15-181-20256-00-00

# STATE OF KANSAS – CORPORATION COMMISSION

FORM G-2
8-7-58

## ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

TYPE TEST: [XX] Deliverability [ ] Open Flow TEST DATE: 6-2-86

COMPANY: GOODLAND GAS COMPANY
LEASE: City of Goodland
WELL NO.: 1-8
COUNTY: Sherman
LOCATION: NW¼ NW¼
SECTION: 8
TWP: 8S
RNG: 39W
ACRES:
FIELD: Goodland
RESERVOIR: Niobrara
PIPELINE CONNECTION: KN Energy
COMPLETION DATE: 10-12-83
PLUG BACK TOTAL DEPTH: 1211
PACKER SET AT: None
CASING SIZE: 4½" WT. I.D. SET AT: 1246 PERF.: 1070 TO: 1102
TUBING SIZE: None WT. I.D. SET AT: PERF. TO:
TYPE COMPLETION (Describe): Frac 100,000# Sd., 934 Bbls $H_2O$
TYPE FLUID PRODUCTION: Gas
PRODUCING THRU: Casing
RESERVOIR TEMPERATURE F:
BAR. PRESS – $P_a$: 13.2 ~~XXXX~~ Psia
GAS GRAVITY – $G_g$: 0.5837
% CARBON DIOXIDE: 1.98
% NITROGEN: 2.79
API GRAVITY OF LIQUID:
VERTICAL DEPTH (H):
TYPE METER CONN.: Orifice
(METER RUN) ~~(PROVER)~~ SIZE: 2.067

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

DURATION OF SHUT-IN ____ 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 | CASING WELLHEAD PRESS. psig | CASING WELLHEAD PRESS. $(P_w)(P_t)(P_c)$ psia | TUBING WELLHEAD PRESS. psig | TUBING WELLHEAD PRESS. $(P_w)(P_t)(P_c)$ psia | DURATION HOURS | LIQUID PROD. Bbls. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SHUT-IN | -- | -- | -- | -- | -- | 30 | 43.2 | -- | -- | 72 | -- |
| FLOW | 0.500 | -- | -- | 66 | -- | 15.8 | 29 | -- | -- | 72 | -- |

### RATE OF FLOW CALCULATIONS

| COEFFICIENT $(F_b)(F_p)$ Mcfd | (METER) (PROVER) PRESSURE psia | EXTENSION $\sqrt{P_m x h_w}$ | GRAVITY FACTOR $F_g$ | FLOWING TEMP. FACTOR $F_t$ | DEVIATION FACTOR $F_{pv}$ | RATE OF FLOW R Mcfd | GOR | $G_m$ |
|---|---|---|---|---|---|---|---|---|
| 50.5 | -- | -- | 1.3089 | 0.9943 | 1.0009 | 47 | -- | -- |

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

$(P_c)^2$ = ____ ____ ; $(P_w)^2$ = ____ ; $P_d$ = ____ % $(P_c - 14.4) + 14.4$ = ____ ; $(P_a)^2 = 0.207$ $(P_d)^2$ = ____ ____

| $(P_c)^2-(P_a)^2$ or $(P_c)^2-(P_d)^2$ | $(P_c)^2-(P_w)^2$ | $\frac{P_c^2-P_a^2}{P_c^2-P_d^2}$ / $\frac{P_c^2-P_a^2}{P_c^2-P_w^2}$ | LOG [ ] | "n" | n x LOG [ ] | ANTILOG | OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd |
|---|---|---|---|---|---|---|---|
| 1.692 | 1.025 | 1.650 | 0.218 | 0.822 | 0.179 | 1.510 | 71 |

OPEN FLOW 71 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 25th day of Nov, 1986.

Robert M Richardson
For Company

Witness (If any)

For Commission

DEC 5 1986

Checked by DEC 1 1986