

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

FORM G-3  
 6-7-53  
 1-2-11

TYPE TEST:  Deliverability  Open Flow TEST DATE: 3/09/90 15-181-20258-00-00

COMPANY: GOODLAND GAS COMPANY LEASE: Weary WELL NO.: 1-16

COUNTY: Sherman LOCATION: NW 1/4, SW 1/4 SECTION: 16 TWP: 8S RNG: 39W ACRES:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KNI Energy

COMPLETION DATE: 10-12-83 PLUG BACK TOTAL DEPTH: 1062' PACKER SET AT: None

CASINO SIZE: 4 1/2" WT: 9.5#/ft. I.D.: SET AT: 1133' PERF.: 986' TO: 1002'

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

TYPE COMPLETION (Describe): Frac 100,000# Sd, 950 Bbls H<sub>2</sub>O TYPE FLUID PRODUCTION: Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE: BAR. PRESS - P<sub>a</sub> Psia

GAS GRAVITY - G<sub>g</sub>: 0.5837 % 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 1990 AT 10:20 (AM)(PM) TAKEN 2/12 1990 AT 8:50 (AM)(PM)

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

OBSERVED DATA

SHUT-IN OR FLOW	ORIFICE SIZE In.	(METER) (PROVER) PRESSURE psig	DIFF. In. (hw)(hx)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASINO WELL-HEAD PRESS		TUBING WELL-HEAD PRESS		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P <sub>w</sub> )(P <sub>i</sub> )(P <sub>c</sub> ) psia	psig	(P <sub>w</sub> )(P <sub>i</sub> )(P <sub>c</sub> ) psia		
SHUT-IN	--	--	--	--	--	32	46.4	--	--	72	--
FLOW	0.375	7.3	12.3	28	--	13	27.4	--	--	24	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (F <sub>s</sub> ) (76) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_{mshw}}$	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. T <sub>f</sub>	DEVIATION FACTOR F <sub>pv</sub>	RATE OF FLOW R Mcfd	GOR	G <sub>m</sub>
0.686	21.7	16.30	1.3089	1.029	1.0007	115	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>c</sub>)<sup>2</sup> = 2.153 ; (P<sub>w</sub>)<sup>2</sup> = 0.751 ; P<sub>d</sub> = -- % (P<sub>c</sub> - 14.4) + 14.4 = -- ; (P<sub>d</sub>)<sup>2</sup> = 0.207

$\frac{(P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	(P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	$\frac{P_c^2 - P_w^2}{P_c^2 - P_w^2}$	LOG [ ]	"n"	n x LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1.946	1.402	1.388	0.142	0.85	0.121	1.32	20

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 31<sup>st</sup> day of Dec, 1990

*John Sanders*  
 For Company

Witness (if any)  
 For Commission

Checked by