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:	11-25-2013	
API #:	47-069-00119	

Farm name: George Gantzer OHI 1H	Operator Wel	II No.: 834920		
LOCATION: Elevation: 1,244'	Quadrangle:	Valley Grove		
District: Tridelphia	County: Ohio			
Latitude: 4,790' Feet South of 40 Deg.	05 Min	. <u>00</u> Sec	<u>,</u>	
Longitude 13,940' Feet West of 80 Deg.	35Min	. 00 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"	118'	118'	365 Cu. Ft.
Agent: Eric Gillespie	13 3/8"	615'	615'	421 Cu. Ft.
Inspector: Gayne J. Knitowski & Bill Hendershot	9 5/8"	2,115'	2,115'	920 Cu. Ft.
Date Permit Issued: 4-1-2013	5 1/2"	13,232'	13,232'	3,171 Cu. Ft.
Date Well Work Commenced: 4-22-2013				
Date Well Work Completed: 10-8-2013				
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig				
Total Vertical Depth (ft): 6,508'				
Total Measured Depth (ft): 13,236'				
Fresh Water Depth (ft.): 178'				
Salt Water Depth (ft.): 750'				
Is coal being mined in area (N/Y)?				
Coal Depths (ft.): No				
Void(s) encountered (N/Y) Depth(s) Y 576'				
OPEN FLOW DATA (If more than two producing formation Producing formation Marcellus Pay zo Gas: Initial open flow MCF/d Oil: Initial open flow Final open flow MCF/d Final open flow Time of open flow between initial and final tests 120	one depth (ft)_6 owB	,623-13,085 ol/d	ta on separate sh	neet)
Static rock Pressure 4,122* psig (surface pressure) after	er 120 Hour	s *Calculated		
Second producing formation Pro-	- d4h (A)		RECE	
Second producing formation Pay zon Gas: Initial open flow MCF/d Oil: Initial open flo	e depth (ft) w Bh	ol/d	Office of O	il and Gas
Final open flow MCF/d Final open flow			DEC 0	9 . 2013
Time of open flow between initial and final tests	Hours		DEC U	0 60.0
Static rock Pressurepsig (surface pressure) after	erHour	'S	WV Depa	irtment of
I certify under penalty of law that I have personally examined at all the attachments and that, based on my inquiry of those individual that the information is true, accurate, and complete.	nd am familiar iduals immedia	with the info to tely responsible	AWING THE STATE OF	a this coefficient and the information I believe
Marley Will Signature	liana	_ #/*	<u>05-9-013</u> Date	

Were core samples taken? Yes	No_N Were o	cuttings caught during drilling?	Yes Y No
Were Electrical, Mechanical or Geophys LWD GR from 5552-13236' MD.	ical logs recorded on this well? If	yes, please list	
NOTE: IN THE AREA BELOW FRACTURING OR STIMULATING DETAILED GEOLOGICAL RECO COAL ENCOUNTERED BY THE W	, PHYSICAL CHANGE, ETC. ? RD OF THE TOPS AND BO	2). THE WELL LOG WHICH TTOMS OF ALL FORMAT	IS A SYSTEMATIC
Perforated Intervals, Fracturing, or Stimu	llating:		
ee attachment			
Plug Back Details Including Plug Type a	nd Depth(s):		
Formations Encountered: Surface:	Top Depth		Bottom Depth
See attachment			
			CEIVED of Oil and Gas
		DE	C 0 3 2013
		WV D	epartment of nental Protection

