

*D. L. ...*  
12/12/18

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

API 47-017-06828 County Doddridge District West Union  
Quad West Union 7.5' Pad Name Addie Pad Field/Pool Name -----  
Farm name Antero Resources Corporation Well Number Warrior Unit 1H  
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 4353811m Easting 516757m  
Landing Point of Curve Northing 4353818m Easting 517410m  
Bottom Hole Northing 4350534m Easting 518791m

Elevation (ft) 891' 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  Brine  
Production hole  Air  Mud  Fresh Water  Brine

Mud Type(s) and Additive(s)  
Air - Foam & 4% KCL

Mud - Polymer

Date permit issued 6/23/2017 Date drilling commenced 7/6/2017 Date drilling ceased 11/5/2017  
Date completion activities began 2/8/2018 Date completion activities ceased 7/2/2017  
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 370' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1495', 1535' 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

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Rev. 8/23/13

API 47-017 - 06828 Farm name Antero Resources Corporation Well number Warrior Unit 1H

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"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	489'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2607'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	19135'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7052'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	204 sx	15.6	1.18	241	0'	8 Hrs.
Surface	Class A	415sx	15.6	1.20	498	0'	8 Hrs.
Coal							
Intermediate 1	Class A	900 sx	15.6	1.18	1062	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	740sx (Lead) 1858sx (Tail)	13.5(Lead), 15.2 (Tail)	1.45 (Lead), 1.83 (Tail)	4473	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 19135' MD, 6587' TVD (BHL), 6606' (Deepest Point Drilled) Loggers TD (ft) 19135' MD

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

Plug back procedure N/A

Kick off depth (ft) 6450'

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

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API 47- 017 - 06828 Farm name Antero Resources Corporation Well number Warrior Unit 1H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6461' (TOP)	TVD	7101' (TOP) MD

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 16771 mcfpd Oil 138 bpd NGL --- bpd Water 71 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

**\*PLEASE SEE ATTACHED EXHIBIT 3**


Please insert additional pages as applicable.


Drilling Contractor Frontier Drilling LLC  
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Allied Horizontal  
Address 381 Colonial Manor Rd City North Huntington State PA Zip 15642

Cementing Company C&J Energy Services  
Address 1650 Hackers Creek City Lane Jew State WV Zip 26378

Stimulating Company Keane Group  
Address 5825 North Sam Houston Parkway West, Suite 600 City Houston State TX Zip 77086

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-6820  
Signature  Title Permitting Agent Date 11/9/2018

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

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API 47-017-06828 Farm Name Antero Resources Corp Well Number Warrior Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/8/2018	18871	19039	48	Marcellus
2	3/21/2018	18671	18839	48	Marcellus
3	3/21/2018	18472	18640	48	Marcellus
4	3/22/2018	18273	18441	48	Marcellus
5	3/22/2018	18074	18242	48	Marcellus
6	3/22/2018	17875	18043	48	Marcellus
7	3/23/2018	17676	17844	48	Marcellus
8	3/24/2018	17477	17645	48	Marcellus
9	3/24/2018	17277	17445	48	Marcellus
10	3/25/2018	17078	17246	48	Marcellus
11	3/25/2018	16879	17047	48	Marcellus
12	3/26/2018	16680	16848	48	Marcellus
13	3/27/2018	16481	16649	48	Marcellus
14	3/27/2018	16282	16450	48	Marcellus
15	3/28/2018	16083	16251	48	Marcellus
16	3/29/2018	15883	16051	48	Marcellus
17	3/29/2018	15684	15852	48	Marcellus
18	3/29/2018	15485	15653	48	Marcellus
19	3/30/2018	15286	15454	48	Marcellus
20	3/30/2018	15087	15255	48	Marcellus
21	3/30/2018	14888	15056	48	Marcellus
22	3/31/2018	14689	14857	48	Marcellus
23	4/1/2018	14489	14657	48	Marcellus
24	4/4/2018	14290	14458	48	Marcellus
25	4/4/2018	14091	14259	48	Marcellus
26	4/5/2018	13892	14060	48	Marcellus
27	4/5/2018	13693	13861	48	Marcellus
28	4/5/2018	13494	13662	48	Marcellus
29	4/6/2018	13295	13463	48	Marcellus
30	4/6/2018	13095	13263	48	Marcellus
31	4/6/2018	12896	13064	48	Marcellus
32	4/6/2018	12697	12865	48	Marcellus
33	4/7/2018	12498	12666	48	Marcellus
34	4/7/2018	12299	12467	48	Marcellus
35	4/8/2018	12100	12268	48	Marcellus
36	4/8/2018	11901	12069	48	Marcellus
37	4/8/2018	11702	11869	48	Marcellus
38	4/8/2018	11502	11670	48	Marcellus
39	4/9/2018	11303	11471	48	Marcellus
40	4/9/2018	11104	11272	48	Marcellus
41	4/9/2018	10905	11073	48	Marcellus
42	4/10/2018	10706	10874	48	Marcellus
43	4/10/2018	10507	10675	48	Marcellus
44	4/10/2018	10308	10475	48	Marcellus
45	4/10/2018	10108	10276	48	Marcellus
46	4/11/2018	9909	10077	48	Marcellus
47	4/11/2018	9710	9878	48	Marcellus
48	4/11/2018	9511	9679	48	Marcellus
49	4/12/2018	9312	9480	48	Marcellus
50	4/12/2018	9113	9281	48	Marcellus
51	4/12/2018	8914	9081	48	Marcellus
52	4/13/2018	8714	8882	48	Marcellus
53	4/13/2018	8515	8683	48	Marcellus
54	4/13/2018	8316	8484	48	Marcellus
55	4/13/2018	8117	8285	48	Marcellus
56	4/14/2018	7918	8086	48	Marcellus
57	4/14/2018	7719	7887	48	Marcellus
58	4/14/2018	7520	7688	48	Marcellus
59	4/14/2018	7320	7488	48	Marcellus
60	4/15/2018	7121	7289	48	Marcellus

