

# KANSAS CORPORATION COMMISSION

## ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

- Open Flow **ASI**  
 Deliverability

(See Instructions on Reverse Side)

Test Date:  
6/22/14

API No. 15  
023-20793-0100

|   |                  |                                  |                 |   |                         |
|---|------------------|----------------------------------|-----------------|---|-------------------------|
| Company<br>Rosewood Resources, Inc.               |                  | Lease<br>Zweygardt               |                 | Well Number<br>34-19H   |                         |
| County<br>Cheyenne                                | Location<br>SWSE | Section<br>19                    | TWP<br>3S       | RNG (E/W)<br>40W  | Acres Attributed<br>80  |
| Field<br>Cherry Creek                             |                  | Reservoir<br>Niobrara            |                 | Gas Gathering Connection<br>Branch Systems Inc.   |                         |
| Completion Date<br>7/30/2007                      |                  | Plug Back Total Depth<br>4241'   |                 | Packer Set at   |                         |
| Casing Size<br>7"                                 | Weight<br>23#    | Internal Diameter<br>6.366       | Set at<br>1622' | Perforations<br>1622' MD  | To<br>424' MD Open Hole |
| Tubing Size<br>NONE                               | Weight           | Internal Diameter                | Set at          | Perforations<br>Open Hole   | To                      |
| Type Completion (Describe)<br>Single (Horizontal) |                  | Type Fluid Production<br>Dry Gas |                 | Pump Unit or Traveling Plunger? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |                         |
| Producing Thru (Annulus / Tubing)<br>Annulus      |                  | % Carbon Dioxide                 |                 | % Nitrogen  |                         |
| Vertical Depth(H)<br>1338'                        |                  | Pressure Taps<br>Flange          |                 | Gas Gravity - G <sub>g</sub><br>.6  |                         |
| Pressure Buildup: Shut in 6-7                     |                  | 20 14 at 9:50                    |                 | (AM) (PM) Taken 6-18  |                         |
| Well on Line: Started 6-22                        |                  | 20 14 at 10:05                   |                 | (AM) (PM) Taken 6-23  |                         |
|   |                  | 20 14 at 10:05                   |                 | (AM) (PM)   |                         |

### OBSERVED SURFACE DATA

Duration of Shut-in 360 Hours

| Static / Dynamic Property | Orifice Size (inches) | Circle one:<br>Meter<br>Prover Pressure<br>psig (P <sub>m</sub> ) | Pressure Differential in Inches H <sub>2</sub> O | Flowing Temperature t | Well Head Temperature t | Casing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>t</sub> ) or (P <sub>c</sub> ) |       | Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>t</sub> ) or (P <sub>c</sub> ) |      | Duration (Hours) | Liquid Produced (Barrels) |
|---------------------------|-----------------------|---|--|-----------------------|-------------------------|--|-------|--|------|------------------|---------------------------|
|                           |                       |   |  |                       |                         | psig   | psia  | psig   | psia |                  |                           |
| Shut-In                   |                       |   |  |                       |                         | 205  | 219.4 |  |      |                  |                           |
| Flow                      |                       |   |  |                       |                         | 59   | 73.4  |  |      | 360              | 0                         |

### FLOW STREAM ATTRIBUTES

| Plate Coefficient (F <sub>b</sub> ) (F <sub>p</sub> ) Mcfd | Circle one:<br>Meter or<br>Prover Pressure<br>psia | Press Extension $\sqrt{P_m \times h}$ | Gravity Factor F <sub>g</sub> | Flowing Temperature Factor F <sub>t</sub> | Deviation Factor F <sub>pv</sub> | Metered Flow R (Mcfd) | GOR (Cubic Feet/ Barrel) | Flowing Fluid Gravity G <sub>m</sub> |
|--|--|---------------------------------------|-------------------------------|---|----------------------------------|-----------------------|--------------------------|--------------------------------------|
|  |  |                                       |                               |   |                                  | 10                    |                          |                                      |

