

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Lumont Formation Yates County Lee  
Initial Annual Special x Date of Test 5-3 to 5-10-63  
Company Shell Oil Company Lease State "H" Well No. 4  
Unit P Sec. 1 Twp. 21S Rge. 35E Purchaser El Paso Natural Gas Company  
Casing 7" Wt. 24.0 I.D. 6.336 Set at 3865 Perf. 2920 To 3230  
Tubing 2" Wt. 4.7 I.D. 1.995 Set at 2848 Perf.          To           
Gas Pay: From 2920 To 3230 L 2848 xG .669 -GL 1905 Bar.Press. 13.2  
Producing Thru: Casing          Tubing x Type Well Single  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: July 8, 1937 Packer 2840 Reservoir Temp.         

## OBSERVED DATA

Tested Through (Proven) (Choke) (Meter) Type Taps Flgs.

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	( <u>Proven</u> ) (Line) Size	( <u>Choke</u> ) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						674		Packer		72
1.	4	1.750	335	2.89	85	668				24
2.	4	1.750	344	13.69	78	626				24
3.	4	1.750	368	34.81	76	569				24
4.	4	1.750	431	45.56	81	514				24
5.										

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_f}$	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.	19.27	31.72	348.2	.9768	.9470	1.030	582.2
2.	19.27	69.93	357.2	.9831	.9470	1.033	1,295
3.	19.27	115.19	381.2	.9850	.9470	1.035	2,143
4.	19.27	142.26	444.2	.9806	.9470	1.041	2,648
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry cf/bbl.  
Gravity of Liquid Hydrocarbons None deg.  
F<sub>c</sub> 9.936 (1-e<sup>-s</sup>) .123

Specific Gravity Separator Gas .669  
Specific Gravity Flowing Fluid None  
P<sub>c</sub> 687.2 P<sub>c</sub><sup>2</sup> 472.2

No.	P <sub>t</sub> P <sub>t</sub> (psia)	P <sub>t</sub> <sup>2</sup>	F <sub>c</sub> Q	(F <sub>c</sub> Q) <sup>2</sup>	(F <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-s</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>	P <sub>w</sub> P <sub>c</sub>
1.	681.2	464.0	5.785	33.47	4.117	468.1	4.1	684.2	99.6
2.	639.2	408.6	12.87	165.6	20.37	429.0	43.2	654.9	95.3
3.	582.2	338.9	21.29	453.3	55.75	394.6	77.6	628.2	91.4
4.	527.2	277.9	26.31	692.2	85.14	363.0	109.2	602.5	87.7
5.									

Absolute Potential: 8,480 MCFPD; n .777

COMPANY Shell Oil Company  
ADDRESS P. O. Box 1858, Roswell, New Mexico  
AGENT AND TITLE A. L. Ellard - Gas Tester  
WITNESSED Jack T. Littlefield  
COMPANY 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  $P_t$ .