NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

AUG 16 AM 9:17

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Four Lakes Devonian Formation Devonian County Lea

Initial (Recomplete) Annual - Special - Date of Test 8-12-62

Company Humble Oil & Refining Co. Lease South Four Lakes Unit Well No. 2

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

Casing 5-1/2" Wt. 17# I.D. - Set at 12,924 Perf. 12,678 To 12,743

Tubing 2" Wt. 4.7 I.D. - Set at 12,420 Perf. - To -

Gas Pay: From 12,678 To 12,743 L 12,711 xG - -GL - Bar.Press. 13.2

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

Date of Completion: 8-12-62 Packer 12,420 Reservoir Temp. -

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) High Pressure Separator 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						2280	-	-	-	72
1.	4"	1.500	689	17.6	80	1690	-	-	-	23
2.	4"	1.500	676	19.4	80	1558	-	-	-	5
3.	4"	1.500	676	14.4	84	1680	-	-	-	18
4.	4"	1.500	676	9.0	81	1850	-	-	-	4
5.	4"	1.500	676	5.8	78	2000	-	-	-	22

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	108.77	672.2	0.9813	0.8974	1.086	1455
2.	13.99	115.63	689.2	0.9813	0.8974	1.086 1.096	1554 1547
3.	13.99	99.62	689.2	0.9777	0.8974	1.086 1.096	1334 1328
4.	13.99	78.76	689.2	0.9804	0.8974	1.086 1.096	1058 1053
5.	13.99	63.29	689.2	0.9831	0.8974	1.086 1.096	854 851

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 3030 cf/bbl. Specific Gravity Separator Gas 0.745
Gravity of Liquid Hydrocarbons - deg. Specific Gravity Flowing Fluid -
P_c - $(1-e^{-s})$ 32.5 P_c - P_c^2 -

(Data Obtained With BHP Bomb)

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: 4,580 MCFPD; n 0.83251

COMPANY Humble Oil & Refining Company
ADDRESS ORIGINAL SIGNED R. R. ALWORTH Box 2347, Hobbs, New Mexico
AGENT and TITLE R. R. Alworth, District Superintendent
WITNESSED J. C. Wemack - Calculated by John W. Sauer
COMPANY Humble Oil & Refining Company

REMARKS

Because of depth and gravity of gas, a bottom hole pressure gage was used to obtain pressure data. See data on attached sheet which gives low-pressure seperator gas volume and bottom hole pressure data.

JWS/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.

MULTI-POINT BACK PRESSURE TEST DATA
South Four Lakes Unit 2
(Continued)

Four Lakes Devonian Pool, Devonian Formation, Lea County, Humble Oil & Refining Co.

OBSERVED DATA

Tested Through Low Pressure Seperator Meter Type Taps Flange

	Flow Data				Tubing Data			Casing Data		
No.	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F	Press. psig	Temp. °F	Press. psig	Temp. °F	Duration of Flow Hr.
SI										72
1.	4"	1.250	37.2	26.0	36	1310.4	-	-	-	23
2.	4"	1.250	47.6	23.0	39	1398.4	-	-	-	5
3.	4"	1.250	44.6	19.4	45	1121.3	-	-	-	18
4.	4"	1.250	35.8	16.0	43	784.0	-	-	-	4
5.	4"	1.250	30.4	11.6	42	505.8	-	-	-	22

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.	9.643	36.20	50.4	1.0239	0.7226	1.000	258
2.	9.643	37.40	60.8	1.0208	0.7226	1.000	266
3.	9.643	33.49	57.8	1.0147	0.7226	1.000	237
4.	9.643	28.00	49.0	1.0168	0.7226	1.000	198
5.	9.643	22.49	43.6	1.0178	0.7226	1.000	160

Specific Gravity Seperator Gas = 1.149

TOTAL VOLUME

No.	Hi-Press. Volume	Lo-Press. Volume	Total
1.	1455	258	1713
2.	1554	266	1820
3.	1334	237	1571
4.	1058	198	1256
5.	854	160	1014

BOTTOM HOLE PRESSURE DATA

No.	BHP	$(BHP)^2 \times 10^{-3}$	$(SIBHP)^2 - (FL\ BHP)^2$
SI	4963	24,631	-
1.	4126	17,024	7,607
2.	4053	16,427	8,204
3.	4219	17,800	6,831
4.	4399	19,351	5,280
5.	4597	21,132	3,499

