

15-181-20226-00-00

FORM O-2
8-7-58

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

TYPE TEST: Deliverability Open Flow Flow TEST DATE: 5-28-87

COMPANY: Goodland Gas Company LEASE: Armstrong WELL NO.: 1-2

COUNTY: Sherman LOCATION: NE/4 SECTION: 2 TWP: 8S RNO: 39W ACRES:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KNEnergy

COMPLETION DATE: 6/10/82 PLUG BACK TOTAL DEPTH: 1038 PACKER SET AT: None

CASING SIZE: 4-1/2" WT. 9.5# I.D. 1143 SET AT PERFP. 980 TO 1000

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

TYPE COMPLETION (Describe): 100,000# Sand, 32,000 Gel Water & 600 MCF CO₂ TYPE FLUID PRODUCTION: Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE F: 14.4 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 19 87 AT 11:30 (AM)(PM) TAKEN 5-18 19 87 AT 11:19 (AM)(PM)

FLOW TEST: STARTED 5-26 19 87 AT 11:36 (AM)(PM) TAKEN 5-28 19 87 AT 11:20 (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 _t)(P _c) psia	psig	(P _w)(P _t)(P _c) psia		
SHUT-IN	--	--	--	--	--	20.5	34.9	--	--	72	--
FLOW	0.625	19.0	5.4	60	--	19.3	33.7	--	--	48	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (F _o)(F _o) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m \times h_w}$	GRAVITY FACTOR F _g	FLOWING TEMP. F _t	DEVIATION FACTOR F _{pv}	RATE OF FLOW R Mcfd	GOR	G _m
79.3	33.4	13.43	1.31	1.00	1.0008	34	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 1218.01 ; (P_w)² = 1135.69 ; P_d = _____ % (P_c - 14.4) + 14.4 = _____ ; (P_w)² = 0.207 ; (P_d)² = _____

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	(P _c) ² - (P _w) ²	$\frac{P_c^2 - P_w^2}{P_c^2 - P_d^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1010.65	82.32	12.28	1.09	0.85	0.93	8.43	287

OPEN FLOW 28 Mcfd @ 14.65 psia DELIVERABILITY RECEIVED 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 1 day of JUNE, 1987.

JUN 12 1987
Checked by [Signature]

Witness (if any)

Checked by