State of West Virginia Department of Environmental Protection - Office of Oil and Gas Well Operator's Report of Well Work

API	<u>47</u> - 017	06181	County Doddride	ge	District Gree	nbrier		
Quad	Big Isaac		Pad Name Marsd		Field/Pool Na			
	_{name} Marsden	, Richard E. &	Wilma		Well Number			
Opera	ator (as registered	d with the OOG)	Antero Resources	Corporation				_
Addre	ess 1615 Wynk	coop Street	City Den	ver	State CC)	_ _ _{Zip} _802	02
Eleva Permi Type Well Type Drille	Landing Poin Bottion (ft) 975' it Type De of Operation D Type Brine D of Completion d with Cable	NAD 83/UTM Top hole It of Curve I Ittom Hole I GL Eviated I Convert I Disposal I Single I Mu Retailed I Mu Retail	Attach an as-drilled 4.344,285.221m 4.344,147.89m 4.341,589.129m Type of Well 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	d plat, profile	Easting 534,630.803 Easting 534,626.78r Easting 535,539.175 sting Type of Retrical Depth Ty Redrilling Revery Solution Mining	vey 3m n 5m Report □In ype □ work ■ 3	nterim F Deep Stimulate ge Other	inal Shallow
Mud Air -	Type(s) and Add Foam & 4% K	litive(s)	□ Fresh Water □ Brine					
Date (permit issued completion activity	ities began)N/A	Date drilling comn 9/22/2014 Date permission granted abmit a plugging applica	Date comple	etion activities ceased _A Granted by	<u>, </u>	6/2014	4/2014
Fresh Salt w	water depth(s) fl vater depth(s) fl depth(s) ft al being mined in	t 1 None lo	155' 752' dentified	Open mine(s) Void(s) enco	Office of Oil an	d Gas	N N N	•
					WV Departm	to teas	ion (フロリー <mark>7/24/2</mark> 01

TYPE OF TRACER(S) USED N/A

WERE TRACERS USED □ Yes ■ No

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Office of Oil and Gas

WR-	35
Rev.	8/23/13

Page	of

API 47- 017 _ 06181	Farm name Marsden, Richard E. & Wilma	_Well number_Welling Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
		*PLEA	SE SEE ATT	ACHED E	XHIBIT 1
-					
				<u> </u>	

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
			*PLEASE S	SEE ATTAC	HED EXI	HIBIT 2		
		-					125	CEIVED Gas
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Please insert additional pages as applicable.

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WR-35 Rev. 8/23/13									Page of
API 47- 017	_ 06181	Farm	name_Marsder	n, Richard	E. & Wilma	_Well 1	number_	Wellir	ng Unit 1H
PRODUCING	FORMATION(<u>S)</u>	<u>DEPTHS</u> 7049' (Top)	_TVD _	7191' (Top)	MD			
Please insert ad	lditional pages a	s applicable.		_					
GAS TEST	□ Build up □	Drawdown	■ Open Flow	(OIL TEST D	low [Pump		
SHUT-IN PRE	SSURE Surf	ace 3600	psi Botto	m Hole	psi	DURAT	TION O	F TES	T hrs
OPEN FLOW	Gas 10,273 mcf	Oil pd	bpd	bpd			MEASU mated		
LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN F MD					D QUANTITYAND NE, OIL, GAS, H ₂ S, ETC)
	0		0.					.,	, 0.12, 0.12, 1.2, 2.12,
		*PLE	ASE SEE	ATTAC	HED EXH	IIBIT :	3		
			+						
									1
Please insert ad	l Iditional pages a	s applicable.							
Drilling Contra	ctor Frontier Dri	lling LLC					53.0		12052
Address 562 Sp	ring Run Road		City	Pennsboro		_ State	WV	_ Zip	26415
Logging Comp Address 1560 G	any STRC		City	Clarksburg		State	WV	7in	26301
		⁹ Can Canda		Diamobarg		_ State		_ Zip	20001
Cementing Cor Address 1036 E	mpany Allied Oil ast Main Street	a Gas Service	es, LLC City	Bridgeport		State	WV	Zip	26330
Stimulating Co	34.3	Completion &	Production Servi						
Dannalding CO			City	Jane Lew		State	WV	_ Zip	26378RECEIVED
		s applicable							Office of Oil and Gas
Address 1650 H	lditional pages a	s applicable.							•
Address 1650 H Please insert ad Completed by		з аррпсавіс.		ermitting Agen	Telephone	303-357	-6820 Date 6/		JUL 0 6 2015

