

# KANSAS CORPORATION COMMISSION ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

(See Instructions on Reverse Side)

Type Test:

- Open Flow **MSI**  
 Deliverability

Test Date:  
7/9/2015

API No. 15  
15-023-20587-0000

Company <b>Rosewood Resources</b>		Lease <b>Isernhagen</b>		Well Number <b>2-23</b>	
County <b>Cheyenne</b>	Location <b>NWSE</b>	Section <b>23</b>	TWP <b>3S</b>	RNG (EW) <b>41W</b>	Acres Attributed <b>80</b>
Field <b>St. Francis</b>		Reservoir <b>Niobrara</b>		Gas Gathering Connection <b>Branch Systems Inc.</b>	
Completion Date <b>9/10/2004</b>		Plug Back Total Depth <b>1508'</b>		Packer Set at	
Casing Size <b>4 1/2"</b>	Weight <b>10.5#</b>	Internal Diameter <b>4.052</b>	Set at <b>1514'</b>	Perforations <b>1316'</b>	To <b>1352'</b>
Tubing Size <b>none</b>	Weight	Internal Diameter	Set at	Perforations	To
Type Completion (Describe) <b>Single (Conventional)</b>		Type Fluid Production <b>Dry Gas</b>		Pump Unit or Traveling Plunger? <input checked="" type="checkbox"/> Yes / No <b>Pumping Unit</b>	
Producing Thru (Annulus / Tubing) <b>Annulus</b>		% Carbon Dioxide		% Nitrogen	
Vertical Depth(H) <b>1352'</b>		Pressure Taps <b>Flange</b>		(Meter Run) (Prover) Size <b>2"</b>	
Pressure Buildup: Shut in <b>7-9</b> 20 <b>15</b> at <b>8:25</b> <input checked="" type="checkbox"/> (AM) (PM) Taken <b>7-10</b> 20 <b>15</b> at <b>8:40</b> <input checked="" type="checkbox"/> (AM) (PM)		Well on Line: Started <b>7-10</b> 20 <b>15</b> at <b>8:40</b> <input checked="" type="checkbox"/> (AM) (PM) Taken <b>7-11</b> 20 <b>15</b> at <b>9:25</b> <input checked="" type="checkbox"/> (AM) (PM)			

### OBSERVED SURFACE DATA

Duration of Shut-in **24** Hours

Static / Dynamic Property	Orifice Size (inches)	Circle one: Meter or Prover Pressure psig (Pm)	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						173	187.4				
Flow						45	59.4			24	0

### 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>tt</sub>	Deviation Factor F <sub>pv</sub>	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>
						43		

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

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

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

(P <sub>c</sub> ) <sup>2</sup> - (P <sub>s</sub> ) <sup>2</sup> or (P <sub>c</sub> ) <sup>2</sup> - (P <sub>j</sub> ) <sup>2</sup>	(P <sub>c</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>s</sub> <sup>2</sup> 2. P <sub>c</sub> <sup>2</sup> - P <sub>j</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: $P_c^2 - P_w^2$	Backpressure Curve Slope = "n" ----- or ----- 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 18 day of December, 20 15.

**KCC WICHITA**

**APR 07 2016**

*Janell Martin*  
For Company

Witness (if any)

For Commission

Checked by

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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 Isernhagen 2-23 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: 12/18/15

**KCC WICHITA** Signature: *Janell Martey*  
APR 07 2016 Title: Production Assistant  
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**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.

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St. Francis

St. Francis

None

July-15

DATE	Tubing PSI	Casing PSI	STATIC	MCF	SPM	CYCLE	HRS DOWN	Water BBLs	REMARKS (Maximum length 110 characters)
7/1/2015		47	60	45	6.5	9.5	0	17	
7/2/2015		47	59	45	6.5	9.5	0	17	
7/3/2015		47	59	37	6.5	9.5	0	17	
7/4/2015		47	59	45	6.5	9.5	0	17	
7/5/2015		47	59	16	6.5	9.5	0	17	
7/6/2015		45	65	41	6.5	9.5	2	17	
7/7/2015		45	58	20	6.5	9.5	0	17	
7/8/2015		45	58	38	6.5	9.5	16	17	turn off p u
7/9/2015		90	115	0	6.5	9.5	24	0	
7/10/2015		173	122	0	6.5	9.5	14	0	
7/11/2015		130	108	24	6.5	9.5	0	0	
7/12/2015		104	92	54	6.5	9.5	0	0	
7/13/2015		52	79	49	6.5	9.5	0	17	
7/14/2015		46	60	37	6.5	9.5	0	17	
7/15/2015		46	58	29	6.5	9.5	0	17	
7/16/2015		46	59	36	6.5	9.5	0	17	
7/17/2015		46	58	32	6.5	9.5	0	17	rpled sunsaver and battery
7/18/2015		45	58	33	6.5	9.5	0	17	
7/19/2015		45	58	44	6.5	9.5	0	17	
7/20/2015		45	58	44	6.5	9.5	0	17	
7/21/2015		46	68	41	6.5	9.5	2	17	
7/22/2015		45	59	43	6.5	9.5	0	17	
7/23/2015		45	58	43	6.5	9.5	0	17	
7/24/2015		45	58	43	6.5	9.5	0	17	
7/25/2015		45	58	43	6.5	9.5	0	17	
7/26/2015		45	58	43	6.5	9.5	0	17	
7/27/2015		44	57	43	6.5	9.5	0	17	
7/28/2015		44	57	43	6.5	9.5	0	17	
7/29/2015		44	57	43	6.5	9.5	0	17	
7/30/2015		44	57	43	6.5	9.5	0	17	
7/31/2015		44	57	43	6.5	9.5	0	17	