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API 47-017-06828 Farm Name Antero Resources Corp Well Number Warrior Unit 1H

EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	2/8/2018	69	8109	5389	3533	402920	8556	N/A
2	3/21/2018	70.6	8135	5798	3837	402575	8839	N/A
3	3/21/2018	71.3	8016	4704	3693	403950	8296	N/A
4	3/22/2018	68.4	7895	6292	4087	402475	8291	N/A
5	3/22/2018	73.2	7784	6036	3714	403830	8551	N/A
6	3/22/2018	73.9	7911	5858	4010	412575	9491	N/A
7	3/23/2018	74	7967	5939	3896	403330	8580	N/A
8	3/24/2018	71.3	7904	5874	3872	402635	8691	N/A
9	3/24/2018	72.4	7734	5883	4062	402575	8547	N/A
10	3/25/2018	75.3	8180	6259	3918	403480	8180	N/A
11	3/25/2018	73.7	7914	5669	4319	403080	8321	N/A
12	3/26/2018	62.9	7553	5687	3825	402760	8466	N/A
13	3/27/2018	73.1	8033	5187	4216	402575	10149	N/A
14	3/27/2018	72.9	7915	5848	4301	403170	8381	N/A
15	3/28/2018	70.8	8013	5860	4087	397495	10561	N/A
16	3/29/2018	73.2	7966	5554	4319	408890	9137	N/A
17	3/29/2018	74.7	7779	5619	4702	402000	8267	N/A
18	3/29/2018	73.4	7594	4402	4578	403000	8589	N/A
19	3/30/2018	76.5	7750	6228	5087	403000	8226	N/A
20	3/30/2018	74.8	7646	5497	4867	403000	8444	N/A
21	3/30/2018	75	7637	4634	3933	410980	8487	N/A
22	3/31/2018	75.2	7600	5781	4226	403000	8582	N/A
23	4/1/2018	73.5	7461	5369	4022	402575	8380	N/A
24	4/4/2018	73.7	7710	5547	4318	403000	8288	N/A
25	4/4/2018	71.6	7464	5892	3685	403860	8366	N/A
26	4/5/2018	70.8	7373	5521	4081	403000	8287	N/A
27	4/5/2018	71.3	7240	5577	3985	403000	8307	N/A
28	4/5/2018	76.4	7686	6194	3806	403520	8341	N/A
29	4/6/2018	75.8	7463	5863	4072	402800	8372	N/A
30	4/6/2018	78	7704	5632	4236	403000	8032	N/A
31	4/6/2018	77.3	7525	5508	3815	403300	8085	N/A
32	4/6/2018	75.6	7324	5983	3969	403830	7973	N/A
33	4/7/2018	75.7	7373	5468	4270	402000	8112	N/A
34	4/7/2018	74.2	7351	5217	4164	408000	8038	N/A
35	4/8/2018	75.8	7310	6193	3954	403000	10693	N/A
36	4/8/2018	78.8	7336	5320	4169	402000	7929	N/A
37	4/8/2018	75.1	7456	5412	3855	403000	8200	N/A
38	4/8/2018	76.6	7269	5804	4306	403360	8130	N/A
39	4/9/2018	77.8	7330	6232	4210	403000	8096	N/A
40	4/9/2018	71.5	7257	5279	4254	408000	8570	N/A
41	4/9/2018	77.3	7352	6420	4632	403700	8760	N/A
42	4/10/2018	78.6	7525	6295	4323	403640	8516	N/A
43	4/10/2018	75.2	7377	5695	3806	403000	7965	N/A
44	4/10/2018	77	7406	6156	4281	403750	7973	N/A
45	4/10/2018	75.2	7086	6151	3909	403240	7809	N/A
46	4/11/2018	73.5	7126	6340	4032	402575	7806	N/A
47	4/11/2018	72.5	7081	5788	3918	402575	7889	N/A
48	4/11/2018	78.4	7101	6494	4149	403200	7846	N/A
49	4/12/2018	76.1	6857	6293	4329	402575	7806	N/A
50	4/12/2018	75.9	6995	5896	4978	402575	9017	N/A
51	4/12/2018	77.5	6913	5697	3943	402950	7784	N/A
52	4/13/2018	74.8	6823	5438	4195	403200	7879	N/A
53	4/13/2018	77.5	7000	5888	4045	402575	7768	N/A
54	4/13/2018	79.2	7114	5966	4167	403080	7806	N/A
55	4/13/2018	78.8	6861	5464	3975	402950	7793	N/A
56	4/14/2018	79.8	6808	5760	4009	403245	7771	N/A
57	4/14/2018	79.2	6675	5833	4178	408386	7693	N/A
58	4/14/2018	77.9	6750	5700	4619	402810	8936	N/A
59	4/14/2018	78.1	6795	5998	4303	403780	7683	N/A
40	4/15/2018	78.7	6882	6056	4179	403320	7650	N/A
	AVG=	75	7,453	5,756	4,137	24,214,666	501,981	TOTAL

