

KANSAS CORPORATION COMMISSION

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

- ☐ Open Flow
☐ Deliverability

(See Instructions on Reverse Side)

Test Date:
9/24/14API No. 15
15-007-23185-0000

Company WOOLSEY OPERATING COMPANY, LLC			Lease HARBAUGH		Well Number E-1
County BARBER	Location 380' FSL & 2210' FEL	Section 23	TWP 34	RNG (E/W) 12W	Acres Attributed
Field STRANATHAN		Reservoir MISSISSIPPI		Gas Gathering Connection APC	
Completion Date 9/19/07		Plug Back Total Depth 5275		Packer Set at NONE	
Casing Size 4.500	Weight 10.500	Internal Diameter 4.052	Set at 5161	Perforations 4660	To 4780
Tubing Size 2.375	Weight 4.70	Internal Diameter 1.995	Set at 4813	Perforations OPEN	To
Type Completion (Describe) SINGLE		Type Fluid Production WATER		Pump Unit or Traveling Plunger? Yes / No PUMPING	
Producing Thru (Annulus / Tubing) ANNULUS		% Carbon Dioxide		% Nitrogen	Gas Gravity - G _g
Vertical Depth(H) 4720		Pressure Taps		(Meter Run) (Prover) Size	
Pressure Buildup: Shut in <u>9/23/14</u> 20 ____ at ____ (AM) (PM) Taken <u>9/24/14</u> 20 ____ at ____ (AM) (PM)					
Well on Line: Started ____ 20 ____ at ____ (AM) (PM) Taken ____ 20 ____ at ____ (AM) (PM)					

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 ₂ O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P _w) or (P ₁) or (P _c)		Tubing Wellhead Pressure (P _w) or (P ₁) or (P _c)		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						200		180		24	
Flow											

FLOW STREAM ATTRIBUTES

Plate Coefficient (F _p) (F _p) Mcfd	Circle one: Meter or Prover Pressure psia	Press Extension $\sqrt{P_m \times h}$	Gravity Factor F _g	Flowing Temperature Factor F _t	Deviation Factor F _{pv}	Metered Flow R (Mcfd)	GOR (Cubic Feet/Barrel)	Flowing Fluid Gravity G _m

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_s)² = 0.207(P_g)² = _____(P_c)² = _____ : (P_w)² = _____ : P_d = _____ % (P_c - 14.4) + 14.4 = _____ :

(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 _a 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: $\left[\frac{P_c^2 - P_w^2}{P_c^2 - P_a^2} \right]$	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)

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 27 day of OCTOBER, 20 14.

Witness (if any)

Received
KANSAS CORPORATION COMMISSION

For Company

For Commission

DEC 31 2014

CONSERVATION DIVISION
WICHITA, KS

Checked by

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 WOOLSEY OPERATING CO., LLC 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.

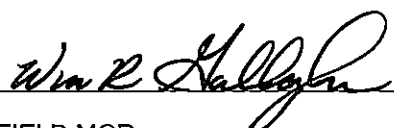
I hereby request a one-year exemption from open flow testing for the HARBAUGH E-1 gas well on the grounds that said well:

(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: 10/27/14

Signature: 
Title: FIELD MGR.

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.