

APPROVED

NAME: [Signature]DATE: 11/10/17

State of West Virginia

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WR-35
Rev. 8/23/13Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-017-06666 County Doddridge District Central
 Quad West Union 7.5' Pad Name Vogt Pad Field/Pool Name -----
 Farm name Gregory R. & Carolyn S. Vogt Well Number McGill Unit 2H
 Operator (as registered with the OOG) Antero Resources Corporation
 Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
 Top hole Northing 4347565m Easting 511887m
 Landing Point of Curve Northing 4347681.055m Easting 512145.155m
 Bottom Hole Northing 4350562m Easting 511197m

Elevation (ft) 1112' GL Type of Well New Existing Type of Report Interim Final
 Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
 Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
 Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
 Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
 Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water
 Production hole Air Mud Fresh Water Brine
 Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

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Date permit issued 01/26/2015 Date drilling commenced 04/07/2016 Date drilling ceased 05/29/2016
 Date completion activities began 02/03/2017 Date completion activities ceased 05/04/2017
 Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 18', 40', 136' Open mine(s) (Y/N) depths No
 Salt water depth(s) ft 1628' Void(s) encountered (Y/N) depths No
 Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No
 Is coal being mined in area (Y/N) No

Reviewed by: _____

11/10/2017

API 47-017 - 06666 Farm name Gregory R. & Carolyn S. Vogt Well number McGill Unit 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	34'	New	94#, K-55	N/A	Y
Surface	17-1/2"	13-3/8"	372'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2522'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	17046'	New	23#, HCP-110	N/A	Y
Tubing		2-3/8"	6824'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details Please note this well was drilled to 17051' however casing was only run to 17046'.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	200 sx	16	1.18	236	0'	8 Hrs.
Surface	Class A	460 sx	15.6	1.18	543	0'	8 Hrs.
Coal							
Intermediate 1	Class A	997 sx	15.6	1.18	1176	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1010 sx (Lead) 1585 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.31(Lead), 1.83 (Tail)	4224	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17051' MD, 6552' TVD (BHL), 6606' (Deepest Point Drilled) Loggers TD (ft) 17003' MD

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6286'

Check all wireline logs run caliper density deviated/directional induction neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0

Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface

Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface

Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Duckbill Unit 2H API #47-017-06668). Please reference the wireline logs submitted with Form WR-35 for Duckbill Unit 2H. A Cement Bond Log has been included with this submittal.

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API 47- 017 - 06666 Farm name Gregory R. & Carolyn S. Vogt Well number McGill Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6565' (TOP)</u>	<u>TVD</u>	<u>6922' (TOP)</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 10541 mcfpd Oil 90 bpd NGL --- bpd Water 350 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

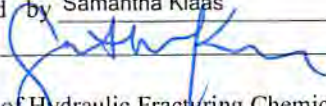
Drilling Contractor Precision Drilling Company, LP
Address 2640 Reach Road City Williamsport State PA Zip 17701

Logging Company Clutch Energy Services LLC
Address 2154 Greensburg Road City New Kensington State PA Zip 15068

Cementing Company Nabors Completion & Production Services, Co.
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company U.S. Well Services
Address 533 Industrial Park Drive City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature  Title Permitting Agent Date 10/02/2017