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API 47-017-06828 Farm Name Antero Resources Corp Well Number Warrior Unit 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
Shale	0	197	0	197
Sandy shale	197	357	197	357
Sandstone	357	417	357	417
Sandstone tr coal	417	437	417	437
Sandy shale	437	537	437	537
Shale	537	737	537	737
Silty sandstone	737	817	737	817
Silty shale	817	997	817	997
Sandstone	997	1,017	997	1,017
Silty shale	1,017	1,277	1,017	1,277
Sandstone	1,277	1,417	1,277	1,417
Sandy shale	1,417	1,677	1,417	1,677
Silty shale	1,677	1,745	1,677	1,758
Big Lime	1,745	2,299	1,758	2,332
Fifty Foot Sandstone	2,299	2,507	2,332	2,546
Gordon	2,507	2,707	2,546	2,751
Fifth Sandstone	2,707	2,778	2,751	2,824
Bayard	2,778	3,562	2,824	3,650
Speechley	3,562	3,746	3,650	3,857
Balltown	3,746	4,366	3,857	4,565
Bradford	4,366	4,793	4,565	5,049
Benson	4,793	5,091	5,049	5,385
Alexander	5,091	6,049	5,385	6,458
Sycamore	6,049	6,231	6,458	6,684
Middlesex	6,231	6,362	6,684	6,896
Burkett	6,362	6,392	6,896	6,960
Tully	6,392	6,436	6,960	7,076
Marcellus	6,436	NA	7,076	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:	3/20/2018
Job End Date:	4/15/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06828-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Warrior 1H
Latitude:	39.33347778
Longitude:	-80.80555556
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,606
Total Base Water Volume (gal):	21,891,282
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	Ascent	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	87.96593	None
Sand (Proppant)	Keane	Proppant					
			Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	11.65997	None
KFR-16FW	Keane	Friction Reducer					
			Water	7732-18-5	60.00000	0.04308	None
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01436	None
			oleic acid diethanolamide	93-83-4	1.50000	0.00108	None
			ammonium chloride	12125-02-9	1.50000	0.00108	None
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00072	None
Hydrochloric Acid (15%)	Keane	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.03967	None
WVG-111LS	Keane	Gel					
			Guar gum	9000-30-0	55.00000	0.00731	None
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00731	None
MBC-516W	Keane	Biocide					

