

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Antelope Ridge Formation Devonian County Lea
Initial x Annual _____ Special _____ Date of Test 9-14 to 15, 1964
Company Shell Oil Company Lease Antelope Ridge Unit Well No. 34-1 3
Unit K Sec. 34 Twp. 23-S Rge. 34-E Purchaser Southern Union Gas Company
Liner 4 1/2" Wt. 13.5 I.D. 3.92 Set at 14,935 Perf. 14,695 To 14,830
Tubing 2 1/2" Wt. 6.5 I.D. 2.441 Set at 14,440 Perf. _____ To _____
Gas Pay: From 14,695 To 14,830 L 14,440 xG Mix .692 -GL 9,992 Bar.Press. 13.2
Producing Thru: Casing _____ Tubing x Type Well Single
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 9-15-64 Packer 13,650 Reservoir Temp. _____

OBSERVED DATA

Flow Data						Tubing Data		Casing Data		Duration of Flow Hr.
No.	(Line) (Line) Size	(Orifice) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						4470				
1.	4	2.500	600	15.0	42	4102				4
2.	4	2.500	580	52.0	40	3569				4
3.	4	2.500	730	61.0	39	3183				3
4.	4	2.500	810	74.0	43	2935				3
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.	42.13	95.91	613.2	1.0178	.9535	1.077	4,224
2.	42.13	175.63	593.2	1.0198	.9535	1.073	7,537
3.	42.13	212.92	743.2	1.0208	.9535	1.096	9,568
4.	42.13	245.30	823.2	1.0168	.9535	1.106	11,081
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 73,389 cf/bbl.
Gravity of Liquid Hydrocarbons 63° API deg.
F_c 3.866 (1-e^{-s}) .497
Specific Gravity Separator Gas .660
Specific Gravity Flowing Fluid .7275
P_c 4483.2 P_c 20,099.1

No.	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.	4115.2	16934.9	24,778	613.9	305.1	17240.0	2859.1	4152.1	92.6
2.	3582.2	12832.2	44,212	1954.7	971.5	13803.7	6295.4	3715.3	82.9
3.	3196.2	10215.7	56,126	3150.1	1565.6	11781.3	8317.8	3432.4	76.6
4.	2948.2	8691.9	69,001	4225.1	2099.9	10791.8	9307.3	3285.1	73.3
5.									

Absolute Potential: 25,000 MCFPD; n 1.000
COMPANY Shell Oil Company
ADDRESS P. O. Box 1858, Roswell, New Mexico
AGENT and TITLE A. L. Ellard - Gas Tester
WITNESSED _____
COMPANY _____

REMARKS

This test is not absolutely representative because of poor separation on the last three rates.

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/d. @ 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} = Supercompressibility 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 .

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U.S. AIR FORCE