

15-103-20628-00-00  
**STATE OF KANSAS - CORPORATION COMMISSION**

FORM O-1  
 8-7-58

**ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST**

TYPE TEST:  Deliverability  Open Flow TEST DATE: July 10, 1988

COMPANY: Fairway Petroleum, Inc. LEASE: KELLNER. WELL NO.: 1

COUNTY: Leavenworth LOCATION: NW SW NE SECTION: 33 TWP: 8S RNG: 22E ACRES: 25

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

COMPLETION DATE: 9/12/86 PLUG BACK TOTAL DEPTH: 1441' PACKER SET AT: \_\_\_\_\_

CASING SIZE: WT. 4 1/2" LD. SET AT 1441' PERF. TO 1374-1379

TUBING SIZE: WT. LD. SET AT PERF. TO

TYPE COMPLETION (Describe): Perforation TYPE FLUID PRODUCTION: See below

PRODUCING THRU: 4 1/2" casing RESERVOIR TEMPERATURE: 79° BAR. PRESS - P<sub>a</sub>: 14.4 Psia

GAS GRAVITY - G<sub>g</sub>: .5738 % CARBON DIOXIDE: \_\_\_\_\_ % NITROGEN: 3.10 API GRAVITY OF LIQUID: \_\_\_\_\_

VERTICAL DEPTH (H): 1441' TYPE METER CONN.: Barton (METER RUN) (PROVER) SIZE: 2"

SHUT-IN PRESSURE: SHUT IN July 10 1988 AT 4:30 (AM)(PM) TAKEN July 10 1988 AT 2 (AM)(PM)

FLOW TEST: STARTED July 10 1988 AT 2 (AM)(PM) TAKEN July 10 1988 AT 2:30 (AM)(PM)

heavy tar (est. 10 degree gravity) hampered testing - rates varied from 51-136 OBSERVED DATA DURATION OF SHUT-IN 21 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 WELL-HEAD PRESS. |  | TUBING WELL-HEAD PRESS. |  | DURATION HOURS | LIQUID PROD. Bbls. |
|-----------------|------------------|--------------------------------|--|-----------------|-------------------|-------------------------|--|-------------------------|--|----------------|--------------------|
|                 |                  |                                |  |                 |                   | psig                    | (P <sub>w</sub> )(P <sub>i</sub> )(P <sub>e</sub> ) psia | psig                    | (P <sub>w</sub> )(P <sub>i</sub> )(P <sub>e</sub> ) psia |                |                    |
| SHUT-IN         |                  |                                |  |                 |                   | 185.0                   | 199.4  |                         |  |                |                    |
| FLOW            | 1.00             | 121.0                          | -  | 78.7            |                   | 121.0                   | 135.4  |                         |  |                |                    |

**RATE OF FLOW CALCULATIONS**

| COEFFICIENT (F <sub>p</sub> )(F <sub>d</sub> ) Mcfd | (METER) (PROVER) PRESSURE psia | EXTENSION √P <sub>m</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> |
|---|--------------------------------|--|-------------------------------|-------------------------------------|----------------------------------|---------------------|-----|----------------|
| 17.53   | 135.4                          | -  | 1.2905                        | 0.9825                              | 1.0076                           | 3039                |     |                |

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

(P<sub>c</sub>)<sup>2</sup> = \_\_\_\_\_ (P<sub>w</sub>)<sup>2</sup> = \_\_\_\_\_ P<sub>d</sub><sup>2</sup> = \_\_\_\_\_ % (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> | (P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup> | $\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}$ | LOG [ ] | "n"  | n x LOG [ ] | ANTILOG | OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd |
|---|---|---------------------------------------|---------|------|-------------|---------|--|
|   |   |                                       |         | 0.85 |             |         | 5121   |

OPEN FLOW 5121 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 July 21 day of \_\_\_\_\_, 1988.

Witness (if any) \_\_\_\_\_

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

4  
29  
10-14-86

September 1986

KELLNER #1

Operator-- Fairway Petroleum, Inc.  
 Operator License Number--6871  
 Operator Address-- 12603 Southwest Freeway, #370; Stafford, TX 77477  
 Operator Phone Number-- (713) 240-1555  
 Lease-- Kellner  
 Location-- SW NE 33  
 Township-- 8S  
 Range-- 22E  
 County-- Leavenworth  
 Gas Purchaser-- LAGGS, Inc. (LLJV)  
 Gas BTU's-- 980 (Est.)

INITIAL OPEN FLOW CALCULATION

Flowing Pressure on Prover (psi)-- 375  
 Shut-In Pressure on Prover (psi)-- 461  
 Orifice Size ( 1 inch) and Coefficient--406.7  
 Specific Gravity-- .6005  
 Temperature of Gas (+459.69F)-- 538.69  
 Open Flow (MCF/D)-- 8,477.6  
 One-Quarter of Open Flow (MCF/D)-- 2,119.4  
 Adjusted State Allowable (MCF/D)-- 1,324.6

CURRENT OPEN FLOW CALCULATION

Flowing Pressure on Prover (psi)--  
 Shut-In Pressure on Prover (psi)--  
 Orifice Size ( inch) and Coefficient--  
 Specific Gravity--  
 Temperature of Gas (+459.69F)--  
 Open Flow (MCF/D)--  
 One-Quarter of Open Flow (MCF/D)--  
 Adjusted State Allowable (MCF/D)--  
 Current Production Rate (MCF/D)-- 320

TESTER--Larry Culbertson--LAGGS, INC.--913-773-8514  
 COMMENTS--