

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Sawyer Formation San Andres County Lea  
Initial \_\_\_\_\_ Annual X Special \_\_\_\_\_ Date of Test 1-14-65  
Company Sinclair Oil & Gas Co. Lease Federal Kelly A Well No. 2  
Unit G Sec. 19 Twp. 9 S Rge. 38 E Purchaser S.O. & G.  
Casing 7 5/8 Wt. 15.3 I.D. 6.969 Set at 400 Perf. \_\_\_\_\_ To \_\_\_\_\_  
Tubing 2 7/8 Wt. 6.5 I.D. 2.441 Set at 5050 Perf. 4896 To 4938  
Gas Pay: From 4896 To 4938 L 4896 xG .818 -GL 4005 Bar. Press. 13.2  
Producing Thru: Casing \_\_\_\_\_ Tubing X Type Well single  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: \_\_\_\_\_ Packer \_\_\_\_\_ Reservoir Temp. \_\_\_\_\_

## OBSERVED DATA

Tested Through (Diameter) (Orifice) (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 <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						1149				72 SI
1.	3	.750	467	7.61	68	469				24
2.										
3.										
4.										
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.	3.449	60.45	480.2	.9924	.8554	1.083	191.7
2.							
3.							
4.							
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio neg. cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
Specific Gravity Separator Gas .818  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 5.866 (1-e<sup>-s</sup>) .240 P<sub>c</sub> 1149 P<sub>c</sub> 1320

No.	P <sub>w</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.	482.2		negligible			232.5	1088	482.2	
2.									
3.									
4.									
5.									

Absolute Potential: 232.6 MCFPD; n 1.000  
COMPANY Sinclair Oil & Gas Co.  
ADDRESS Box 308; Tatum, N. Mex.  
AGENT and TITLE R. Fawcett, Inst. Tech.  
WITNESSED \_\_\_\_\_  
COMPANY \_\_\_\_\_

## REMARKS

used previous n slope  
A. P. calculated

## 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  $P_t$ .