API 47-017-06181 Farm Name Marsden, Richard E. & Wilma Well Number Welling Unit 1H								
EXHIBIT 1								
	Perforation	Perforated from MD	Perforated to	Number of				
Stage No.	Date	ft.	MD ft.	Perforations	Formations			
1	22-Sept-14		16,261'	60	Marcellus			
2	11-Oct-14	15,890'	16,060'	60	Marcellus			
3	12-Oct-14	15,689'	15,858'	60	Marcellus			
4	12-Oct-14	15,487'	15,657'	60	Marcellus			
5	12-Oct-14	15,286'	15,456'	60	Marcellus			
6	13-Oct-14	15,085'	15,254'	60	Marcellus			
7	13-Oct-14	14,883'	15,053'	60	Marcellus			
8	13-Oct-14	14,682'	14,852'	60	Marcellus			
9	14-Oct-14	14,481'	14,651'	60	Marcellus			
10	14-Oct-14	14,279'	14,449'	60	Marcellus			
11	14-Oct-14	14,078'	14,248'	60	Marcellus			
12	15-Oct-14	13,877'	14,047'	60	Marcellus			
13	15-Oct-14	13,676'	13,845'	60	Marcellus			
14	15-Oct-14	13,474'	13,644'	60	Marcellus			
15	15-Oct-14	13,273'	13,443'	60	Marcellus			
16	16-Oct-14	13,273'	13,443'	60	Marcellus			
17	16-Oct-14	12,870'	13,040'	60	Marcellus			
18	16-Oct-14	12,669'	12,839'	60	Marcellus			
19	16-Oct-14	12,468'	12,638'	60	Marcellus			
20	17-Oct-14	12,266'	12,436'	60	Marcellus			
21	17-Oct-14	12,065'	12,235'	60	Marcellus			
22	17-Oct-14	11,864'	12,034'	60	Marcellus			
23	17-Oct-14	11,663'	11,832'	60	Marcellus			
24	18-Oct-14	11,461'	11,631'	60	Marcellus			
25	18-Oct-14	11,260'	11,430'	60	Marcellus			
26	18-Oct-14	11,059'	11,228'	60	Marcellus			
27	18-Oct-14	10857'	11027'	60	Marcellus			
28	19-Oct-14	10656'	10826'	60	Marcellus			
29	19-Oct-14	10455'	10625'	60	Marcellus			
30	19-Oct-14	10253'	10423'	60	Marcellus			
31	19-Oct-14	10052'	10222'	60	Marcellus			
32	20-Oct-14	9851'	10021'	60	Marcellus			
33	20-Oct-14	9650'	9819'	60	Marcellus			
34	20-Oct-14	9448'	9618'	60	Marcellus			
35	21-Oct-14	9247'	9417'	60	Marcellus			
36	21-Oct-14	9046'	9215'	60	Marcellus			
37	21-Oct-14	1	9046'	60	Marcellus			
38	21-Oct-14	 	8813'	60	Marcellus			
39	21-Oct-14		8612'	60	Marcellus			
40	22-Oct-14		8410'	60	Marcellus			
41	22-Oct-14		8209'	60	Marcellus			
42	22-Oct-14		8008'	60	Marcellus Of			
43	22-Oct-14		7806'	60	Marcellus			
44	23-Oct-14		7605'	60	Marcellus			
45	24-Oct-14	7234'	7404'	60	Marcellus			

