

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

Type Test:

- Open Flow **AST**  
 Deliverability

(See Instructions on Reverse Side)

Test Date:  
6/12/2013

API No. 15  
15-023-20662 - 0000

Company Rosewood Resources		Lease Isernhagen		Well Number 22-25	
County Cheyenne	Location SENW/4	Section 25	TWP 3S	RNG (E/W) 41W	Acres Attributed 80
Field St. Francis		Reservoir Niobrara		Gas Gathering Connection Branch Systems Inc.	
Completion Date 3/10/2006		Plug Back Total Depth 1463'		Packer Set at	
Casing Size 4 1/2"	Weight 10.5#	Internal Diameter 4.052	Set at 1464'	Perforations 1280'	To 1316'
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? <input checked="" type="radio"/> Yes / No Pumping Unit	
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide		% Nitrogen	
Vertical Depth(H) 1316'		Pressure Taps Flange		(Meter Run) (Prover) Size 2"	
Pressure Buildup: Shut in 6-11 20 13 at 9:25 (AM) (PM) Taken 6-12 20 13 at 9:40 (AM) (PM)		Well on Line: Started 6-12 20 13 at 9:40 (AM) (PM) Taken 6-13 20 13 at 10:25 (AM) (PM)			

### OBSERVED SURFACE DATA

Duration of Shut-in **24** Hours

Static / Dynamic Property	Orifice Size (inches)	Circle one: Meter 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>1</sub> ) or (P <sub>c</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>1</sub> ) or (P <sub>c</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						130	144.4				
Flow						55	69.4			24	0

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>b</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 (Mcf/d)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>
						30		

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

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

(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>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>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: $\frac{P_c^2 - P_w^2}{P_c^2 - P_a^2}$	Backpressure Curve Slope = "n" ----- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability Equals R x Antilog (Mcf/d)

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 21 day of November, 20 13.

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*Jamall Martinez*  
For Company

Witness (if any)

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 Isernhagen 22-25 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: 11/21/13

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WICHITA, KS

Signature: \_\_\_\_\_

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.

W369

Isernhagen 22-25

St. Francis

St. Francis

None

June-13

DATE	Casing			HRS CYCLEDOWN	Water BBLs	REMARKS (Maximum length 110 characters)
	PSI	STATIC MCF	SPM			
6/1/2013	49	62	29	6	7	9
6/2/2013	53	66	29	6	7	10
6/3/2013	51	64	30	6	7	11
6/4/2013	50	63	30	6	7	9
6/5/2013	63	76	30	6	7	10 5 min bt
6/6/2013	67	80	30	6	7	10
6/7/2013	54	67	31	6	7	9
6/8/2013	54	67	31	6	7	10
6/9/2013	56	69	31	6	7	11
6/10/2013	57	70	31	6	7	2 8
6/11/2013	78	91	31	6	3	1 5 pu off hfp si for state test - cp 87
6/12/2013	73	86	0	6	0	24 0 reopened - cp 130
6/13/2013	57	70	38	6	3	5 restart pu
6/14/2013	61	74	33	6	7	11
6/15/2013	62	75	32	6	7	12
6/16/2013	63	76	32	6	7	11
6/17/2013	59	72	32	6	3	5 pu off
6/18/2013	52	65	30	6	0	0
6/19/2013	46	59	29	6	3	5 restart pu
6/20/2013	51	64	29	6	7	12
6/21/2013	67	80	30	6	7	9 5.75 min bt greased
6/22/2013	78	91	31	6	7	10
6/23/2013	82	95	31	6	3	5 pu off hfp
6/24/2013	78	91	30	6	0	0 calibrated meter
6/25/2013	81	94	28	6	0	0
6/26/2013	80	93	27	6	0	0
6/27/2013	72	85	27	6	7	5 restart pu
6/28/2013	67	79	28	6	7	10
6/29/2013	55	68	29	6	7	9
6/30/2013	54	67	30	6	7	8
7/1/2013						

Total

879

219

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Isernhagen 22-25

St. Francis

St. Francis

None

July-13

DATE	Casing PSI	STATIC MCF	SPM	HRS CYCLIDOWN	Water BBLs	REMARKS (Maximum length 110 characters)
7/1/2013	55	68	30	6	7	9
7/2/2013	55	68	31	6	7	9
7/3/2013	55	68	31	6	7	8
7/4/2013	56	69	31	6	7	10
7/5/2013	55	68	31	6	7	9 treated well
7/6/2013	58	71	31	6	7	7
7/7/2013	70	83	31	6	7	8
7/8/2013	68	81	31	6	7	10 5.25 min bt
7/9/2013	68	81	31	6	7	11
7/10/2013	60	73	32	6	7	8
7/11/2013	62	75	32	6	7	9
7/12/2013	69	82	32	6	4	6 shut pumping unit off hfp
7/13/2013	76	89	30	6	0	2.5 0
7/14/2013	78	91	28	6	0	0
7/15/2013	58	71	27	6	4	5 started pu
7/16/2013	57	70	28	6	7	10 5.25 min bt greased
7/17/2013	53	66	29	6	7	11
7/18/2013	80	93	29	6	4	5 pu off hfp
7/19/2013	72	85	29	6	0	0
7/20/2013	74	87	27	6	0	0
7/21/2013	76	89	26	6	0	0
7/22/2013	73	86	25	6	0	0
7/23/2013	64	77	25	6	4	5 restart pu
7/24/2013	73	86	26	6	7	11
7/25/2013	79	92	28	6	4	5 pu off hfp
7/26/2013	61	74	27	6	4	5 restart pu
7/27/2013	57	70	27	6	7	11
7/28/2013	58	71	28	6	7	12
7/29/2013	57	70	29	6	7	10
7/30/2013	57	70	29	6	4	3.5 5 pu off hfp
7/31/2013	87	100	24	6	0	5.5 0

Total

895

199

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Isernhagen 22-25

St. Francis

St. Francis

None

August-13

DATE	Casing			HRS CYCLEDOWN	Water BBLs	REMARKS (Maximum length 110 characters)
	PSI	STATIC MCF	SPM			
8/1/2013	78	91	28	6		
8/2/2013	78	91	26	6		
8/3/2013	77	90	26	6		
8/4/2013	74	87	24	6		
8/5/2013	67	80	24	6		
8/6/2013	55	68	24	6	2	5 restart pu
8/7/2013	51	64	24	6	4	10
8/8/2013	55	68	26	6	4	11
8/9/2013	59	72	27	6	4	10
8/10/2013	56	69	27	6	4	11
8/11/2013	54	67	28	6	4	12
8/12/2013	55	68	28	6	4	10
8/13/2013	54	67	28	6	4	5 5.25 min bt greased
8/14/2013	55	68	28	6	4	6
8/15/2013	55	68	29	6	4	0.5 4
8/16/2013	66	79	29	6	4	7
8/17/2013	66	79	29	6	4	8
8/18/2013	66	79	29	6	4	9
8/19/2013	67	80	29	6	2	1.5 3
8/20/2013	78	91	28	6	0	1 0
8/21/2013	87	100	26	6	0	0
8/22/2013	90	103	24	6	0	5 0
8/23/2013	74	87	25	6	0	0
8/24/2013	83	96	24	6	0	1 0
8/25/2013	89	102	23	6	0	1 0
8/26/2013	55	68	23	6	2	3 started pumping unit
8/27/2013	52	65	24	6	4	5
8/28/2013	51	64	25	6	4	7
8/29/2013	79	92	30	6	2	1 3 pu off hfp
8/30/2013	86	99	25	6	0	0
8/31/2013	86	99	24	6	0	0

Total

814

129

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