PERFORATION RECORD ATTACHMENT

Well Number and Name: 834920 George Gantzer OHI 1H

PERFO	PRATION RE	CORD				STIMULAT	ION RECOF	RD		
	Interval F	Perforated					luid		ing Agent	Average
Date	From	To	Date	Interval	Treated	Туре	Amount	Туре	Amount	Injection
8/30/2013	12,778	13,061	9/3/2013	12,778	13,061	Slk wtr	12,206	Sand	526,400	77
9/3/2013	12,436	12,719	9/3/2013	12,436	12,719	Slk wtr	9,652	Sand	528,200	77
9/3/2013	12,094	12,377	9/3/2013	12,094	12,377	Sik wtr	9,331	Sand	524,060	78
9/3/2013	11,752	12,035	9/3/2013	11,752	12,035	Sik wtr	9,508	Sand	526,460	79
9/3/2013	11,409	11,693	9/4/2013	11,409	11,693	Slk wtr	9,464	Sand	523,440	80
9/4/2013	11,067	11,351	9/4/2013	11,067	11,351	Slk wtr	9,471	Sand	526,380	80
9/4/2013	10,730	11,007	9/5/2013	10,730	11,007	Sik wtr	9,609	Sand	523,980	76
9/5/2013	10,383	10,667	9/5/2013	10,383	10,667	Slk wtr	9,199	Sand	521,440	80
9/5/2013	10,041	10,325	9/5/2013	10,041.	10,325	Sik wtr	9,630	Sand	529,400	80
9/5/2013	9,699	9,982	9/6/2013	9,699	9,982	Sik wtr	10,899	Sand	526,740	76
9/6/2013	9,357	9,640	9/6/2013	9,357	9,640	Slk wtr	11,093	Sand	524,980	74
9/6/2013	9,015	9,298	9/6/2013	9,015	9,298	Slk wtr	11,278	Sand	526,740	74
9/6/2013	8,673	8,956	9/6/2013	8,673	8,956	Slk wtr	11,468	Sand	527,920	73
9/7/2013	8,331	8,614	9/7/2013	8,331	8,614	Sik wtr	9,605	Sand	524,540	75.8
9/7/2013	7,988	8,272	9/7/2013	7,988	8,272	Slk wtr	9,749	Sand	525,140	79.4
9/7/2013	7,646	7,930	9/8/2013	7,646	7,930	Slk wtr	9,439	Sand	526,740	79
9/8/2013	7,304	7,588	9/8/2013	7,304	7,588	Slk wtr	9,474	Sand	526,360	77
9/8/2013	6,962	7,246	9/8/2013	6,962	7,246	Slk wtr	9,495	Sand	523,200	77
9/8/2013	6,623	6,906	9/8/2013	6,623	6,906	Sik wtr	9,272	Sand	527,620	79.5

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

Maximum TVD of wellbore: 6508 ft TVD @ 12677 ft MD

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
LS/SS	0	0	575	575
PITTSBURG COAL	575	575	585	585
LS/SHALE	585	585	700	700
SS	700	700	1200	1200
SHALE	1200	1200	1290	1290
SS	1290	1290	1750	1750
BIG LIME (LS)	1750	1750	1800	1800
BIG INJUN (SS)	1800	1800	2011	2011
SHALE	2011	2011	6237	6206
GENESEO (SH)	6237	6206	6266	6230
TULLY (LS)	6266	6230	6310	6262
HAMILTON (SH)	6310	6262	6519	6374
MARCELLUS (SH)	6519	6374		
TD OF LATERAL			13236	6341

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Hydraulic Fracturing Fluid Product Component Information Disclosure

8,245,331	Total Water Volume (gal)*:
6,388	True Vertical Depth (TVD):
GAS	Production Type:
NAD27	Long/Lat Projection:
40.045059	Latitude:
-80.600569	Longitude:
GANTZER OHI 1H	
GEORGE	Well Name and Number:
APPALACHIA LLC	
CHESAPEAKE	Operator Name:
4706900119	API Number:
OHIO	County:
WEST VIRGINIA	State:
9/3/2013	Fracture Date:

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	CHESAPEAKE ENERGY	Carrier/Base Fluid	Water	007732-18-5	100.00%	80.72326%	
Recycled Produced Water	CHESAPEAKE ENERGY	Carrier/Base Fluid	Water	007732-18-5	100.00%	6.11791%	
EC6110A	NALCO	Anti-Bacterial Agent Ethanol		000064-17-5	5.00%	0.00135%	
			Quaternary Ammonium	000111-30-8 NA	10.00%	0.01616%	
			Compounds				
EC6629A	NALCO	Scale Inhibitor	No Hazardous Components	NONE		0.00000%	
Northern White	SCHLUMBERGER	Proppant - Natural,	Crystalline silica	14808-60-7	98.10440%	13.08848%	
Sand, 100 Mesh		Acid, Gelling Agent,	Hydrogen chloride	7647-01-0	1.05127%	0.14025%	
Sand, Hydrochloric		Friction Reducer,		9000-30-0	0.59495%	0.07937%	
Acid, J580, J609,		Breaker, Cross	e, 2-acrylamido-2-	38193-60-1	0.07461%	0.00995%	
J218, J610, L058,		Linker, Iron Control	methylpropanesulfonic acid, sodium				
J475, A264		Agent, Corrosion	salt polymer				
		Inhibitor	Ammonium sulfate	7783-20-2	0.07051%	0.00941%	
			Sodium sulfate	7757-82-6	0.03048%	0.00407%	
			Diammonium peroxidisulphate	7727-54-0	0.02961%	0.00395%	

