NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **Tubb Gas** Formation **Tubb** County **Lea**

Initial **XX** Annual _____ Special _____ Date of Test **Feb. 23-27, 1959**

Company **Cosden Petroleum Corporation** Lease **Edith Butler** Well No. **2**

Unit **E** Sec. **18** Twp. **22-S** Rge. **38-E** Purchaser **Permian Basin Pipeline Company**

Casing **7"** Wt. **23.0#** I.D. **6.366"** Set at **6,900'** Perf. **6,102** To **6,220**

Tubing **2-3/8"** Wt. **4.7** I.D. **1.995"** Set at **6,948'** Perf. **6,853'** To **6,855'**

Gas Pay: From **6,102'** To **6,220'** L **6,102** xG **.700** -GL **4271** Bar.Press. **13.2**

Producing Thru: Casing **XX** Tubing _____ Type Well **G-O Dual**
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: **Feb. 15, 1959** Packer **Baker Model "D" @ 6,632'** Reservoir Temp. **98.9° calculated**

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps _____

No.	Flow Data (Prover) (Line) Size	Flow Data (Choke) (Orifice) Size	Flow Data Press. psig	Flow Data Diff. h_w	Flow Data Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI								1742.0		69.25
1.	2"	0.125	1001.2		50			1573.8	59	3.00
2.	2"	0.187	1316.5		59			1318.9	61	3.00
3.	2"	0.218	1190.2		69			1194.2	65	3.00
4.	2"	0.250	1049.2		61			1056.3	54	3.00
5.	2"	0.312	882.7		59			897.0	53	3.00

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.	0.3418		1014.4	1.0098	0.9258	1.146	371
2.	0.7851		1329.7	1.0010	0.9258	1.193	1154
3.	1.0834		1203.4	0.9915	0.9258	1.160	1388
4.	1.4030		1062.4	0.9990	0.9258	1.141	1573
5.	2.1577		895.9	1.0010	0.9258	1.125	2015

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio **38,007** cf/bbl. Specific Gravity Separator Gas **0.700Est**

Gravity of Liquid Hydrocarbons **54.6** deg. Specific Gravity Flowing Fluid **0.769**

P_c **0.740** $(1-e^{-s})$ **0.255** P_c **1755.2** P_c^2 **3,080**

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.	1587.0	2518.6	0.2745	0.075	0.019	2518.6	562.4	1587.0	0.904
2.	1332.1	1774.5	0.8539	0.729	0.1859	1774.7	1306	1332.3	0.759
3.	1207.4	1457.8	1.0271	1.055	0.2188	1458.1	1623	1207.5	0.688
4.	1069.5	1143.8	1.1640	1.355	0.3452	1144.1	1937.	1069.7	0.609
5.	910.2	828.5	1.4911	2.223	0.5669	829.1	2252	910.5	0.519

Absolute Potential: **2633** MCFPD; n **0.791**

COMPANY **Permian Basin Pipeline Company**

ADDRESS **2223 Dodge Street, Omaha, Nebraska**

AGENT and TITLE **R. L. West, Gas Tester**

WITNESSED **J. T. Holten, Jr.** J. T. Holten Jr.

COMPANY **Cosden Petroleum Corporation**

REMARKS

See Page (2) for 20.00 hour flow rate. Estimated ability @ 500# = 2,450 MCF/D
Point alignment is not exact. An average was drawn through the second, third and fourth rates of flow data points to determine the slope (N)
GOR was calculated by dividing total gas produced by total fluid produced.

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.