MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **Eumont**   Formation **Yates & Seven Rivers**   County **Lea**

Initial_____ Annual_____ Special **X**   Date of Test **8-6 to 8-10-56**

Company **Humble Oil & Refining Company** Lease **N.M. State B**   Well No. **1**

Unit **E** Sec. **29** Twp. **21S** Rge. **36E** Purchaser **El Paso Natural Gas Company**

Casing **7** Wt. **24** I.D. **6.366** Set at **3941** Perf. **3300** To **3655**

Tubing **2½** Wt. **6.5** O.D. **2.875** Set at **3799** Perf. **-** To **-**

Gas Pay: From **3300** To **3655** L **3300** xG **0.670** -GL **2211** Bar.Press. **13.2**

Producing Thru: Casing **X** Tubing_____ Type Well **G.O. Dual**

Date of Completion: **4-19-53** Packer **3796**   Single-Bradenhead-G. G. or G.O. Dual **Dual**   Reservoir Temp. **90**

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter)   Type Taps **Flange**

No.	Flow Data (Prover) (Choke) (Line) Size	(Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Temp. °F.	Casing Data Press. psig	Temp. °F.	Duration of Flow Hr.
SI								975		72
1.	4	1.000	562	16.8	64			851		24
2.	4	1.000	562	27.84	66			792		24
3.	4	1.000	549	47.41	68			701		24
4.	4	1.000	573	51.84	72			655		24
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.	6.135	98.3	575.2	0.9962	0.9463	1.064	605
2.	6.135	124.7	575.2	0.9943	0.9463	1.052	764
3.	6.135	163.6	562.2	0.9924	0.9463	1.059	998
4.	6.135	174.3	586.2	0.9887	0.9463	1.060	1061
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio_____ cf/bbl.   Specific Gravity Separator Gas_____
Gravity of Liquid Hydrocarbons_____ deg.   Specific Gravity Flowing Fluid_____
F_c **0.065** $(1-e^{-s})$ **0.141** P_c **988.2** P_c^2 **976.5**

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	$\frac{P_w}{P_c}$
1.	864.2	746.8	0.523	0.273	0.04	746.8	229.7	864.2	87.4
2.	805.2	648.5	0.660	0.436	0.06	648.4	328.1	805.2	81.5
3.	714.2	510.1	0.863	0.745	0.11	510.2	466.3	714.3	72.5
4.	668.2	446.5	0.918	0.843	0.12	446.6	529.9	668.3	67.6
5.									

Absolute Potential: **1625** MCFPD; n **0.67**

COMPANY **Humble Oil & Refining Company**
ADDRESS **Box 1347, Hobbs, N.M.**
AGENT and TITLE _____ **District Superintendent**
WITNESSED **J. R. Rimmer**
COMPANY **El Paso Natural Gas Company**

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 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.