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## NEW MEXICO OIL CONSERVATION COMMISSION

60-101957

HOBBS OFFICE OCC-1

Form C-122  
Revised 12-1-55

MAIN OFFICE

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Cave Formation Grayburg-Premier Sand 3:10 County EDDY  
Initial X Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test 6-1-57  
Company Yates Brothers Lease Simpson Federal Well No. 1  
Unit P Sec. 6 Twp. 17S Rge. 29E Purchaser --  
Casing 5 1/2 Wt. 14 I.D. 5.012 Set at 2456-2470 Perf. 2374 To 2384  
Tubing 2 Wt. 4 1/2 I.D. \_\_\_\_\_ Set at 2370 Perf. open To \_\_\_\_\_  
Gas Pay: From 2374 To 2384 L 2374 xG .660 -GL 1567 Bar.Press. 13.2  
Producing Thru: Casing X Tubing \_\_\_\_\_ Type Well Single  
Date of Completion: 1-14-57 Packer None Single-Bradenhead-G. G. or G.O. Dual  
Reservoir Temp. \_\_\_\_\_

## OBSERVED DATA

Tested Through (Prover) (~~Choke~~) (~~Meter~~)

Type Taps \_\_\_\_\_

Flow Data						Tubing Data		Casing Data		Duration of Flow Hr.
No.	(Prover) ( <del>LINE</del> ) Size	( <del>Choke</del> ) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI								<u>193</u>		<u>4 1/2</u> Months
1.	<u>2</u>	<u>.1250</u>			<u>44</u>			<u>177</u>		<u>3</u>
2.	<u>2</u>	<u>.2500</u>			<u>46</u>			<u>134</u>		<u>3</u>
3.	<u>2</u>	<u>.3750</u>			<u>47</u>			<u>88</u>		<u>3</u>
4.	<u>2</u>	<u>.5000</u>			<u>47</u>			<u>57</u>		<u>3</u>
5.										

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wpf}}$	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.	<u>.3418</u>		<u>190.2</u>	<u>1.0157</u>	<u>.9535</u>	<u>1.021</u>	<u>64.4</u>
2.	<u>1.4030</u>		<u>147.2</u>	<u>1.0157</u>	<u>.9535</u>	<u>1.012</u>	<u>202.0</u>
3.	<u>3.0691</u>		<u>101.2</u>	<u>1.0127</u>	<u>.9535</u>	<u>NA</u>	<u>300.0</u>
4.	<u>5.5235</u>		<u>70.2</u>	<u>1.0127</u>	<u>.9535</u>	<u>NA</u>	<u>374.0</u>
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio \_\_\_\_\_ cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
F<sub>c</sub> 1.712 (1-e<sup>-s</sup>) 0.102

Specific Gravity Separator Gas \_\_\_\_\_  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 206.2 P<sub>c</sub> 42.5 (thands.)

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.	<u>190.2</u>	<u>36.2</u>	<u>.11</u>	<u>.01</u>	<u>Negligible</u>	<u>36.2</u>	<u>6.3</u>	<u>190.2</u>	<u>.92</u>
2.	<u>147.2</u>	<u>21.7</u>	<u>.35</u>	<u>.12</u>	<u>"</u>	<u>21.7</u>	<u>20.8</u>	<u>147.2</u>	<u>.72</u>
3.	<u>101.2</u>	<u>10.2</u>	<u>.51</u>	<u>.26</u>	<u>"</u>	<u>10.2</u>	<u>32.3</u>	<u>101.2</u>	<u>.49</u>
4.	<u>70.2</u>	<u>4.9</u>	<u>.64</u>	<u>.41</u>	<u>"</u>	<u>4.9</u>	<u>37.6</u>	<u>70.2</u>	<u>.34</u>
5.									

Absolute Potential: 380 MCFPD; n .94COMPANY Yates BrothersADDRESS Artesia, New MexicoAGENT and TITLE John West EngineeringWITNESSED Marvin C. SpitzerCOMPANY Yates Bros

## 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  $P_t$ .