NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **Eumont** Formation **7 Rivers - Queen** County **Lea**

Initial ____ Annual ____ Special **X** Date of Test **12-3- to 12-7-56**

Company **Tidewater Oil Company** Lease **State "A"** Well No. **4**

Unit **A** Sec. **8** Twp. **21S** Rge. **36E** Purchaser **El Paso Natural Gas Co.**

Casing **7** Wt. **24** I.D. **6.336** Set at **3765** Perf. **2913** To **3532**

Tubing **2-7/8"** Wt. **6.50** I.D. **2.441** Set at **3862** Perf. ____ To ____

Gas Pay: From **2913** To **3532** L **2913** xG **.685** -GL **1995** Bar.Press. **13.2**

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

Date of Completion: **1-21-53** Packer **3699** Reservoir Temp. **93° F.**

OBSERVED DATA

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

No.	Flow Data: ~~(Prover)~~ (Line) Size	Flow Data: ~~(Choke)~~ (Orifice) Size	Flow Data: Press. psig	Flow Data: Diff. $\sqrt{h_w}$	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								1011		72
1.	4"	1.25	595	8.5	87			642		24
2.	4"	1.25	580	8.0	86			656		24
3.	4"	1.25	578	7.0	85			677		24
4.	4"	1.25	563	5.4	84			712		24
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure $\sqrt{psia}$	Flow Temp. Factor F_t	Gravity Factor F_g	Compress. Factor F_{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	9.643	209.59	24.66	.9750	.9359	1.061	1956
2.	9.643	194.82	24.35	.9759	.9359	1.061	1821
3.	9.643	170.17	24.31	.9768	.9359	1.057	1586
4.	9.643	129.60	24.00	.9777	.9359	1.058	1210
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio **Dry Gas** cf/bbl. Specific Gravity Separator Gas **0.685**

Gravity of Liquid Hydrocarbons ____ deg. Specific Gravity Flowing Fluid ____

F_c **.865** $(1-e^{-s})$ **.128** P_c **1024.2** P_c^2 **1049.0**

Third test. Slope greater than 1.0. Average slope of 1.0 drawn through highest rate of flow.

No.	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.	655.2	429.3	1.69	2.86	.37	429.7	619.3	207.3	20.24
2.	669.2	447.8	1.58	2.50	.32	448.1	600.9	211.7	20.67
3.	690.2	476.4	1.37	1.88	.24	476.6	572.4	218.3	21.31
4.	725.2	525.9	1.05	1.10	.14	526.0	523.0	229.3	22.39
5.									

Absolute Potential: **3,200** MCFPD; n **1.000**

COMPANY **Tidewater Oil Company**

ADDRESS **Box 547 Hobbs, New Mexico**

AGENT and TITLE **E. W. Hogue , Acting Area Superintendent**

WITNESSED **L. D. Southern**

COMPANY **El Paso Natural Gas Company**

REMARKS

ELVIS A. UTZ
GAS ENGINEER

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.