Total

1140

459

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St. Francis

St. Francis

None

August-15

DATE	Tubing PSI	Casing PSI	STATIC	MCF	SPM	CYCLE	HRS DOWN	Water BBLs	REMARKS (Maximum length 110 characters)
8/1/2015		45	58		43	6.5	9.5	0	17
8/2/2015		45	58		43	6.5	9.5	0	17
8/3/2015		46	59		43	6.5	9.5	0	17
8/4/2015		45	58		43	6.5	9.5	0	17
8/5/2015		44	57		43	6.5	9.5	0	17
8/6/2015		44	57		43	6.5	9.5	0	17
8/7/2015		45	58		43	6.5	9.5	0	17
8/8/2015		45	58		43	6.5	9.5	0	17
8/9/2015		47	60		43	6.5	9.5	0	17
8/10/2015		49	62		43	6.5	9.5	0	17
8/11/2015		49	62		43	6.5	9.5	0	17
8/12/2015		50	63		43	6.5	9.5	0	17
8/13/2015		50	63		43	6.5	9.5	0	17
8/14/2015		50	63		43	6.5	9.5	0	17
8/15/2015		50	63		43	6.5	9.5	0	17
8/16/2015		52	65		43	6.5	9.5	0	17
8/17/2015		50	63		44	6.5	9.5	0	17
8/18/2015		50	63		44	6.5	9.5	0	17
8/19/2015		51	64		43	6.5	9.5	0	17
8/20/2015		50	63		44	6.5	9.5	0	17
8/21/2015		50	63		43	6.5	9.5	0	17
8/22/2015		51	64		43	6.5	9.5	0	17
8/23/2015		51	64		43	6.5	9.5	0	17
8/24/2015		51	64		43	6.5	9.5	0	17
8/25/2015		51	64		43	6.5	9.5	0	17
8/26/2015		51	64		43	6.5	9.5	0	17
8/27/2015		49	62		44	6.5	9.5	0	17
8/28/2015		48	61		44	6.5	9.5	0	17
8/29/2015		50	63		43	6.5	9.5	0	17
8/30/2015		53	66		42	6.5	9.5	4	17
8/31/2015		55	68		42	6.5	9.5	0	17

Total

1336

527

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W353

Isernhagen 02-23

St. Francis

St. Francis

None

September-15

DATE	Tubing PSI	Casing PSI	STATIC	MCF	SPM	CYCLE	HRS DOWN	Water BBLs	REMARKS (Maximum length 110 characters)
9/1/2015		65	78	38	6.5	9.5	0	17	
9/2/2015		47	60	47	6.5	9.5	0	17	
9/3/2015		46	59	45	6.5	9.5	0	17	
9/4/2015		50	63	43	6.5	9.5	0	17	
9/5/2015		55	68	42	6.5	9.5	0	17	
9/6/2015		59	72	42	6.5	9.5	0	17	
9/7/2015		58	71	43	6.5	9.5	0	17	
9/8/2015		56	69	43	6.5	9.5	0	17	
9/9/2015		57	70	42	6.5	9.5	0	17	
9/10/2015		48	61	45	6.5	9.5	0	17	
9/11/2015		51	64	43	6.5	9.5	0	17	
9/12/2015		52	65	42	6.5	9.5	0	17	
9/13/2015		51	64	42	6.5	9.5	0	17	
9/14/2015		53	66	42	6.5	9.5	0	17	
9/15/2015		54	67	42	6.5	9.5	0	17	
9/16/2015		55	68	42	6.5	9.5	0	17	
9/17/2015		56	69	41	6.5	9.5	0	17	
9/18/2015		56	69	42	6.5	9.5	0	17	
9/19/2015		52	65	44	6.5	9.5	0	17	
9/20/2015		50	63	43	6.5	9.5	0	17	
9/21/2015		51	64	43	6.5	9.5	0	17	
9/22/2015		53	66	42	6.5	9.5	0	17	
9/23/2015		54	67	42	6.5	9.5	0	17	
9/24/2015		0	67	42	6.5	9.5	0	17	
9/25/2015		0	67	42	6.5	9.5	0	17	
9/26/2015		0	67	42	6.5	9.5	0	17	
9/27/2015		0	67	42	6.5	9.5	0	17	
9/28/2015		0	67	42	6.5	9.5	0	17	
9/29/2015		0	67	42	6.5	9.5	0	17	
9/30/2015		0	67	42	6.5	9.5	0	17	
10/1/2015		0	0	0	0	0	0	0	

Total

1274

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