

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

FORM G-2
(Rev.8/98)

TYPE TEST:

- Open Flow
 Deliverability

TEST DATE: 4/29/2015

API No. 15-145-21768 - 0000

Company Ritchie Exploration		Lease Concept			Well Number 3AB	
County Pawnee	Location 2242' FNL 598'		Section 3	TWP 22s	RNG (E/W) 18	Acres Attributed 640
Field wildcat	Reservoir Cong/Miss		Gas Gathering Connection SemGas			
Completion Date 1/9/2015		Plug Back Total Depth 4170		Packer Set at none		
Casing Size 4.500	Weight 10.500	Internal Diameter 4.052	Set at 4424	Perforations 4069	To 4123	
Tubing Size 2.375	Weight 4.700	Internal Diameter 1.995	Set at 4048	Perforations	To	
Type Completion (Describe) frac		Type Fluid Production oil/water		Pump Unit or Traveling Plunger? no		
Producing Thru (Annulus/Tubing) tubing		% Carbon Dioxide 0.110		% Nitrogen 11.040		
Gas Gravity- Gg 0.649						
Vertical Depth (H) 4096		Pressure Taps flange		Meter Run Size 3.068		
Pressure Buildup: Shut in 4/25 2015 @ 1050		TAKEN		4/28 2015 @ 1000		
Well on Line: Started 4/28 2015 @ 1000		TAKEN		4/29/2015 @ 1430		

OBSERVED SURFACE DATA

Static/ Dynamic Property	Orifice Size in.	Meter Pressure psig	Pressure Diff. In. H ₂ O	Flowing Temp. t.	WellHead Temp. t.	Casing WellHead Press. (P _w) (P _c) (P _c)		Tubing WellHead Press. (P _w) (P _c) (P _c)		Duration (Hours)	Liquid Prod. Barrels
						psig	psia	psig	psia		
Shut-in						1008	1022	902	916	71.2	
Flow	1.250	94.7	82.00	69		941	955	323	337	28.5	23.0

FLOW STREAM ATTRIBUTES

COEFFICIENT (F _b) Mcf/d	(METER) PRESSURE psia	EXTENSION $\sqrt{P_m \times H_w}$	GRAVITY FACTOR Fg	FLOWING TEMP FACTOR Ft	DEVIATION FACTOR Fpv	RATE OF FLOW R Mcf/d	GOR	G _m
7.771	109.1	94.58	1.2413	0.9915	1.0079	911	47070	0.736

(OPEN FLOW)(DELIVERABILITY) CALCULATIONS

(P_c)² = 1045.3 (P_w)² = 912.8 P_d = 9.2 % (P_c - 14.4) + 14.4 = (P_a)² = 0.207
(P_d)² = 8.76

$(P_c)^2 - (P_a)^2$ or $(P_c)^2 - (P_d)^2$	$(P_c)^2 - (P_w)^2$	$\frac{(P_c)^2 - (P_a)^2}{(P_c)^2 - (P_w)^2}$ or $\frac{(P_c)^2 - (P_d)^2}{(P_c)^2 - (P_w)^2}$	LOG	Backpressure Curve Slope "n" ---- or ---- Assigned Standard Slope	n x LOG	Antilog	Open Flow Deliverability = R x Antilog Mcf/d
1045.09	132.51	7.887	0.8969	0.701	0.6287	4.253	3877
1036.54	132.51	7.822	0.8933	0.701	0.6262	4.229	3855

OPEN FLOW 3877 Mcfd @ 14.65 psia DELIVERABILITY 3855 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 herein and that said report is true and correct. Executed this the 4 day of May, 20 15

Witness (if any)

For Commission

Received
KANSAS CORPORATION COMMISSION

MAY 06 2015

CONSERVATION DIVISION
WICHITA, KS

For Company

Checked by