

TYPE TEST: Deliverability Open Flow TEST DATE: 6-2-86

COMPANY: GOODLAND GAS COMPANY LEASE: Lovelace WELL NO.: 1-5

COUNTY: Sherman LOCATION: NW SECTION: 5 TWP: 8S RNG: 38W ACRES:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KN Energy

COMPLETION DATE: 10-25-78 PLUG BACK TOTAL DEPTH: 953 PACKER SET AT: None

CASINO SIZE: 4 1/2" WT. I.D. SET AT 915 PERF. 888 TO 892
 896 TO 906
 908 TO 915

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

TYPE COMPLETION (Describe): Frac 30,000 # Sd. 152,760 SCF No Gas TYPE FLUID PRODUCTION: Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE F: 13.2 BAR. PRESS - P_a: 13.2 Psia

GAS GRAVITY - G_g: 0.5837 % CARBON DIOXIDE: 1.98 % NITROGEN: 2.79 API GRAVITY OF LIQUID:

VERTICAL DEPTH (H): Positive Displacement Meter (METER RUN)(PROVER) SIZE:

SHUT-IN PRESSURE: SHUT IN 5-27 19 86 AT (AM)(PM) TAKEN 5-30 19 86 AT (AM)(PM)
 FLOW TEST: STARTED 5-30 19 86 AT (AM)(PM) TAKEN 6-2 19 86 AT (AM)(PM)

OBSERVED DATA

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	--	--	--	--	--	22.5	35.7	--	--	72	--
FLOW	--	--	--	--	--	20	33.2	--	--	72	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (F _p)(F _d) Mafd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m \times h_w}$	GRAVITY FACTOR F _g	FLOWING TEMP. FACTOR F _L	DEVIATION FACTOR F _{pv}	RATE OF FLOW R Mafd	GOR	G _m
--	--	--	--	--	--	12	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = _____ (P_w)² = _____ P_d² = _____ % (P_c - 14.4) + 14.4 = _____ (P_a)² = 0.207 (P_d)² = _____

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 - P_a^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mafd
1.100	0.172	6.388	0.805	0.718	0.578	3.786	45

OPEN FLOW 45 Mafd @ 14.65 psia DELIVERABILITY Mafd @ 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 25th day of NOV, 1986.

Witness (if any) _____ For Commission

Robert M. Richardson For Company

Checked by _____ DEC 1 1986

DEC 5 1986

Rec'd: 25-86