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>a</sub>)<sup>2</sup> = 0.207

(P<sub>c</sub>)<sup>2</sup> = \_\_\_\_\_ : (P<sub>w</sub>)<sup>2</sup> = \_\_\_\_\_ : P<sub>a</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ : (P<sub>a</sub>)<sup>2</sup> = \_\_\_\_\_

|  |   |   |  |  |             |         |  |
|--|---|---|--|--|-------------|---------|--|
| (P <sub>c</sub> ) <sup>2</sup> - (P <sub>a</sub> ) <sup>2</sup><br>or<br>(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> | Choose formula 1 or 2:<br>1. P <sub>c</sub> <sup>2</sup> - P <sub>a</sub> <sup>2</sup><br>2. P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup><br>divided by: P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> | LOG of formula 1. or 2. and divide by: $\frac{P_c^2 - P_w^2}{P_c^2 - P_a^2}$ | Backpressure Curve Slope = "n"<br>-----<br>Assigned Standard Slope | n x LOG [ ] | Antilog | Open Flow Deliverability Equals R x Antilog (Mcfd) |
|  |   |   |  |  |             |         |  |

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 12 day of December, 20 14.

Received

KANSAS CORPORATION COMMISSION

Witness (if any)

**FEB 25 2015**

For Company

For Commission

CONSERVATION DIVISION

Checked by

I declare under penalty of perjury under the laws of the state of Kansas that I am authorized to request exempt status under Rule K.A.R. 82-3-304 on behalf of the operator Rosewood Resources, Inc.

and that the foregoing pressure information and statements contained on this application form are true and correct to the best of my knowledge and belief based upon available production summaries and lease records of equipment installation and/or upon type of completion or upon use being made of the gas well herein named.

I hereby request a one-year exemption from open flow testing for the Zweygardt 34-19H gas well on the grounds that said well:

(Check one)

- is a coalbed methane producer
- is cycled on plunger lift due to water
- is a source of natural gas for injection into an oil reservoir undergoing ER
- is on vacuum at the present time; KCC approval Docket No. \_\_\_\_\_
- is not capable of producing at a daily rate in excess of 250 mcf/D

I further agree to supply to the best of my ability any and all supporting documents deemed by Commission staff as necessary to corroborate this claim for exemption from testing.

Date: 12/12/14

Received  
KANSAS CORPORATION COMMISSION

FEB 25 2015

CONSERVATION DIVISION  
WICHITA, KS

Signature: *Small Martiney*

Title: Production Assistant

**Instructions:** If a gas well meets one of the eligibility criteria set out in KCC regulation K.A.R. 82-3-304, the operator may complete the statement provided above in order to claim exempt status for the gas well.

At some point during the current calendar year, wellhead shut-in pressure shall have been measured after a minimum of 24 hours shut-in/buildup time and shall be reported on the front side of this form under **OBSERVED SURFACE DATA**. Shut-in pressure shall thereafter be reported yearly in the same manner for so long as the gas well continues to meet the eligibility criterion or until the claim of eligibility for exemption **IS** denied.

The G-2 form conveying the newest shut-in pressure reading shall be filed with the Wichita office no later than December 31 of the year for which it's intended to acquire exempt status for the subject well. The form must be signed and dated on the front side as though it was a verified report of annual test results.

