NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

1960 SEP 1 AM 10:59

Pool **Undesignated** Formation **San Andres** County **Lea**

Initial ____ Annual **X** Special ____ Date of Test **March 29, 1960**

Company **Lone Star Producing Company** Lease **State King** Well No. **1**

Unit **N** Sec. **16** Twp. **9-S** Rge. **35-E** Purchaser **Sinclair Oil & Gas Company**

Casing **9-5/8" 36# 4342' 7" liner** Wt. **23#** I.D. ____ Set at **4241-5552'** Perf. **4740'** To **4815'**

Tubing **2.375"** Wt. **4.7#** I.D. **1.995** Set at **4736'** Perf. **4920'** To **4924'**

Gas Pay: From **4740'** To **4815'** L **4920** xG $_{Mix}$ **.801** -GL **3941** Bar.Press. **13.2**

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

Date of Completion: **November 18, 1952** Packer **4736** Reservoir Temp. **122°F**

OBSERVED DATA

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

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						1248	68	Packer		72
1.	3	2.000	187	1.5	64	1124	67	Packer	-	4
2.	3	2.000	210	2.5	66	1073	67	Packer	-	14
3.	3	2.000	205	5.0	68	1038	67	Packer	-	3
4.	3	2.000	205	11.0	70	953	71	Packer	-	3
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.	27.52	17.33	200.2	.9962	.8709	1.029	496
2.	27.52	23.62	223.2	.9943	.8709	1.033	582
3.	27.52	33.03	218.2	.9924	.8709	1.032	811
4.	27.52	48.99	218.2	.9905	.8709	1.031	1199
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio **283,189** cf/bbl. Specific Gravity Separator Gas **.791**

Gravity of Liquid Hydrocarbons **50** deg. Specific Gravity Flowing Fluid **.801**

P_c **9.936** $(1-e^{-s})$ **.238** P_c **1261.2** P_c^2 **1590.6**

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.	1137.2	1293	4.233	17.918	4.264	1297.3	293.3	1139.0	.9031
2.	1086.2	1180	5.783	33.443	7.959	1188.0	402.6	1090.0	.8643
3.	1051.2	1105	8.058	64.931	15.454	1120.5	470.1	1058.5	.8393
4.	966.2	934	11.913	141.920	33.777	967.8	622.8	983.8	.7801
5.									

Absolute Potential: **3,050** MCFPD; n **1.00**

COMPANY **Lone Star Producing Company**

ADDRESS **P.O. Box 4815, Midland, Texas**

AGENT and TITLE C. D. Kelly

WITNESSED ____

COMPANY ____

REMARKS

Slope of curve is less than 45° so a value of 1.00 for n was used. Purchaser requested all delivery rates be below 1 MMCFD if possible while conducting test.

C. D. Kelly, Jr.

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.