

# KANSAS CORPORATION COMMISSION

## ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

(See Instructions on Reverse Side)

- Open Flow  Deliverability

Test Date:  
6/22/14

API No. 15  
023-21263-0000

Company Rosewood Resources, Inc.		Lease Zimbelman		Well Number 21-24	
County Cheyenne	Location NENW	Section 24	TWP 3S	RNG (E/W) 41W	Acres Attributed 80
Field Cherry Creek		Reservoir Niobrara		Gas Gathering Connection Branch Systems Inc.	
Completion Date 10/13/2010		Plug Back Total Depth 1391'		Packer Set at	
Casing Size 4 1/2"	Weight 10.5#	Internal Diameter 6.366	Set at 1431'	Perforations 1194'	To 1224'
Tubing Size NONE	Weight	Internal Diameter	Set at	Perforations	To
Type Completion (Describe) Single (Conventional)		Type Fluid Production Dry Gas		Pump Unit or Traveling Plunger? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide		% Nitrogen	
Vertical Depth(H) 1450'		Pressure Taps Flange		Gas Gravity - G <sub>g</sub> .6	
Pressure Buildup: Shut in 6-7		20 14 at 6:05		(AM)(PM) Taken 6-21	
Well on Line: Started 6-22		20 14 at 6:15		(AM)(PM) Taken 6-23	

### OBSERVED SURFACE DATA

Duration of Shut-in 360 Hours

Static / Dynamic Property	Orifice Size (Inches)	Circle one: Meter or Prover Pressure 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>i</sub> ) or (P <sub>c</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>i</sub> ) or (P <sub>c</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-in						222	236.4				
Flow						49	63.4			360	

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>s</sub> ) (F <sub>p</sub> ) Mcfd	Circle one: Meter or Prover Pressure 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>
						8		

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

(P <sub>c</sub> ) <sup>2</sup> - (P <sub>a</sub> ) <sup>2</sup> or (P <sub>c</sub> ) <sup>2</sup> - (P <sub>d</sub> ) <sup>2</sup>	(P <sub>d</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	Choose formula 1 or 2: 1. P <sub>c</sub> <sup>2</sup> - P <sub>a</sub> <sup>2</sup> 2. P <sub>c</sub> <sup>2</sup> - P <sub>d</sub> <sup>2</sup> 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: $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_a^2} \right]$	Backpressure Curve Slope ≈ "n" ----- or ----- Assigned Standard Slope	n x LOG $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_a^2} \right]$	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

*Janell Matting*  
For Company

Witness (if any)

FEB 25 2015

For Commission

CONSERVATION DIVISION  
WICHITA, KS

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 Zimbelman 21-24 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

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KANSAS CORPORATION COMMISSION

FEB 25 2015

CONSERVATION DIVISION  
WICHITA, KS

Signature: *Janell Matney*

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.

W2736  
 Zimbelman 21-24  
 St. Francis  
 St. Francis  
 Flow  
 June-1~~8~~4  
 FloBoss

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
6/1/2013	51	64		9	0
6/2/2013	56	69		8	0
6/3/2013	49	62		8	0
6/4/2013	63	76		8	0
6/5/2013	46	59		8	0
6/6/2013	47	60		8	0
6/7/2013	176	189		5	9
6/8/2013	190	203		0	24
6/9/2013	202	215		0	24
6/10/2013	213	226		0	24
6/11/2013	223	236		0	24
6/12/2013	228	241		0	24
6/13/2013	229	242		0	24
6/14/2013	230	243		0	24
6/15/2013	230	243		0	24
6/16/2013	231	244		0	24
6/17/2013	231	244		0	24
6/18/2013	231	244		0	24
6/19/2013	226	239		0	24
6/20/2013	224	237		0	24
6/21/2013	222	235		0	24
6/22/2013	222	235		0	24
6/23/2013	117	130		21	5
6/24/2013	107	120		14	0
6/25/2013	101	114		32	0
6/26/2013	90	103		12	0
6/27/2013	83	96		12	0
6/28/2013	51	64		12	0
6/29/2013	49	62		10	0
6/30/2013	51	64		10	0
7/1/2013					0

Total

177

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CONSERVATION DIVISION  
 WICHITA, KS

W2736  
 Zimbelman 21-24  
 St. Francis  
 St. Francis  
 Flow  
 July-14  
 FloBoss

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
7/1/2014	51	64		10	0
7/2/2014	51	64		9	0
7/3/2014	51	64		9	0
7/4/2014	51	64		9	0
7/5/2014	52	65		9	0
7/6/2014	53	66		9	0
7/7/2014	53	66		9	0
7/8/2014	55	68		9	0
7/9/2014	55	68		9	0
7/10/2014	55	68		9	0
7/11/2014	58	71		9	0
7/12/2014	58	71		9	0
7/13/2014	59	72		9	0
7/14/2014	87	100		8	0
7/15/2014	48	61		8	0
7/16/2014	50	63		8	0
7/17/2014	50	63		8	0
7/18/2014	51	64		8	0
7/19/2014	48	61		8	0
7/20/2014	50	63		8	0
7/21/2014	134	147		8	0
7/22/2014	139	152		2	22
7/23/2014	75	88		11	7
7/24/2014	57	70		9	3
7/25/2014	49	62		9	4
7/26/2014	48	61		8	0
7/27/2014	49	62		8	0
7/28/2014	49	62		8	0
7/29/2014	49	62		8	0
7/30/2014	50	63		8	0
7/31/2014	51	64		8	0

Total

261

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CONSERVATION DIVISION  
 WICHITA, KS

W2736  
 Zimbelman 21-24  
 St. Francis  
 St. Francis  
 Flow  
 August-14  
 FloBoss

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
8/1/2014	37	50		8	0
8/2/2014	36	49		8	0
8/3/2014	49	62		8	0
8/4/2014	50	63		8	0
8/5/2014	51	64		8	0
8/6/2014	51	64		8	0
8/7/2014	53	66		7	0
8/8/2014	52	65		7	0
8/9/2014	54	67		7	0
8/10/2014	55	68		7	0
8/11/2014	55	68		7	0
8/12/2014	49	62		7	0
8/13/2014	50	63		7	0
8/14/2014	49	62		7	0
8/15/2014	55	68		7	3
8/16/2014	54	67		7	0
8/17/2014	55	68		7	0
8/18/2014	55	68		7	0
8/19/2014	63	76		7	2
8/20/2014	53	66		7	0
8/21/2014	52	65		7	0
8/22/2014	55	68		7	0
8/23/2014	49	62		7	0
8/24/2014	51	64		7	0
8/25/2014	66	79		7	0
8/26/2014	52	65		7	0
8/27/2014	63	76		7	0
8/28/2014	115	128		7	0
8/29/2014	47	60		7	5
8/30/2014	48	61		7	0
8/31/2014	63	76		7	0

Total

223

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 WICHITA, KS