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

	District Clay	
API 47 - 085 10352 County Ritchie Quad Pennsboro 7.5' Pad Name Pool	I Pad Field/Pool Name	
Farm name_Dennis J. Sellers	Well Number Ver	non Unit 1H
Operator (as registered with the OOG) Antero Resource		
Address 1615 Wynkoop Street City De	enver State CO	Zip 80202
As Drilled location NAD 83/UTM Attach an as-drill Top hole Northing 4349859m	led plat, profile view, and deviation survey Easting ^{507636m}	
Landing Point of Curve Northing 4349760.10m		
Bottom Hole Northing 4346060m	Easting 508575m	
Elevation (ft) 1181' GL Type of Well	New DExisting Type of Report	□Interim B Final
Permit Type 🗆 Deviated 🗆 Horizontal 📕 Horizo	ontal 6A 🗆 Vertical Depth Type	🗆 Deep 🔳 Shallow
Type of Operation Convert Deepen Drill	Plug Back Redrilling Rework	Stimulate
Well Type 🗆 Brine Disposal 🗆 CBM 🔳 Gas 🛢 Oil 🗆 Se	condary Recovery 🗆 Solution Mining 🗆 St	orage 🗆 Other
Type of Completion 🛢 Single 🗆 Multiple 🛛 Fluids Prod	uced 🗆 Brine 📕 Gas 🗆 NGL 📕 Oil	🗆 Other
Drilled with 🗆 Cable 🛢 Rotary		
Drilling Media Surface hole 🛯 Air 🗆 Mud 🗆 Fresh W	ater Intermediate hole 🛽 Air 🗆 Mud	l 🗆 Fresh Water 🗅 Brine
Production hole 🗆 Air 🛢 Mud 🗆 Fresh Water 🗆 Brir	ne	
Mud Type(s) and Additive(s) Air - Foam & 4% KCL		
Mud - Polymer		
5/44/0040	6/17/2018	. 7/27/2018
Date permit issued5/11/2018 Date drilling com		ceased 7/27/2018
Date permit issued5/11/2018 Date drilling com Date completion activities began 8/27/2018	_ Date completion activities ceased	10/8/2018
Date permit issued 5/11/2018 Date drilling com	_ Date completion activities ceased	
Date permit issued 5/11/2018 Date drilling com Date completion activities began 8/27/2018 /erbal plugging (Y/N) N/A Date permission grante	Date completion activities ceased ed N/A Granted by	10/8/2018 N/A
Date permit issued $5/11/2018$ Date drilling com Date completion activities began $8/27/2018$ Verbal plugging (Y/N) N/A Date permission grante lease note: Operator is required to submit a plugging applie	Date completion activities ceased ed Granted by cation within 5 days of verbal permission to p	10/8/2018 N/A
Date permit issued $5/11/2018$ Date drilling com Date completion activities began $8/27/2018$ /erbal plugging (Y/N) N/A Date permission grante Please note: Operator is required to submit a plugging applie Freshwater depth(s) ft None Identified	_ Date completion activities ceased ed <u>N/A</u> Granted by cation within 5 days of verbal permission to p Open mine(s) (Y/N) depths	10/8/2018 N/A
Date permit issued 5/11/2018 Date drilling com Date completion activities began 8/27/2018 /erbal plugging (Y/N) N/A Date permission grante Please note: Operator is required to submit a plugging applie Freshwater depth(s) ft None Identified	Date completion activities ceased ed Granted by cation within 5 days of verbal permission to p	10/8/2018 N/A blug No

Reviewed by:

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Farm name_Dennis J. Sellers _Well number_Vernon Unit 1H API 47-085 10352 CASING Hole Casing New or Grade Basket Did cement circulate (Y/ N) STRINGS Size Used wt/ft Depth(s) * Provide details below* Size Depth Conductor 24" 20" 105' New 94#, H-40 N/A Y Surface 17-1/2" 13-3/8" 392' 54.5#. J-55 New N/A Y Coal Intermediate 1 12-1/4" 9-5/8" 2602' 36#, J-55 New N/A Y Intermediate 2 Intermediate 3 Production 8-3/4"/8-1/2" 5-1/2" 19971' New 23#, P-110 N/A Y Tubing 2-3/8" 6898' 4.7#, L-80 Packer type and depth set N/A **Comment Details** CEMENT Class/Type Number Yield Volume WOC Slurry Cement DATA of Cement of Sacks wt (ppg) (ft ³/sks) $(ft^{\frac{3}{2}})$ Top (MD) (hrs) Conductor Class A 204 sx 15.6 1.21 247 0' 8 Hrs. Surface Class A 375 sx 1.20 0' 15.6 450 8 Hrs. Coal Intermediate 1 Class A 903 sx 15.6 1.19 1075 0' 8 Hrs. Intermediate 2 Intermediate 3 Production Class H 738 sx (Lead) 2312 sx (Tail) 14.5 (Lead), 15.2 (Tail) 1.40 (Lead), 1.60 (Tail) 4732 -500' into Intermediate Casing 8 Hrs. Tubing Drillers TD (ft) 19991' MD, 6544' TVD (BHL), 6548' (Deepest Point Drilled) Loggers TD (ft) 19991' MD Deepest formation penetrated Marcellus Plug back to (ft) N/A Plug back procedure N/A Kick off depth (ft) 5837' 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 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 DI Yes No DETAILS WAS WELL COMPLETED OPEN HOLE? 🗆 Yes 📱 No DETAILS WERE TRACERS USED DI Yes No TYPE OF TRACER(S) USED N/A

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PI 47	7- 085 _ 10352	Farm nar	_{ne_} Dennis J. Se	ellers	Well numberVernon Unit 1H
			PERFORAT	ION RECORD	
Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
-					
	*PL	EASE S	EE ATI	ACHED	EXHIBIT 1
I					
		-			

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 (Ibs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
		*PLEA	ASE SEI	E ATTA	CHE	D EXH	IBIT 2	2

Please insert additional pages as applicable.

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PRODUCING	FORMATION((S)	DEPTHS					
Marcellus	1 Oldmininon (<u></u>	6464' (TOP)	TUD 6	956' (TOP) MD			
iviar cellus			0404 (TOP)	$_{\rm TVD}$ 69	956' (TOP) MD			
Please insert ac	ditional pages a	as applicable.						
GAS TEST	🗆 Build up 🗆	Drawdown	Open Flow	O	L TEST IFlow	⊐ Pump)	
SHUT-IN PRE	SSURE Surf	face 3000	_psi Botto	om Hole	psi DURA	TION (OF TEST	hrs
OPEN FLOW		Oil îpd <u>145</u>	NGL bpd				JRED BY Orifice D Pilot	E.
LITHOLOGY/ FORMATION	TOP DEPTH IN FT	BOTTOM DEPTH IN FT		BOTTOM DEPTH IN FT			RECORD QUANTITYA	
	NAME TVD	TVD	MD	MD	TYPE OF FLUID (FRE	SHWAT	ER, BRINE, OIL, GAS, H	$I_2S, ETC)$
Please insert ad	lditional pages a	s applicable.						
Drilling Contra	ctor Patterson -		mpany LLC					
Drilling Contra	ctor Patterson -		mpany LLC City	Eighty Four	State	PA	Zip <u>15330</u>	
Drilling Contra Address 207 Ca Logging Comp	any Nine Energy	UTI Drilling Co		Eighty Four	State	PA		
Drilling Contra Address 207 Ca Logging Comp	any Nine Energy	UTI Drilling Co		Eighty Four Washington	State	<u>РА</u> РА	Zip <u>15330</u> Zip <u>15307</u>	
Drilling Contra Address 207 Ca Logging Comp Address 125 Mu Cementing Cor	actor Patterson - ariton Drive any Nine Energy useum Rd mpany Schlumbe	UTI Drilling Co / Service	City					
Drilling Contra Address 207 Ca Logging Comp Address 125 Mu Cementing Cor	actor Patterson - ariton Drive any Nine Energy useum Rd mpany Schlumbe	UTI Drilling Co / Service	City					
Drilling Contra Address 207 Ca Logging Comp Address 125 M Cementing Cor Address 300 Sc	any <u>Nine Energy</u> Iseum Rd Ning Schlumber Nany <u>Schlumber</u>	UTI Drilling Co / Service erger	City	Washington	State	PA	Zip	
Drilling Contra Address 207 Ca Logging Comp Address 125 Mu Cementing Cor Address 300 Sc Stimulating Co	any <u>Nine Energy</u> Iseum Rd Ning Schlumber Nany <u>Schlumber</u>	UTI Drilling Co / Service erger	City	Washington	State	PA	Zip	
Drilling Contra Address 207 Ca Logging Comp Address 125 Mu Cementing Cor Address 300 Sc Stimulating Co Address 121 Ch	any <u>Nine Energy</u> Iseum Rd Nine Energy Schlumber hlumberger Dr Mannany Hallibur	UTI Drilling Co / Service erger fton 200	City City City City City	Washington Sugar Land	State	PA TX	Zip <u>15307</u> Zip <u>77478</u>	