W2410  
 Zweygardt 34-19H  
 St. Francis  
 St. Francis  
 Flow  
 June-17<sup>4</sup>

| DATE                  | Casing |        | MCF | HRS  |    | REMARKS<br>(Maximum length 110 characters) |
|-----------------------|--------|--------|-----|------|----|--|
|                       | PSI    | STATIC |     | DOWN |    |  |
| 6/1/2013 <sup>4</sup> | 57     | 70     |     | 0    | 0  |  |
| 6/2/2013              | 62     | 75     |     | 0    | 0  |  |
| 6/3/2013              | 59     | 72     |     | 0    | 0  |  |
| 6/4/2013              | 74     | 87     |     | 0    | 0  |  |
| 6/5/2013              | 51     | 64     |     | 0    | 0  |  |
| 6/6/2013              | 52     | 65     |     | 0    | 0  |  |
| 6/7/2013              | 130    | 143    |     | 0    | 9  |  |
| 6/8/2013              | 180    | 193    |     | 0    | 24 |  |
| 6/9/2013              | 183    | 196    |     | 0    | 24 |  |
| 6/10/2013             | 185    | 201    |     | 0    | 24 |  |
| 6/11/2013             | 185    | 201    |     | 0    | 24 |  |
| 6/12/2013             | 190    | 203    |     | 0    | 24 |  |
| 6/13/2013             | 189    | 202    |     | 0    | 24 |  |
| 6/14/2013             | 189    | 202    |     | 0    | 24 |  |
| 6/15/2013             | 190    | 203    |     | 0    | 24 |  |
| 6/16/2013             | 191    | 204    |     | 0    | 24 |  |
| 6/17/2013             | 191    | 204    |     | 0    | 24 |  |
| 6/18/2013             | 205    | 218    |     | 0    | 24 |  |
| 6/19/2013             | 201    | 214    |     | 0    | 24 |  |
| 6/20/2013             | 201    | 214    |     | 0    | 24 |  |
| 6/21/2013             | 200    | 213    |     | 0    | 24 |  |
| 6/22/2013             | 200    | 213    |     | 0    | 24 |  |
| 6/23/2013             | 134    | 147    |     | 1    | 5  |  |
| 6/24/2013             | 112    | 125    |     | 0    | 0  |  |
| 6/25/2013             | 104    | 117    |     | 0    | 0  |  |
| 6/26/2013             | 105    | 118    |     | 0    | 0  |  |
| 6/27/2013             | 84     | 97     |     | 0    | 0  |  |
| 6/28/2013             | 62     | 75     |     | 0    | 0  |  |
| 6/29/2013             | 60     | 73     |     | 0    | 0  |  |
| 6/30/2013             | 57     | 70     |     | 0    | 0  |  |
| 7/1/2013              |        |        |     |      | 0  |  |

Total

1

Received  
 KANSAS CORPORATION COMMISSION  
**FEB 25 2015**  
 CONSERVATION DIVISION  
 WICHITA, KS

W2410  
 Zwegardt 34-19H  
 St. Francis  
 St. Francis  
 Flow  
 July-14

| DATE      | Casing<br>PSI | STATIC | MCF | HRS<br>DOWN | REMARKS<br>(Maximum length 110 characters) |
|-----------|---------------|--------|-----|-------------|--|
| 7/1/2014  | 57            | 70     |     | 0           | 0  |
| 7/2/2014  | 56            | 69     |     | 0           | 0  |
| 7/3/2014  | 57            | 70     |     | 0           | 0  |
| 7/4/2014  | 57            | 70     |     | 0           | 0  |
| 7/5/2014  | 59            | 72     |     | 0           | 0  |
| 7/6/2014  | 59            | 72     |     | 0           | 0  |
| 7/7/2014  | 73            | 86     |     | 0           | 0  |
| 7/8/2014  | 59            | 72     |     | 0           | 0  |
| 7/9/2014  | 60            | 73     |     | 0           | 0  |
| 7/10/2014 | 60            | 73     |     | 0           | 0  |
| 7/11/2014 | 62            | 75     |     | 0           | 0  |
| 7/12/2014 | 63            | 76     |     | 0           | 0  |
| 7/13/2014 | 64            | 77     |     | 0           | 0  |
| 7/14/2014 | 78            | 91     |     | 0           | 0  |
| 7/15/2014 | 53            | 66     |     | 0           | 0  |
| 7/16/2014 | 53            | 66     |     | 0           | 0  |
| 7/17/2014 | 57            | 70     |     | 0           | 0  |
| 7/18/2014 | 56            | 69     |     | 0           | 0  |
| 7/19/2014 | 69            | 82     |     | 22          | 0 Open up backside and produce             |
| 7/20/2014 | 69            | 82     |     | 22          | 0  |
| 7/21/2014 | 113           | 126    |     | 20          | 0  |
| 7/22/2014 | 176           | 189    |     | 3           | 22   |
| 7/23/2014 | 105           | 118    |     | 20          | 7  |
| 7/24/2014 | 90            | 103    |     | 25          | 3  |
| 7/25/2014 | 80            | 93     |     | 20          | 4  |
| 7/26/2014 | 71            | 84     |     | 26          | 0  |
| 7/27/2014 | 70            | 83     |     | 23          | 0  |
| 7/28/2014 | 70            | 83     |     | 22          | 0  |
| 7/29/2014 | 70            | 83     |     | 20          | 0  |
| 7/30/2014 | 67            | 80     |     | 20          | 0  |
| 7/31/2014 | 66            | 79     |     | 18          | 0  |

