

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

Type Test:

- Open Flow  
 Deliverability

(See Instructions on Reverse Side)

Test Date:

API No. 15  
1511910119 - 00 - 00

Company Pan Gas Storage Company LLC		Lease Nichols			Well Number A1-2
County Meade	Location C NWSW	Section 2	TWP 33S	RNG (E/W) 28W	Acres Attributed
Field Borchers North		Reservoir Mississippian		Gas Gathering Connection <b>DCP Midstream</b>	
Completion Date 8/15/62		Plug Back Total Depth 5784		Packer Set at 5678	
Casing Size 4.5	Weight 9.5	Internal Diameter 4.090	Set at 5784	Perforations 5717	To 5784
Tubing Size 2.375	Weight 4.7	Internal Diameter 1.995	Set at 5678	Perforations	To
Type Completion (Describe) <b>Single (Gas)</b>		Type Fluid Production <b>Saltwater</b>		Pump Unit or Traveling Plunger? Yes / <b>No</b>	
Producing thru (Annulus / Tubing) <b>Tubing</b>		% Carbon Dioxide		% Nitrogen	Gas Gravity - G <sub>g</sub>
Vertical Depth(H)		Pressure Taps		(Meter Run) (Prover) Size	

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Pressure Buildup: Shut in 2/22 20 11 at 9:55 AM (AM) (PM) Taken 2/28 20 11 at 8:00 AM (AM) (PM)  
Well on Line: Started 2/28 20 11 at 9:00 AM (AM) (PM) Taken 3/1 20 11 at 1:30 PM (AM) (PM)

**OBSERVED SURFACE DATA**

Duration of Shut-in \_\_\_\_\_ Hours

Static / Dynamic Property	Orifice Size (inches)	Circle one: Meter or Prover Pressure psig (P <sub>m</sub> )	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						271	285.4			over 24 hrs	
Flow						208	222.4			24	

**FLOW STREAM ATTRIBUTES**

Plate Coefficient (F <sub>s</sub> ) (F <sub>o</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>pv</sub>	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>
						120		

**(OPEN FLOW) (DELIVERABILITY) CALCULATIONS**

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

(P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup> or (P <sub>c</sub> ) <sup>2</sup> - (P <sub>d</sub> ) <sup>2</sup>	(P <sub>w</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>w</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: $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_w^2} \right]$	Backpressure Curve Slope = "n" ----- or ----- Assigned Standard Slope	n x LOG $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_w^2} \right]$	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 7 day of September, 20 2012.

\_\_\_\_\_  
Witness (if any)

Larry J. Jerbin PE  
For Company

\_\_\_\_\_  
For Commission

\_\_\_\_\_  
Checked by

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Form G-2  
(Rev. 7/03)

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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 Pan Gas Storage Company 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 Nichols A1-2 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: September 7, 2012

Signature: Larry J. Jenkins PE  
Title: Principal Petroleum Engineer

**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.

PAN GAS STORAGE COMPANY LLC  
5051 Westheimer Rd  
Houston, Texas 77056  
Room 1540

September 7, 2012

Jim Hemmen  
KCC Production Department  
Kansas Corporation Commission  
Finney State Office Building  
130 S. Market, Room 2078  
Wichita, KS 67202-3802

RE: G-2 Forms for the Nichols "A"1-2 and the Friesen 2-3 Gas Wells

Dear Mr. Hemmen:

Please find enclosed G-2 forms for the following wells for 2011.

Nichols "A" 1-2 gas well, Sec 2-33S-28W, Meade County, API No. 15119-10119  
Friesen 2-3 gas well, Sec 3-33S-28W, Meade County, API No. 15119-20498

We are requesting a one year exemption from flow testing on both wells as neither well is capable of producing at a daily rate in excess of 250 Mcf/d.

If there are any questions or additional information is required, please contact me at the numbers listed below or by e-mail.

Respectfully,



Larry Jenkins, PE  
Principal Petroleum Engineer  
713-989-7484  
713-989-1135 fax  
[Larry.jenkins@sug.com](mailto:Larry.jenkins@sug.com)

Word/KCC G-2 Cover letter 2011.doc

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