

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

TYPE TEST:  Deliverability  Open Flow TEST DATE: April 21, 1990

COMPANY: Fairway Petroleum, Inc. LEASE: Ryan WELL NO.: 2

COUNTY: Leavenworth LOCATION: NE SECTION: 33 TWP: 8S RNO: 22E ACRES: 27

FIELD: RESERVOIR: McLouth PIPELINE CONNECTION: LAGGS, INC.

COMPLETION DATE: 7/2/86 PLUG BACK TOTAL DEPTH: 1256 PACKER SET AT:

CASING SIZE: WT. LD. SET AT PERF. TO  
 4 1/2" 1256 1196 1204

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

TYPE COMPLETION (Describe): Perforation TYPE FLUID PRODUCTION: Water

PRODUCING THRU: 4 1/2" Casing RESERVOIR TEMPERATURE F: 76° BAR. PRESS - P<sub>a</sub>: 14.4 Psia

GAS GRAVITY - G<sub>g</sub>: 0.5826 % CARBON DIOXIDE: N.A. % NITROGEN: N.A. API GRAVITY OF LIQUID:

VERTICAL DEPTH (H): 1256 TYPE METER CONN.: Flange (METER RUN) (PROVER) SIZE: 2"

SHUT-IN PRESSURE: SHUT IN April 14, 1990 19 AT (AM)(PM) TAKEN 19 AT (AM)(PM)

FLOW TEST: STARTED April 15, 1990 19 AT (AM)(PM) TAKEN 19 AT (AM)(PM)

OBSERVED DATA DURATION OF SHUT-IN: 24 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	CASED 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						92	106.4			24	
FLOW	.75	28	13	76	76	58	72.4			24	

RATE OF FLOW CALCULATIONS

COEFFICIENT (F <sub>b</sub> )(F <sub>d</sub> ) / Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION √P <sub>wh</sub> h <sub>w</sub>	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. FACTOR F <sub>L</sub>	DEVIATION FACTOR F <sub>pv</sub>	RATE OF FLOW R / Mcfd	GOR	G <sub>m</sub>
2.779	42.4	23.5	1.2982	0.9843	1.0076	84.1		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>c</sub>)<sup>2</sup> = 11.3 ; (P<sub>w</sub>)<sup>2</sup> = 5.2 ; P<sub>d</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ ; (P<sub>w</sub>)<sup>2</sup> = 0.207 ; (P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

(P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup> or (P <sub>c</sub> ) <sup>2</sup> - (P <sub>d</sub> ) <sup>2</sup>	(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
	6.1			0.85			152.7

OPEN FLOW 152.7 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 12 day of May, 1990

*George M. Hunt*  
 For Company

Witness (if any) MAY 29 1990

CONSERVATION DIVISION  
 Wichita, Kansas

Checked by