NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation Queen County Lea

Initial ____ Annual ____ Special x Date of Test 8-13- to 8-17-56

Company Humble Oil & Refining Company Lease J. D. Knox Well No. 1

Unit J Sec. 10 Twp. 21S Rge. 36E Purchaser El Paso Natural Gas Company

Casing 5½ Wt. 17 I.D. 4.892 Set at 3750 Perf. 2895 To 3620

Tubing 2 Wt. 4.7 I.D. 1.995 Set at 3392 Perf. none To none

Gas Pay: From 2895 To 3620 L 3392 xG 0.680 =GL 2307 Bar.Press. 13.2

Producing Thru: Casing ____ Tubing x Type Well single

Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: Re- 1-18-56 Packer 3392 Reservoir Temp. 90

OBSERVED DATA

Tested Through ([redacted]) (Meter) Type Taps Flange

No.	Flow Data (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						997				72
1.	4	1.750	580	81.0	60	704				24
2.	4	1.750	591	64.0	61	754				24
3.	4	1.750	589	34.2	60	844				24
4.	4	1.750	576	11.6	59	922				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.	19.27	219.2	593.2	1.0000	0.9393	1.072	4253
2.	19.27	196.6	604.2	0.9990	0.9393	1.072	3811
3.	19.27	143.5	602.2	1.0000	0.9393	1.072	2784
4.	19.27	82.67	589.2	1.0010	0.9393	1.070	1603
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio ____ cf/bbl.

Gravity of Liquid Hydrocarbons ____ deg.

F_c 9.936 $(1-e^{-s})$ 0.147

Specific Gravity Separator Gas ____

Specific Gravity Flowing Fluid ____

P_c 1010.2 P_c^2 1020.5

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$(F_cQ)^2 (1-e^{-s})$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	717.2	514.4	42.26	1786	262.5	776.9	243.6	493.8	48.4
2.	767.2	588.6	37.86	1433	210.7	799.3	221.2	470.3	46.1
3.	857.2	734.8	27.66	765.1	112.5	847.3	173.2	416.2	40.8
4.	935.2	874.6	15.93	253.7	37.3	911.9	108.6	329.5	32.3
5.									

Absolute Potential: 17,250 MCFPD; n 1.0000

COMPANY Humble Oil & Refining Company

ADDRESS Box 2347, Hobbs, N.M.

AGENT and TITLE [signature] District Superintendent

WITNESSED Smith & Blumer

COMPANY El Paso Natural Gas Company

REMARKS

Second test. Poor point alignment on first test. Decreasing flow rate sequence used on this test for better point alignment. Slope greater than 1.0000. Line with slope of 1.0000 drawn through point of highest rate of flow.

dfl

ELVIS A. UTZ 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.