

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: 4-23-2012
API #: 47-009-00121

FINAL

Farm name: Alan H Degarmo BRK 8H Operator Well No.: 834315

LOCATION: Elevation: 1205' Quadrangle: 247-Bethany

District: Buffalo County: Brooke
Latitude: 8460' Feet South of 40 Deg. 15 Min. 00 Sec.
Longitude 3950' Feet West of 80 Deg. 32 Min. 30 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	20"	130'	130'	314 Cu. Ft.
Agent: <u>Eric Gillespie</u>	13 3/8"	336'	336'	471 Cu. Ft.
Inspector: <u>Bill Hendershot</u>	9 5/8"	1715'	1715'	780 Cu. Ft.
Date Permit Issued: <u>1-18-2012</u>	5 1/2"	12289'	12289'	3020 Cu. Ft.
Date Well Work Commenced: <u>4-14-2012</u>				
Date Well Work Completed: <u>7-11-2012</u>				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): <u>6023'</u>				
Total Measured Depth (ft): <u>12293'</u>				
Fresh Water Depth (ft.): <u>71', 248'</u>				
Salt Water Depth (ft.): <u>1120'</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>305'</u>				
Void(s) encountered (N/Y) Depth(s) <u>Y 305'</u>				

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

Producing formation Marcellus Pay zone depth (ft) 6,115'-12,149'
Gas: Initial open flow 2,315* MCF/d Oil: Initial open flow 194 Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 3,915* psig (surface pressure) after 24 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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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

4-23-2014
Date

05/23/2014

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Were core samples taken? Yes _____ No N

Were cuttings caught during drilling? Yes Y No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list _____
LWD GR from 5301'-12293' 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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PERFORATION RECORD ATTACHMENT

Well Number and Name: 8343 15 Alan H Degarmo BRK 8H

PERFORATION RECORD			STIMULATION RECORD							
Date	Interval Perforated		Date	Interval	Treated	Fluid		Propping Agent		Average Injection
	From	To				Type	Amount	Type	Amount	
6/17/2012	11,553	12,149	7/8/2012	11,553	12,149	Sik wtr	12,535	Sand	669,960	85
7/8/2012	10,873	11,469	7/8/2012	10,873	11,469	Sik wtr	12,344	Sand	668,200	85
7/8/2012	10,194	10,789	7/9/2012	10,194	10,789	Sik wtr	12,398	Sand	659,700	85
7/9/2012	9,514	10,110	7/9/2012	9,514	10,110	Sik wtr	12,439	Sand	669,320	85
7/9/2012	8,834	9,430	7/10/2012	8,834	9,430	Sik wtr	13,420	Sand	669,280	84
7/10/2012	8,154	8,750	7/10/2012	8,154	8,750	Sik wtr	12,401	Sand	670,030	85
7/10/2012	7,475	8,070	7/11/2012	7,475	8,070	Sik wtr	13,178	Sand	669,260	83
7/11/2012	6,795	7,391	7/11/2012	6,795	7,391	Sik wtr	12,422	Sand	670,180	85
7/11/2012	6,115	6,711	7/11/2012	6,115	6,711	Sik wtr	12,167	Sand	661,480	86

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

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
SS/LS	0	0	305	305
Coal Void	305	305	315	315
SS/SH	315	315	570	570
SHALE	570	570	670	670
SHALE/SS	670	670	840	840
SS	840	840	1372	1372
BIG INJUN	1372	1372	1579	1579
SHALE	1579	1579	4480	4480
SHALE W/ MINOR SS	4480	4480	4530	4530
SHALE	4530	4530	5725	5693
GENESEO	5725	5693	5741	5706
TULLY	5741	5706	5823	5764
HAMILTON	5823	5764	6037	5865
MARCELLUS	6037	5865		
TD OF LATERAL			12293	6023

05/23/2014

Hydraulic Fracturing Fluid Product Component Information Disclosure

9-01121

Fracture Date:	7/8/2012
State:	WEST VIRGINIA
County:	BROOKE
API Number:	4700900121
Operator Name:	CHESAPEAKE APPALACHIA LLC
Well Name and Number:	ALAN H DEGARMO BRK 8H
Longitude:	-80.572137
Latitude:	40.246317
Long/Lat Projection:	NAD27
Production Type:	GAS
True Vertical Depth (TVD):	6,023
Total Water Volume (gal)*:	4,818,366

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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				79.67793%	
Recycled Produced Water		Carrier/Base Fluid				6.87385%	
Premium White		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00%	8.32755%	
100 Mesh Sand		Proppant	Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00%	4.50459%	
ACID, HYDROCHLORIC,	WEATHERFORD	Acid	Water	007732-18-5	85.00%	0.44670%	
			Hydrochloric Acid	007647-01-0	15.00%	0.07883%	
WIC-641L	WEATHERFORD	Iron Control Agent	Citric Acid	000077-92-9	70.00%	0.00412%	
WAI-251LC	WEATHERFORD	Corrosion Inhibitor	Ethylene Glycol	000107-21-1	60.00%	0.00066%	
			Dimethyl Formamide	000068-12-2	40.00%	0.00044%	
			Tar bases, quinoline derivs, benzyl chloride-qauternized	072480-70-7	13.00%	0.00014%	
			Branched-Ethoxylated Nonyl Phenol (Branched-Nonyl Phenol Ethoxylate)	068412-54-4	10.00%	0.00011%	

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			Cinnamaldehyde	000104-55-2	10.00%	0.00011%	
			2-Butoxyethanol (Ethylene Glycol Monobutyl Ether)	000111-76-2	7.00%	0.00008%	
			Isopropanol (Isopropyl Alcohol, Propan-2-ol)	000067-63-0	7.00%	0.00008%	
			Triethyl Phosphate	000078-40-0	7.00%	0.00008%	
EC6110A	NALCO	Anti-Bacterial Agent	Glutaraldehyde	000111-30-8	60.00%	0.01501%	
			Quaternary Ammonium Compounds	N/A	10.00%	0.00250%	
			Ethanol	000064-17-5	5.00%	0.00125%	
EC6629A	NALCO	Scale Inhibitor	No Hazardous Components	NONE		0.00000%	
WFR-61LA	WEATHERFORD	Friction Reducer	Petroleum Distillate Hydrotreated Light	064742-47-8	40.00%	0.02151%	
			Sodium Chloride	007647-14-5	10.00%	0.00538%	
			Alcohols ethoxylated C12-16	068551-12-2	7.00%	0.00376%	
			Quaternary Ammonium Chloride (Ammonium Chloride)	012125-02-9	7.00%	0.00376%	
Additional Ingredients Not Listed on MSDS							
EC6110A, EC6629A	NALCO	Anti-Bacterial Agent, Scale Inhibitor	Methanol (Methyl Alcohol)	000067-56-1			
			Proprietary Acrylate Polymer	TRADE SECRET			
			Proprietary Quaternary Ammonium Salt	TRADE SECRET			
			Water	007732-18-5			
WAI-251LC, WFR-61LA, WIC-641L	WEATHERFORD	Corrosion Inhibitor, Friction Reducer, Iron Control Agent	Proprietary Alcohol	TRADE SECRET			
			Proprietary Ethoxylated Nonylphenol	TRADE SECRET			
			Proprietary Friction Reducer Additive (WFR-61LA)	TRADE SECRET			
			Water	007732-18-5			

* 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.