

KANSAS CORPORATION COMMISSION

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

(See Instructions on Reverse Side)

- Open Flow
 Deliverability

Test Date:
12/10/2009

API No. 15
15-199-20363 **0000**

Company Raven Resources, LLC		Lease Westfield		Well Number #1-1	
County Wallace County	Location NW/4 NW/4	Section 01	TWP 12S	RNG (E/W) 42W	Acres Attributed
Field		Reservoir Niobrara	Gas Gathering Connection Closed gathering system (West Kansas Pipeline)		
Completion Date 8/2008		Plug Back Total Depth 991.34'	Packer Set at		
Casing Size 4 1/2"	Weight 10.5	Internal Diameter	Set at 1033.34'	Perforations 830' - 863'	To
Tubing Size 2 3/8"	Weight 4.7	Internal Diameter	Set at 825'	Perforations	To
Type Completion (Describe) CO2 Frac		Type Fluid Production	Pump Unit or Traveling Plunger? Yes / No No		
Producing Thru (Annulus / Tubing) Tubing		% Carbon Dioxide	% Nitrogen	Gas Gravity - G _g	
Vertical Depth(H) 1040'		Pressure Taps		(Meter Run) (Prover) Size .500"	
Pressure Buildup: Shut in 12-10 20 09 at 10 am (AM) (PM)		Taken 12-11 20 09 at 10 am (AM) (PM)			
Well on Line: Started 12-11 20 09 at 10 am (AM) (PM)		Taken 12-12 20 09 at 10 am (AM) (PM)			

OBSERVED SURFACE DATA

Duration of Shut-in 24 Hours

Static / Dynamic Property	Orifice Size (inches)	Pressure Differential in Inches H ₂ O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P _w) or (P _i) or (P _c)		Tubing Wellhead Pressure (P _w) or (P _i) or (P _c)		Duration (Hours)	Liquid Produced (Barrels)
					psig	psia	psig	psia		
Shut-in	.500	16	0		5		5		24	0
Flow	.500	16.4	3		2		2		24	0

FLOW STREAM ATTRIBUTES

Plate Coefficient (F _b) (F _v) Mcfd	Circle one: Meter or Prover Pressure psia	Press Extension $\sqrt{P_m \times h}$	Gravity Factor F _g	Flowing Temperature Factor F _{tt}	Deviation Factor F _{pv}	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G _m

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = _____ : (P_w)² = _____ : P_d = _____ % (P_c - 14.4) + 14.4 = _____ : (P_a)² = 0.207
(P_d)² = _____

(P _c) ² - (P _a) ² or (P _c) ² - (P _d) ²	(P _c) ² - (P _w) ²	Choose formula 1 or 2: 1. P _c ² - P _a ² 2. P _c ² - P _d ² divided by: P _c ² - P _w ²	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.

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KANSAS CORPORATION COMMISSION

_____ day of _____, 20____.

Witness (if any) _____ For Company _____

For Commission _____ Checked by _____

MAY 20 2010
CONSERVATION DIVISION
WICHITA, KS

KANSAS CORPORATION COMMISSION

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

- Open Flow
 Deliverability

(See Instructions on Reverse Side)

Test Date:

API No. 15

Company		Lease <i>Westfield</i>			Well Number <i>1-1</i>
County <i>Wallace</i>	Location	Section <i>1</i>	TWP <i>12S</i>	RNG (E/W) <i>429N</i>	Acres Attributed
Field		Reservoir <i>Nebraska</i>	Gas Gathering Connection		
Completion Date <i>8-5-08</i>		Plug Back Total Depth <i>991.34'</i>		Packer Set at	
Casing Size <i>4 1/2"</i>	Weight <i>10.5</i>	Internal Diameter	Set at <i>1033.34'</i>	Perforations <i>830-863'</i>	To
Tubing Size <i>2 7/8"</i>	Weight <i>4.7</i>	Internal Diameter	Set at <i>825'</i>	Perforations	To
Type Completion (Describe) <i>CO2 Frac</i>		Type Fluid Production		Pump Unit or Traveling Plunger? Yes / <input checked="" type="checkbox"/> No	
Producing Thru (Annulus / Tubing) <i>Tubing</i>		% Carbon Dioxide	% Nitrogen	Gas Gravity - G _g	

Vertical Depth (ft)	Pressure Taps	(Meter Run) (Prover) Size <i>.500</i>
Pressure Buildup: Shut in <i>12-10</i> 20 09 at <i>10:00</i> (<input checked="" type="checkbox"/> PM) Taken <i>12-11</i> 20 09 at <i>10:00</i> (<input checked="" type="checkbox"/> PM)		
Well on Line: Started <i>12-11</i> 20 09 at <i>10:00</i> (<input checked="" type="checkbox"/> PM) Taken <i>12-12</i> 20 09 at <i>10:00</i> (<input checked="" type="checkbox"/> PM)		

OBSERVED SURFACE DATA

Duration of Shut-in *24* Hours

Static / Dynamic Property	Orifice Size (inches)	Circ. or. Prover Pressure psig (Pm)	Pressure Differential in inches H ₂ O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P _w) or (P _c) or (P _e)		Tubing Wellhead Pressure (P _w) or (P _c) or (P _e)		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-in	<i>.500</i>	<i>16</i>	<i>0</i>			<i>5</i>		<i>5</i>		<i>24</i>	<i>0</i>
Flow	<i>.500</i>	<i>16.4</i>	<i>3</i>			<i>2</i>		<i>2</i>		<i>24</i>	<i>0</i>

FLOW STREAM ATTRIBUTES

Plate Coefficient (F ₀) (F ₁) Mcfd	Circ. or. Meter or Prover Pressure psia	Press Extension $\sqrt{P_m \times h}$	Gravity Factor F _g	Flowing Temperature Factor F _t	Deviation Factor F _{pv}	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G _g

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_w)² = 0.207

(P _c) ² = _____	(P _w) ² = _____	P ₀ = _____ %	(P _w - 14.4) + 14.4 = _____	(P _w) ² = _____			
(P _c) ² - (P _w) ² or (P _c) ² - (P _w) ²	(P _w) ² - (P _w) ²	Choose formula 1 or 2: 1. P _c ² - P _w ² 2. P _c ² - P _w ² divide by: P _c ² - P _w ²	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 14 day of May, 20 10.

Witness (if any) *[Signature]*
For Commission For Company

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KANSAS CORPORATION COMMISSION

MAY 20 2010

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 Raven Resources, LLC 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 Westfield 1-1 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: 5/18/10

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MAY 20 2010

CONSERVATION DIVISION
WICHITA, KS

Signature: [Signature]

Title: [Signature]

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.

TO: DAVID
FROM: LINDA
DATE: May 17, 2010
RE: KANSAS CORPORATION COMMISSION
FORM(S) G-2

David – These forms were due to be filed at the Kansas Corporation Commission on or before May 5, 2010. Justin sent his work to me Friday and I completed the forms. However, you need to sign them before we can submit to the KCC.

Please sign and date all of them where indicated (including your "title") and return them to me; I'll make copies and then forward to KCC. I have been in contact with the KCC Conservation Division Analyst – he is aware that they are ready to file and are just waiting on your signature.

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