

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool South Vacuum Formation McKee County Lea

Initial I Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test 10-27-58

Company The Pure Oil Company Lease South Vacuum Unit Well No. 2-35

Unit I Sec. 35 Twp. 18-3 Rge. 35-E Purchaser Phillips Petroleum Company

Liner 5" Wt. 17.93 I.D. 4.276 Set at 13881 Perf. 13620 To 13823

Tubing 2 Wt. 4.70 I.D. 1.995 Set at 13622 Perf. Open Ended To \_\_\_\_\_

Gas Pay: From 13620 To 13823 L 13721 xG 0.801 -GL 11000 Bar.Press. 30.18" Hg.

Producing Thru: Casing \_\_\_\_\_ Tubing I Type Well G. O. Dual  
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 9-28-58 Packer Quiberson Hookwall Reservoir Temp. 200° F 165° F

## OBSERVED DATA

Tested Through Quiberson (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 <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						<u>3498</u>	<u>78</u>	<u>Packer</u>		<u>64</u>
1.	<u>4.026</u>	<u>2.000</u>	<u>26</u>	<u>11</u>	<u>44</u>	<u>368</u>	<u>76</u>			<u>9</u>
2.	<u>4.026</u>	<u>2.000</u>	<u>26</u>	<u>11</u>	<u>44</u>	<u>211</u>	<u>76</u>			<u>3</u>
3.	<u>4.026</u>	<u>2.000</u>	<u>26</u>	<u>11</u>	<u>45</u>	<u>110</u>	<u>75</u>			<u>3</u>
4.	<u>4.026</u>	<u>2.000</u>	<u>26</u>	<u>11</u>	<u>45</u>	<u>82</u>	<u>75</u>			<u>3</u>
5.	<u>4.026</u>	<u>2.000</u>	<u>26</u>	<u>11</u>	<u>44</u>	<u>53</u>	<u>75</u>			<u>24</u>

## 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>25.580</u>	<u>20.8</u>	<u>26</u>	<u>1.0157</u>	<u>0.9385</u>		<u>502.0</u>
2.	<u>25.580</u>	<u>20.8</u>	<u>26</u>	<u>1.0157</u>	<u>0.9385</u>		<u>502.0</u>
3.	<u>25.580</u>	<u>20.8</u>	<u>26</u>	<u>1.0157</u>	<u>0.9385</u>		<u>502.0</u>
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5.	<u>25.580</u>	<u>20.8</u>	<u>26</u>	<u>1.0157</u>	<u>0.9385</u>		<u>502.0</u>

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 22,300 cf/bbl.

Gravity of Liquid Hydrocarbons 56.3 @ 60 deg.

$P_c$  9.936 (1-e<sup>-s</sup>) 0.570

Specific Gravity Separator Gas 0.688

Specific Gravity Flowing Fluid 0.801

$P_c$  3498  $P_c^2$  12236004

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>368</u>	<u>135.2</u>	<u>4975</u>	<u>24.75</u>	<u>13.10</u>	<u>118.3</u>	<u>12088</u>	<u>384.5</u>	<u>10.72</u>
2.	<u>211</u>	<u>44.5</u>	<u>4975</u>	<u>24.75</u>	<u>13.10</u>	<u>57.6</u>	<u>12178</u>	<u>240.0</u>	<u>6.85</u>
3.	<u>110</u>	<u>12.1</u>	<u>4975</u>	<u>24.75</u>	<u>13.10</u>	<u>25.2</u>	<u>12211</u>	<u>158.0</u>	<u>4.51</u>
4.	<u>82</u>	<u>6.72</u>	<u>4975</u>	<u>24.75</u>	<u>13.10</u>	<u>19.84</u>	<u>12216</u>	<u>141.0</u>	<u>4.04</u>
5.	<u>53</u>	<u>2.81</u>	<u>4975</u>	<u>24.75</u>	<u>13.10</u>	<u>15.91</u>	<u>12220</u>	<u>126.0</u>	<u>3.61</u>

Absolute Potential: 502 MCFPD; n = 00

COMPANY The Pure Oil Company

ADDRESS Box 2107, Fort Worth, Texas

AGENT and TITLE J. M. Williams Production Engineer

WITNESSED N. J. Littlejohn

COMPANY The Pure Oil Company

REMARKS

EXHIBIT 9

## 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  $P_t$ .

COMPANY The Pure Oil Company  
 WELL South Vacuum Unit 2-35  
 LOCATION I-35-18S-35E  
 COUNTY Lea  
 DATE 10-31-58

