WR-35
Rev (9-11)

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

DATE: 4-23-2014
API #: 47-009-00111

FINAL

Farm name: Brooke County Park BRK 8H Operator Well No.: 834341

LOCATION: Elevation: 1206' Quadrangle: Stuebenville East

District: Buffalo County: Brooke
Latitude: 1740' Feet South of 40 Deg. 17 Min. 30 Sec.
Longitude 11350' Feet West of 80 Deg. 32 Min. 30 Sec.

Company: Chesapeake Appalachia, L.L.C.

Address: P.O. Box 18496	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Oklahoma City, OK 73154-0496	20"	120'	120'	202 Cu. Ft.
Agent: Eric Gillespie	13 3/8"	396'	396'	505 Cu. Ft.
Inspector: Bill Hendershot	9 5/8"	1758'	1758'	808 Cu. Ft.
Date Permit Issued: 11-18-2011	5 1/2"	10804'	10804'	2470 Cu. Ft.
Date Well Work Commenced: 1-15-2012				
Date Well Work Completed: 6-28-2012				
Verbal Plugging:				
Date Permission granted on:				
Rotary ☑ Cable ☐ Rig ☐				
Total Vertical Depth (ft): 6018'(cement plug @4980'-5979')				
Total Measured Depth (ft): 10807'				
Fresh Water Depth (ft.): 73', 250'				
Salt Water Depth (ft.): 1126'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 330'				
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) 6,240'-10,663'
Gas: Initial open flow 2,197* MCF/d Oil: Initial open flow 229 Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 48 Hours
Static rock Pressure 3,912* psig (surface pressure) after 48 Hours *Calculated

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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Environmental Protection

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.

Marlea Williams
Signature

4-23-2014
Date

05/23/2014

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Were core samples taken? Yes_____ No X_____ Were cuttings caught during drilling? Yes_____ No X_____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list GR, neutron, density, and resistivity
open hole logs run from 0' - 6,000' MD; LWD GR from 4,900' - 10,746' 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): Cement plug @4980'-5979'

Formations Encountered: Top Depth / Bottom Depth
Surface:

(See Attached)

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PERFORATION RECORD ATTACHMENT

Well Number and Name: 834341 Brooke County Park BRK 8H

PERFORATION RECORD			STIMULATION RECORD							
	Interval Perforated					*Fluid*		*Propping Agent*		Average
Date	From	To	Date	Interval Treated		Type	Amount	Type	Amount	Injection
6/2/2012	10,099	10,663	6/22/2012	10,099	10,663	Slk wtr	12,791	Sand	640,320	79.9
6/22/2012	9,456	10,020	6/22/2012	9,456	10,020	Slk wtr	12,920	Sand	640,860	79.9
6/22/2012	8,813	9,377	6/25/2012	8,813	9,377	Slk wtr	13,001	Sand	642,320	79.1
6/25/2012	8,169	8,734	6/25/2012	8,169	8,734	Slk wtr	12,735	Sand	636,400	80
6/25/2012	7,526	8,090	6/28/2012	7,526	8,090	Slk wtr	12,582	Sand	640,880	79.7
6/28/2012	6,883	7,447	6/28/2012	6,883	7,447	Slk wtr	12,833	Sand	635,720	80
6/28/2012	6,240	6,804	6/28/2012	6,240	6,804	Slk wtr	12,618	Sand	640,420	80

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VERTICAL PILOT HOLE

Formation/Lithology	Top Depth, TVD/MD (ft)	Bottom Depth, TVD/MD (ft)
LS/SHALE	0	330
PITTSBURG COAL	330	340
SHALE	340	1000
SS/SHALE	1000	1300
SHALE/LS/SS	1300	1340
BIG INJUN (SS)	1340	1624
SHALE	1624	5727
GENESEO (SH)	5727	5740
TULLY (LS)	5740	5801
HAMILTON (SH)	5801	5904
MARCELLUS (SH)	5904	5965
ONONDAGA (LS)	5965	
TD OF PILOT HOLE		6000

LATERAL SIDETRACK WELLBORE

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
LS/SHALE	0	0	330	330
PITTSBURG COAL	330	330	340	340
SHALE	340	340	1000	1000
SS/SHALE	1000	1000	1300	1300
SHALE/LS/SS	1300	1300	1340	1340
BIG INJUN (SS)	1340	1340	1624	1624
SHALE	1624	1624	5720	5711
GENESEO (SH)	5720	5711	5734	5724
TULLY (LS)	5734	5724	5804	5785
HAMILTON (SH)	5804	5785	5980	5896
MARCELLUS (SH)	5980	5896		
TD OF LATERAL			10807	6018

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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Fracture Date:	6/22/2012
State:	WEST VIRGINIA
County:	BROOKE
API Number:	4700900111
Operator Name:	CHESAPEAKE APPALACHIA LLC
Well Name and Number:	BROOKE COUNTY PARK BRK 8H
Longitude:	-80.548086
Latitude:	40.260476
Long/Lat Projection:	NAD27
Production Type:	GAS
True Vertical Depth (TVD):	6,017
Total Water Volume (gal)*:	3,795,246

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by Mass)**	Maximum Ingredient Concentration in HF Fluid (% by Mass)**	Comments
Fresh Water		Carrier/Base Fluid				79.59985%	
Recycled Produced Water		Carrier/Base Fluid				7.49572%	
Ottawa Sand		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00%	8.53373%	
100 Mesh Sand		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00%	3.67618%	
Acid, Hydrochloric 15pct	SCHLUMBERGER	Acid	Water	007732-18-5	85.00%	0.53297%	
			Hydrogen Chloride	007647-01-0	15.00%	0.09405%	
A264	SCHLUMBERGER	Corrosion Inhibitor	Methanol (Methyl Alcohol)	000067-56-1	40.00%	0.00040%	
			Aliphatic acid	N/A	30.00%	0.00030%	
			Aliphatic alcohols, ethoxylated # 1	N/A	30.00%	0.00030%	
			Propargyl Alcohol (2-Propynol)	000107-19-7	10.00%	0.00010%	
L058	SCHLUMBERGER	Iron Control Agent	Sodium Erythorbate	006381-77-7	100.00%	0.00036%	
EC6110A	NALCO	Anti-Bacterial Agent	Glutaraldehyde	000111-30-8	60.00%	0.01658%	
			Quaternary Ammonium Compounds	N/A	10.00%	0.00276%	
			Ethanol	000064-17-5	5.00%	0.00138%	

EC6629A	NALCO	Scale Inhibitor	No Hazardous Components	NONE		0.00000%	
B315	SCHLUMBERGER	Friction Reducer	Petroleum Distillate Hydrotreated Light	064742-47-8	30.00%	0.00979%	
			Aliphatic alcohol polyglycol ether	N/A	1.50%	0.00049%	

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* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

"Additional Ingredients Not Listed on MSDS" component information were obtained directly from the supplier. As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of this information should be directed to the supplier who provided it.

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