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

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EXHIBIT 1								
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations			
1	8/27/2018	19762.7	19862	60	Marcellus			
2	8/27/2018	19563.296	19731.466	60	Marcellus			
3	8/27/2018	19363.892	19532.062	60	Marcellus			
4	8/28/2018	19164.488	19332.658	60	Marcellus			
5	8/28/2018	18965.084	19133.254	60	Marcellus			
6	8/29/2018	18765.68	18933.85	60	Marcellus			
7	8/29/2018	18566.276	18734.446	60	Marcellus			
8	8/29/2018	18366.872	18535.042	60	Marcellus			
10	8/30/2018 8/30/2018	18167.468 17968.064	18335.638	60 60	Marcellus Marcellus			
10	8/30/2018	17768.66	18136.234 17936.83	60	Marcellus			
12	8/31/2018	17569.256	17737.426	60	Marcellus			
13	8/31/2018	17369.852	17538.022	60	Marcellus			
14	9/1/2018	17170.448	17338.618	60	Marcellus			
15	9/1/2018	16971.044	17139.214	60	Marcellus			
16	9/1/2018	16771.64	16939.81	60	Marcellus			
17	9/2/2018	16572.236	16740.406	60	Marcellus			
18	9/2/2018	16372.832	16541.002	60	Marcellus			
19	9/3/2018	16173.428	16341.598	60	Marcellus			
20	9/3/2018	15974.024	16142.194	60	Marcellus			
21	9/4/2018	15774.62	15942.79	60	Marcellus			
22	9/6/2018	15575.216	15743.386	60	Marcellus			
23	9/6/2018	15375.812	15543.982	60	Marcellus			
24	9/6/2018	15176.408	15344.578	60	Marcellus			
25	9/7/2018	14977.004	15145.174	60	Marcellus			
26	9/7/2018	14777.6	14945.77	60	Marcellus			
27	9/7/2018	14578.196	14746.366	60	Marcellus			
28	9/7/2018	14378.792	14546.962	60	Marcellus			
29	9/8/2018	14179.388	14347.558	60	Marcellus			
30	9/9/2018	13979.984	14148.154	60	Marcellus			
31	9/9/2018	13780.58	13948.75	60	Marcellus			
32	9/10/2018	13581.176	13749.346	60	Marcellus			
33	9/10/2018	13381.772	13549.942	60	Marcellus			
34 35	9/10/2018	13182.368	13350.538	60	Marcellus			
36	9/10/2018 9/11/2018	12982.964 12783.56	13151.134	60 60	Marcellus Marcellus			
37	9/11/2018	12584.156	12951.73 12752.326	60	Marcellus			
38	9/12/2018	12384.752	12552.922	60	Marcellus			
39	9/12/2018	12185.348	12353.518	60	Marcellus			
40	9/12/2018	11985.944	12154.114	60	Marcellus			
41	9/13/2018	11786.54	11954.71	60	Marcellus			
42	9/13/2018	11587.136	11755.306	60	Marcellus			
43	9/13/2018	11387.732	11555.902	60	Marcellus			
44	9/13/2018	11188.328	11356.498	60	Marcellus			
45	9/14/2018	10988.924	11157.094	60	Marcellus			
46	9/14/2018	10789.52	10957.69	60	Marcellus			
47	9/14/2018	10590.116	10758.286	60	Marcellus			
48	9/15/2018	10390.712	10558.882	60	Marcellus			
49	9/15/2018	10191.308	10359.478	60	Marcellus			
50	9/15/2018	9991.904	10160.074	60	Marcellus			
51	9/15/2018	9792.5	9960.67	60	Marcellus			
52	9/16/2018	9593.096	9761.266	60	Marcellus			
53	9/16/2018	9393.692	9561.862	60	Marcellus			
54	9/16/2018	9194.288	9362.458	60	Marcellus			
55	9/17/2018	8994.884	9163.054	60	Marcellus			
56	9/17/2018	8795.48	8963.65	60	Marcellus			
57	9/18/2018	8596.076	8764.246	60	Marcellus			
58	9/19/2018	8396.672	8564.842	60	Marcellus			
59	9/20/2018	8197.268	8365.438	60	Marcellus			
60	9/20/2018	7997.864	8166.034	60	Marcellus			
61 62	9/21/2018	7798.46	7966.63	60	Marcellus			
62	9/21/2018	7599.056	7767.226	60	Marcellus			
64	9/21/2018	7399.652	7567.822	60	Marcellus			
65	9/22/2018 9/22/2018	7200.248 7000.844	7368.418 7169.014	60 60	Marcellus Marcellus			