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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API 47-017-06666 Farm Name Gregory R. & Carolyn S. Vogt Well Number McGill Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/3/2017	16778	16943	36	Marcellus
2	3/24/2017	16581	16747	36	Marcellus
3	3/24/2017	16385	16551	36	Marcellus
4	3/24/2017	16189	16354	36	Marcellus
5	3/25/2017	15992	16158	36	Marcellus
6	3/25/2017	15796	15962	36	Marcellus
7	3/25/2017	15600	15765	36	Marcellus
8	3/25/2017	15403	15569	36	Marcellus
9	3/26/2017	15207	15373	36	Marcellus
10	3/26/2017	15011	15176	36	Marcellus
11	3/28/2017	14814	14980	36	Marcellus
12	3/29/2017	14618	14784	36	Marcellus
13	3/29/2017	14422	14587	36	Marcellus
14	3/29/2017	14225	14391	36	Marcellus
15	3/29/2017	14029	14195	36	Marcellus
16	3/30/2017	13833	13998	36	Marcellus
17	3/30/2017	13636	13802	36	Marcellus
18	3/30/2017	13440	13606	36	Marcellus
19	3/30/2017	13244	13409	36	Marcellus
20	3/30/2017	13047	13213	36	Marcellus
21	3/31/2017	12851	13017	36	Marcellus
22	3/31/2017	12655	12820	36	Marcellus
23	3/31/2017	12458	12624	36	Marcellus
24	3/31/2017	12262	12428	36	Marcellus
25	3/31/2017	12066	12231	36	Marcellus
26	3/31/2017	11869	12035	36	Marcellus
27	4/1/2017	11673	11839	36	Marcellus
28	4/1/2017	11477	11642	36	Marcellus
29	4/1/2017	11280	11446	36	Marcellus
30	4/1/2017	11084	11250	36	Marcellus
31	4/1/2017	10888	11053	36	Marcellus
32	4/2/2017	10691	10857	36	Marcellus
33	4/2/2017	10495	10661	36	Marcellus
34	4/2/2017	10299	10464	36	Marcellus
35	4/2/2017	10102	10268	36	Marcellus
36	4/2/2017	9906	10072	36	Marcellus
37	4/2/2017	9710	9875	36	Marcellus
38	4/3/2017	9513	9679	36	Marcellus
39	4/3/2017	9317	9483	36	Marcellus
40	4/3/2017	9121	9286	36	Marcellus
41	4/3/2017	8924	9090	36	Marcellus
42	4/3/2017	8728	8894	36	Marcellus
43	4/4/2017	8532	8697	36	Marcellus
44	4/4/2017	8335	8501	36	Marcellus
45	4/4/2017	8139	8305	36	Marcellus
46	4/4/2017	7943	8108	36	Marcellus
47	4/4/2017	7746	7912	36	Marcellus
48	4/4/2017	7550	7716	36	Marcellus
49	4/5/2017	7354	7519	36	Marcellus
50	4/5/2017	7157	7323	36	Marcellus
51	4/5/2017	6961	7127	36	Marcellus

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AP147-017-06666 Farm Name Gregory R. & Carolyn S. York Well Number McGill Unit 2H							
EXHIBIT 2							
Stage No.	Stimulations Date	Avg Pump Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	3/24/2017	74.9	4882	4170	348860	7333	N/A
2	3/24/2017	77.1	5322	4109	347830	7282	N/A
3	3/24/2017	76.8	5529	3998	348000	7220	N/A
4	3/24/2017	81.8	8135	5314	348250	7224	N/A
5	3/25/2017	85.7	8276	5296	348670	7199	N/A
6	3/25/2017	74.5	7822	5586	345700	8534	N/A
7	3/25/2017	84.0	7978	5343	349500	7200	N/A
8	3/25/2017	7570.0	80.9	5218	348650	8782	N/A
9	3/26/2017	81.1	7521	5103	348800	7081	N/A
10	3/26/2017	84.8	7793	5171	344200	7191	N/A
11	3/28/2017	80.3	7481	5275	347000	7044	N/A
12	3/29/2017	79.9	7789	5171	347800	8229	N/A
13	3/29/2017	79.9	7698	5314	343750	7442	N/A
14	3/29/2017	84.5	7957	5057	346700	7170	N/A
15	3/29/2017	84.6	8223	5171	346800	7718	N/A
16	3/30/2017	84.2	8258	5840	347800	7005	N/A
17	3/30/2017	85.1	7830	5078	347650	7082	N/A
18	3/30/2017	84.9	7817	5718	344800	7147	N/A
19	3/30/2017	79.9	7721	5404	347700	7237	N/A
20	3/30/2017	83.2	8281	5786	348350	8075	N/A
21	3/31/2017	84.5	8049	5372	348400	7776	N/A
22	3/31/2017	84.9	7955	5364	351240	7095	N/A
23	3/31/2017	84.6	7687	5534	348880	7052	N/A
24	3/31/2017	84.9	7498	5579	348690	7035	N/A
25	3/31/2017	81.9	7396	5976	348200	7448	N/A
26	3/31/2017	84.7	7626	6398	348200	6874	N/A
27	4/1/2017	83.2	7683	5468	348550	8392	N/A
28	4/1/2017	83.0	7255	5296	347760	6997	N/A
29	4/1/2017	85.0	7444	5364	349210	7011	N/A
30	4/1/2017	84.8	7623	5472	348230	7013	N/A
31	4/1/2017	84.8	7630	5311	348850	6878	N/A
32	4/2/2017	85.1	7724	5200	348300	6887	N/A
33	4/2/2017	81.5	7419	5454	351250	6950	N/A
34	4/2/2017	85.0	7510	5051	349500	6945	N/A
35	4/2/2017	84.8	7489	5153	350050	6957	N/A
36	4/2/2017	85.2	7593	5193	348210	6816	N/A
37	4/2/2017	84.0	7700	5575	348350	7453	N/A
38	4/3/2017	84.7	7496	0	348250	6877	N/A
39	4/3/2017	84.9	7443	5468	347360	6899	N/A
40	4/3/2017	84.9	7740	5658	349330	8091	N/A
41	4/3/2017	83.6	7823	5676	349710	7790	N/A
42	4/3/2017	85.2	7456	5708	349000	6787	N/A
43	4/4/2017	85.2	7293	5704	350150	6745	N/A
44	4/4/2017	85.2	7422	6266	350250	7279	N/A
45	4/4/2017	84.3	6992	5733	348850	6900	N/A
46	4/4/2017	84.6	7053	6040	348060	6963	N/A
47	4/4/2017	80.5	6736	5869	350590	6710	N/A
48	4/4/2017	84.9	6625	5811	350750	6714	N/A
49	4/5/2017	80.6	6807	6700	344810	7138	N/A
50	4/5/2017	79.7	6637	6487	347300	7956	N/A
51	4/5/2017	74.4	6251	6073	341240	6880	N/A
AVG=		229.6	7,449	5,422	4,732	17,754,330	370,453
TOTAL							

