

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

Type Test

(See Instructions on Reverse Side)

- Open Flow  
 Deliverability

Test Date  
9/12 to 9/13/14

API No 15-119-21,070-0000  
~~15-20,225-0000~~

Company <b>Benchmark Energy, LLC</b>			Lease Reimer		Well Number 1-29
County Meade	Location SWSW	Section 29	TWP 32S	RNG (E/W) 27W	Acres Attributed
Field		Reservoir Morrow/Chester		Gas Gathering Connection DCP	
Completion Date 1/27/05		Plug Back Total Depth 5946		Packer Set at 5598	
Casing Size	Weight	Internal Diameter	Set at 6000	Perforations 5635	To 5680
Tubing Size 2.375	Weight	Internal Diameter	Set at 5598	Perforations	To
Type Completion (Describe) single		Type Fluid Production SW		Pump Unit or Traveling Plunger? Yes / No No	
Producing Thru (Annulus / Tubing) tubing		% Carbon Dioxide		% Nitrogen	Gas Gravity - G <sub>g</sub> .650 est
Vertical Depth(H)		Pressure Taps flange			(Meter Run) (Prover) Size 2"
Pressure Buildup	Shut in 9/09	20 14	at 10:45 am	(AM) (PM) Taken 9/12	20 14 at 10:45 am (AM) (PM)
Well on Line	Started 9/12	20 14	at 10:45 am	(AM) (PM) Taken 9/13	20 14 at 10:45 am (AM) (PM)

**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>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								59.5	73.9	72	
Flow	.625	47	1	72				48.4	62.8	24	

**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>
1 914	61.4	7.835	1.240	9887	-----	18		

**(OPEN FLOW) (DELIVERABILITY) CALCULATIONS**

(P<sub>c</sub>)<sup>2</sup> = 5.461      (P<sub>w</sub>)<sup>2</sup> = 3.943      P<sub>d</sub> = \_\_\_\_\_ %      (P<sub>c</sub> - 14 4) + 14 4 = \_\_\_\_\_      (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>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 $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_a^2} \right]$	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)
5.254	1 518	3.461	5392	.850	.4583	2.87	52
				assigned			

Open Flow 52 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 14th day of September, 20 14

\_\_\_\_\_  
Witness (if any)

Received  
KANSAS CORPORATION COMMISSION

*Radica M. Wilson*  
For Company

\_\_\_\_\_  
For Commission

**OCT 09 2014**

*GLM, INC.*  
Checked by