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Polymer of 2-acylamiclo-2- 136783-29-8 0.00789% 0.00107% salt and methyl acylate 0.713-9 0.00487% 0.00068		0.02591%		007732-18-5	Water			
Polymor of 2-aorylamido-2- methylproparesulfonic acid sodium salt and methyl acrylate G7-13-6 0.00799% 0.0006		0.00620%		TRADE SECRET		Inhibitor		
Polymer of 2-aorylamido-2- methyloppanesulfonic acid sodium salt and methyl acrylate Urea		0.00620%		TRADE SECRET	Proprietary Acrylate Polymer	Agent, Scale		EC6629A
amido-2- fonic acid sodium pylate 57-13-6 ide 1310-58-3 10.00491% 10.00066% ide 1310-58-3 10.004928% 10.00057% ide 1310-58-3 10.004928% 10.00057% 10.000378% 10.00039% 10.00009% 10.00009% 10.00009% 10.00009% 10.00009% 10.00001% 10.000001% 10.0000000000		0.00620%		000067-56-1		Anti-Bacterial	NALCO	EC6110A,
amido-2-fonic acid sodium 136793-29-8 0.00799% 0.00107% rylate 57-13-6 0.00491% 0.00066% ide 1310-58-3 0.00428% 0.00057% ie 6381-77-7 0.00408% 0.00056% ie 6381-77-7 0.00408% 0.00039% ie 6781-86-9 0.00234% 0.00039% ie 61790-12-3 0.00216% 0.00039% ie 61790-12-3 0.00216% 0.00039% ie 61790-12-3 0.00216% 0.00039% ie 61790-12-3 0.00216% 0.00039% ie 0.00237% 0.00029% 0.00029% ie 0.0024% 0.00029% 0.00029% ie 0.0024% 0.00029% 0.00029% ie 0.0024% 0.00029% 0.00029% ie 0.0024% 0.00029% 0.00024% ie 0.0024% 0.00029% 0.00001% ie 0.00289-7-2 0.00002% 0.00001%				t Listed on MSDS	Additional Ingredients No			
amido-2- fonic acid sodium 136793-29-8 0.00799% 0.00107% fonic acid sodium 57-13-6 0.00491% 0.00066% ryliate 57-13-6 0.00491% 0.00066% ide 1310-58-3 0.00428% 0.00057% ie 6381-77-7 0.00378% 0.00059% ie 67-56-1 0.00239% 0.00039% ca 7631-86-9 0.00233% 0.00031% i- 61790-12-3 0.00216% 0.00029% with 68527-49-1 0.00216% 0.00029% ethoxylated 68951-67-7 0.00083% 0.00011% s/methylacrylate 25038-72-6 0.00055% 0.00007% s/methylacrylate 64-02-8 0.00037% 0.00005% irracetate 64-02-8 0.00007% 0.00005% irracetate 64-02-8 0.00007% 0.00001% irracetate 67762-90-7 0.00001% <0.00001%		< 0.00001%	< 0.00001%	540-97-6	Dodecamethylcyclohexasiloxane			
amildo-2- fonic acid sodium rylate 136793-29-8 0.00799% 0.00107% tonic acid sodium rylate 57-13-6 0.00491% 0.00066% de 57-13-6 0.00491% 0.00057% de 1310-58-3 0.00428% 0.00059% 0.00057% de 6381-77-7 0.00294% 0.00039% 0.00039% ca 667-81-5 0.00233% 0.00039% 0.00039% ca 61790-12-3 0.00216% 0.00039% 0.00039% with 68527-49-1 0.00233% 0.00029% 0.00029% ethoxylated 68527-49-7 0.00083% 0.00011% 0.00029% ethoxylated 68951-67-7 0.00062% 0.00001% 0.00001% fraacetate 64743-02-8 0.00055% 0.00007% 0.00001% sand silicones 63148-62-9 0.00007% 0.00001% 0.00001% phydrate (taic) 14807-96-6 0.00007% 0.00001% 0.00001% phydrate (taic) 14807-96-6 0.00001% 0.00001% 0.000		< 0.00001%	< 0.00001%	541-02-6	Decamethyl cyclopentasiloxane			