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			Water	7732-18-5	56.70000	0.00497	None
			Glutaral	111-30-8	26.70000	0.00234	None
			didecyl dimethyl ammonium chloride	7173-51-5	8.00000	0.00070	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00047	None
			ethonal	64-17-5	2.80000	0.00025	None
KSI-19	Keane	Scale Inhibitor					
			Methanol	67-56-1	30.00000	0.00398	None
KAI-12	Keane	Acid Inhibitor					
			Ethylene glycol	107-21-1	40.00000	0.00023	None
			dipropylene glycol, monomethyl ether	34590-94-8	20.00000	0.00012	None
			Ethoxylated alcohol	68131-39-5	10.00000	0.00006	None
			formic acid	64-18-6	10.00000	0.00006	None
			Cinnamaldehyde	104-55-2	10.00000	0.00006	None
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00006	None
			isopropyl alcohol	67-63-0	5.00000	0.00003	None
KFEAC-30	Keane	Iron Control					
			Citric acid	77-92-9	30.00000	0.00049	None
			Acetic acid	64-19-7	5.00000	0.00008	None
KWBO-2	Keane	Breaker					
			Sodium persulfate	7775-27-1	99.00000	0.00030	None
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.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01436	
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00731	
			Glutaral	111-30-8	26.70000	0.00234	
			ammonium chloride	12125-02-9	1.50000	0.00108	
			oleic acid diethanolamide	93-83-4	1.50000	0.00108	
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00072	
			didecyl dimethyl ammonium chloride	7173-51-5	8.00000	0.00070	
			Citric acid	77-92-9	30.00000	0.00049	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00047	
			ethonal	64-17-5	2.80000	0.00025	
			dipropylene glycol, monomethyl ether	34590-94-8	20.00000	0.00012	
			Cinnamaldehyde	104-55-2	10.00000	0.00006	
			Ethoxylated alcohol	68131-39-5	10.00000	0.00006	
			formic acid	64-18-6	10.00000	0.00006	
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00006	

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			isopropyl alcohol	67-63-0	5.00000	0.00003
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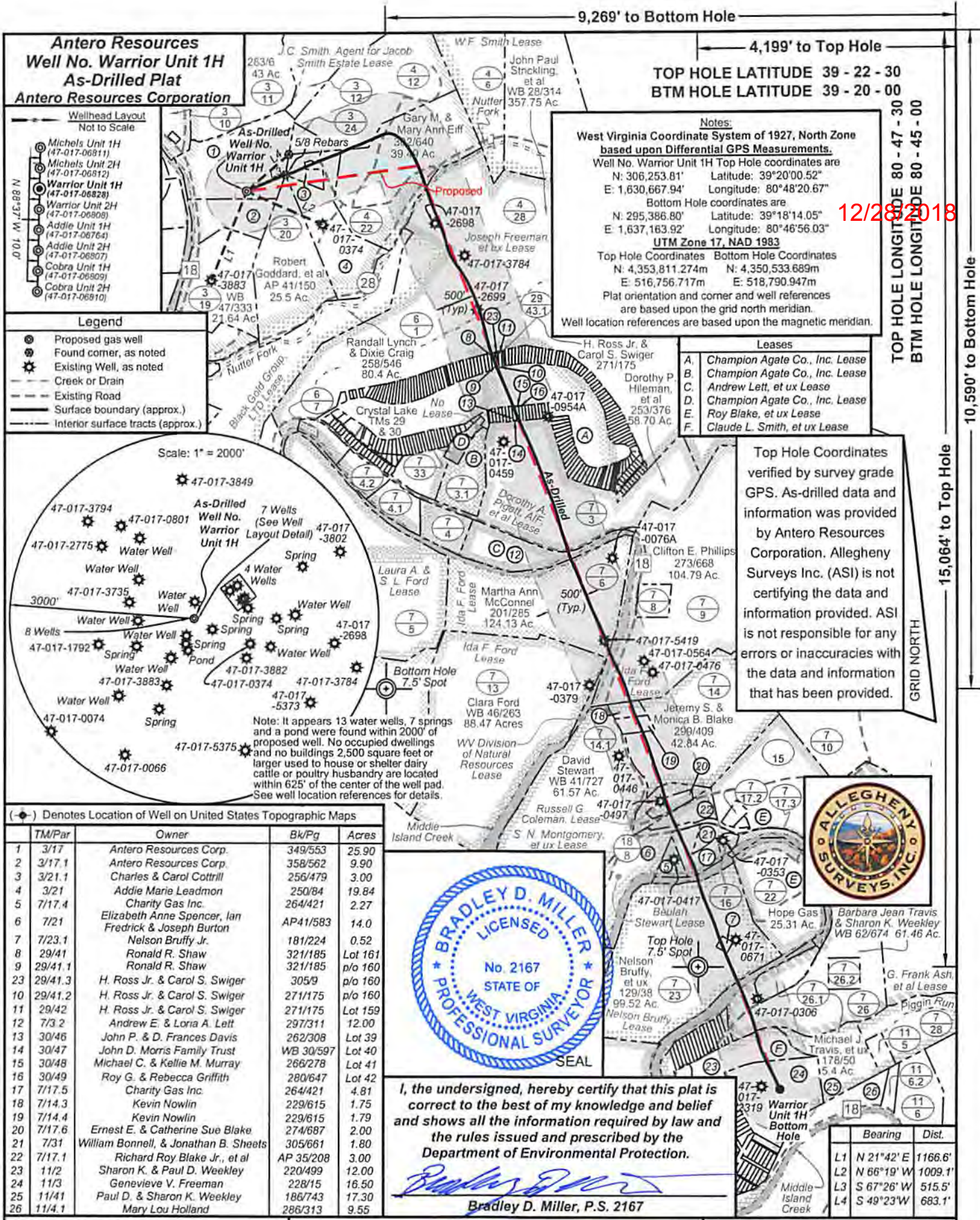
\* Total Water Volume sources may include fresh water, produced water, and/or recycled water  
 \*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

