NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **Red Hills** Formation **Pennsylvanian** County **Lea**

Initial ____ Annual ____ Special **x x** Date of Test **1-5-65**

Company **The Pure Oil Company** Lease **Red Hills Unit** Well No. **1**

Unit **O** Sec. **32** Twp. **25-S** Rge. **33-E** Purchaser **El Paso Natural Gas Company**

Casing **6-5/8** Wt. **28#** I.D. **5,666** Set at **16,962'** Perf. **14,607'** To **14,788'**

Tubing **2-7/8"** Wt. **6.5#** I.D. **2.229** Set at **13,797'** Perf. **13,776'** To **13,779'**

Gas Pay: From **14,350'** To **15,530'** L **13,777** xG **.580** -GL **7991** Bar.Press **13.2 psig**

Producing Thru: Casing ____ Tubing **2-7/8"** Type Well **Gas**
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: **1-26-64** Packer **13,730' & 13,734'** Reservoir Temp. **194° F**

OBSERVED DATA

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

No.	Flow Data (Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI	6.065"	1.75"				5794		1000	72	98
1.	"	1.75"	683.9	49.0	76	4044	84	800	72	15.5
2.	"	3.50"	692.3	19.36	82	3282	108	1500	72	24.5
3.	"	3.50"	692.3	32.49	80	2818	110	1680	72	24.5
4.	"	3.50"	709.2	47.61	80	1885	106	1520	72	24.5
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.	18.86	184.82	697.1	.9850	1.0171	1.050	3666.7
2.	80.64	116.87	705.5	.9795	1.0171	1.049	9849.1
3.	80.64	151.40	705.50	.9813	1.0171	1.049	12,782.6
4.	80.64	185.45	722.4	.9813	1.0171	1.049	15,657.4
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio - cf/bbl.
Gravity of Liquid Hydrocarbons - deg.
P_c **5.866** $(1-e^{-s})$ **.424**

Specific Gravity Separator Gas **.580**
Specific Gravity Flowing Fluid -
P_c **4426** P_c^2 **19,589 x 103**

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	4057.2	16,460.9	21.427	459.1	194.6	16,655	2,934	4081	.924
2.	3295.2	10,858.3	57.444	3299.8	1399.1	12,257	7,332	3501	.790
3.	2831.2	8,015.7	74.624	5568.7	2361.1	10,377	9,212	3221	.728
4.	1898.2	3,603.2	91.583	8387.4	3556.3	7,159	12,430	2676	.605
5.									

Absolute Potential: **26,500** MCFPD; n **1.00**
COMPANY **The Pure Oil Company**
ADDRESS **Box 671 - Midland, Texas**
AGENT and TITLE **N. B. Ross - Petroleum Engineer**
WITNESSED ____
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.

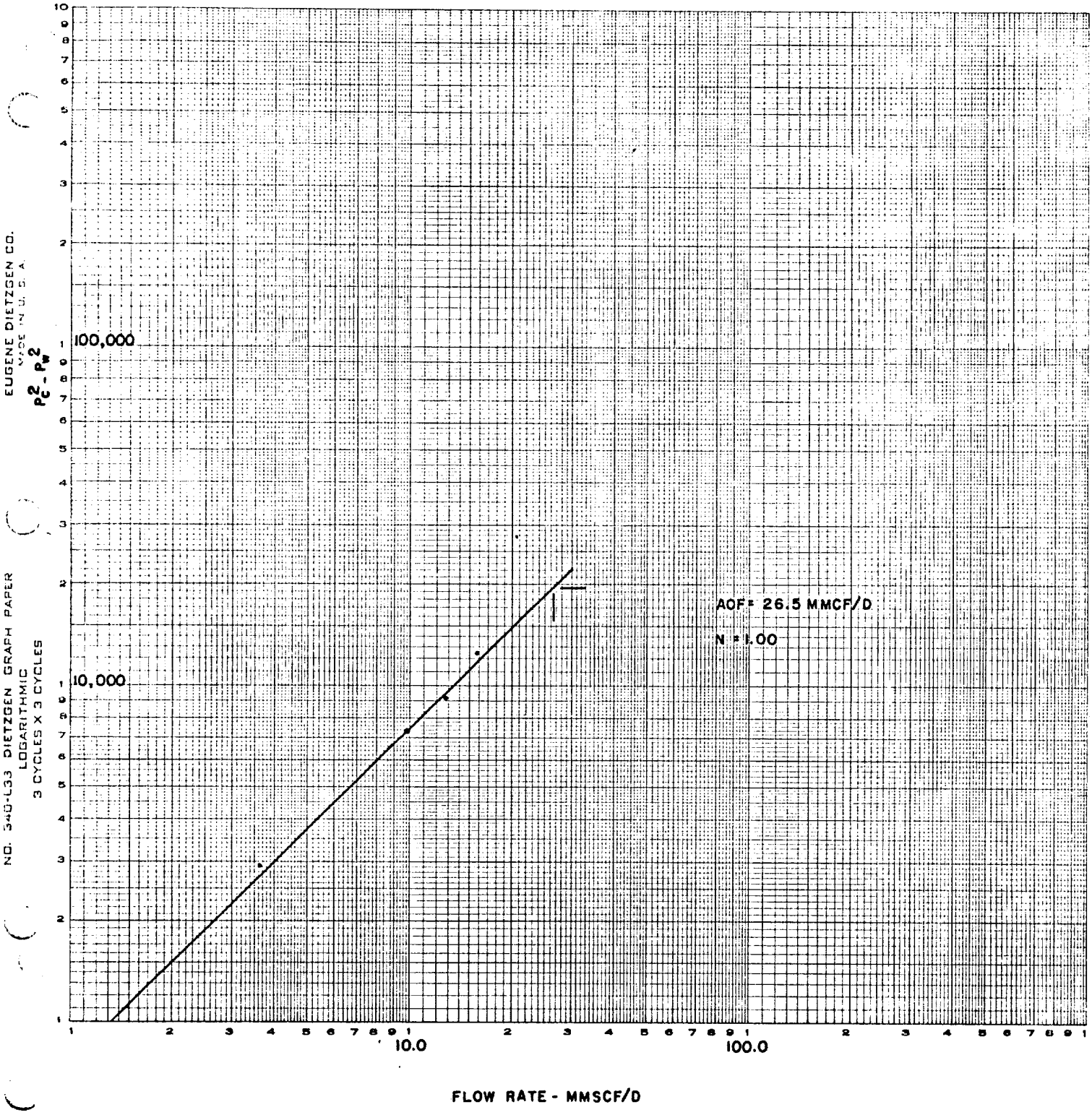
F_g = Gravity correction factor.

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.


EUGENE DIETZGEN CO.
MADE IN U. S. A.
NO. 340-L33 DIETZGEN GRAPH PAPER
LOGARITHMIC
3 CYCLES X 3 CYCLES
$P_c^2 - P_w^2$
100,000
10,000
AOF = 26.5 MMCF/D
N = 1.00
10.0
100.0
FLOW RATE - MMSCF/D