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 **X** Annual ______ Special ______ Date of Test **5-4-59**

Company **Amerada Petroleum Corp.** Lease **J.R. Phillips Gas Unit** Well No. **3**

Unit **G** Sec. **1** Twp. **20-S** Rge. **36-E** Purchaser **Permian Basin Pipe Line Co.**

Casing **5-1/2"** Wt. **17.0#** I.D. **4.892"** Set at **3023'** Perf. **Open Hole** To ______

Tubing **2-3/8"** Wt. **4.7#** I.D. **1.995"** Set at **3207'** Perf. **Open Hole** To ______

Gas Pay: From **3023** To **3267** L **3207** xG **0.660** -GL **2117** Bar.Press. **13.2**

Producing Thru: Casing ______ Tubing **X** Type Well **Single**

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

Date of Completion: **5-15-57** Packer **2981'** Reservoir Temp. **87° Calculated**

OBSERVED DATA

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

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	~~(Prover)~~ (Line) Size	~~(Choke)~~ (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI	4 in.	2.25 In.				903.7				71.00
1.	4 In.	2.25	406.6	6.1	71	861.7	83			3.00
2.	4 In.	2.25	401.4	13.9	71	818.2	63			3.00
3.	4 In.	2.25	407.8	25.0	69	757.5	63			3.00
4.	4 In.	2.25	411.8	41.0	68	669.6	63			3.00
5.	4 In.	2.25	405.1	38.3	67	645.0	64			24.00

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.	40.53	50.61	419.8	0.9786	0.9535	1.035	1981
2.	40.53	75.91	414.6	0.9971	0.9535	1.041	3045
3.	40.53	102.60	421.0	0.9971	0.9535	1.041	4116
4.	40.53	132.00	425.0	0.9971	0.9535	1.042	5300
5.	40.53	126.60	418.3	0.9962	0.9535	1.041	5074

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio **Dry Gas** cf/bbl.
Gravity of Liquid Hydrocarbons ______ deg.
F_c **9.936** $(1-e^{-s})$ **0.136**

Specific Gravity Separator Gas ______
Specific Gravity Flowing Fluid ______
P_c **916.9** P_c^2 **840.7**

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.	874.9	765.5	19.680	387.3	52.67	818.2	22.5	904.5	0.986
2.	831.4	691.2	30.255	915.4	124.49	815.7	25.0	903.2	0.985
3.	770.7	594.0	40.896	1672.5	227.46	821.5	19.2	906.4	0.989
4.	682.8	466.2	52.661	2773.2	377.15	843.3	- 2.6	918.3	1.002
5.	658.2	433.2	50.415	2541.7	345.67	778.9	61.8	882.6	0.963

Absolute Potential: 38,055 MCFPD; n 0.772

COMPANY **Amerada Petroleum Corporation**
ADDRESS **Drawer "D" - Monument, New Mexico**
AGENT and TITLE R. E. [signature] **District Engineer**
WITNESSED **R.L. West**
COMPANY **Permian Basin Pipeline Company**

REMARKS

Friction calculations resulted in a value of P_w^2 in excess of P_c^2 on the 4th flow rate. Because the plotted points did not fall on a straight line a slope of 0.772, which is the average Eumont Pool slope, was drawn through the 24 hour flow rate and the absolute potential was calculated on that basis.

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.