

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas  
Well Operator's Report of Well Work

DATE: 10-18-2012  
API #: 47-009-00119

Farm name: John Harwatt BRK 8H Operator Well No.: 834171

LOCATION: Elevation: 1135' Quadrangle: 247-Bethany

District: Buffalo County: Brooke  
Latitude: 2570 Feet South of 40 Deg. 12 Min. 30 Sec.  
Longitude 10210' Feet West of 80 Deg. 35 Min. 00 Sec.

Company: Chesapeake Appalachia, L.L.C.

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
P.O. Box 18496 Oklahoma City, OK 73154-0496	13 3/8"	391'	391'	477 Cu. Ft.
Agent: Eric Gillespie	9 5/8"	1799'	1799'	818 Cu. Ft.
Inspector: <b>Bill Hendershot</b>	5 1/2"	11184'	11184'	2588 Cu. Ft.
Date Permit Issued: 1-23-2012				
Date Well Work Commenced: 3-1-2012				
Date Well Work Completed: 7-18-2012				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 5999'				
Total Measured Depth (ft): 11190'				
Fresh Water Depth (ft.): 70', 300'				
Salt Water Depth (ft.): 1190'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 318'				
Void(s) encountered (N/Y) Depth(s) N				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 6,199'-11,048'

Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 909\* MCF/d Final open flow 122 Bbl/d  
Time of open flow between initial and final tests 37 Hours \*Calculated  
Static rock Pressure 3,899\* psig (surface pressure) after \_\_\_\_\_ Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_

Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

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I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Marlene Williams  
Signature

10-18-2012  
Date

Were core samples taken? Yes \_\_\_\_\_ No

Were cuttings caught during drilling? Yes \_\_\_\_\_ No

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list GR MWD from 5303'-11135' MD

**NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.**

Perforated Intervals, Fracturing, or Stimulating:

(See attached)

Plug Back Details Including Plug Type and Depth(s):

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			

(See attached)

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WYOMING SURVEY  
MONTGOMERY, WY

**PERFORATION RECORD ATTACHMENT**

Well Number and Name: 834171 John Harwatt BRK 8H

PERFORATION RECORD			STIMULATION RECORD							
Date	Interval Perforated		Date	Interval Treated		Fluid		Propping Agent		Average Injection
	From	To		Type	Amount	Type	Amount			
6/24/2012	10,509	11,048	7/13/2012	10,509	11,048	Sik wtr	12,813	Sand	626,260	80
7/13/2012	9,893	10,432	7/13/2012	9,893	10,432	Sik wtr	12,478	Sand	629,260	79
7/13/2012	9,278	9,816	7/14/2012	9,278	9,816	Sik wtr	12,560	Sand	625,500	78
7/14/2012	8,662	9,201	7/14/2012	8,662	9,201	Sik wtr	12,729	Sand	623,000	80
7/14/2012	8,046	8,585	7/15/2012	8,046	8,585	Sik wtr	12,766	Sand	622,460	80
7/15/2012	7,430	7,964	7/15/2012	7,430	7,964	Sik wtr	12,387	Sand	620,690	80
7/15/2012	6,815	7,349	7/18/2012	6,815	7,349	Sik wtr	12,418	Sand	625,500	80
7/18/2012	6,199	6,740	7/18/2012	6,199	6,740	Sik wtr	14,226	Sand	627,240	80

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 WYOMING GEOLOGICAL SURVEY  
 PERFORATION UNIT

**LATERAL SIDETRACK WELLBORE (no vertical pilot hole associated with this well)**

**Maximum TVD of wellbore: 5999 ft TVD @ 11190 ft MD**

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
LS/SS	0	0	318	318
PITTSBURG COAL	318	318	326	326
LS/SS	326	326	490	490
SH/SS	490	490	700	700
SS	700	700	1030	1030
SS/LS	1030	1030	1090	1090
SS	1090	1090	1360	1360
LS	1360	1360	1390	1390
SS/LS	1390	1390	1420	1420
SS/SH	1420	1420	1480	1480
BIG INJUN (SS)	1480	1480	1636	1636
SHALE	1636	1636	5810	5784
GENESEO (SH)	5810	5784	5828	5798
TULLY (LS)	5828	5798	5903	5853
HAMILTON (SH)	5903	5853	6112	5955
MARCELLUS (SH)	6112	5955		
TD OF LATERAL			11135	5998

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LATERAL WELLS