

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

Type Test

- Open Flow  
 Deliverability

(See Instructions on Reverse Side)

Test Date  
9/12 to 9/13/14

API No 15  
145-20,225-00-00

Company <b>Benchmark Energy, LLC</b>		Lease <b>Gilkinson</b>			Well Number
County <b>Pawnee</b>	Location <b>SESWNWNW</b>	Section <b>15</b>	TWP <b>23S</b>	RNG (E/W) <b>16W</b>	Acres Attributed
Field <b>Zook</b>		Reservoir <b>Simpson Sand</b>		Gas Gathering Connection <b>Lumen</b>	
Completion Date <b>6/27/73</b>		Plug Back Total Depth <b>4140</b>		Packer Set at <b>3857</b>	
Casing Size <b>5.5</b>	Weight	Internal Diameter	Set at <b>4144</b>	Perforations <b>4030</b>	To <b>4040</b>
Tubing Size <b>2.375</b>	Weight	Internal Diameter	Set at <b>4024</b>	Perforations	To
Type Completion (Describe) <b>single</b>		Type Fluid Production <b>SW</b>		Pump Unit or Traveling Plunger? Yes / No <b>No</b>	
Producing Thru (Annulus / Tubing) <b>tubing</b>		% Carbon Dioxide <b>.2456</b>		% Nitrogen <b>7.8153</b>	
Vertical Depth(H)		Pressure Taps <b>flange</b>			(Meter Run) (Prover) Size <b>2"</b>
Pressure Buildup	Shut in <u>9/09</u>	20 <u>14</u>	at <u>2:00 pm</u>	(AM) (PM) Taken <u>9/12</u>	20 <u>14</u> at <u>2:00 pm</u> (AM) (PM)
Well on Line	Started <u>9/12</u>	20 <u>14</u>	at <u>2:00 pm</u>	(AM) (PM) Taken <u>9/13</u>	20 <u>14</u> at <u>2:00 pm</u> (AM) (PM)

### OBSERVED SURFACE DATA

Duration of Shut-in 72 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>i</sub> ) or (P <sub>c</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>i</sub> ) or (P <sub>c</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In								97.0	111.4	72	
Flow	375	59	6	81				80.0	94.4	24	

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>s</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 (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>
.6860	73.4	20.98	1.248	.9804	-----	18		

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

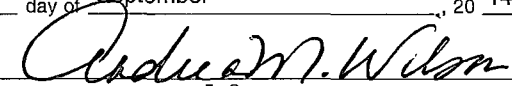
(P<sub>c</sub>)<sup>2</sup> = 12.409      (P<sub>w</sub>)<sup>2</sup> = 8.911      P<sub>d</sub> = \_\_\_\_\_ %      (P<sub>c</sub> - 14 4) + 14 4 = \_\_\_\_\_      (P<sub>a</sub>)<sup>2</sup> = 0.207  
(P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

(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 $P_c^2 - P_w^2$	Backpressure Curve Slope = "n" ----- or ----- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability Equals R x Antilog (Mcfd)
12.202	3.498	3.488	.5425	.850	.4611	2.89	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

Received  
KANSAS CORPORATION COMMISSION

  
 For Company  
**GLM, INC.**  
 Checked by

Witness (if any) \_\_\_\_\_  
For Commission \_\_\_\_\_

**OCT 09 2014**

CONSERVATION DIVISION  
WICHITA, KS