NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Bennett Formation Queen County Lea

Initial X Annual ____ Special X Date of Test 9-12-56

Company Sinclair Oil & Gas Company Lease W. C. Roach Well No. 1

Unit D Sec. 21 Twp. 20 S Rge. 37 E Purchaser Permian Basin Pipe Line Company

Casing 7" Wt. 24# I.D. 6.336 Set at 3712' Perf. 3380' To 3422'

Tubing 2-3/8" Wt. 4.7# I.D. 1.995 Set at 3769' Perf. 3614' To 3615'

Gas Pay: From 3380' To 3422' L 3380' xG .675 -GL 2282' Bar.Press. 13.2

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

Date of Completion: 11-12-54 Packer ____ Reservoir Temp. 114

OBSERVED DATA

Tested Through ~~XXXXXXXXXXXXXXXX~~(Meter) Type Taps Pipe

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								991.5	70	72-1/4
1.	4	1.750	460.3	6.2	60			818.7	70	23-1/2
2.			465.7	14.3	63			719.0	70	24
3.			470.3	23.0	64			644.7	70	24
4.			459.8	45.1	65			590.9	70	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.	21.69	54.18	473.5	1.0000	.9427	1.049	1162
2.	21.69	82.75	478.9	.9971	.9427	1.049	1770
3.	21.69	105.4	483.3	.9962	.9427	1.050	2254
4.	21.69	146.8	472.8	.9952	.9427	1.046	3108
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio - cf/bbl.
Gravity of Liquid Hydrocarbons - deg.
F_c .752 $(1-e^{-s})$ .345

Specific Gravity Separator Gas .675
Specific Gravity Flowing Fluid -
P_c 1004.7 P_c^2 1009.4

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.	831.9	692.1	.8738	.7635	.1107	692.2	317.2	832.0	.83
2.	732.2	536.1	1.331	1.772	.2569	536.4	473.0	732.4	.73
3.	657.9	432.8	1.695	2.873	.4166	433.2	576.2	658.2	.66
4.	604.1	364.9	2.337	5.462	.7920	365.7	643.7	604.7	.60
5.									

Absolute Potential: 4873 MCFPD; n 1.000 Limited

COMPANY Sinclair Oil & Gas Company
ADDRESS 520 East Broadway Street Hobbs, New Mexico
AGENT and TITLE Richard L. Harned Gas Analyst
WITNESSED R. L. West
COMPANY Permian Basin Pipe Line Company

REMARKS

An average curve drawn through the data points would have been in excess of 1.00. Due to this being a retest, an average slope of 1.00 was drawn through the high data point.

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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.