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_	~	F1 47-065-10	552 Farm Na			umber Vernon Unit 1H		-
		-		EXHIBI	Z	-	1	
tage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure	Max Breakdown Pressure	ISIP (PSI)	Amount of Proppant (Ibs)	Amount of Water (bbls)	Amount of Nitrogen/ other
1	8/27/2018	69.95	(PSI) 7496	(PSI) 0	3366	288480	6930.333	(units) N/A
2	8/27/2018	62.71	7484	5454	3255	409920	8919.024	N/A
3	8/27/2018	64.42	7659	6526	3019	409560	10293.71	N/A
4	8/28/2018	60.75	7689	5619	3338	404390	10887.55	N/A
5	8/28/2018	70.89	7930	5892	3030	412220	8658.881	N/A
6	8/29/2018	70.19	7910	5546	3166	408800	8576.714	N/A
7	8/29/2018	71.14	7537	5460	3177	416460	8907.476	N/A
8	8/29/2018	69.4	7472	3713	3178	408640	9643.857	N/A N/A
9 10	8/30/2018 8/30/2018	72.43	8005 7785	5418 4955	3227 3098	406520 409320	8888.381 8837.333	N/A N/A
10	8/30/2018	71.27	7571	5142	3393	409320	10494.57	N/A
12	8/31/2018	67.02	7499	5410	3268	400200	8576.19	N/A
13	8/31/2018	55.28	7858	4243	5862	406600	11484.19	N/A
14	9/1/2018	61.2	7831	5552	3544	412800	13174.12	N/A
15	9/1/2018	74.4	7797	5424	3307	401420	9054.857	N/A
16	9/1/2018	72.88	7379	5474	3016	402980	9406.714	N/A
17	9/2/2018	65.41	7454	5266	5018	141580	10222.33	N/A
18	9/2/2018	68.59	7198	5426	3328	404140	8572.571	N/A
19	9/3/2018	76.02	7807	5558	3431	397720	8826.119	N/A
20	9/3/2018	76.2	7332	5071	3348	398540	8713.143	N/A
21	9/4/2018	69.47	7170	5151	3184	399400	8347.952	N/A
22	9/6/2018	62.93	8033	6150	3778	399920	9134.714	N/A
23	9/6/2018 9/6/2018	71.01	7541 7233	5784	3197 3210	408660 402280	9729.238 8493.857	N/A N/A
25	9/7/2018	75.09	7239	5645 5594	3333	401400	8640.548	N/A
26	9/7/2018	76.15	6875	5461	3372	400440	8729.762	N/A
27	9/7/2018	73.75	6851	6021	3189	397400	8890.429	N/A
28	9/7/2018	70.8	7080	5760	3091	400180	8558.476	N/A
29	9/8/2018	70.8	7182	6398	3334	399100	8406.738	N/A
30	9/9/2018	71.3	7286	6746	3721	399040	9036.833	N/A
31	9/9/2018	74.75	7527	6005	3599	398860	8544.024	N/A
32	9/10/2018	64.36	7801	5767	3205	403100	11535.24	N/A
33	9/10/2018	69.37	7714	5865	3581	398420	10680.62	N/A
34	9/10/2018	64.1	7877	7611	3529	393560	13390.48	N/A
35	9/10/2018	68.05	7089	6148	3433	401080	8400.429	N/A
36	9/11/2018	74.02	7352	6942	4041	400460	8509.19	N/A
37 38	9/11/2018 9/12/2018	71.82 63.09	7291 7877	5814 5812	4173 3940	397960 402080	8475.262 11172.55	N/A N/A
39	9/12/2018	74	7483	5813	4193	397620	9332.738	N/A
40	9/12/2018	63.38	7344	5948	3777	402620	11486.57	N/A
41	9/13/2018	70.5	6868	5011	3648	401220	8376.167	N/A
42	9/13/2018	73.87	6885	5995	3399	397540	8316.524	N/A
43	9/13/2018	69.76	6675	5987	3427	402520	8322.429	N/A
44	9/13/2018	73.3	6828	4092	3366	404320	8192.929	N/A
45	9/14/2018	72	6568	4335	3320	404500	8157.31	N/A
46	9/14/2018	75.11	6917	6595	3490	405540	8280.071	N/A
47	9/14/2018	71.9	6997	6042	3462	405240	8292.619	N/A
48	9/15/2018	71.3	6913	4774	3039	391720	8052.071	N/A
49	9/15/2018	72.08	6892	4889	3034	401320	8055.31	N/A
50	9/15/2018	73.16	6908	5890	3169	402360	8396.952	N/A N/A
51 52	9/15/2018 9/16/2018	76.1 76.8	6618 6464	4866 4061	3043 3108	398800 397700	8100.262 8044.452	N/A N/A
53	9/16/2018	77.51	6467	5590	3320	406160	8139.976	N/A
54	9/16/2018	76.29	6682	6653	6179	398540	7884.738	N/A
55	9/17/2018	73.92	6523	5297	3180	394940	8036.571	N/A
56	9/17/2018	77.7	6701	5223	3772	400440	8057.167	N/A
57	9/18/2018	75.61	6712	6423	2968	398640	8181.095	N/A
58	9/19/2018	73.16	6303	6588	3358	393160	8059.048	N/A
59	9/20/2018	76.42	6408	6018	3328	398120	8128.286	N/A
60	9/20/2018	75.76	6194	5966	3339	398060	8110.357	N/A
61	9/21/2018	78.14	6264	5942	3564	398740	8248.643	N/A
62	9/21/2018	76.83	6280	6254	3250	404860	8072.095	N/A
63	9/21/2018	77.91	6094	5599	3673	399360	8370.857	N/A
64	9/22/2018	76.62	6433	5149	3869	401920	8149.31	N/A
65	9/22/2018 AVG=	73.87	6221	6235	3202	402020 25,755,950	7990.357	N/A