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LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	18'	N/A	18'	N/A
Fresh Water	40'	N/A	40'	N/A
Fresh Water	136'	N/A	136'	N/A
Sandy Shale	est. 0	230	est. 0	230
Sandstone	est. 230	780	est. 230	780
Limestone	est. 780	910	est. 780	910
Sandstone/Limestone	est. 910	940	est. 910	940
Silty Dolostone	est. 940	1020	est. 940	1020
Silty Sandstone	est. 1020	1140	est. 1020	1140
Sandstone	est. 1140	1170	est. 1140	1170
Silty Sandstone	est. 1170	1200	est. 1170	1200
Silty Limestone	est. 1200	1230	est. 1200	1230
Siltstone	est. 1230	1380	est. 1230	1380
Silty Sandstone	est. 1380	1500	est. 1380	1500
Siltstone	est. 1500	1650	est. 1500	1650
Silty Dolostone	est. 1650	1950	est. 1650	1950
Silty Sandstone	est. 1950	2015	est. 1950	2015
Calcareous Sandstone	est. 2015	2056	est. 2015	2060
Big Lime	2056	2555	2060	2559
Gantz	2555	2661	2559	2665
Fifty Foot Sandstone	2661	2774	2665	2778
Gordon	2774	2997	2778	3002
Fifth Sandstone	2997	3168	3002	3174
Bayard	3168	3875	3174	3912
Speechley	3875	4172	3912	4222
Balltown	4172	4613	4222	4688
Bradford	4613	5015	4688	5112
Benson	5015	5303	5112	5415
Alexander	5303	5398	5415	5515
Elk	5398	5745	5515	5876
Rhonestreet	5745	6228	5876	6377
Sycamore	6228	6391	6377	6570
Middlesex	6391	6085	6570	6760
Burkett	6085	6535	6760	6827
Tully	6535	6565	6827	6922
Marcellus	6565	NA	6922	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/24/2017
Job End Date:	4/5/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06666-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	McGill 2H
Latitude:	39.27727500
Longitude:	-80.86235000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,604
Total Base Water Volume (gal):	16,174,498
Total Base Non Water Volume:	0



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
Water	Antero Resources	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.00621	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	11.58267	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.25179	
			Hydrogen Chloride	7647-01-0	17.50000	0.05854	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.02645	
			Petroleum Distillates	64742-47-8	60.00000	0.02505	
			Suspending agent (solid)	14808-60-7	3.00000	0.00405	
			Surfactant	68439-51-0	3.00000	0.00159	
WFRA-500	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01776	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01430	

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Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitripropionamide	10222-01-2	20.00000	0.00408	
			Deionized Water	7732-18-5	28.00000	0.00233	
SI-1100s	U.S. Well Services, LLC	Scale Inhibitor					
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00130	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	3.00000	0.00045	
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	3.00000	0.00043	
			Phosphino carboxylic acid polymer	71050-62-9	3.00000	0.00043	
SI-1100	U.S. Well Services, LLC	Scale Inhibitor					
			Ethylene Glycol	107-21-1	40.00000	0.00090	
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00019	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	3.00000	0.00006	
			Phosphino carboxylic acid polymer	71050-62-9	3.00000	0.00006	
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	3.00000	0.00006	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00113	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00008	
			Cinnamaldehyde	104-55-2	20.00000	0.00003	
			Formic acid	64-18-6	20.00000	0.00003	
			Butyl cellosolve	111-76-2	20.00000	0.00003	
			Polyether	60828-78-6	10.00000	0.00002	
			Acetophenone,thiourea,formaldehyde polymer	68527-49-1	5.00000	0.00001	

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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