

15-181-20268-00-00

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6-9-87

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

FORM O-2
8-7-58

TYPE TEST: Deliverability Open Flow TEST DATE: FLOW TEST 5-27-87

COMPANY: GOODLAND GAS COMPANY LEASE: Armstrong WELL NO.: 1-12A

COUNTY: Sherman LOCATION: SW 1/4, NW 1/4 SECTION: 12 TWP: 8S RNG: 40W ACRES:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KN Energy

COMPLETION DATE: 11-16-83 PLUG BACK TOTAL DEPTH: 1231 PACKER SET AT: None

CASINO SIZE: 4 1/2" WT. 9.5#/ft I.D. SET AT 1301 PERF. 1163 TO 1190

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

TYPE COMPLETION (Describe): Frac 82.600# Sd., 631 Bbls H2O TYPE FLUID PRODUCTION: Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE F: 14.4 Psia BAR. PRESS - P_a

GAS GRAVITY - G_g: 0.5827 % CARBON DIOXIDE: 1.28 % NITROGEN: 2.635 API GRAVITY OF LIQUID: --

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

SHUT-IN PRESSURE: SHUT IN 5-15 1987 AT 10:31 (AM)(PM) TAKEN 5-18 1987 AT 10:49 (AM)(PM)

FLOW TEST: STARTED 5-26 1987 AT 10:40 (AM)(PM) TAKEN 5-27 1987 AT 10:30 (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)(h _d)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASINO WELLHEAD PRESS		TUBING WELLHEAD PRESS		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P _w)(P _i)(P _c) psia	psig	(P _w)(P _i)(P _c) psia		
SHUT-IN	--	--	--	--	--	27.5	41.9	--	--	72	--
FLOW	0.750	25.5	4.0	60	--	25.6	40.0	--	--	24	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (P _c) ² -(P _a) ² or (P _c) ² -(P _d) ² 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
115.1	39.9	12.63	1.31	1.00	1.0004	46	--	---

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 1755.61 ; (P_w)² = 1600.00 ; P_d² = _____ % (P_c - 14.4) + 14.4 = _____ ; (P_d)² = 0.207

(P _c) ² -(P _a) ² or (P _c) ² -(P _d) ²	(P _c) ² -(P _w) ²	$\frac{P_c^2 - P_a^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1548.25	155.61	9.95	1.00	0.85	0.85	7.05	324

OPEN FLOW 324 Mcfd @ 14.65 psia DELIVERABILITY STATE CORP 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 29 day of May, 1987.

Checked by *[Signature]* 6-9-87
Wichita, Kansas

Witness (if any)

Checked by