

Farm name: Gerald Gourley BRK 3H Operator Well No.: 835867

LOCATION: Elevation: 1,160' Quadrangle: Steubenville East, WV.

District: Cross Creek County: Brooke  
Latitude: 5,110' Feet South of 40 Deg. 20 Min. 00 Sec.  
Longitude 5,460' 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.
<u>P.O. Box 18496</u> <u>Oklahoma City, OK 73154-0496</u>	<u>20"</u>	<u>138'</u>	<u>138'</u>	<u>247 Cu. Ft.</u>
Agent: <u>Eric Gillespie</u>	<u>13 3/8"</u>	<u>575'</u>	<u>575'</u>	<u>640 Cu. Ft.</u>
Inspector: <u>Bill Hendershot</u>	<u>9 5/8"</u>	<u>1,570'</u>	<u>1,570'</u>	<u>696 Cu. Ft.</u>
Date Permit Issued: <u>8-30-2012</u>	<u>5 1/2"</u>	<u>11,100'</u>	<u>11,100'</u>	<u>1,061 Cu. Ft.</u>
Date Well Work Commenced: <u>11-3-2012</u>				
Date Well Work Completed: <u>7-18-2013</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>5,674'</u>				
Total Measured Depth (ft): <u>11,110'</u>				
Fresh Water Depth (ft.): <u>520'</u>				
Salt Water Depth (ft.): <u>676'</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>704'</u>				
Void(s) encountered (N/Y) Depth(s) <u>Y 704'</u>				

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

Producing formation Marcellus Pay zone depth (ft) 5,900-10,855

Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d

Final open flow 1,199\* MCF/d Final open flow 228 Bbl/d

Time of open flow between initial and final tests 72 Hours \*Calculated

Static rock Pressure 3,688\* psig (surface pressure) after 72 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.

Matthew Wellins  
Signature

2-26-15  
Date

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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 5020-11110' 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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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

2-26-15  
Date

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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 Name and Number: Gerald Gourley BRK 3H

API No. 47-009-00149

Stage	Date	Interval Perforated		Total Number Of Shots	Date	Interval Treated		Fluid		Propping Agent		Average Injection Rate
		From	To			Type	Amount	Type	Amount			
1	6/15/2013	10665	10855	42	6/15/2013	10665	10855	SLK Wtr	7415	Sand	473900	80
2	6/15/2013	10301	10604	42	6/15/2013	10301	10604	SLK Wtr	7607	Sand	474800	79.1
3	6/15/2013	9935	10238	42	6/15/2013	9935	10238	SLK Wtr	7568	Sand	476960	80.1
4	6/16/2013	9568	9871	42	6/16/2013	9568	9871	SLK Wtr	7647	Sand	474080	80
5	6/16/2013	9201	9504	42	6/16/2013	9201	9504	SLK Wtr	7428	Sand	471940	80
6	6/16/2013	8834	9137	42	6/16/2013	8834	9137	SLK Wtr	7515.4	Sand	476340	80
7	6/16/2013	8468	8761	42	6/16/2013	8468	8761	SLK Wtr	7516	Sand	476120	79.6
8	6/16/2013	8101	8404	42	6/16/2013	8101	8404	SLK Wtr	7305	Sand	472680	80
9	6/16/2013	7734	8037	42	6/16/2013	7734	8037	SLK Wtr	7554	Sand	478660	79.1
10	6/17/2013	7372	7670	42	6/17/2013	7372	7670	SLK Wtr	7350	Sand	475620	79
11	6/17/2013	7000	7303	42	6/17/2013	7000	7303	SLK Wtr	7559	Sand	472260	80
12	6/18/2013	6634	6937	42	6/18/2013	6634	6937	SLK Wtr	7421	Sand	470140	80
13	6/18/2013	6267	6570	42	6/18/2013	6267	6570	SLK Wtr	8798	Sand	474060	80
14	6/18/2013	5900	6207	42	6/18/2013	5900	6207	SLK Wtr	6833	Sand	475960	80

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

**Maximum TVD of wellbore:** 5674 ft TVD @ 5998 ft MD

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
SS	0	0	704	704
PITTSBURG COAL (VOID)	704	704	708	708
SS	708	708	758	758
COAL	758	758	766	766
SS	766	766	1110	1110
BIG LIME	1110	1110	1220	1220
BIG INJUN (SS)	1220	1220	1343	1343
SHALE	1343	1343	5545	5499
GENESEO (SH)	5545	5499	5565	5514
TULLY (LS)	5565	5514	5637	5564
HAMILTON (SH)	5637	5564	5785	5636
MARCELLUS (SH)	5785	5636		
TD OF LATERAL			11110	5614