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(j) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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WV Department of  
 Environmental Protection



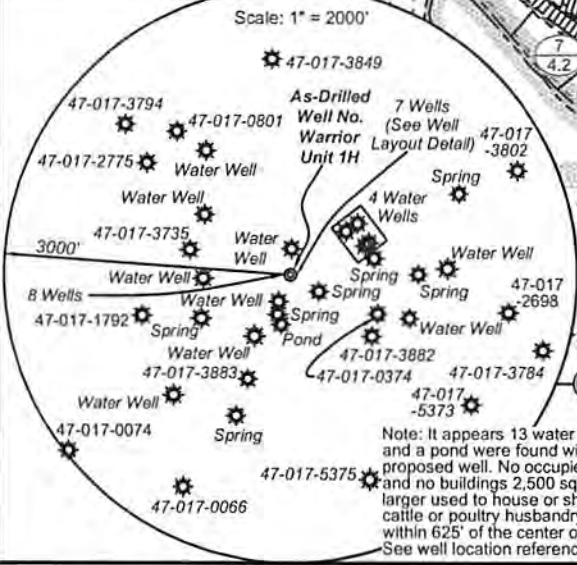
**Notes:**  
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
 Well No. Warrior Unit 1H Top Hole coordinates are  
 N: 306,253.81' Longitude: 80°20'00.52"  
 E: 1,630,667.94' Longitude: 80°48'20.67"  
 Bottom Hole coordinates are  
 N: 295,386.80' Longitude: 39°18'14.05"  
 E: 1,637,163.92' Longitude: 80°46'56.03"  
**UTM Zone 17, NAD 1983**  
 Top Hole Coordinates Bottom Hole Coordinates  
 N: 4,353,811.274m N: 4,350,533.689m  
 E: 516,756.717m E: 518,790.947m  
 Plat orientation and corner and well references are based upon the grid north meridian.  
 Well location references are based upon the magnetic meridian.

**Leases**

A.	Champion Agate Co., Inc. Lease
B.	Champion Agate Co., Inc. Lease
C.	Andrew Lett, et ux Lease
D.	Champion Agate Co., Inc. Lease
E.	Roy Blake, et ux Lease
F.	Claude L. Smith, et ux Lease

Top Hole Coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

- Legend**
- Proposed gas well
  - Found corner, as noted
  - Existing Well, as noted
  - Creek or Drain
  - Existing Road
  - Surface boundary (approx.)
  - Interior surface tracts (approx.)



(\*) Denotes Location of Well on United States Topographic Maps

TM/Par	Owner	Bk/Pg	Acres
1	3/17	Antero Resources Corp.	349/553 25.90
2	3/17.1	Antero Resources Corp.	358/562 9.90
3	3/21.1	Charles & Carol Cottrill	256/479 3.00
4	3/21	Addie Marie Leadmon	250/84 19.84
5	7/17.4	Charity Gas Inc.	264/421 2.27
6	7/21	Elizabeth Anne Spencer, Ian Fredrick & Joseph Burton	AP41/583 14.0
7	7/23.1	Nelson Bruffy Jr.	181/224 0.52
8	29/41	Ronald R. Shaw	321/185 Lot 161
9	29/41.1	Ronald R. Shaw	321/185 p/o 160
23	29/41.3	H. Ross Jr. & Carol S. Swiger	305/9 p/o 160
10	29/41.2	H. Ross Jr. & Carol S. Swiger	271/175 p/o 160
11	29/42	H. Ross Jr. & Carol S. Swiger	271/175 Lot 159
12	7/3.2	Andrew E. & Loria A. Lett	297/311 12.00
13	30/46	John P. & D. Frances Davis	262/308 Lot 39
14	30/47	John D. Morris Family Trust	WB 30/597 Lot 40
15	30/48	Michael C. & Kellie M. Murray	266/278 Lot 41
16	30/49	Roy G. & Rebecca Griffith	280/647 Lot 42
17	7/17.5	Charity Gas Inc.	264/421 4.81
18	7/14.3	Kevin Nowlin	229/615 1.75
19	7/14.4	Kevin Nowlin	229/615 1.79
20	7/17.6	Ernest E. & Catherine Sue Blake	274/687 2.00
21	7/31	William Bonnell, & Jonathan B. Sheets	305/661 1.80
22	7/17.1	Richard Roy Blake Jr., et al	AP 35/208 3.00
23	11/2	Sharon K. & Paul D. Weekley	220/499 12.00
24	11/3	Genevieve V. Freeman	228/15 16.50
25	11/41	Paul D. & Sharon K. Weekley	186/743 17.30
26	11/4.1	Mary Lou Holland	286/313 9.55



