

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: 8/16/2013
API #: 47-085-10002

Farm name: Campbell, John A. & Linda J. Operator Well No.: Kuhn Unit 1H

LOCATION: Elevation: 1,014' Quadrangle: Pullman 7.5'

District: Union County: Ritchie
Latitude: 3,811' Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 10,002' Feet West of 80 Deg. 55 Min. 00 Sec.

Company: Antero Resources Corporation

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
1625 17th Street Denver, CO 80202	20" 51#	41'	41'	39 Cu. Ft. Class A
Agent: CT Corporation System	13 3/8" 54.5#	460'	460'	639 Cu. Ft. Class A
Inspector: David Cowan	9 5/8" 36#	2,540'	2,540'	1,034 Cu. Ft. Class A
Date Permit Issued: 10/31/2012	5 1/2" 20#	13,155'	13,155'	3,201 Cu. Ft. Class H
Date Well Work Commenced: 2/25/2013				
Date Well Work Completed: 4/26/2013	2 3/8" 4.7#	6,691'		
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 6389' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 13,155' MD, 6386' TVD (BHL)				
Fresh Water Depth (ft.): 275'				
Salt Water Depth (ft.): None Available				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): No Coal Layers Observed				
Void(s) encountered (N/Y) Depth(s) N, N/A				

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

Producing formation Marcellus Pay zone depth (ft) 6316' (TOP)

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

Final open flow 2743 MCF/d Final open flow ___ Bbl/d

Time of open flow between initial and final tests ___ Hours

Static rock Pressure 3000 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.

Robert M. Kaler
Signature

8-29-13
Date

11/08/2013

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85-10002

Were core samples taken? Yes _____ No

Were cuttings caught during drilling? Yes No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Yes, CBL.

This is a subsequent well. Antero only runs wireline logs on the first well on a multi-well pad (Pullman Unit 2H API#47-085-09978). Please reference the wireline logs submitted with Form WR-35 for Pullman Unit 2H.

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:

Perforations: 6483'-13,099' (1368 Holes)

Frac'd w/ 29,500 15% HCL Acid, 170,789 bbls Slick Water carrying 506,775# mesh, 2,531,976# 40/70 sand and 1,471,326# 20/40 sand.

Plug Back Details Including Plug Type and Depth(s):

Formations Encountered: Surface:	Top Depth	/	Bottom Depth
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Big Lime	est 1890'		1981'
Big Injun	est 1982'		2240'
Weir	est 2241'		2399'
Berea	est 2400'		2517'
Gantz Sand	est 2518'		2794'
Gordon	est 2795'		2881'
Fifth Sandstone	est 2882'		3026'
Bayard	est 3027'		3805'
Speechley	est 3806'		4449'
Balltown	est 3997'		4812'
Bradford	est 4450'		5049'
Benson	est 4813'		5622'
Alexander	est 5050'		6005'
Rhinestreet	5623'		6298'
Sycamore SS	6006'		6315'
Middlesex Shale	6163'		6389' TVD
Burket Shale	6271'		
Tully LS	6299'		
Marcellus	6316'		

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/20/2013
Job End Date:	4/27/2013
State:	West Virginia
County:	Ritchie
API Number:	47-085-10002-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Kuhn 1H
Longitude:	-80.93008900
Latitude:	39.18087200
Datum:	NAD27
Federal/Tribal Well:	NO
Total Base Water Volume (gal):	7,301,658
Total Base Non Water Volume:	243,503



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Base Fluid	Water	7732-18-5	100.00000	92.68491	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	6.87040	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.16644	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Hydrogen Chloride	7641-01-1	18.00000	0.03976	
WVRA-405	U.S. Well Services, LLC	Friction Reducer	Guar Gum	9000-30-0	50.00000	0.06504	
			Petroleum Distillates	64742-47-8	60.00000	0.06159	
			Suspending agent (solid)	14808-60-7	3.00000	0.00995	
			Surfactant	68439-51-0	3.00000	0.00390	
			Anionic Polyacrylamide	Proprietary	40.00000	0.02471	
			Water	7732-18-5	40.00000	0.02471	
			Petroleum Distillates	64742-47-8	40.00000	0.01989	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00309	
			Crystalline Salt	12125-02-9	5.00000	0.00309	

WV Department of Environmental Protection
 4/20/2013

85.10002

SI-1000	U.S. Well Services, LLC	Scale Inhibitor	Anionic Copolymer	Proprietary		0.00449
			Ethylene Glycol	107-21-1	20.00000	0.00406
			Water	7732-18-5	30.00000	0.00338
BioClear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent	2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00469
			Deionized Water	7732-18-5	28.00000	0.00268
AP One	U.S. Well Services, LLC	Gel Breakers	Ammonium Persulfate	7727-54-0	100.00000	0.00229
AI-300	U.S. Well Services, LLC	Acid Corrosion Inhibitor	Ethylene Glycol	107-21-1	40.00000	0.00033
			N,N-Dimethylformamide	68-12-2	20.00000	0.00013
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00012
			Cinnamaldehyde	104-55-2	15.00000	0.00012
			2-Butoxyethanol	111-76-2	15.00000	0.00010
			Poly(oxy-1,2-ethanediyl), alpha-(4-nolylphenyl)-omega-hydroxy, branched	127087-87-0	5.00000	0.00004
			1-Decanol	112-30-1	5.00000	0.00004
			Isopropyl Alcohol	67-63-0	2.50000	0.00002
			1-Octanol	111-87-5	3.00000	0.00002

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* 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%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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