NE MEXICO OIL CONSERVATION COMMISSION

One-point Back Pressure Test for Gas Wells (Deliverability)

Form C-122-C

4-1-54

HOBBS OFFICE OCC

Pool Eumont Formation Queens County Lea

Initial X Annual ____ Special ____ Date of test September 27, 1955

Company General Crude Oil Lease State "G"

Unit D Sec. 16 Twp. 20 S Rge. 37 E Purchaser Permian Basin Pipe Line

Casing 7" Wt. 24# I.D. 6.366 Set at 3774 Perf. 3294 To 3360

Tubing 2-1/2" Wt. 6.5# I.D. 2.441 Set at 3840 Perf. — To —

Gas Pay: From 3205 To 3435 L 3294 x G 0.660 = GL 2174 Bar.Press. 13.2

Producing Thru: Casing X Tubing ____ Type Well Gas-oil dual

Single- Bradenhead-G.G. or G.O. Dual

FLOW DATA

Started Date	Started time	Taken Date	Taken time	Duration Hours	Type Taps	Line Size	Orfice Size	Static Press.	Differential	Flow Temp.
9-27-55	7:25 AM PM	9-27-55	AM 3:05 PM	7-3/4	Prover	2"	5/16"	Prover Pressure 559.9 PSIA		72° F.

FLOW CALCULATIONS

Pressure p_f	Differential h_w	Meter Extension $\sqrt{p_f h_w}$	24-Hour Coefficient	Gravity Factor F_g	Temp. Factor F_t	Compressability F_{pv}	Rate of Flow MCF/Da. @ 15.025 psia Q
Prover 559.9 PSIA			2.153	0.9535	0.9887	1.054	1,197

SHUT-IN DATA / FLOW DATA

Shut-in Date	Shut-in Time	Press. Taken Date	Press. Taken Time	Duration Hours	Wellhead Pressure (P_c) psia Tubing	Wellhead Pressure (P_c) psia Casing	W.H. Working Pressure (P_w) and (P_t) psia Tubing	W.H. Working Pressure (P_w) and (P_t) psia Casing
9-27-55	AM 3:05 PM	9-28-55	5:05 AM PM	14-1/2	—	974.2 PSIA	—	559.9 PSIA

FRICTION CALCULATIONS(if necessary)

Not significant

DELIVERABILITY CALCULATIONS

P_w 559.9 P_c 974.2 $P_w + P_c$ 0.575

$1-\frac{P_w}{P_c}$ 0.425 $1+\frac{P_w}{P_c}$ 1.575 $\left|1-\frac{P_w}{P_c}\right|\left|1+\frac{P_w}{P_c}\right| = M$ 0.6694

.36 + M 0.5377 Log 9.73054-10 x (n) .80 = 7.78443-8 +

COMPANY General Crude Oil Company

ADDRESS 314 Commerce Building, Abilene, Texas

AGENT and TITLE ____

WITNESSED J. M. Welsch

COMPANY Permian Basin Pipe Line Company

SUMMARY

P_c = 974.2 psia

Q = 1,197 MCF/Da.

P_w = 559.9 psia

P_d = 779.4 psia

D = 728.6 MCF/Da.

Log Q = 3.07809

Log D = 10.86252 - 8

Antilog = 728.62 = D

REMARKS

Dry gas throughout test.

This form is to be used for reporting deliverability tests in the designated Dry Gas Pools of Lea County as ordered by New Mexico Oil Conservation Commission Directive dated March 15, 1954, which directive was provided for by Orders R-365-A through R-376-A. For details regarding this test please refer to the above mentioned Directive.

NOMENCLATURE

Q = Actual 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_d = Deliverability pressure; 80 % of 72 hour individual wellhead shut-in pressure (P_c). 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

D = Deliverability at Deliverability pressure (P_d) MCF/da. @ 15.025 psia and 60° F.

p_f = Static 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.

DELIVERABILITY FORMULA

$$D = Q \left[\frac{.36}{\left(1 - \frac{P_w}{P_c}\right)\left(1 + \frac{P_w}{P_c}\right)} \right]^n$$

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.