

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

(See Instructions on Reverse Side)

Type Test:

- Open Flow **BSI**  
 Deliverability

Test Date:  
2/4/2010

API No. 15  
181-20347-00 ~ 00

Company Rosewood Resources		Lease Harden		Well Number 1-4	
County Sherman	Location SWNE	Section 4	TWP 7S	RNG (E/W) 39W	Acres Attributed 80
Field Goodland		Reservoir Niobrara		Gas Gathering Connection Branch Systems Inc.	
Completion Date 7/24/2004		Plug Back Total Depth 1198'		Packer Set at	
Casing Size 4 1/2"	Weight 10.5#	Internal Diameter 4.052	Set at 1211'	Perforations 1024'	To 1054'
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? Flowing	Yes / <input checked="" type="radio"/> No
Producing Thru (Annulus / Tubing) Annulus	% Carbon Dioxide	% Nitrogen	Gas Gravity - G <sub>g</sub> .6
Vertical Depth(H) 1054'	Pressure Taps Flange	(Meter Run) (Prover) Size 2"	
Pressure Buildup: Shut in 2-3	20 10 at 2:35	(AM) <input checked="" type="radio"/> Taken 2-4	20 10 at 2:50 (AM) <input checked="" type="radio"/>
Well on Line: Started 2-4	20 10 at 2:50	(AM) <input checked="" type="radio"/> Taken 2-5	20 10 at 3:35 (AM) <input checked="" type="radio"/>

### OBSERVED SURFACE DATA

Duration of Shut-in 72 Hours

Static / Dynamic Property	Orifice Size (inches)	Circle one: Meter 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>e</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>i</sub> ) or (P <sub>e</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-in						10	24.4				
Flow						13	27.4			72	0

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>s</sub> ) (F <sub>a</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>
						14		

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

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

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

(P <sub>e</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup> or (P <sub>e</sub> ) <sup>2</sup> - (P <sub>o</sub> ) <sup>2</sup>	(P <sub>e</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	Choose formula 1 or 2: 1. P <sub>e</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> 2. P <sub>e</sub> <sup>2</sup> - P <sub>o</sub> <sup>2</sup> divided by: P <sub>e</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>	LOG of formula 1. or 2. and divide by: P <sub>e</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>	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 16 day of December, 20 10

\_\_\_\_\_  
Witness (if any)      Gannell Grew  
For Company

\_\_\_\_\_  
For Commission      \_\_\_\_\_  
Checked by

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JAN 26 2011

CONSERVATION DIVISION  
WICHITA, KS

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 Harden 1-4 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: 12/16/10

Signature: Jannell Gerwe  
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.

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CONSERVATION DIVISION  
WICHITA, KS

W403  
 Harden 1-4  
 North Goodland  
 Goodland  
 None  
 February-10

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
2/1/2010	10	23	5	0	10psi, 7:48am
2/2/2010	10	23	1	22	
2/3/2010	12	25	0	24	
2/4/2010	13	26	0	24	
2/5/2010	13	26	16	0	
2/6/2010	12	25	10	1.5	
2/7/2010	11	24	10	1	
2/8/2010	10	23	11	0	
2/9/2010	11	24	2	18	
2/10/2010	13	26	0	24	
2/11/2010	13	26	0	24	
2/12/2010	14	27	0	15	
2/13/2010	15	28	0	24	
2/14/2010	15	28	0	12	
2/15/2010	16	29	0	18	
2/16/2010	16	29	0	8	
2/17/2010	15	28	5	8	
2/18/2010	14	27	6	8	cd
2/19/2010	14	27	6	6	
2/20/2010	13	26	10	5	
2/21/2010	13	26	14	0	
2/22/2010	11	24	16	0	
2/23/2010	10	23	15	1	
2/24/2010	10	23	14	0	
2/25/2010	10	23	11	1.5	nb
2/26/2010	11	24	7	5.5	
2/27/2010	10	23	13	1	
2/28/2010	10	23	13	0	
3/1/2010	0	0	0	0	
3/2/2010	0	0	0	0	
3/3/2010	0	0	0	0	

Total

185

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CONSERVATION DIVISION  
 WICHITA, KS

W403  
 Harden 1-4  
 North Goodland  
 Goodland  
 None  
 March-10

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
3/1/2010	9	22		13	0
3/2/2010	9	22		14	0
3/3/2010	9	22		13	0
3/4/2010	9	22		11	0
3/5/2010	9	22		8	0
3/6/2010	9	22		14	0
3/7/2010	8	21		15	0
3/8/2010	8	21		14	0
3/9/2010	7	20		14	0
3/10/2010	7	20		13	0
3/11/2010	7	20		13	0 bp
3/12/2010	7	20		13	0
3/13/2010	7	20		13	0
3/14/2010	7	20		10	0
3/15/2010	7	20		13	0
3/16/2010	7	20		13	0
3/17/2010	7	20		13	0
3/18/2010	7	20		13	0
3/19/2010	7	20		12	0
3/20/2010	7	20		13	0
3/21/2010	6	19		13	0
3/22/2010	6	19		13	0 cal
3/23/2010	6	19		9	0
3/24/2010	6	19		12	0
3/25/2010	6	19		12	0
3/26/2010	6	19		11	0
3/27/2010	6	19		11	0
3/28/2010	6	19		12	0
3/29/2010	6	19		11	0
3/30/2010	6	19		11	0
3/31/2010	7	20		10	0

Total 380

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