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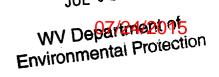
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						Well Number <u>Welling U</u>		
EXHIBIT 2								
			Treatment	Breakdown			Amount of	Nitrogen/
tage No.	Stimulations	Avg Pump	Pressure	Pressure		Amount of Proppant	Water	other
	Date	Rate	(PSI)	(PSI)	ISIP (PSI)	(lbs)	(bbls)	(units)
1	11-Oct-14	61.4	7,340	6,066	5,057	173,700	7,356	N/A
2	11-Oct-14	61.1	7,160	6,235	4,987	189,300	6,162	N/A
3	12-Oct-14	63.2	7,118	5,969	5,830	189,700	6,120	N/A
4	12-Oct-14	63.0	7,272	6,334	5,774	212,600	6,345	N/A
5	12-Oct-14	61.3	7,141	6,313	5,746	240,500	6,762	N/A
6	13-Oct-14	63.8	7,166	6,033	4,870	238,000	6,725	N/A
7	13-Oct-14	64.2	7,247	6,100	5,280	239,400	6,744	N/A
8	13-Oct-14	61.4	7,097	5,820	5,497	239,700	6,663	N/A
9	14-Oct-14	62.7	7,062	5,999	5,363	235,100	6,644	N/A
10	14-Oct-14	63.6	6,995	5,801	5,518	237,900	6,556	N/A
11	14-Oct-14	62.4	6,862	5,890	5,105	241,000	6,592	N/A
12	15-Oct-14	62.4	6,881	5,844	5,471	236,500	6,670	N/A
13	15-Oct-14		7,305	6,130	4,783	220,600	7,147	N/A
14	15-Oct-14	61.8	7,133	5,750	5,711	236,700	6,531	N/A
15	15-Oct-14	63.4	7,181	6,190	5,677	238,800	6,542	N/A
16		63.5	7,181	6,050	5,843	239,800	6,489	N/A
17	16-Oct-14	63.8	7,075	5,845	6,064	238,900		N/A
18	16-Oct-14	64.1	7,108	5,728	t	ì	6,473	N/A
19	16-Oct-14	-		5,711	6,058	236,400	6,492	N/A
	16-Oct-14	65.1	6,931		5,680	237,900	6,446	N/A
20	17-Oct-14	63.8	6,920	5,580 5,475	5,726	236,700	6,067	
21	17-Oct-14	64.3	7,192	5,175	5,245	237,300	6,491	N/A
22	17-Oct-14	64.6	6,883	5,273	5,820	239,900	6,452	N/A
23	17-Oct-14	63.9	6,944	5,572	5,565	238,700	6,377	N/A
24	18-Oct-14	62.7	6,834	5,588	5,138	235,500	6,289	N/A
25	18-Oct-14	63.0	6,727	5,606	5,643	238,100	6,282	N/A
26	18-Oct-14		6,996	5,720	5,582	201,300	6,783	N/A
27	18-Oct-14	64.8	6,932	5,909	5,680	238,400	6,274	N/A
28	19-Oct-14		6,747	5,784	5,778	242,000	6,265	N/A
29	19-Oct-14	64.3	6,819	6,002	5,631	238,300	6,266	N/A
30	19-Oct-14	64.7	6,777	5,839	5,715	240,200	6,201	N/A
31	19-Oct-14		6,635	5,918	5,566	238,000	6,276	N/A
32	20-Oct-14	63.3	6,708	5,742	5,453	235,600	6,242	N/A
33	20-Oct-14	63.7	6,723	5,764	5,359	234,100	6,198	N/A
34	20-Oct-14	63.8	6,717	5,713	5,691	238,400	6,097	N/A
35	21-Oct-14	59.9	6,752	6,128	4,940	238,600	6,223	N/A
36	21-Oct-14	63.3	7,018	6,372	5,105	242,100	6,182	N/A
37	21-Oct-14	63.3	6,515	5,867	5,177	239,600	6,056	N/A
38	21-Oct-14	64.6	6,798	6,086	5,296	236,700	6,058	N/A
39	21-Oct-14	64.7	6,653	5,859	5,599	238,200	6,069	N/A
40	22-Oct-14	64.3	6,543	6,021	5,661	237,800	6,034	N/A
41	22-Oct-14	62.7	6,673	6,364	5,545	224,400	6,475	N/A
42	22-Oct-14	63.8	6,662	5,914	5,084	237,300	5,955	N/A
43	22-Oct-14	60.5	6,560	5,991	5,797	210,700	6,316	N/A
44	23-Oct-14	 	6,504	6,147	5,846	173,100	6 327	N/A
45	24-Oct-14		6,419	6,006	5,076	216,200	SIFIC	MED
	AVG=	63.2	6,913	5,906	5,490	10,349,700	287.864	DHIMANO