I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

*Bradley D. Miller*  
 Bradley D. Miller, P.S. 2167



	Bearing	Dist.
L1	N 21°42' E	1166.6'
L2	N 66°19' W	1009.1'
L3	S 67°26' W	515.5'
L4	S 49°23' W	683.1'

FILE NO: 52-30-WU-14  
 DRAWING NO: Warrior 1H As-Drilled Well Plat  
 SCALE: 1" = 1500'  
 MINIMUM DEGREE OF ACCURACY: Submeter  
 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: October 5 20 18  
 OPERATOR'S WELL NO. Warrior Unit 1H  
 API WELL NO  
 47 - 017 - 06828  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION: 891' As-Drilled WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union  
 DISTRICT: West Union COUNTY: Doddridge

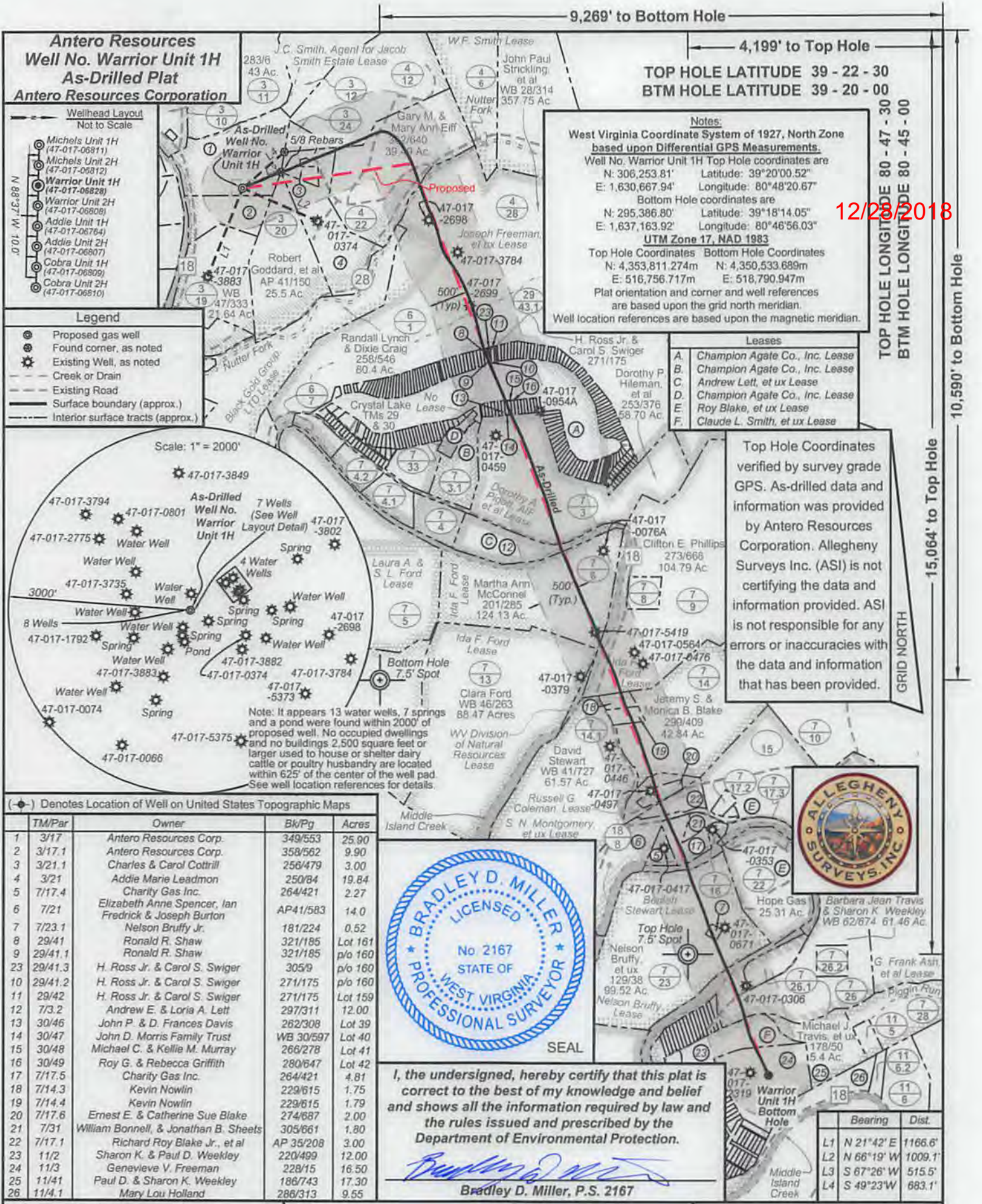
SURFACE OWNER: Antero Resources Corp. ACREAGE: 25.9 90; 80; 51  
 ROYALTY OWNER: J.C. Smith, Agent for Jacob Smith Estate, Dorothy A. Pigott, Alf, et al; Russell G. Coleman  
 Nelson Bruffy, G. Frank Ash, et al; Roy Blake, et ux; Andrew Lett, et ux; Joseph Freeman, et ux; S. N. Montgomery, et ux; Claude L. Smith, et ux  
 ACRES: 56.07; 11.90; 58.70  
 ACRES: 114; 32.07; 290; 124  
 LEASE NO: ACRES: 112; 100; 140; 600

