

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

FORM G-2
 8-7-50
 1-3-91

TYPE TEST: Deliverability Open Flow TEST DATE: 3/09/90 15-181-20097-00-00

COMPANY: GOODLAND GAS COMPANY LEASE: Nemchek WELL NO.: 1-3

COUNTY: Sherman LOCATION: SW 1/4, NE 1/4, NW 1/4 SECTION: 3 TWP: 8S RNO: 39W ACRES:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KNEnergy

COMPLETION DATE: 8-27-80 PLUG BACK TOTAL DEPTH: 1037 PACKER SET AT: None

CASINO SIZE: 4 1/2" WT: 9.5#/ft. I.D.: 1037 SET AT: 964 PERF.: 1000 TO:

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

TYPE COMPLETION (Describe): Frac 40,000# Sc., 20,000 Gal. TYPE FLUID PRODUCTION: 70 quality foam Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE F: DAR. PRESS - P_a: P_{isa}

GAS GRAVITY - G_r: 0.5837 % CARBON DIOXIDE: 1.98 % NITROGEN: 2.790 API GRAVITY OF LIQUID: --

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

SHUT-IN PRESSURE: SHUT IN 2/9 19:90 AT 11:20 (AM)(PM) TAKEN 2/12 1990 AT 11:10 (AM)(PM) TAKEN
 FLOW TEST: STARTED 2/22 19:90 AT 8:00 (AM)(PM) TAKEN 2/23 19:90 AT 8:00 (AM)(PM) TAKEN

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. Bois.
						psig	(P _w)(P _i)(P _c) psia	psig	(P _w)(P _i)(P _c) psia		
SHUT-IN	--	--	--	--	--	31	45.4	--	--	72	--
FLOW	0.375	15.2	20.3	43	--	14	28.4	--	--	24	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (F ₁)(F ₂) Mcd	(METER) (PROVER) PRESSURE psia	EXTENSION √P _m zhw	GRAVITY FACTOR F _g	FLOWING TEMP. FACTOR F _t	DEVIATION FACTOR F _{pv}	RATE OF FLOW R Mcd	GOR	G _m
0.686	29.6	24.48	1.3089	1.016	1.0012	22	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 2.061 ; (P_w)² = 0.807 ; P_d = -- % (P_c - 14.4) + 14.4 = -- ; (P_d)² = 0.207 ; (P_d)² = --

(P _c) ² - (P _d) ²	(P _c) ² - (P _w) ²	$\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcd
1.854	1.255	1.478	0.170	0.85	0.144	1.39	31

OPEN FLOW Mcd @ 14.65 psia DELIVERABILITY Mcd @ 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