

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

FORM G-2
8-7-50
1-3-9

TYPE TEST: Deliverability Open Flow TEST DATE: 3/09/90 **15-181-20096-00-00**

COMPANY: GOODLAND GAS COMPANY LEASE: Wiggins WELL NO.: 1-1

COUNTY: Sherman LOCATION: SW $\frac{1}{4}$, NE $\frac{1}{4}$, NW $\frac{1}{4}$ SECTION: 1 TWP: 8S RNG: 39W ACRES:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KNEnergy

COMPLETION DATE: 8-13-80 PLUG BACK TOTAL DEPTH: 959' PACKER SET AT: None

CASING SIZE: 4 $\frac{1}{2}$ " WT. 9.5#/ft. I.D. 1015' SET AT: 1015' PERF. 948 TO 988

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

TYPE COMPLETION (Describe): Frac 40,000# sd, 114 MCF N2 20,000 gal. TYPE FLUID PRODUCTION: Gas

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

GAS GRAVITY - G_c: 0.5880 % 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: BIHUT IN 2/9 1990 AT 9:10(AM)(PM) TAKEN 2/12 1990 AT 10:25(AM)(PM)

FLOW TEST: STARTED 2/22 1990 AT 8:00(AM)(PM) TAKEN 2/23 1990 AT 8:00(AM)(PM)

OBSERVED DATA DURATION OF SHUT-IN 72 HR.

SHUT-IN OR FLOW	ORIFICE SIZE In.	(METER) (PROVER) PRESSURE psia	DIFF. In. (hw) (hw)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS		TUBING WELLHEAD PRESS		DURATION HOURS	LIQUID PROD. Bbls.
						psia	(P _w)(P _i)(P _c) psia	psia	(P _w)(P _i)(P _c) psia		
SHUT-IN	--	--	--	--	--	27	41.4	--	--	72	--
FLOW	0.5	12.3	22.1	36	--	13	27.4	--	--	24	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (P _c) ² (P _d) ² Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m \times h_w}$	GRAVITY FACTOR P _g	FLOWING TEMP. P _t	DEVIATION FACTOR Y _{pv}	RATE OF FLOW R Mcfd	GOR	G _m
1.219	26.7	24.29	1.3041	1.024	1.0011	40	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 1.714 ; (P_w)² = 0.751 ; P_d = -- % (P_c - 14.4) + 14.4 = -- ; (P_w)² = 0.207 ; (P_d)² = --

$\frac{(P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 - P_a^2}{P_c^2 - P_d^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1.507	0.963	1.565	0.194	0.85	0.165	1.46	58

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

JAN 2 1991
KANSAS CORPORATION COMMISSION

Checked by