sodium 136793-29-8 0.00799% 0.00107% 57-13-6 0.00491% 0.00066% 0.00066% 1310-58-3 0.00428% 0.00057% 0.00056% 6381-77-7 0.002378% 0.00050% 0.00056% 67-56-1 0.002378% 0.00033% 0.00033% 61790-12-3 0.00216% 0.00029% 0.00029% 68527-49-1 0.00178% 0.00024% 0.00029% d 68527-49-1 0.00178% 0.00024% 0.00029% rylate 25038-72-6 0.00062% 0.00007% 0.00007% 64743-02-8 0.000037% 0.00007% 0.00007% 64-02-8 0.00001% 0.00001% 64-02-8 0.00001% <0.00001%		< 0.00001%	0.00001%	1310-73-2	Sodium hydroxide			
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57-2- 136793-29-8 0.00799% 0.00107% acid sodium 57-13-6 0.00491% 0.00066% 1310-58-3 0.00428% 0.00057% 0.00057% 6381-77-7 0.00408% 0.00054% 0.00050% 67-56-1 0.00294% 0.00039% 0.00039% 7631-86-9 0.00233% 0.00031% 0.0029% 61790-12-3 0.00216% 0.00029% 0.00029% 68527-49-1 0.00178% 0.00024% 0.00024%	EC	Charles Control	Constitution of the Consti		3			
57-2- 136793-29-8 0.00799% 0.00107% acid sodium 57-13-6 0.00491% 0.00066% 1310-58-3 0.00428% 0.00057% 0.00057% 6381-77-7 0.00378% 0.00050% 0.0050% 67-56-1 0.00294% 0.00039% 0.00031% 7631-86-9 0.00233% 0.00029% 0.00029% 61790-12-3 0.00216% 0.00029% 0.00029%	0	0.00024%	0.00178%	68527-49-1	with			
0.00799% 0.00107% 136793-29-8 0.00799% 0.00107% 2010 sodium 57-13-6 0.00491% 0.00066% 1310-58-3 0.00428% 0.00057% 0.00057% 6381-77-7 0.00408% 0.00054% 0.00050% 56-81-5 0.00378% 0.00039% 0.00039% 67-56-1 0.00294% 0.00039% 0.00039% 7631-86-9 0.00233% 0.00031% 0.00031%	3	0.00029%	0.00216%	61790-12-3				
5-2- 136793-29-8 0.00799% 0.00107% acid sodium 57-13-6 0.00491% 0.00066% 1310-58-3 0.00428% 0.00057% 0.00057% 6381-77-7 0.00408% 0.00050% 0.00050% 56-81-5 0.00378% 0.00039% 0.00039%	UU	0.00031%	0.00233%	7631-86-9	talline silica			
5-2- 136793-29-8 0.00799% 0.00107% acid sodium 57-13-6 0.00491% 0.00066% 1310-58-3 0.00428% 0.00057% 0.00054% 6381-77-7 0.00408% 0.00054% 0.00050% 56-81-5 0.00378% 0.00050% 0.00050%	D	0.00039%	0.00294%	67-56-1				
2-2- 136793-29-8 0.00799% 0.00107% acid sodium 57-13-6 0.00491% 0.00066% 1310-58-3 0.00428% 0.00057% 6381-77-7 0.00408% 0.00054% 0.0054%		0.00050%	0.00378%	56-81-5				
2-2- 136793-29-8 0.00799% 0.00107% acid sodium 57-13-6 0.00491% 0.00066% 1310-58-3 0.00428% 0.00057%	-8	0.00054%	0.00408%	6381-77-7				
0.00799% 0.00107% acid sodium 57-13-6 0.00491% 0.00066%		0.00057%	0.00428%	1310-58-3				
0.00799% acid sodium		0.00066%	0.00491%	57-13-6				
lamido-2- 136793-29-8 0.00799% fonic acid sodium					salt and methyl acrylate			
136703 20 8 0 0 00700%		0.00	0.007.0070	100180-28-0	methylpropanesulfonic acid sodium			
		0 00107%	0 00799%	136793-29-8	Polymer of 2-acrylamido-2-			

* 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%

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