

Farm name: OCC A OHI 10H Operator Well No.: 835237

LOCATION: Elevation: 1120' Quadrangle: Valley Grove 7.5

District: Triadelphia County: Ohio
Latitude: 4114' Feet South of 40 Deg. 05 Min. 00 Sec.
Longitude 1395' Feet West of 80 Deg. 35 Min. 00 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"	100'	100'	216 Cu. Ft.
Agent: Eric Gillespie	13 3/8"	498'	498'	437 Cu. Ft.
Inspector: Bill Hendershot	9 5/8"	1928'	1928'	797 Cu. Ft.
Date Permit Issued: 7-26-2012	5 1/2"	11524'	11524'	3216 Cu. Ft.
Date Well Work Commenced: 8-10-2012				
Date Well Work Completed: 5-12-2013				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 6269'				
Total Measured Depth (ft): 11524'				
Fresh Water Depth (ft.): 257'				
Salt Water Depth (ft.): 550'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 444'				
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) frac 5/13/13

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow n/a 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

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.

Markene Williams
Signature

2/26/15
Date

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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 GR, neutron, density, and resistivity
open hole logs run from 32-517' MD; LWD GR from 5258-11524' 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: Surface:	Top Depth	/	Bottom Depth
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LATERAL SIDETRACK WELLBORE (no vertical pilot hole associated with this well)

Maximum TVD of wellbore: 6269 ft TVD @ 11464 ft MD

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
SS/LS	0	0	444	444
PITTSBURG COAL	444	444	449	449
SS/SH	449	449	1485	1485
SS	1485	1485	1610	1610
BIG INJUN (SS)	1610	1610	1798	1798
SHALE	1798	1798	6322	6024
GENESEO (SH)	6322	6024	6380	6045
TULLY (LS)	6380	6045	6483	6083
HAMILTON (SH)	6483	6083	6885	6198
MARCELLUS (SH)	6885	6198		
TD OF LATERAL			11524	6256

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Marcene Willard
Signature

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Date

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Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	4/8/2013
State:	WEST VIRGINIA
County:	OHIO
API Number:	4706900137
Operator Name:	CHESAPEAKE APPALACHIA LLC
Well Name and Number:	OCC A OHI 10H
Longitude:	-80.598243
Latitude:	40.07943
Long/Lat Projection:	NAD27
Production Type:	GAS
True Vertical Depth (TVD):	6,269
Total Water Volume (gal)*:	6,078,492

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%	76.11100%	
Recycled Produced Water	CHESAPEAKE ENERGY	Carrier/Base Fluid	Water	007732-18-5	100.00%	9.48961%	
EC6734A	NALCO	Anti-Bacterial Agent	Acetic acid	000064-19-7	60.00%	0.01569%	
			Hydrogen Peroxide	007722-84-1	30.00%	0.00785%	
			Peracetic Acid	000079-21-0	30.00%	0.00785%	
			Ethylene Glycol	000107-21-1	30.00%	0.00160%	
			Crystalline silica	14808-60-7	98.49108%	13.77207%	
			Hydrogen chloride	7647-01-0	1.07661%	0.15054%	
			Water	007732-18-5	2.88471%	0.41633%	
			Guar gum	9000-30-0	0.11795%	0.01649%	
			Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.11449%	0.01601%	
			Ammonium sulfate	7783-20-2	0.10821%	0.01513%	
			Sodium sulfate	7757-82-6	0.04677%	0.00654%	
EC6486A	NALCO	Scale Inhibitor					
Acid, Hydrochloric 15pct, A264, J218, J580, J609, L058, 100 Mesh Sand, Northern White Sand	SCHLUMBERGER	Breaker, Corrosion Inhibitor, Friction Reducer, Gelling Agent, Iron Control Agent, Proppant - Natural					

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			Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.01227%	0.00172%	
			Diammonium peroxodisulphate	7727-54-0	0.00756%	0.00106%	
			Urea	57-13-6	0.00754%	0.00105%	
			Sodium erythorbate	6381-77-7	0.00493%	0.00069%	
			Methanol	67-56-1	0.00339%	0.00047%	
			Fatty acids, tall-oil	61790-12-3	0.00249%	0.00035%	
			Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00205%	0.00029%	
			Non-crystalline silica	7631-86-9	0.00141%	0.00020%	
			Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	0.00095%	0.00013%	
			Prop-2-yn-1-ol	107-19-7	0.00064%	0.00009%	
			Alkenes, C>10 a-	64743-02-8	0.00042%	0.00006%	
			Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00024%	0.00003%	
			Dimethyl siloxanes and silicones	63148-62-9	0.00011%	0.00001%	
			Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	0.00002%	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%	

Additional Ingredients Not Listed on MSDS

EC6486A, EC6734A	NALCO	Anti-Bacterial Agent, Scale Inhibitor	Diethylene Glycol	000111-46-6		0.00006%	
			Proprietary Inorganic Phosphate	TRADE SECRET		0.00062%	
			Proprietary Organic Acid Derivatives	TRADE SECRET		0.00185%	
			Proprietary Phosphonic Acid Ester	TRADE SECRET		0.00030%	
			Water	007732-18-5		0.02179%	

* 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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