

STATE OF KANSAS - CORPORATION COMMISSION
 ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

FORM G-2
 6-7-58
 15-181-20039-0060

TYPE TEST: Deliverability Open Flow TEST DATE: 3/09/90

COMPANY: GOODLAND GAS COMPANY LEASE: Glasco WELL NO.: 1-31

COUNTY: Sherman LOCATION: SE 1/4 SECTION: 31 TWP: 7S RNO: 38W ACRES:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KNEnergy

COMPLETION DATE: 11-6-78 PLUG BACK TOTAL DEPTH: 971 PACKER SET AT: None

CASINO SIZE: 4 1/2" WT.: 9.5#/ft. I.D.: SET AT: 921 PERF.: None TO:

TUBING SIZE: None WT.: I.D.: SET AT: PERF.: TO:

TYPE COMPLETION (Describe): Open Hole TYPE FLUID PRODUCTION: Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE: F BAR. PRESS - P_a: Psia

GAS GRAVITY - G_g: 0.5900 % CARBON DIOXIDE: 1.98 % NITROGEN: 2.790 API GRAVITY OF LIQUID: --

VERTICAL DEPTH (H): TYPE METER CONN.: Orifice-Flange (METER RUN) (PROVER) SIZE: 2.067

SHUT-IN PRESSURE: SHUT IN: 2/9 19: 90 AT 8:55 (AM)(PM) TAKEN: 2/12 19: 90 AT 10:05 (AM)(PM)

FLOW TEST: STARTED: 2/22 19: 90 AT 8:00 (AM)(PM) TAKEN: 2/23 19: 90 AT 8:00 (AM)(PM)

OBSERVED DATA DURATION OF SHUT-IN: 72 HR.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) (PROVER) PRESSURE psig	DIFF. in. (h _w)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASINO WELL-HEAD PRESS		TUBING WELL-HEAD PRESS		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P _w)(P _i)(P _c) psia	psig	(P _w)(P _i)(P _c) psia		
SHUT-IN	--	--	--	--	--	32	46.4	--	--	72	--
FLOW	0.75	10.9	22.1	42	--	25	39.4	--	--	24	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (F _h)(F _g) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m \times h_w}$	GRAVITY FACTOR F _g	FLOWING TEMP. FACTOR F _t	DEVIATION FACTOR F _{pv}	RATE OF FLOW R Mcfd	GOR	G _m
2.779	25.9	23.64	1.3052	1.017	1.0009	87	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 2.153 ; (P_w)² = 1.552 ; P_d = -- % (P_c - 14.4) + 14.4 = -- ; (P_i)² = 0.207 ; (P_d)² = --

$\frac{(P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 \cdot P_w^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1.946	0.601	3.240	0.511	0.85	0.434	2.72	236

OPEN FLOW Mcfd @ 14.65 psia DELIVERABILITY Mcfd @ 14.65 psia

The undersigned authority, on behalf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct.

Executed this the 31st day of Dec, 1990.

John P. Sanders
 For Company

Witness (if any)

For Commission

Checked by