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,587'TVD  
 19,135' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
 Denver, CO 80202 Charleston, WV 25313

12/28/2018





**Notes:**  
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
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C.	Andrew Lett, et ux Lease
D.	Champion Agate Co., Inc. Lease
E.	Roy Blake, et ux Lease
F.	Claude L. Smith, et ux Lease

Top Hole Coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

- Legend**
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  - Found corner, as noted
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  - Existing Road
  - Surface boundary (approx.)
  - Interior surface tracts (approx.)



Denotes Location of Well on United States Topographic Maps

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3	Charles & Carol Cottrill	256/479	3.00
4	Addie Marie Leadmon	250/84	19.84
5	Charity Gas Inc.	264/421	2.27
6	Elizabeth Anne Spencer, Ian Fredrick & Joseph Burton	AP41/583	14.0
7	Nelson Bruffy Jr.	181/224	0.52
8	Ronald R. Shaw	321/185	Lot 161
9	Ronald R. Shaw	321/185	p/o 160
23	H. Ross Jr. & Carol S. Swiger	305/9	p/o 160
10	H. Ross Jr. & Carol S. Swiger	271/175	p/o 160
11	H. Ross Jr. & Carol S. Swiger	271/175	Lot 159
12	Andrew E. & Loria A. Lett	297/311	12.00
13	John P. & D. Frances Davis	262/308	Lot 39
14	John D. Morris Family Trust	WB 30/597	Lot 40
15	Michael C. & Kellie M. Murray	266/278	Lot 41
16	Roy G. & Rebecca Griffith	280/647	Lot 42
17	Charity Gas Inc.	264/421	4.81
18	Kevin Nowlin	229/615	1.75
19	Kevin Nowlin	229/615	1.79
20	Ernest E. & Catherine Sue Blake	274/687	2.00
21	William Bonnell, & Jonathan B. Sheets	305/661	1.80
22	Richard Roy Blake Jr., et al	AP 35/208	3.00
23	Sharon K. & Paul D. Weekley	220/499	12.00
24	Genevieve V. Freeman	228/15	16.50
25	Paul D. & Sharon K. Weekley	186/743	17.30
26	Mary Lou Holland	286/313	9.55



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*Bradley D. Miller*  
 Bradley D. Miller, P.S. 2167



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 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: October 5, 2018  
 OPERATOR'S WELL NO. Warrior Unit 1H  
 API WELL NO. 47-017-06828  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION: 891' As-Drilled WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union  
 DISTRICT: West Union COUNTY: Doddridge

SURFACE OWNER: Antero Resources Corp. ACREAGE: 25.9 90; 80; 51  
 ROYALTY OWNER: J.C. Smith, Agent for Jacob Smith Estate; Dorothy A. Pigott, AIF, et al; Ida F. Ford (2) LEASE NO: ACREAGE: 112; 100; 140; 600

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,587'TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 19,135' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
 Denver, CO 80202 Charleston, WV 25313

12/28/2018

**Antero Resources Corporation**  
**As-Dilled Plat**  
**Well No. Warrior Unit 1H**  
**Antero Resources Corporation**

Wellhead Layout  
 Not to Scale

Antero Resources Corporation  
 1815 Wynkoop Street  
 Denver, CO 80202

**Notes**  
 West Virginia Coordinates System of 1927, North Zone  
 based upon Differential GPS Measurements  
 Well No. Warrior Unit 1H Top Hole Coordinates are  
 Latitude: 39°20'00.52" N  
 Longitude: 80°48'50.67" E  
 Bottom Hole Coordinates are  
 Latitude: 39°18'14.05" N  
 Longitude: 80°48'56.03" E  
 UTM Zone 17 NAD 1983  
 Top Hole Coordinates Bottom Hole Coordinates  
 N: 4,353,811.574m E: 518,780.947m  
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 Plat orientation and corner and well references  
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 Well location references are based upon the magnetic meridian.