JWS/mcb
Humble Oil & Refining Co.
Box 2347
Hobbs, New Mexico

(Continued)

Table V

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h MBLE OIL AND REFINING CO..PANY

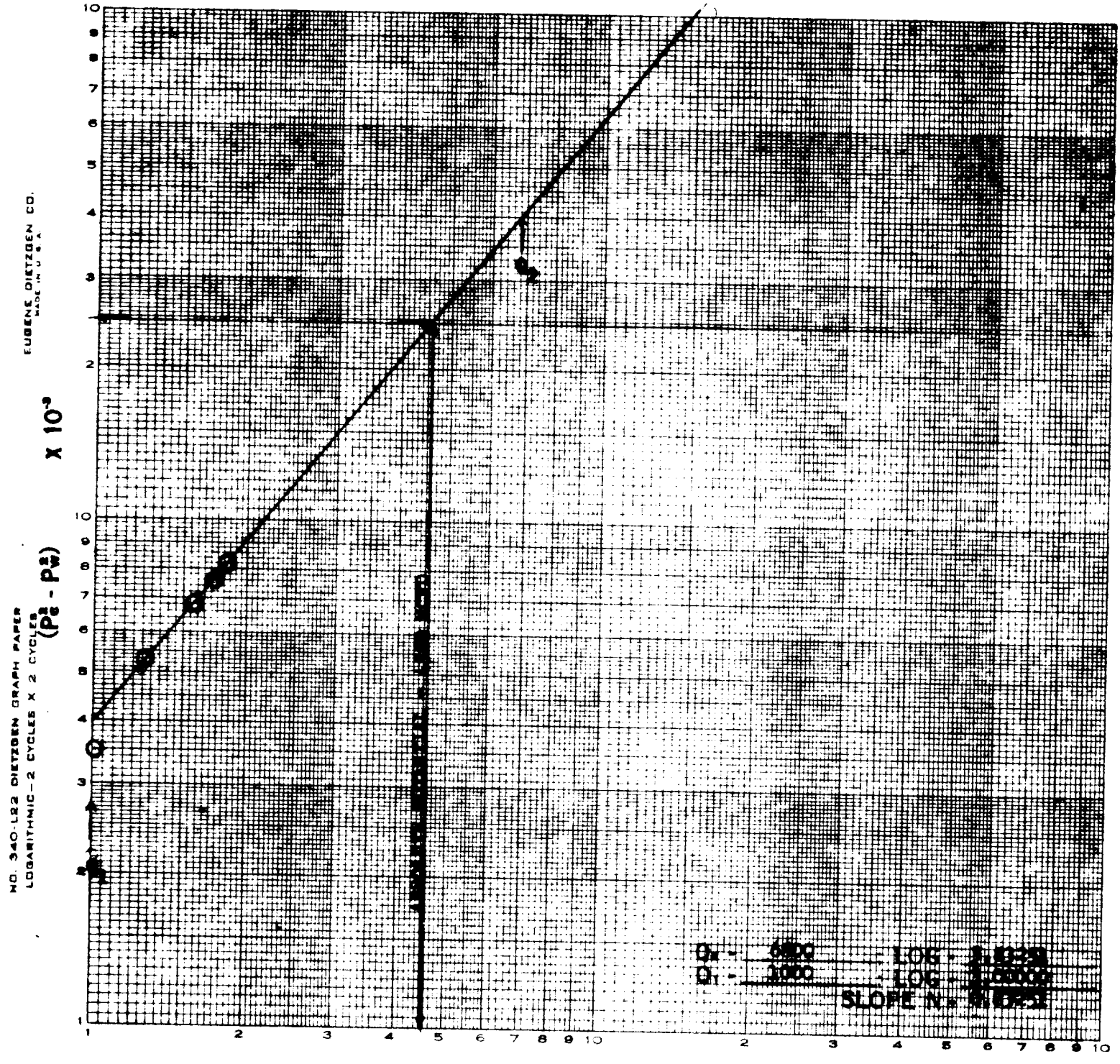
MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Well SOUTH FOUR LAKES UNIT NO. 2

Location G - 2 - 12S - 34E

County LEA

Date AUGUST 12, 1962



Q - MCFD - 15.025 PSID