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API 47-0	17-06181 Farm Name M	arsden, Richard E. & Wilma V	Veil Number Welling Un	it 1H
		EXHIBIT 3		
LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Fresh Water	155	N/A	155	N/A
Shale	0	287	0	287
Shale w/ Trace Coal	est. 287	307	est. 287	307
Sandstone	est. 307	747	est. 307	747
Unknown	est. 747	787	est. 747	787
Shale	est. 787	1,107	est. 787	1,107
Sandstone	est. 1107	1,167	est. 1107	1,167
Siltstone	est. 1167	1,187	est. 1167	1,187
Sandstone	est. 1187	1,307	est. 1187	1,307
Siltstone/Shale	est. 1307	1,587	est. 1307	1,587
Sandstone w/ Trace Coal	est. 1587	1,607	est. 1587	1,607
Sandstone	est. 1607	1,747	est. 1607	1,747
Shale	est. 1747	1,787	est. 1747	1,787
Sandstone	est. 1787	1,807	est. 1787	1,807
Shale	est. 1807	1,996	est. 1807	2,000
Big Lime	1,996	2,125	2,000	2,129
Big Injun	2,125	2,491	2,129	2,496
Gantz Sand	2,491	2,631	2,496	2,636
Fifty Foot Sandstone	2,631	2,718	2,636	2,723
Gordon	2,718	2,881	2,723	2,886
Fifth Sandstone	2,881	2,924	2,886	2,929
Bayard	2,924	3,414	2,929	3,419
Warren	3,414	3,639	3,419	3,644
Speechley	3,639	3,932	3,644	3,937
Baltown	3,932	4,415	3,937	4,420
Bradford	4,415	5,030	4,420	5,035
Benson	5,030	5,312	5,035	5,317
Alexander	5,312	5,505	5,317	5,510
Elk	5,505	6,054	5,510	6,059
Rhinestreet	6,054	6,522	6,059	6,527
Sycamore	6,522	6,747	6,527	6,755
Middlesex	6,747	6,892	6,755	6,918
Burkett	6,892	6,918	6,918	6,952
Tully	6,918	7,049	6,952	7,191
Marcellus	7,049	NA	7,191	NA

^{*}Please note Antero determines shallow 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

0	Total Base Non Water Volume:
12,090,162	Total Base Water Volume (gal):
7,113	True Vertical Depth:
NO	Federal/Tribal Well:
NAD27	Datum:
39.24710800	Latitude:
-80.59884400	Longitude:
Welling Unit 1H	Well Name and Number:
Antero Resources Corporation	Operator Name:
47-017-06181-00-00	API Number:
Doddridge	County:
West Virginia	State:
10/24/2014	Job End Date:
10/11/2014	Job Start Date:

Hydraulic Fracturing Fluid Composition:

Sand

Nabors Completion and Production

Sand - Bulk - West Virginia

Aluminum Oxide

1344-28-1

14808-60-7

99.9000 1.10000

Crystalline Silica, quartz

Titanium Oxide

13463-67-7

0.10000

0.0035

0.0035

0.1000

0.0386

3.50646

Sand

and Production

Vabors Completion

Sand - Bulk - West Virginia

Water

7732-18-5

100.00000

90.29659

Aluminum Oxide Crystalline Silica, quartz

ron Oxide itanium Oxide

1309-37-1

0.10000

0.00503

0.0050

1.1000

0.1000

344-28-1

3463-67-7

14808-60-7

99.90000

5.02669 0.0553

Water

ANTERO RESOURCES

Water

Trade Name

Supplier

Purpose

Ingredients

Abstract Service Concentration in Concentration in

Ingredient Maximum

Ingredient Maximum

(CAS #) Number

(% by mass)**

(% by mass)**

HF Fluid

Comments

Additive

Chemical

Sand

and Production Vabors Completion

Sand - Bulk - West Virginia

Crystalline Silica, quartz

14808-60-7

99.90000

0.72590

0.00799

1.1000

344-28-1

Aluminum Oxide









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		Acid Inhibitor 2 (AI-2) Nab- and Serv		Super TSC 2 LT Nab			OB-2 LT Nab and Serv						Super GREEN SOLV- Nab M Serv		Super TSC-LT Nab and Serv					AQUCAR DB 20 Nab and Serv		WFR-6W Nab and Serv		LSG-100L Nab and Serv			HCI Acid (12.5-18.0%),Nabors Completion 22 Baume Services		
		Nabors Completion and Production Services		Nabors Completion and Production Services			Nabors Completion and Production Services						Nabors Completion and Production Services		Nabors Completion and Production Services					Nabors Completion and Production Services		Nabors Completion and Production Services		Nabors Completion and Production Services			Nabors Completion and Production Services		
		Acid Corrosion Inhibitors		Paraffin & Scale Additives			Gel Breakers						Paraffin & Scale Additives		Paraffin & Scale Additives					Biocides		Friction Reducer		Gelling Agents			Bulk Acid		
Isopropyl Alcohol	Glycol Ethers		Bis(hexamethylene triaminepenta (methylenephosphonic acid))		Crystalline Silica (in the form of quartz)	Ammonium Persulfate		Undecane	Tridecane	tetradecane	Dodecane	Aliphatic Hydrocarbons		100% Non-Hazardous Mixture		Dibromoacetonitrile	Sodium bromide	2,2-Dibromo-3-nitrilo- propionamide (DBNPA)	Polyethylene glycol		Anionic Water-Soluble Polymer Emulsion		Petroleum Distillates		Hydrochloric Acid	Water		Titanium Oxide	
67-63-0	111-46-6		Proprietary		14808-60-7	7727-54-0		Proprietary	Proprietary	Proprietary	Proprietary	Proprietary		Proprietary		3252-43-5	7647-15-6	10222-01-2	25322-68-3		Proprietary		64742-47-8		7647-01-0	7732-18-5		13463-67-7	
40.00000	40.00000		10.00000		10.00000	85.00000		8.00000	9.00000	11.00000	14.00000	95.00000		100.00000		3.00000	4.00000	20.00000	54.50000		100.00000		70.00000		18.00000	87.50000		0.10000	
0.00015	0.00015		0.00069		0.00016	0.00134		0.00019	0.00021	0.00026	0.00033	0.00225		0.00626		0.00049	0.00066	0.00328	0.00893		0.06229		0.09426		0.03670	0.17841		0.00073	
																							C	R Paint	N	L	IVE DII ar 0 6 2		١

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0.00000	1.00000	123-91-1	Dioxane		
0.00000	00000.1	Proprietary	Proprietary		
0.00000	1.00000	Proprietary	Proprietary		
0.00000		Proprietary	Proprietary		
0.00000		Proprietary	Proprietary		
0.00005		111-76-2	2-Butoxyethanol		
0.00006	0.10000	79-06-1	2-Propenamide as residual		
0.00007		1310-73-2	Sodium Hydroxide		
0.00016	1.00000	1113-55-9	Monobromo-3- nitrilopropionamide		
0.00016		73003-80-2	2,2-Dibromomalonamide		
0.00019		7732-18-5	Water		
0.00021		7732-18-5	Water		
0.00024	15.00000	Proprietary	Alkali Chloride salt		
0.00043		57-50-1	Sugar		
0.00043		Proprietary	Proprietary		
0.00094		Proprietary	Proprietary		
0.00094		Proprietary	Proprietary		
0.00094		Proprietary	Proprietary		
0.00187	3.00000	Proprietary	Surfactant Blend		
0.00249	4.00000	107-21-1	Ethylene Glycol		
0.00249	4.00000	Proprietary	Ethoxylated alcohols		
0.00269		14808-60-7	Crystalline Silica (in the form of quartz)		
0.00269		68439-51-0	Surfactant		
0.00313	50.00000	Proprietary	Proprietary		The second secon
0.00376	60.00000	7732-18-5	Water		
0.00524		7732-18-5	Water		
0.00617	90.00000	7732-18-5	Water		
0.01620	26.00000	64742-47-8	Isoparaffinic Solvent		
0.02492	40.00000	7732-18-5	Water		
0.06229	100.00000	Proprietary	Copolymer		
0.06733	50.00000	9000-30-0	guar gum		
Offic				n Other Ingredients	Other Ingredients Nabors Completion and Production Services
1	nts shown below are Non-MSDS.	ets (MSDS), Ingredie	CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients		n abo
0.00017	40.00000	107-21-1	Ethylene Glycol		
=IVE				n Gel Breakers	Nabors Completion and Production Services
0.00004	10.00000	72480-70-7	Tar bases, quinoline derivs, benzyl chloride-quaternized		
0.00005	13.00000	68412-54-4	Ethoxylated Nonylphenol		
0.00013	40.00000	107-19-7	r lobaldy McGliot		

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