

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

FORM G-3  
8-7-55

15-181-20042-0000

**TYPE TEST:**  Deliverability  Open Flow      **TEST DATE:** 4-25 to 5-1-87

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**COMPANY:** Goodland Gas Company      **LEASE:** Pinkney      **WELL NO.:** 1-32

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**COUNTY:** Sherman      **LOCATION:** SW 1/4      **SECTION:** 32      **TWP:** 7S      **RNG:** 38W      **ACRES:**

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**FIELD:** Goodland      **RESERVOIR:** Niobarra      **PIPELINE CONNECTION:** KN Energy

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**COMPLETION DATE:** 10-27-78      **PLUG BACK TOTAL DEPTH:** 984'      **PACKER SET AT:** None

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**CASINO SIZE:** 4 1/2" WT.      **LD.:**      **SET AT:** 917'      **PERF.:** None      **TO:**

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

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**TYPE COMPLETION (Describe):** Open Hole      **TYPE FLUID PRODUCTION:** Gas

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**PRODUCING THRU:** Casing      **RESERVOIR TEMPERATURE F:**      **SAR. PRESS - P<sub>a</sub>:** 14.4 Psia

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**GAS GRAVITY - G<sub>g</sub>:** 0.5827      **% CARBON DIOXIDE:** 1.280      **% NITROGEN:** 2.635      **API GRAVITY OF LIQUID:** --

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

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**SHUT-IN PRESSURE: SHUT IN:** 4-25 19 87 AT 10:19 (AM) (PM) TAKEN 4-28 19 87 AT 10:09 (AM) (PM)

**FLOW TEST: STARTED:** 4-28 19 87 AT 10:12 (AM) (PM) TAKEN 5-1 19 87 AT 10:12 (AM) (PM)

**OBSERVED DATA**

DURATION OF SHUT-IN 72 HR.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) (PROVER) PRESSURE psig	DIFF. in. (h <sub>w</sub> )(h <sub>d</sub> )	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASINO WELLHEAD PRESS		TUBING WELLHEAD 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	--	--	--	--	--	23.8	38.20	--	--	72	--
FLOW	0.375	19.2	4.0	60	--	19.3	33.70	--	--	72	--

**RATE OF FLOW CALCULATIONS**

COEFFICIENT (F <sub>o</sub> )(P <sub>o</sub> ) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m h_w}$	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. F <sub>L</sub>	DEVIATION FACTOR F <sub>pv</sub>	RATE OF FLOW R Mcfd	GOR RECEIVED STATE CORPORATION COMMISSION
28.4	33.7	11.61	1.3100	1.00	1.0011	10	

**(OPEN FLOW) (DELIVERABILITY) CALCULATIONS**

(P<sub>c</sub>)<sup>2</sup> = 1459.24      (P<sub>w</sub>)<sup>2</sup> = 1135.69      P<sub>d</sub> = \_\_\_\_\_ %      (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_      (P<sub>w</sub>)<sup>2</sup> = 0.107 Kansas      (P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	(P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	$\frac{P_c^2 - P_w^2}{P_c^2 - P_d^2}$	LOG [ ]	"n"	n x LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1251.88	323.55	3.87	0.5876	0.718	0.4219	2.6419	26

**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 15 day of May, 1987

*David J. Gardner*  
For Company

Witness (if any)

Checked by

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

FORM O-2  
8-7-58  
Pg 1 of 1  
15-181-20042-0005

TYPE TEST:  Deliverability  Open Flow TEST DATE: \_\_\_\_\_

COMPANY: \_\_\_\_\_ LEASE: Pinkney WELL NO.: 1-32

COUNTY: \_\_\_\_\_ LOCATION: \_\_\_\_\_ SECTION: \_\_\_\_\_ TWP: \_\_\_\_\_ RNG: \_\_\_\_\_ ACRES: \_\_\_\_\_

FIELD: \_\_\_\_\_ RESERVOIR: \_\_\_\_\_ PIPELINE CONNECTION: \_\_\_\_\_

COMPLETION DATE: \_\_\_\_\_ PLUG BACK TOTAL DEPTH: \_\_\_\_\_ PACKER SET AT: \_\_\_\_\_

CASING SIZE: \_\_\_\_\_ WT. I.D. SET AT \_\_\_\_\_ PERF. TO \_\_\_\_\_

TUBING SIZE: \_\_\_\_\_ WT. I.D. SET AT \_\_\_\_\_ PERF. TO \_\_\_\_\_

TYPE COMPLETION (Describe): \_\_\_\_\_ TYPE FLUID PRODUCTION: \_\_\_\_\_

PRODUCING THRU: \_\_\_\_\_ RESERVOIR TEMPERATURE  $F$ : \_\_\_\_\_ BAR. PRESS -  $P_a$ : 14.4 Psia

GAS GRAVITY -  $G_g$ : .5827 % CARBON DIOXIDE: \_\_\_\_\_ % NITROGEN: \_\_\_\_\_ API GRAVITY OF LIQUID: \_\_\_\_\_

VERTICAL DEPTH (H): \_\_\_\_\_ TYPE METER CONN.: F (METER RUN)(PROVER) SIZE: 2

SHUT-IN PRESSURE: SHUT IN \_\_\_\_\_ 19 \_\_\_\_\_ AT \_\_\_\_\_ (AM)(PM) TAKEN \_\_\_\_\_ 19 \_\_\_\_\_ AT \_\_\_\_\_ (AM)(PM)

FLOW TEST: STARTED \_\_\_\_\_ 19 \_\_\_\_\_ AT \_\_\_\_\_ (AM)(PM) TAKEN \_\_\_\_\_ 19 \_\_\_\_\_ AT \_\_\_\_\_ (AM)(PM)

**OBSERVED DATA** DURATION OF SHUT-IN \_\_\_\_\_ HR.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) (PROVER) PRESSURE psig	DIFF. in. (h <sub>w</sub> )(h <sub>d</sub> )	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS		TUBING WELLHEAD 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						23.8	38.2				
FLOW	.375	19.2	4.0	60		19.3	33.7				

**RATE OF FLOW CALCULATIONS**

COEFFICIENT (F <sub>p</sub> )(F <sub>d</sub> ) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m h_w}$	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. F <sub>L</sub>	DEVIATION FACTOR F <sub>pv</sub>	RATE OF FLOW R Mcfd	GOR	Q <sub>m</sub>
.6860	33.6	11.59	1.31	60	1.011	10.53		

**(OPEN FLOW) (DELIVERABILITY) CALCULATIONS**

(P<sub>c</sub>)<sup>2</sup> = 1459.24 (P<sub>w</sub>)<sup>2</sup> = 1135.69 P<sub>d</sub><sup>2</sup> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	(P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	$\frac{P_c^2 - P_w^2}{P_c^2 - P_d^2}$	LOG [ ]	"n"	n x LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R = ANTILOG Mcfd
<u>1251.88</u>	<u>323.55</u>	<u>3.869</u>	<u>.5875</u>	<u>.718</u>	<u>.4218</u>	<u>2.641</u>	<u>27.81</u>

OPEN FLOW 28 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 \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

Witness (if any)  
Walter Balthazor  
For Commission

For Company \_\_\_\_\_  
Checked by \_\_\_\_\_