

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Undesignated Formation Ellenburger County Lea
Initial X Annual _____ Special _____ Date of Test 4-3 - 4-12-57
Company Gulf Oil Corporation Lease Graham State "P" Well No. 5
Unit P Sec. 36 Twp. 19S Rge. 36E Purchaser Permian Basin P. L. Co.
Casing 7 Wt. 29 I.D. _____ Set at 9785 Perf. _____ To _____
Tubing 2.375 Wt. 4.7 I.D. 1.995 Set at 9808 Perf. _____ To _____
Gas Pay: From 9785 To 9822 ~~9805~~ 9808 xG * _____ -GL * _____ Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X # _____ Type Well Single
Date of Completion: 8-13-54 Packer 9740 Reservoir Temp. _____
Single-Bradenhead-G. G. or G.O. Dual

OBSERVED DATA

Tested Through (~~Remounted Orifice~~) (Meter) Type Taps _____ Pipe _____

Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
No.	(Remounted Orifice) (Line) Size	(Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.
SI						<u>2198.2</u>			<u>72</u>
1.	<u>4</u>	<u>2.25</u>	<u>435.0</u>	<u>2.9</u>	<u>71</u>	<u>2153.2</u>			<u>23</u>
2.	<u>4</u>	<u>2.25</u>	<u>438.7</u>	<u>7.7</u>	<u>65</u>	<u>2094.5</u>			<u>24</u>
3.	<u>4</u>	<u>2.25</u>	<u>435.0</u>	<u>17.8</u>	<u>65</u>	<u>1985.4</u>			<u>24</u>
4.	<u>4</u>	<u>2.25</u>	<u>432.0</u>	<u>33.5</u>	<u>58</u>	<u>1801.7</u>			<u>24</u>
5.									

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_f}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	<u>40.53</u>	<u>36.06</u>	<u>448.2</u>	<u>.9896</u>	<u>.9608</u>	<u>1.039</u>	<u>1444</u>
2.	<u>40.53</u>	<u>48.34</u>	<u>441.9</u>	<u>.9952</u>	<u>.9608</u>	<u>1.040</u>	<u>2351</u>
3.	<u>40.53</u>	<u>89.32</u>	<u>448.2</u>	<u>.9952</u>	<u>.9608</u>	<u>1.040</u>	<u>3600</u>
4.	<u>40.53</u>	<u>122.1</u>	<u>445.2</u>	<u>1.0019</u>	<u>.9608</u>	<u>1.046</u>	<u>4983</u>
5.							

PRESSURE CALCULATIONS

CO₂ - 0%N₂ - 2.83%

Gas Liquid Hydrocarbon Ratio * _____ cf/bbl.
Gravity of Liquid Hydrocarbons 67.5 deg.
F_c 9.936 (1-e^{-S}) *

Specific Gravity Separator Gas .650
Specific Gravity Flowing Fluid .7110
P_c 2211.4 P_c 4890.3

No.	P _w P _t (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-S})	P _w ²	P _c ² -P _w ²	Cal. P _w	P _w P _c
1.	<u>2166.4</u>	<u>4693.3</u>	<u>14.35</u>	<u>205.9</u>	<u>77.42</u>	<u>4710.7</u>	<u>119.6</u>	<u>2184.3</u>	<u>.99</u>
2.	<u>2107.7</u>	<u>4442.4</u>	<u>23.36</u>	<u>545.7</u>	<u>206.3</u>	<u>4448.7</u>	<u>211.6</u>	<u>2136.2</u>	<u>.98</u>
3.	<u>1998.6</u>	<u>3994.4</u>	<u>35.77</u>	<u>1279.5</u>	<u>473.4</u>	<u>4467.8</u>	<u>422.5</u>	<u>2113.8</u>	<u>.96</u>
4.	<u>1814.9</u>	<u>3293.9</u>	<u>49.51</u>	<u>2451.2</u>	<u>914.3</u>	<u>4208.2</u>	<u>682.1</u>	<u>2051.3</u>	<u>.93</u>
5.									

Absolute Potential: 20,000 MCFPD; n 0.71

COMPANY Gulf Oil Corporation

ADDRESS Hobbs, New Mexico

AGENT and TITLE H. L. Smith

WITNESSED R. L. West

COMPANY Permian Basin P. L. Co.

Fluid Rate

REMARKS

Barrels	Galx	GL	(1-e ^{-S})	GOR
1. <u>28</u>	<u>.698</u>	<u>6846</u>	<u>.376</u>	<u>51,571</u>
2. <u>52</u>	<u>.704</u>	<u>6905</u>	<u>.378</u>	<u>45,211</u>
3. <u>51</u>	<u>.685</u>	<u>6718</u>	<u>.370</u>	<u>70,588</u>
4. <u>84</u>	<u>.692</u>	<u>6787</u>	<u>.373</u>	<u>59,321</u>

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 .