EXHIBIT 3								
LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface				
Sandy siltstone	0	275	0	275				
Limey sandstone	275	415	275	415				
silty shale	415	695	415	695				
limey siltstone	695	875	695	875				
sandy shale	875	1,335	875	1,335				
silty shale, tr. coal	1,335	1,465	1,335	1,465				
Sandy siltstone	1,465	1,595	1,465	1,595				
silty shale	1,595	1,675	1,595	1,675				
silty sandstone	1,675	1,755	1,675	1,755				
shaly sand	1,755	1,825	1,755	1,825				
silty sand tr. Coal	1,825	1,895	1,825	1,895				
Sandstone	1,895	1,935	1,895	1,935				
siltstone	1,935	1,972	1,935	1,973				
Big Lime	1,972	2,132	1,973	2,133				
Big Injun	2,132	2,501	2,133	2,502				
Gantz Sand	2,501	2,794	2,502	2,795				
Fifty Foot Sandstone	2,794	2,970	2,795	2,972				
Gordon	2,970	3,131	2,972	3,133				
Fifth Sandstone	3,131	3,462	3,133	3,469				
Bayard	3,462	3,375	3,469	3,510				
Warren	3,375	3,874	3,510	3,896				
Speechley	3,874	4,632	3,896	4,730				
Balltown	4,131	5,022	4,175	5,169				
Bradford	4,632	5,022	4,730	5,169				
Benson	5,022	5,250	5,169	5,423				
Alexander	5,250	5,858	5,423	6,085				
Rhinestreet	5,833	6,189	6,060	6,447				
Sycamore	6,189	6,295	6,447	6,582				
Middlesex	6,295	6,404	6,582	6,767				
Burkett	6,404	6,439	6,767	6,858				
Fully	6,439	6,464	6,858	6,956				
Marcellus	6,464	NA	6,956	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.

