

15-181-20199-00-01

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

FORM 9-2
8-7-58

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

COMPANY: Goodland Gas Company LEASE: Dorn Cook WELL NO.: 2-11

COUNTY: Sherman LOCATION: SW 1/4, NE 1/4, NE 1/4 SECTION: 11 TWP: 8S RNG: 40W ACRES:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KN Energy

COMPLETION DATE: 4-29-82 PLUG BACK TOTAL DEPTH: 1215' PACKER SET AT: None

CASING SIZE: 4 1/2" WT. 9.5#/ft. L.D. SET AT 2284' PERF. 1200' TO 1220'

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

TYPE COMPLETION (Describe): Frac 100,000# Sd., 600 MCF CO2, 32,000 gal. H2O TYPE FLUID PRODUCTION: Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE F: 14.4 Psia BAR. PRESS - Pa

GAS GRAVITY - Gg: 0.5827 % CARBON DIOXIDE: 1.280 % NITROGEN: 2.635 API GRAVITY OF LIQUID: --

VERTICAL DEPTH (H): TYPE METER CONN.: Orifice - flange (METER RUN)(PROVER) SIZE

SHUT-IN PRESSURE: SHUT IN 4-25 19 87 AT 11:40 (AM)(PM) TAKEN 4-28 19 87 AT 11:36 (AM)(PM)

FLOW TEST: STARTED 4-28 19 87 AT 11:40 (AM)(PM) TAKEN 5-1 19 87 AT 11:21 (AM)(PM)

OBSERVED DATA

DURATION OF SHUT-IN 72 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		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	--	--	--	--	--	43.3	57.7	--	--	72	--
FLOW	0.750	36.3	3.0	60	--	36.7	51.1	--	--	72	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (P _d)(P _w) / Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION √P _m h _w	GRAVITY FACTOR P _g	FLOWING TEMP. F _L	DEVIATION FACTOR F _{pv}	RATE OF FLOW R Mcfd	STATE OF KANSAS CORPORATION COMMISSION
115.1	50.7	12.33	1.31	1.00	1.0021	45	RECEIVED 6-1-87 CONSERVATION DIVISION Wichita, Kansas

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 3329.29, (P_w)² = 2611.21, P_d² = _____ % (P_c - 14.4) + 14.4 = _____ (P_d)² = _____

(P _c) ² - (P _w) ² or (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 = ANTILOG Mcfd
3121.93	718.08	4.35	0.64	0.73	0.47	2.92	132

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.

Harold J. Sullivan
For Company

Witness (if any)

Checked by

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

FORM G-2
8-7-58

89
6-4-89

TYPE TEST: Deliverability Open Flow TEST DATE:

COMPANY: Dorn Cook LEASE: Dorn Cook WELL NO.: 2-11

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 _w)(h _d)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS.		TUBING WELLHEAD PRESS.		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P _w)(P _i)(P _c) psia	psig	(P _w)(P _i)(P _c) psia		
SHUT-IN						43.3	57.7				
FLOW	.750	36.3	3.0	60		36.7	51.1				

RATE OF FLOW CALCULATIONS							STATE CORPORATION COMMISSION RECEIVED CONSERVATION DIVISION Wichita, Kansas
COEFFICIENT (F _o)(F _d) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_{mshw}}$	GRAVITY FACTOR F_g	FLOWING TEMP. FACTOR F_L	DEVIATION FACTOR F_{pv}	RATE OF FLOW R Mcfd	
2.779	50.7	12.33	1.31	60	1.011	45.38	

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

$(P_c)^2 - (P_a)^2$ or $(P_c)^2 - (P_w)^2$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 - P_a^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
3121.93	718.08	4.348	.6383	.730	.4660	2.924	132.69

OPEN FLOW 133 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) Male F. Baltrayon For Commission
 For Company _____
 Checked by _____