

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

Type Test:

Open Flow **AST**  
 Deliverability

(See Instructions on Reverse Side)

Test Date:  
2/4/2010

API No. 15  
181-20490-01 - 00

Company: Rosewood Resources, Inc.      Lease: Wahrman      Well Number: 13-22H

County: Sherman      Location: NWSW      Section: 22      TWP: 7S      RNG (E/W): 39W      Acres Attributed: 80

Field: Goodland      Reservoir: Niobrara      Gas Gathering Connection: Branch Systems Inc.

Completion Date: 3/26/2007      Plug Back Total Depth: 3455'      Packer Set at:

Casing Size: 4 1/2"      Weight: 10.5#      Internal Diameter: 4.000      Set at: 3455'      Perforations: 3427'      To: 3442'

Tubing Size: NONE      Weight:      Internal Diameter:      Set at:      Perforations:      To:

Type Completion (Describe): Single (Horizontal)      Type Fluid Production: Dry Gas      Pump Unit or Traveling Plunger?: Yes  No

Producing Thru (Annulus / Tubing): Annulus      % Carbon Dioxide:      % Nitrogen:      Gas Gravity - G<sub>g</sub>: .6

Vertical Depth(H): 3480'      Pressure Taps: Flange      (Meter Run) (Prover) Size: 2"

Pressure Buildup: Shut in 2-3 20 10 at 10:30 (AM) (PM) Taken 2-4 20 10 at 10:45 (AM) (PM)  
Well on Line: Started 2-4 20 10 at 10:45 (AM) (PM) Taken 2-5 20 10 at 11:30 (AM) (PM)

### OBSERVED SURFACE DATA

Duration of Shut-in 72 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>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						36	50.4				
Flow						21	35.4			72	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>t</sub>	Deviation Factor F <sub>pv</sub>	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>
						21		

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(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>w</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> 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>d</sub> <sup>2</sup> 2. P <sub>c</sub> <sup>2</sup> - P <sub>w</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: $\frac{P_c^2 - P_w^2}{P_c^2 - P_w^2}$	Backpressure Curve Slope = "n" ----- 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)

For Commission

*Janell Gerwin*  
For Company

For Company

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 Wahrman 13-22H 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 Geved  
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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WICHITA, KS

W2395  
 Wahrmann 13-22H  
 North Goodland  
 Goodland  
 None  
 February-10

DATE	Casing		MCF	HRS		REMARKS (Maximum length 110 characters)
	PSI	STATIC		DOWN		
2/1/2010	12	25	18	0	cd	
2/2/2010	12	25	3	22		
2/3/2010	29	42	0	24		
2/4/2010	31	44	0	24		
2/5/2010	21	34	26	0		
2/6/2010	15	28	25	1.5		
2/7/2010	13	26	22	1		
2/8/2010	13	26	21	0		
2/9/2010	16	29	10	18		
2/10/2010	22	35	0	24		
2/11/2010	30	43	0	24	nb	
2/12/2010	24	37	4	15		
2/13/2010	36	49	0	24		
2/14/2010	27	40	6	12		
2/15/2010	25	38	5	18		
2/16/2010	21	34	2	8		
2/17/2010	22	35	19	8		
2/18/2010	19	32	21	8		
2/19/2010	18	31	19	6		
2/20/2010	16	29	20	5		
2/21/2010	14	27	24	0		
2/22/2010	12	25	23	0		
2/23/2010	11	24	20	1		
2/24/2010	11	24	19	0		
2/25/2010	12	25	21	1.5		
2/26/2010	14	27	17	5.5		
2/27/2010	12	25	22	1		
2/28/2010	11	24	21	0		
3/1/2010	0	0	0	0		
3/2/2010	0	0	0	0		
3/3/2010	0	0	0	0		

Total

388

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W2395  
 Wahrmann 13-22H  
 North Goodland  
 Goodland  
 None  
 March-10

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

Total

627

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