

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

Type Test:

(See Instructions on Reverse Side)

✓ Open Flow  
Deliverability

Test Date:  
9-5-15

API No. 15  
15-189-22839-0000

Company MIDWESTERN EXPLORATION CO.		Lease KING		Well Number 1-4	
County STEVENS	Location 990'FSL & 1650'FEL	Section 4	TWP 35S	RNG (E/W) 35W	Acres Atributed
Field LOWER MORROW		Reservoir DCP MIDSTREAM		Gas Gathering Connection	
Completion Date		Plug Back Total Depth 6350		Packer Set at NONE	
Casing Size 5.5	Weight 15.5	Internal Diameter 4.950	Set at 6684	Perforations 6220	To 6244
Tubing Size 2.375	Weight 4.7	Internal Diameter 1.995	Set at 6205	Perforations	To
Type Completion (Describe) SINGLE GAS		Type Fluid Production WATER		Pump Unit or Traveling Plunger? Yes / No NO	
Producing Thru (Annulus / Tubing) TUBING		% Carbon Dioxide 0.272		% Nitrogen 9.376	
Vertical Depth(ft) 6232		Pressure Taps FLANGE		(Meter Run) (Provert) Size 2.067"	
Pressure Buildup: Shut in 9-1-15 20 at 1300 (AM) (PM)		Taken 9-4-15 20 at 1300 (AM) (PM)			
Well on Line: Started 9-4-15 20 at 1300 (AM) (PM)		Taken 9-5-15 20 at 1300 (AM) (PM)			

### OBSERVED SURFACE DATA

Duration of Shut-in 72.0 Hours

Static Dynamic Property	Orifice Size (inches)	Circ. one Meter Prover Pressure psig (Pm)	Pressure Differential in Inches H <sub>2</sub> O	Flowing Temperature	Well Head Temperature	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						1123.3	1137.7	1128.1	1142.5	72.0	
Flow	1.250	13.7	24.9	83	75	332.3	346.7	148.9	163.3	24.0	12

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>p</sub> ) (I <sub>p</sub> ) Mcfd	Circ. 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 Liquid Gravity G <sub>L</sub>
8.3283	28.10	26.45	1.2004	0.9786	1.0022	259.3	NONE	0.694

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

$(P_c)^2 = 1294.4$       $(P_w)^2 = 120.2$       $P_d = 30.5$  %      $(P_c - 14.4) + 14.4 = 1137.7$       $(P_w)^2 = 0.207$   
 $(P_d)^2 =$

$(P_c)^2 - (P_w)^2$ or $(P_c)^2 - (P_d)^2$	$(P_c)^2 - (P_w)^2$	Choose formula 1 or 2: 1. $P_c^2 - P_w^2$ 2. $P_c^2 - P_d^2$ divided by $P_c^2 - P_w^2$	LOG of formula 1. or 2. and divide by: $P_c^2 - P_w^2$	Backpressure Curve Slope = "n" Assigned Standard Slope	n x LOG	Antilog	Open Flow Deliverability (Equals R x Antilog) (Mcfd)
1294.15	1174.16	1.102	0.0423	0.816	0.0345	1.0826	280.77

Open Flow 281     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 5th day of SEPTEMBER, 2015

Copy to KCC Wichita  
Witness (if any)

KCC WICHITA

SEP 21 2015

Precision Wireline & Testing  
For Company

Checked by: *Mark Bueh*

For Commission

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