

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

DATE: 9-7-2012  
API #: 47-061-01616

Farm name: Esther Clark 1H Operator Well No.: 832638

LOCATION: Elevation: 1424' Quadrangle: Hundred

District: Battelle County: Monongalia  
Latitude: 5490' Feet South of 39 Deg. 40 Min. 00 Sec.  
Longitude 5960' Feet West of 80 Deg. 22 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"	110'	110'	106 Cu. Ft.
Agent: Eric Gillespie	13 3/8"	525'	525'	623 Cu. Ft.
Inspector: Sam Ward	9 5/8"	3660'	3660'	1852 Cu. Ft.
Date Permit Issued: 1-25-2011	5 1/2"	15657'	15657'	3357 Cu. Ft.
Date Well Work Commenced: 12-10-2011				
Date Well Work Completed: 3-26-2012				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft.): 7962'				
Total Measured Depth (ft.): 15674'				
Fresh Water Depth (ft.): 400'				
Salt Water Depth (ft.): None				
Is coal being mined in area (N/Y)? Y				
Coal Depths (ft.): 221', 1200'				
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) 8,349'-15,536'

Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 4011\* MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 77 Hours \*Calculated  
Static rock Pressure 5130\* 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

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

9-11-2012  
Date

12/14/2012

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

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

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list \_\_\_\_\_  
MWD IN LATERAL \_\_\_\_\_

**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):

<u>Formations Encountered:</u>	<u>Top Depth</u>	<u>/</u>	<u>Bottom Depth</u>
<u>Surface:</u>			

(See Attached)

**PERFORATION RECORD ATTACHMENT**

Well Number and Name: 832638 Esther Clark 1H

PERFORATION RECORD			STIMULATION RECORD							
Date	Interval Perforated		Date	Interval Treated	Fluid		Propping Agent		Average Injection	
	From	To			Type	Amount	Type	Amount		
2/15/2012	15,144	15,536	3/12/2012	15,144	15,536	Sik wtr	13,281	Sand	568,080	81
3/13/2012	14,658	15,051	3/14/2012	14,658	15,051	Sik wtr	9,916	Sand	569,480	76
3/14/2012	14,175	14,570	3/14/2012	14,175	14,570	Sik wtr	10,729	Sand	568,500	78
3/15/2012	13,688	14,080	3/16/2012	13,688	14,080	Sik wtr	10,270	Sand	571,840	77
3/16/2012	13,203	13,595	3/17/2012	13,203	13,595	Sik wtr	10,410	Sand	571,980	84
3/17/2012	12,717	13,113	3/18/2012	12,717	13,113	Sik wtr	10,526	Sand	571,880	76
3/18/2012	12,232	12,624	3/18/2012	12,232	12,624	Sik wtr	11,981	Sand	571,880	82
3/18/2012	11,747	12,139	3/19/2012	11,747	12,139	Sik wtr	10,706	Sand	570,900	80
3/19/2012	11,262	11,654	3/21/2012	11,262	11,654	Sik wtr	10,859	Sand	570,960	70
3/21/2012	10,776	11,169	3/21/2012	10,776	11,169	Sik wtr	16,450	Sand	571,720	50
3/22/2012	10,295	10,683	3/22/2012	10,295	10,683	Sik wtr	10,891	Sand	572,280	81
3/22/2012	9,806	10,198	3/23/2012	9,806	10,198	Sik wtr	10,638	Sand	570,180	84
3/23/2012	9,321	9,713	3/23/2012	9,321	9,713	Sik wtr	10,410	Sand	565,980	83
3/24/2012	8,835	9,228	3/25/2012	8,835	9,228	Sik wtr	9,979	Sand	565,250	85.8
3/26/2012	8,349	8,747	3/26/2012	8,349	8,747	Sik wtr	9,866	Sand	568,160	84.6

**LATERAL WELLBORE****Maximum TVD of wellbore: 7962 ft TVD @ 8370 ft MD**

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
SHALE	0	0	250	250
SANDSTONE/SHALE	250	250	500	500
SHALE	500	500	930	930
SANDSTONE	930	930	990	990
LIMESTONE/SHALE	990	990	1140	1140
COAL	1140	1140	1156	1156
COAL/LIMESTONE/SHALE	1156	1156	1240	1240
COAL	1240	1240	1260	1260
COAL/LIMESTONE/SHALE	1260	1260	1320	1320
SHALE	1320	1320	1600	1600
SANDSTONE/SHALE	1600	1600	2460	2460
BIG LIME	2640	2640	2550	2550
BIG INJUN SANDSTONE	2550	2550	2750	2750
SANDSTONE/SHALE	2750	2750	3210	3210
BEREA SANDSTONE	3210	3210	3550	3550
SHALE	3550	3550	4100	4100
SHALE/SANDSTONE	4100	4100	4580	4580
SHALE	4580	4580	7849	7749
GENESEO	7849	7749	7881	7775
TULLY	7881	7775	7911	7797
HAMILTON	7911	7797	8121	7914
MARCELLUS	8121	7914	15674	15674
TD	15674	7894		0