NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Four Lakes Devonian Formation Devonian County Lea

Initial x Annual ____ Special ____ Date of Test 6-27-60

Company Humble Oil & Refining Company Lease South Four Lakes Well No. 6

Unit I Sec. 2 Twp. 12-S Rge. 34-E Purchaser El Paso Natural Gas Company

Casing 7" OD Wt. 32 - 26# I.D. ____ Set at 12,845 Perf. 12,793 To 12,831

Tubing 2" OD Wt. 4.70 I.D. ____ Set at 12,555 Perf. - To -

Gas Pay: From 12,793 To 12,831 L 12,555 xG ____ -GL ____ Bar.Press. 13.2

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

Date of Completion: 5-7-59 Packer ____ Reservoir Temp. ____

OBSERVED DATA

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

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						1890	80			49:50
1.	4"	.750"	692.4	25.00	82	887	80			23:10
2.	4"	.750"	692.4	20.25	84	890	85			2:00
3.	4"	.750"	692.4	13.69	86	1023	85			3:00
4.	4"	.750"	692.4	1.69	81	1051	79			2:00
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.	3.435	132.82	705.6	.9795	.8276	1.1236	415.5
2.	3.435	119.54	705.6	.9777	.8276	1.1211	372.4
3.	3.435	98.29	705.6	.9759	.8276	1.1198	305.4
4.	3.435	34.53	705.6	.9804	.8276	1.1249	106.3
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 2508 cf/bbl.
Gravity of Liquid Hydrocarbons 60.3 deg.
P_c ____ $(1-e^{-s})$ ____

Specific Gravity Separator Gas .876
Specific Gravity Flowing Fluid .7389
P_c ____ P_c^2 ____

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.									
2.									
3.									
4.									
5.									

Absolute Potential: See attached letter MCFPD; n ____
COMPANY Humble Oil & Refining Company
ADDRESS Box 2347, Hobbs, New Mexico
AGENT and TITLE OPERATOR SIGNED R. R. ALWORTH R. R. Alworth, District Superintendent
WITNESSED J. C. Womack; Calculated by L. N. Perry, Jr.
COMPANY Humble Oil & Refining Company

REMARKS

LNP/mcb

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.

BOTTOM HOLE PRESSURE DATA

South Four Lakes Gas Unit Well #6

Points	BHP	$(BHP)^2$	$(SIBHP)^2 - (Fl.\ BHP)^2$	Q
Shut In	4961	24,612	-	-
1	3818	14,577	10,035	415.5
2	3863	14,923	9,689	372.4
3	4471	19,990	4,622	305.4
4	4760	22,658	1,954	108.3

BOTTOM HOLE PRESSURE DATA

South Four Lakes Gas Unit Well #6

Points	BHP	(BHP)^2	[illegible] $-$ (BHP)^2	
Unit In	4961	24,612	-	-
1	3818	14,577	10,035	[illegible]15.5
2	3868	14,963	9,649	1[illegible]7.4
3	4471	19,990	4,622	305.4
4	4760	22,658	1,954	208.5

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MULTIPOINT BACK PRESSURE TEST FOR GAS WELLS

Well: South Four Lakes Unit Well #5 (Dev.)

Location: NE/SE4, Sec. 2, T-12-S, R-34-E

County: Lea County, New Mexico

Date: 6-27-60