

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

Type Test:

- Open Flow  
 Deliverability

(See Instructions on Reverse Side)

Test Date:  
09-13-2013

API No. 15  
057-20596-00-00

Company Ritchie Exploration, Inc.		Lease O' Slash-Hill Trust		Well Number #1	
County Ford	Location 30' N & 170' E of E/2 E/2 NE	Section 2	TWP 28	RNG (E/W) 23W	Acres Attributed 640
Field Steel		Reservoir Mississippian	Gas Gathering Connection Superior Pipeline		
Completion Date 07-12-10		Plug Back Total Depth 5164'	Packer Set at		
Casing Size 4.50"	Weight 10.5#	Internal Diameter 4.052"	Set at 5199'	Perforations 5054'	To 5068'
Tubing Size 2.375"	Weight 4.7#	Internal Diameter 1.995"	Set at 5110'	Perforations	To
Type Completion (Describe) New		Type Fluid Production 2.64 barrels water per day	Pump Unit or Traveling Plunger? Yes / No Yes		
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide 0.14	% Nitrogen 10.274	Gas Gravity - G <sub>g</sub> 0.672	
Vertical Depth(H) 5200'		Pressure Taps Flange		(Meter Run) (Prover) Size 3.068"	
Pressure Buildup: Shut in		09-12	20	13	at 10:00 AM (AM) (PM) Taken
Well on Line: Started		09-13	20	13	at 10:00 AM (AM) (PM) Taken

### OBSERVED SURFACE DATA

Duration of Shut-in \_\_\_\_\_ 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>e</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>i</sub> ) or (P <sub>e</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						450	471	450	471	24	
Flow											

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>v</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>dv</sub>	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>e</sub>)<sup>2</sup> = \_\_\_\_\_ : (P<sub>w</sub>)<sup>2</sup> = \_\_\_\_\_ : P<sub>o</sub> = \_\_\_\_\_ % (P<sub>e</sub> - 14.4) + 14.4 = \_\_\_\_\_ : (P<sub>e</sub>)<sup>2</sup> = 0.207  
(P<sub>o</sub>)<sup>2</sup> = \_\_\_\_\_

(P <sub>e</sub> ) <sup>2</sup> - (P <sub>o</sub> ) <sup>2</sup> or (P <sub>e</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	(P <sub>e</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	Choose formula 1 or 2: 1. P <sub>e</sub> <sup>2</sup> - P <sub>o</sub> <sup>2</sup> 2. P <sub>e</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> divided by: P <sub>e</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>	LOG of formula 1. or 2. and divide by: $\frac{P_e^2 - P_w^2}{P_e^2 - P_o^2}$	Backpressure Curve Slope = "n" ----- or ----- Assigned Standard Slope	n x LOG $\left[ \frac{P_e^2 - P_w^2}{P_e^2 - P_o^2} \right]$	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. Executed this the 16th day of September, 20 13.

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

\_\_\_\_\_  
For Company  
\_\_\_\_\_  
Checked by

**KCC WICHITA**

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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 Ritchie Exploration, Inc. 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.

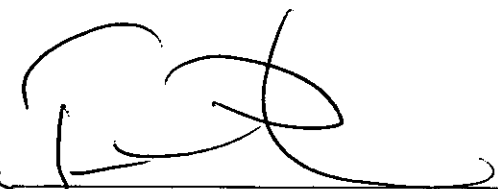
I hereby request a one-year exemption from open flow testing for the O' Slash-Hill Trust #1 gas well on the grounds that said well:

(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: 09-16-2013

Signature: 

Title: Production Manager

**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.

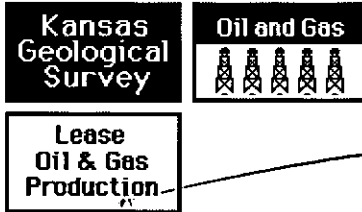
At some point during the current calendar year, wellhead shut-in pressure shall have been measured after a minimum of 24 hours shut-in/buildup time and shall be reported on the front side of this form under **OBSERVED SURFACE DATA**. Shut-in pressure shall thereafter be reported yearly in the same manner 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.

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**Yearly and monthly production**

Save Monthly Data to File

**O. Slash-Hill Trust 1 Lease**

**Lease:** O. Slash-Hill Trust 1  
**Operator:** Ritchie Exploration, Inc.  
**Location:** T28S, R23W, Sec. 2  
**KS Dept. of Revenue Lease Code:** 232275  
**Field:** Steel  
**County:** Ford  
**Producing Zone:**  
**Well Data:**

T28S R23W, Sec. 2, E2 E2 NE  
**Lease:** O. Slash-Hill Trust 1  
**Operator:** Ritchie Exploration, Inc.

15-057-20596

**Annual Gas Production, (mcf)**

**Sample Monthly Gas Production, (mcf)**

A49  
314  
297  
155  
79

Year	Production	Wells
<b>Production Charts</b>		
<b>Flash Chart</b>		
2010	57,583	1
2011	108,543	1
2012	56,566	1
2013	9,641	1

(Complete production available in file saved using blue button at top of page.)

Year	Month	Production	Wells	Purchaser
2010	7	6251	1	Superior Pipeline Co LCC (100%)
2010	8	9231	1	Superior Pipeline Co LCC (100%)
2010	9	8882	1	Superior Pipeline Co LCC (100%)
2010	10	12086	1	Superior Pipeline Co LCC (100%)

Updated through 4-2013.  
 Note: bbls is barrels; mcf is 1000 cubic feet.

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2010	11	10040	1	<u>Superior Pipeline Co LCC (100%)</u>
2010	12	11093	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	1	12505	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	2	9135	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	3	9980	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	4	11017	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	5	9860	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	6	9138	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	7	8904	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	8	8387	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	9	7918	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	10	7150	1	<u>Superior Pipeline Co LCC (100%)</u>

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2011	11	7967	1	<u>Superior Pipeline Co LCC (100%)</u>
2011	12	6582	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	1	7257	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	2	6590	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	3	6644	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	4	5946	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	5	5637	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	6	5984	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	7	6014	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	8	4520	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	9	3898	1	<u>Superior Pipeline Co LCC (100%)</u>
2012	10	1158	1	<u>Superior Pipeline Co LCC (100%)</u>

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2012	11	640	1	Superior Pipeline Co LCC (100%)
2012	12	2278	1	Superior Pipeline Co LCC (100%)
2013	1	1552	1	Superior Pipeline Co LCC (100%)
2013	2	1976	1	Superior Pipeline Co LCC (100%)
2013	3	2427	1	Superior Pipeline Co LCC (100%)
2013	4	3686	1	Superior Pipeline Co LCC (100%)

Pre-1987 cumulative data and monthly volume data is provided under license agreement to the KGS by IHS Energy. As such, it may be reviewed and used for public service and research purposes. It may not be downloaded or used for purposes of re-packaging, reselling or dissemination to third parties.

Kansas Geological Survey

Comments to [webadmin@kgs.ku.edu](mailto:webadmin@kgs.ku.edu)

URL=<http://www.kgs.ku.edu/Magellan/Field/lease.html>

Programs Updated May 23, 2005

Data from Kansas Dept. of Revenue files monthly.

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