

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Tubb (Gas) Formation Tubb County Lea

Initial X Annual _____ Special _____ Date of Test 8-3-65

Company Sinclair Oil & Gas Company Lease S. J. Sarkeys Well No. 5

Unit 0 Sec. 23 Twp. 21S Rge. 37E Purchaser El Paso Natural Gas Co.

Casing 5½" Wt. 15.50 I.D. 4.73" Set at 7284 Perf. 6120 To 6264

Tubing 2" OD Wt. 3.4# I.D. 1.67" Set at 6140 Perf. OE To _____

Gas Pay: From 6120 To 6264 L 6140 xG 0.8516 -GL 5229 Bar.Press. 13.2

Producing Thru: Casing _____ Tubing X Type Well G-O Dual

Date of Completion: 7-30-65 Packer 6680 Single-Bradenhead-G. G. or G.O. Dual
Reservoir Temp. 105

OBSERVED DATA

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

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						1407		1427		
1.	3"	1.250"	460	7"	92	1215	92	1325	92	1 Hr.
2.	3"	1.250"	570	8"	91	1100	91	1244	91	1 Hr.
3.	3"	1.250"	600	15"	89	930	89	1111	89	1 Hr.
4.	3"	1.250"	640	22"	91	756	91	1000	91	1 Hr.
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wpf}}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	9.781	57.6	473.2	.9706	.9359	1.045	534.8
2.	9.871	68.2	583.2	.9715	.9359	1.057	641.1
3.	9.781	95.8	613.2	.9732	.9359	1.061	905.5
4.	9.781	119.8	653.2	.9715	.9359	1.064	1155.8
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 15,742 cf/bbl.
Gravity of Liquid Hydrocarbons 50° deg.
F_c P_w measured (1-e^{-s})

Specific Gravity Separator Gas 0.685
Specific Gravity Flowing Fluid 0.8516
P_c 1440.2 P_c² 2074.2

No.	P _w P _t (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-s})	P _w ²	P _c ² -P _w ²	Cal. P _w	P _w P _c
1.	1338.2					1790.8	283.4		92.9
2.	1257.2					1580.6	493.6		87.3
3.	1124.2					1263.8	810.4		78.0
4.	1013.2					1026.6	1047.6		70.3
5.									

Absolute Potential: 1850 MCFPD; n 0.73605

COMPANY Sinclair Oil & Gas Company
ADDRESS P. O. Box 1920, Hobbs, New Mexico
AGENT and TITLE Fred Burns, Superintendent
WITNESSED D. Payne & Bob Murray
COMPANY Sinclair Oil & Gas Co. & El Paso Natural Gas Co.

REMARKS

Orig. & 2cc: OCC Santa Fe
cc: RFS, GAC, File

cc: El Paso Natural Gas Co.
Attn. Bob Murray
P. O. Box 1384
Jal, New Mexico

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 .

SINCLAIR OIL & GAS CO.

S. J. SARKEYS No. 5

Location: Unit O, T21S, R37E

LEA COUNTY, N. MEX.

Test 8-3-65

$R^2 = 0.742$

$Q_1 = 2450; \log = 3.38917$

$Q_2 = 450; \log = 2.65312$

Slope $n = 0.73605$

1000
 $P_2 - P_w^2$

100
100

1000

100