

## NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE 000

Form C-122

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Eumont Formation Queen County Lea  
Initial Annual Special X Date of Test 7-6-56  
Company Shell Oil Company Lease State (Devonian) Well No. 1  
Unit G Sec. 20 Twp. 21S Rge. 36 E Purchaser El Paso Natural Gas Company  
Casing 7 Wt. 24 I.D. 6.336 Set at 3830 Perf. 3060 To 3620  
Tubing 2 1/2 Wt. 6.5 I.D. 2.441 Set at 3904 Perf.        To         
Gas Pay: From 3060 To 3620 L 3060 xG .660 -GL 2019 Bar.Press.         
Producing Thru: Casing X Tubing        Type Well G. C. Dual  
Date of Completion: 9-22-53 Packer 3710 Single-Bradenhead-G. G. or G.O. Dual  
Reservoir Temp.       

## OBSERVED DATA

Tested Through XXXXX XXXXX (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>4</u>	<u>1.750</u>	<u>547</u>	<u>2.82</u>	<u>55</u>			<u>1014</u>		<u>72</u>
1.	<u>4</u>	<u>1.750</u>	<u>536</u>	<u>5.52</u>	<u>58</u>			<u>952</u>		<u>24</u>
2.	<u>4</u>	<u>1.750</u>	<u>553</u>	<u>7.42</u>	<u>61</u>			<u>886</u>		<u>24</u>
3.	<u>4</u>	<u>1.750</u>	<u>555</u>	<u>8.42</u>	<u>63</u>			<u>820</u>		<u>24</u>
4.	<u>4</u>	<u>1.750</u>	<u>555</u>	<u>8.42</u>	<u>63</u>			<u>780</u>		<u>24</u>
5.										

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_t}$	Pressure psia	Flow Temp. Factor $P_t$	Gravity Factor $P_g$	Compress. Factor $P_{gv}$	Rate of Flow Q-MCFPD @ 15.025 psia
1.	<u>19.27</u>	<u>66.26</u>		<u>1.0040</u>	<u>.9535</u>	<u>1.061</u>	<u>1,290</u>
2.	<u>19.27</u>	<u>128.07</u>		<u>1.0019</u>	<u>.9535</u>	<u>1.061</u>	<u>2,517</u>
3.	<u>19.27</u>	<u>176.05</u>		<u>.9990</u>	<u>.9535</u>	<u>1.062</u>	<u>3,431</u>
4.	<u>19.27</u>	<u>200.20</u>		<u>.9971</u>	<u>.9535</u>	<u>1.062</u>	<u>3,869</u>
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio        cf/bbl.  
Gravity of Liquid Hydrocarbons 0.865 deg.  
 $P_g = \frac{0.865}{(1-e^{-.00015 P_t})}$  0.130

Specific Gravity Separator Gas         
Specific Gravity Flowing Fluid 1027.2  
 $P_g = \frac{1027.2}{P_g}$  2055.1

No.	$P_w$ $P_t$ (psia)	$P_t^2$	$P_g Q$	$(P_g Q)^2$	$\frac{(P_g Q)^2}{(1-e^{-.00015 P_t})}$	$P_w^2$	$P_g^2 - P_w^2$	Cal. $\frac{P_w}{P_g}$	$\frac{P_w}{P_g}$
1.	<u>965.2</u>	<u>931.6</u>	<u>1.22</u>	<u>1.49</u>	<u>.16</u>	<u>931.0</u>	<u>129.3</u>	<u>965.3</u>	<u>.9597</u>
2.	<u>899.2</u>	<u>808.6</u>	<u>2.10</u>	<u>4.41</u>	<u>.62</u>	<u>809.2</u>	<u>245.7</u>	<u>899.6</u>	<u>.8758</u>
3.	<u>855.2</u>	<u>731.2</u>	<u>2.97</u>	<u>8.82</u>	<u>1.13</u>	<u>855.4</u>	<u>337.7</u>	<u>855.9</u>	<u>.8118</u>
4.	<u>793.2</u>	<u>629.2</u>	<u>3.35</u>	<u>11.22</u>	<u>1.46</u>	<u>630.7</u>	<u>424.4</u>	<u>794.2</u>	<u>.7732</u>
5.									

Absolute Potential: 7,800 MCFPD; n 0.778COMPANY Shell Oil CompanyADDRESS Box 1957, Hobbs, New MexicoAGENT and TITLE Edward M. PinkappleWITNESSED El Paso Natural Gas CompanyCOMPANY El Paso Natural Gas Company

REMARKS

EL PASO  
NATURAL GAS  
ENGINEER

## 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  $P_t$ .

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