by Ralph Lowe?

A Yes, they were.

MR. BRATTON: We would offer in evidence Applicant's Exhibits 1 through 7.

MR. NUTTER: Applicant's Exhibits 1 through 7 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 7 were offered and admitted in evidence.)

MR. BRATTON: We have nothing further at this time.

MR. NUTTER: Are there any questions of the witness?

MR. DURRETT: Yes, sir, I have one question.

CROSS EXAMINATION

BY MR. DURRETT:

Q Mr. Farr, this Baker Model D packer is a permanent type packer?

A Yes, it is.

Q What about the Model K, is that a permanent type?

A No, it is retrievable, it was run in on the long

string. It's just a production type packer to facilitate moving any fluids that might be produced from the upper zone.

MR. DURRETT: I see. Thank you.

MR. NUTTER: If no further questions, the witness may be excused.

(Witness excused.)

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

MR. BRATTON: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2788? We'll take the case under advisement.

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 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 22nd day of April, 1963.

Ada Dearnley
Notary Public-Court Reporter

My Commission Expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2788, heard by me on 4/10, 1963.

..... Examiner
New Mexico Oil Conservation Commission