

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Wildcat Formation Dakota County San Juan  
Initial X Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test Oct. 21, 1959  
Company Southern Union Gas Company Lease Federal Nye Well No. 1  
Unit M Sec. 20 Twp. 31N Rge. 12W Purchaser Southern Union Gas Company  
Casing 5 1/2" Wt. 15.5# I.D. 4.950 Set at 7173 Perf. 6948 To 7044  
Tubing 2-3/8" Wt. 4.7# I.D. 1.995 Set at 6948 Perf. 6945 To 6948  
Gas Pay: From 6948 To 7044 L 6948 xG .670 -GL 4655 Bar.Press. 12.0  
Producing Thru: Casing \_\_\_\_\_ Tubing X Type Well Dual Gas - Gas  
Date of Completion: Sept. 30, 1959 Packer 6500 Single-Bradenhead-G. G. or G.O. Dual  
Reservoir Temp. \_\_\_\_\_

## OBSERVED DATA

Tested Through ~~120000~~ (Choke) ~~120000~~ Type Taps \_\_\_\_\_

Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
No.	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.
SI									
1.		<u>3/4"</u>	<u>128</u>		<u>64</u>	<u>2097</u>			<u>21 days</u>
2.									<u>3 hours</u>
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.	<u>12.365</u>		<u>140</u>	<u>0.9962</u>	<u>0.9463</u>	<u>1.015</u>	<u>1.521</u>
2.							
3.							
4.							
5.							

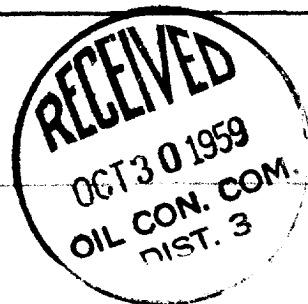
## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio \_\_\_\_\_ cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
F<sub>c</sub> 9.402 (1-e<sup>-s</sup>) 0.287 Specific Gravity Separator Gas \_\_\_\_\_  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 2109 P<sub>c</sub> 4448

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>140</u>	<u>19.6</u>	<u>14.29</u>	<u>200.49</u>	<u>57.54</u>	<u>77.44</u>	<u>4371</u>	<u>275.6</u>	<u>.131</u>
2.									
3.									
4.									
5.									

Absolute Potential: 69.1 MCFPD; n 0.75  
COMPANY SOUTHERN UNION GAS COMPANY  
ADDRESS P. O. Box 815, Farmington, New Mexico  
AGENT and TITLE Thomas E. Fenne, Engineer  
WITNESSED Mr. Bill Poe  
COMPANY Ohio Oil Co., Durango, Colorado

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 371, 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  $P_t$ .

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