

NEW MEXICO OIL CONSERVATION COMMISSION

Form 8-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Tubb Formation Tubb County Lea
Initial Annual Special X Date of Test 7-11 to 19, 1963
Company Shell Oil Co. Lease Livingston Well No. 2
Unit W Sec. 3 Twp. 21S Rge. 37E Purchaser El Paso Natural Gas Co.
Casing 5 1/2' Wt. 15.5 I.D. 4.950 Set at 6674 Perf. 61.5 To 6329
Tubing 2 1/2' Wt. 6.5 I.D. 2.441 Set at 6590 Perf. 6563 To 6566
Gas Pay: From 61.5 To 6329 L 61.5 xG mix .702 GL 4342 Bar.Press. 13.2
Producing Thru: Casing X Tubing Type Well G.O. Dual
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: May 6, 1957 Packer 6500 Reservoir Temp.

OBSERVED DATA

Tested Through (Packer) (Choke) (Meter) Type Taps Flg.

No.	Flow Data			Tubing Data		Casing Data		Duration of Flow Hr.
	(<u>Packer</u>) (Line) Size	(<u>Choke</u>) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	
SI								
1.	4	1.000	510	2.9	3	743		72
2.	4	1.000	552	4.00	4	737		24
3.	4	1.000	577	38.44	75	695		24
4.	4	1.000	573	96.04	71	65		24
5.								

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wpf}}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	6.135	3	523.2	.976	.9407	1.053	231.1
2.	6.135	47.4	572.2	.977	.9407	1.056	25.0
3.	6.135	150.62	590.2	.950	.9407	1.057	904.9
4.	6.135	237.27	566.2	.936	.9407	1.060	1436
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 131.50 cf/bbl.
Gravity of Liquid Hydrocarbons 44.6 deg.
F_c 2.325 (1-e^{-s}) .25
Specific Gravity Separator Gas .673
Specific Gravity Flowing Fluid .519
P_c 471.2 P_c 413.2

No.	P _t 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.	756.2	571.8	5373	2887	.0745	571.2	371.3	756.3	77.9
2.	750.2	562.8	1626	4390	.1133	562.1	30.3	750.3	77.2
3.	70.2	501.5	2.104	4.427	1.142	502.6	440.6	709.0	73.0
4.	671.2	450.5	3.339	11.15	2.77	453.4	49.8	673.3	69.3
5.									

Absolute Potential: 3.750 MCFPD; n 1.000

COMPANY Shell Oil Company
ADDRESS P. O. Box 15, Roswell, New Mexico
AGENT and TITLE A. L. Ellard - Gas Tester
WITNESSED Jack T. Littlefield
COMPANY El Paso Natural Gas Company

REMARKS

Slope greater than 1.000, a slope of 1.000 drawn through highest rate of flow.

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.

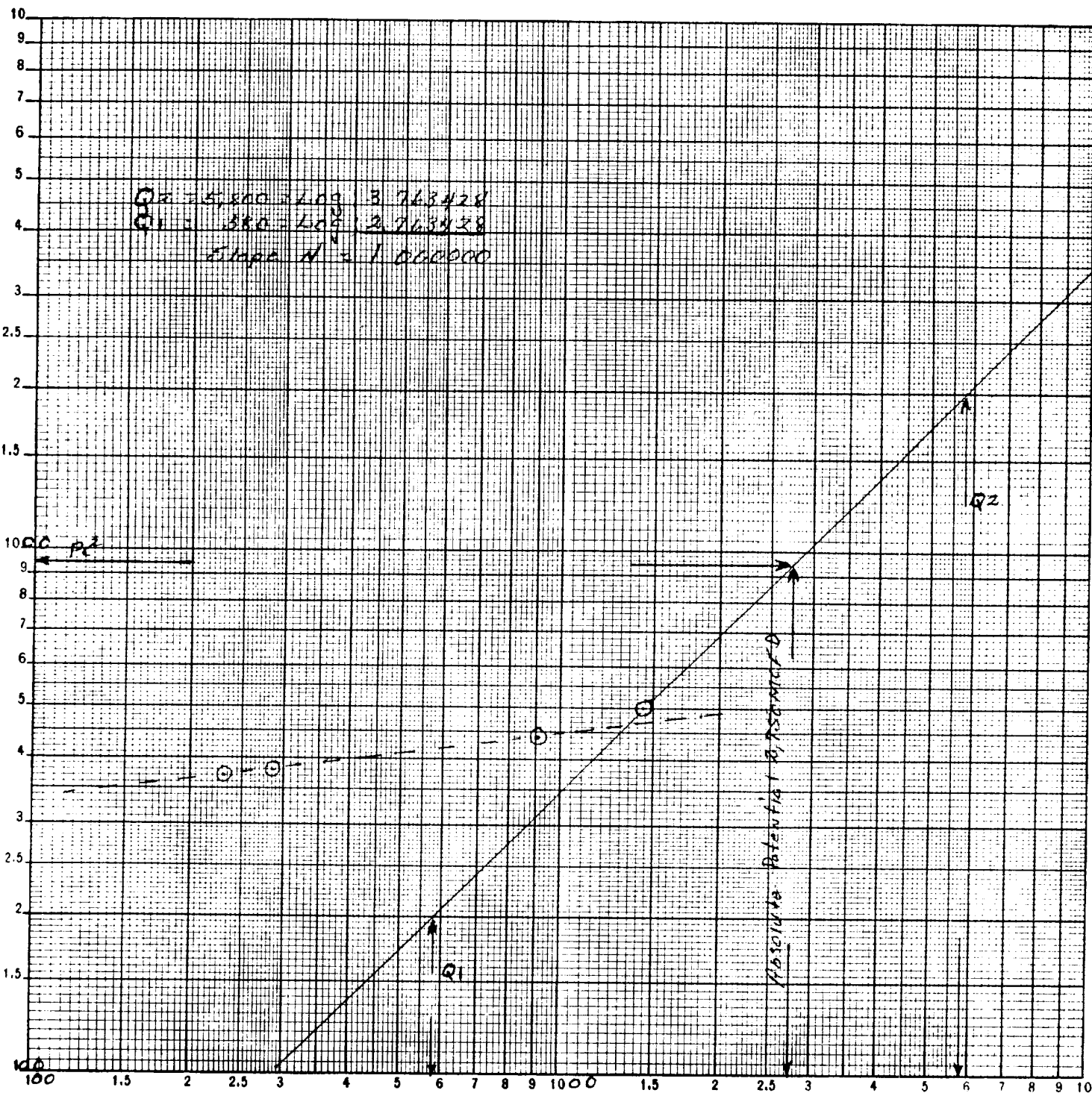
Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .

GAS WELL BACK PRESSURE CURVE

County LEE Field TIBB GAS
Operator SHELL OIL COMPANY
Lease LIVINGSTON Well No. 2
Volume 2,750 MCF/24 hr.
Date JULY 19, 1963

$P_e^2 - P_w^2$ (Thsds.)

K&S LOGARITHMIC 359-110
KEUFFEL & ESSER CO. MADE IN U.S.A.
2 X 2 CYCLES



$Q - MCFD - 15.025$ psi