NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Sawyer Formation San Andres County Lea

Initial ____ Annual ____ Special ____ Date of Test April 8, 1961

Company Alamo Corporation Lease Bell Federal Well No. 2

Unit P Sec. 20 Twp. 9S Rge. 38E Purchaser None-Well Shut In

Casing 4½" Wt. 9.5#/ft. I.D. 4.090" Set at 4,997' Perf. 4,877' 4,950' To 4,900' 4,966'

Tubing 2" Wt. 4.7# I.D. 1.995" Set at 4,906" Perf. - To -

Gas Pay: From 4,877' To 4,966' L 4,921½' xG 0.773 -GL 3,804 Bar.Press. 13.2 psia

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

Date of Completion: 4-8-61 Packer None Reservoir Temp. -----

OBSERVED DATA

Tested Through (Prover) (~~Choke~~) (~~Meter~~) Type Taps -----

No.	Flow Data (Prover) (~~Choke~~) 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	2"					1,215	60	1,213	60	72 hr.
1.	2"	0.218"				867	67	973		3 hr.
2.	2"	0.187"				790	65	930		3 hr.
3.	2"	0.125"				874	54	1,011		3 hr.
4.	2"	0.0625"				1,085	41	1,100		3 hr.
5.	2"	0.0625"				1,125	52	1,154		24 hr.

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.	1.0834		580.2	.9933	.8809	1.079	593.5
2.	.7851		803.2	.9952	.8809	1.072	591.7
3.	.3418		887.2	1.0058	.8809	1.091	293.2
4.	.0827		1,098.2	1.0188	.8809	1.122	91.5
5.	.0827		1,138.2	1.0078	.8809	1.120	93.6

PRESSURE CALCULATIONS

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

Specific Gravity Separator Gas *.773
Specific Gravity Flowing Fluid ---
P_c 1,228.2 P_c^2 1,508.5

No.	P_w (~~P~~) (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.	986.2					972.6	535.9		80.3
2.	943.2					889.6	618.9		76.8
3.	1,024.2					1,049.0	459.5		83.4
4.	1,113.2					1,239.2	269.3		90.6
5.	1,167.2					1,362.4	146.1		95.0

Absolute Potential: 971 MCFPD; n 1.0000

COMPANY DENTON OIL COMPANY
ADDRESS 5238-34th Street., Lubbock, Texas
AGENT and TITLE C. J. Jordan, Jr., Gas Engineer
WITNESSED ____
COMPANY ____

REMARKS

* CO_2 composition of gas - 9.90%
N_2 composition of gas - 9.68%
NOTE: Decreasing flow rate used to test this well as previous attempt to test by increasing flow failed due to excess liquid accumulation in well bore.

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.

DENTON OIL COMPANY

Company: Alamo Corporation
Well: Bell Federal No. 2
Location: SE/4 SE/4, Sec. 20, T-9S, R-38E
County: Lea
Date: April 8, 1961