NEW MEXICO OIL CONSERVATION COMMISSION

MAIN OFFICE OCC

1953 AUG 1953 OCT 10 PM 3:05

HOBBS OFFICE OCC

ELVIS A. U... GAS ENGINEER

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation Queen County Lea

Initial Annual Special Date of Test 7-27-56

Company Sinclair Oil & Gas Co. Lease W.P. Byrd Well No. 7

Unit C Sec. 11 Twp. 20S Rge. 36E Purchaser El Paso Natural Gas Co.

Casing 5½ Wt. 15# I.D. Set at 3650 Perf. 3234 To 3582

Tubing 2 Wt. 4.7 I.D. Set at 3560 Perf. Open To

Gas Pay: From 3234 To 3582 L 3560 xG .675 -GL 2403 Bar.Press. 12.2

Producing Thru: Casing Tubing Type Well Single

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

Date of Completion: 4-13-54 Packer None Reservoir Temp. 117°

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						834	82	835	82	72
1.	4	1.500	578	19.4	60	794	82	815	82	24
2.	"	"	561	31.9	64	773	82	804	82	24
3.	"	"	564	47.6	64	747	82	792	82	24
4.	"	"	605	59.3	68	717	82	778	82	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.	13.99	107.25	591.2	1.0000	.9427	1.064	1505
2.	"	135.37	574.2	.9962	.9427	1.064	1892
3.	"	165.81	577.2	.9962	.9427	1.064	2318
4.	"	191.11	618.2	.9924	.9427	1.066	2667
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry Gas cf/bbl.

Gravity of Liquid Hydrocarbons deg.

F_c Pw Measured $(1-e^{-s})$

Specific Gravity Separator Gas .675

Specific Gravity Flowing Fluid

P_c 848.2 P_c^2 719.4

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.	828.2					685.9	33.5		97.6
2.	817.2					667.8	51.6		96.3
3.	805.2					648.3	71.1		94.9
4.	791.2					626.0	93.4		93.3
5.									

Absolute Potential: 8366 MCFPD; n .56

COMPANY Sinclair Oil & Gas Company

ADDRESS 520 E. Broadway Hobbs, New Mexico

AGENT and TITLE R.L. Harned Gas Analyst

WITNESSED Ed Mabe

COMPANY El Paso Natural Gas Co.

REMARKS

WELL COULD NOT BE PULLED DOWN ON FOURTH RATE OF FLOW DUE TO CHOKE SIZE IN WELL

Orig &2 cc:NMCC

cc: SJF,WJR, FCR, CCS, File

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.