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	6/15/2013
State:	WEST VIRGINIA
County:	BROOKE
API Number:	4700900149
Operator Name:	CHESAPEAKE APPALACHIA LLC
Well Name and Number:	GERALD GOURLEY BRK 3H
Longitude:	-80.55996
Latitude:	40.318357
Long/Lat Projection:	NAD27
Production Type:	GAS
True Vertical Depth (TVD):	5,674
Total Water Volume (gal)*:	4,724,160

## 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%	80.19879%	
Recycled Produced Water	CHESAPEAKE ENERGY	Carrier/Base Fluid	Water	007732-18-5	100.00%	4.83198%	
EC6110A	NALCO	Anti-Bacterial Agent	Ethanol Glutaraldehyde (Pentanediol) Quaternary Ammonium Compounds	000064-17-5 000111-30-8 NA	5.00% 60.00% 10.00%	0.00136% 0.01631% 0.00272%	
EC6629A	NALCO	Scale Inhibitor	No Hazardous Components	NONE		0.00000%	
Northern White Sand, 100 Mesh Sand, Acid	SCHLUMBERGER	Proppant - Natural, Acid, Gelling Agent, Friction Reducer, Iron Control Agent, Corrosion Inhibitor, Breaker	Crystalline silica Hydrogen chloride Acrylamide sodium acrylate copolymer	14808-60-7 7647-01-0 25085-02-3	98.47696% 0.99475% 0.21353%	14.78121% 0.14931% 0.03205%	
Hydrochloric, J580, J609, B315, L058, A264, J218			Distillates (petroleum), hydrotreated light	64742-47-8	0.19566%	0.02937%	
			Guar gum	9000-30-0	0.03984%	0.00598%	
			Alkylalcohol, ethoxylate >C10	68002-97-1	0.01155%	0.00173%	
			Sorbitan monooleate	1338-43-8	0.01005%	0.00151%	

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Acrylamide/ammonium acrylate copolymer	26100-47-0	0.00773%	0.00116%	
Thiocyanic acid, ammonium salt	1762-95-4	0.00560%	0.00084%	
Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.00535%	0.00080%	
Poly(oxyethylene) sorbitol monostearate	9005-67-8	0.00530%	0.00080%	
Ammonium sulfate	7783-20-2	0.00506%	0.00076%	
Ammonium chloride	12125-02-9	0.00483%	0.00072%	
Sodium erythorbate	6381-77-7	0.00393%	0.00059%	
Methanol	67-56-1	0.00372%	0.00056%	
Fatty acids, tall-oil	61790-12-3	0.00273%	0.00041%	
Diammonium peroxodisulphate	7727-54-0	0.00228%	0.00034%	
Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00225%	0.00034%	
Sodium sulfate	7757-82-6	0.00219%	0.00033%	
Alcohols, C14-15, ethoxylated (ZEO)	68951-67-7	0.00105%	0.00016%	
Ethoxylated oleic acid	9004-96-0	0.00097%	0.00014%	
Prop-2-yn-1-ol	107-19-7	0.00070%	0.00010%	
Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.00057%	0.00009%	
Alkenes, C>10 a-	64743-02-8	0.00046%	0.00007%	
Urea	57-13-6	0.00035%	0.00005%	
Sorbitol Tetraoleate	61723-83-9	0.00029%	0.00004%	
Sodium sulfoyanate	540-72-7	0.00025%	0.00004%	
2-Propenoic acid, ammonium salt	10604-69-0	0.00024%	0.00004%	
Non-crystalline silica	7631-86-9	0.00016%	0.00002%	
Alcohols, C12-C14, ethoxylated	68439-50-9	0.00014%	0.00002%	
Alcohols, C12-C16, ethoxylated	68551-12-2	0.00014%	0.00002%	
C14 alpha olefin ethoxylate	84133-50-6	0.00014%	0.00002%	
Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00008%	0.00001%	
2-propenamid	79-06-1	0.00004%	0.00001%	
Dimethyl siloxanes and silicones	63148-62-9	0.00001%	< 0.00001%	
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	< 0.00001%	< 0.00001%	
Octamethylcyclotetrasiloxane	556-67-2	< 0.00001%	< 0.00001%	
Sodium hydroxide	1310-73-2	< 0.00001%	< 0.00001%	
Decamethyl cyclopentasiloxane	541-02-6	< 0.00001%	< 0.00001%	
Dodecamethylcyclohexasiloxane	540-97-6	< 0.00001%	< 0.00001%	

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**Additional Ingredients Not Listed on MSDS**

EC6110A, EC6629A	NALCO	Anti-Bacterial Agent, Scale Inhibitor	Methanol (Methyl Alcohol)	000067-56-1		0.00607%	
			Proprietary Acrylate Polymer	TRADE SECRET		0.00607%	
			Proprietary Quaternary Ammonium Salt	TRADE SECRET		0.00607%	
			Water	007732-18-5		0.02636%	

\* 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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