Total

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**FEB 25 2015**

CONSERVATION DIVISION  
 WICHITA, KS

W2410  
 Zweygartt 34-19H  
 St. Francis  
 St. Francis  
 Flow  
 August-14

| DATE      | Casing<br>PSI | STATIC | MCF | HRS<br>DOWN | REMARKS<br>(Maximum length 110 characters) |
|-----------|---------------|--------|-----|-------------|--|
| 8/1/2014  | 65            | 78     |     | 17          | 0  |
| 8/2/2014  | 64            | 77     |     | 17          | 0  |
| 8/3/2014  | 62            | 75     |     | 15          | 0  |
| 8/4/2014  | 60            | 73     |     | 14          | 0  |
| 8/5/2014  | 59            | 72     |     | 12          | 0  |
| 8/6/2014  | 59            | 71     |     | 10          | 0  |
| 8/7/2014  | 60            | 73     |     | 10          | 0  |
| 8/8/2014  | 59            | 72     |     | 0           | 0 shut in not flowing gas                  |
| 8/9/2014  | 60            | 73     |     | 0           | 0  |
| 8/10/2014 | 85            | 98     |     | 0           | 0  |
| 8/11/2014 | 96            | 109    |     | 0           | 0  |
| 8/12/2014 | 98            | 111    |     | 0           | 0  |
| 8/13/2014 | 118           | 131    |     | 0           | 0  |
| 8/14/2014 | 67            | 80     |     | 5           | 0  |
| 8/15/2014 | 70            | 83     |     | 3           | 3  |
| 8/16/2014 | 68            | 81     |     | 3           | 0  |
| 8/17/2014 | 68            | 81     |     | 3           | 0  |
| 8/18/2014 | 64            | 77     |     | 0           | 0  |
| 8/19/2014 | 88            | 101    |     | 0           | 2 shut in at meter                         |
| 8/20/2014 | 88            | 101    |     | 10          | 0  |
| 8/21/2014 | 117           | 130    |     | 0           | 0 bring on at 6 mcf                        |
| 8/22/2014 | 69            | 82     |     | 2           | 0  |
| 8/23/2014 | 63            | 77     |     | 0           | 0  |
| 8/24/2014 | 56            | 69     |     | 0           | 0 opened more 18 mcf                       |
| 8/25/2014 | 70            | 83     |     | 4           | 0  |
| 8/26/2014 | 60            | 73     |     | 4           | 0  |
| 8/27/2014 | 60            | 73     |     | 4           | 0  |
| 8/28/2014 | 60            | 73     |     | 4           | 0  |
| 8/29/2014 | 54            | 67     |     | 0           | 5 shut in at shed                          |
| 8/30/2014 | 72            | 85     |     | 0           | 0  |
| 8/31/2014 | 95            | 108    |     | 0           | 0  |

Total

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