

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Tubb Gas Formation Gulf County LeaInitial Annual Special 2 Date of Test 4-26 to 5-3-1965Company Shell Oil Company Lease Livingston Well No. 7Unit V Sec. 3 Twp. 21-S Rge. 37-W Purchaser El Paso Natural Gas CompanyCasing 5 1/2' Wt. 15.58 I.D. 4.976 Set at 6120 Perf. 6067 To 6392Tubing 2 1/16 Wt. 3.43 I.D. 1.751 Set at 6282 Perf. To Gas Pay: From 6067 To 6392 L 6293 xG 1.748 -GL 4707 Bar.Press. 13.2Producing Thru: Casing Tubing Type Well G. G. DualDate of Completion: 10-15-64 Packer None Reservoir Temp. bar: 3-5-65

OBSERVED DATA

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

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI										
1.	4	1.000	542	15.21	60	710		879		72
2.	4	1.000	541	19.36	62	715		816		24
3.	4	1.000	547	37.21	66	870		764		24
4.	4	1.000	504	37.21	71	867		760		24
5.	4	1.000	506	33.29	73	825		759		24

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.	6.135 ✓	91.89 ✓	555.2 ✓	1.0000 ✓	.9239 ✓	1.066 ✓	356.2 ✓
2.	6.135 ✓	103.6 ✓	554.2 ✓	.9981 ✓	.9239 ✓	1.066 ✓	625.8 ✓
3.	6.135 ✓	144.4 ✓	561.2 ✓	.9943 ✓	.9239 ✓	1.066 ✓	817.5 ✓
4.	6.135 ✓	149.7 ✓	502.2 ✓	.9896 ✓	.9239 ✓	1.070 ✓	598.4 ✓
5.	6.135 ✓	176.0 ✓	501.2 ✓	.9877 ✓	.9239 ✓	1.066 ✓	1,051 ✓

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 64,500 cf/bbl.
Gravity of Liquid Hydrocarbons 48.5 deg.
F_c 14.05 (1-e^{-s}) .277Specific Gravity Separator Gas .743
Specific Gravity Flowing Fluid .8212
P_c 692.2 P_c² 726.0

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.	528.2					617.5	108.4		52.8
2.	525.2					610.2	115.1		52.5
3.	797.2					635.5	160.5		59.3
4.	763.2					622.2	160.8		58.9
5.	772.2					596.3	199.7		56.5

Absolute Potential: 4,275 MCFPD; n 1.000COMPANY Shell Oil CompanyADDRESS P. O. Box 1050, Roswell, New MexicoAGENT and TITLE A. L. Oilerd - Gas TesterWITNESSED Booby BoazCOMPANY El Paso Natural Gas 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} = Supercompressibility 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**

City LAKE Field LL END
 Operator SHELL OIL COMPANY
 Lease LIVINGSTON Well No. 7
 Volume 4,275 MCF/24 hr.
 Date APRIL 26, 1965

$P_e - P_{wf}$
THOUSANDS

LOGARITHMIC
KEUFFEL & ESSER CO. MADE IN U.S.A.
3 X 3 CYCLES