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B	Champion Agate Co., Inc. Lease
C	Andrew Est. et ux Lease
D	Champion Agate Co., Inc. Lease
E	Foy Blake, et ux Lease
F	Clayde L. Smith et ux Lease

Top Hole Coordinates  
 verified by survey grade  
 GPS. As-dilled data and  
 information was provided  
 by Antero Resources  
 Corporation. Allegedly  
 Surveys Inc. (ASI) is not  
 certifying the data and  
 information provided. ASI  
 is not responsible for any  
 errors or inaccuracies with  
 the data and information  
 that has been provided.



Denotes Location of Well on United States Topographic Maps

Trmpar	Owner	Acres	Bk/Pg
3717	Antero Resources Corp.	28.80	349823
3717	Antero Resources Corp.	9.90	388583
3717	Charles & Carol Cottrell	3.00	288479
3717	Abdul Malik Leadman	19.84	28084
3717	Charly Gas Inc.	5.27	284421
3717	Elizabeth Anne Spencer, Jan	14.0	4911883
3717	Frederick & Joseph Burton	0.25	181224
3717	Ronald R. Shaw	161	321182
3717	Ronald R. Shaw	160	321182
3717	H. Ross Jr. & Carol S. Swiger	309	309
3717	H. Ross Jr. & Carol S. Swiger	180	321175
3717	H. Ross Jr. & Carol S. Swiger	180	321175
3717	Andrew E. & Lora A. Lett	15.00	287311
3717	John P. & D. Frances Davis	1.39	283308
3717	John D. Moore Family Trust	1.40	WB 30827
3717	Michael C. & Kellie M. Murray	1.41	288278
3717	Roy G. & Rebecca Griffin	1.45	288427
3717	Charly Gas Inc.	4.81	284421
3717	Kevin Nowlin	1.75	228815
3717	Kevin Nowlin	1.78	228815
3717	Ernest E. & Catherine Sue Blake	2.00	274887
3717	William Bonnell, & Jonathan B. Streets	1.80	302881
3717	Richard Roy Blake, Jr. et al	3.00	AP 324208
3717	Sharon K. & Paul D. Weekley	15.00	250498
3717	Genevieve V. Freeman	18.50	22815
3717	Paul D. & Sharon K. Weekley	17.90	188743
3717	Mary Lou Holland	9.55	288313



I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller, P.S. 2187

FILE NO: 52-30-WU-14  
 DRAWING NO: Warrior 1H As-Dilled Well Plat  
 SCALE: 1" = 1500'  
 MINIMUM DEGREE OF ACCURACY: Submeter  
 PROVEN SOURCE OF ELEVATION: WVDOT, Hamisville, WV

STATE COUNTY PERMIT 47 - 017 - 08828  
 API WELL NO  
 OPERATORS WELL NO: Warrior Unit 1H  
 DATE: October 5, 2018

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION: 881' As-Dilled WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union  
 DISTRICT: West Union COUNTY: Doddridge

SURFACE OWNER: Antero Resources Corp. ACRES: 28.8  
 ROYALTY OWNER: J.C. Smith Agent for Jacob Smith Estate; Dorothy A. Pigott, AIF, et al; Ida F. Ford (S) LEASE NO: 114; 32.07; 290; 124  
 ACRES: 112; 100; 140; 600

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY As-Dilled)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 1835' MD

DESIGNATED AGENT: Diana Stemper - CT Corporation System  
 ADDRESS: 1815 Wynkoop Street Denver, CO 80202  
 ADDRESS: 5400 D Big Tyler Road Chichester, WV 25213



Dist	Bearing
L1	N 21°43' E 1188.8'
L2	N 88°19' W 1008.7'
L3	S 87°50' W 518.5'
L4	S 40°23' W 683.1'

4,193' to Top Hole  
 TOP HOLE LATITUDE 39 - 22 - 30  
 BTM HOLE LATITUDE 39 - 20 - 00  
 8,289' to Bottom Hole

BLM HOLE LONGITUDE 80 - 42 - 00  
 TOP HOLE LONGITUDE 80 - 47 - 30

101' to Bottom Hole  
 GRID NORTH