

WR-35  
Rev. 8/23/13

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

API 47 - 017 - 06837 County Doddridge District Central  
Quad Pullman 7.5' (TH) Pennsboro 7.5' (BH) Pad Name Stanley Pad Field/Pool Name ----  
Farm name Stanley Webb et al Well Number Hattie Unit 3H  
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 4343070m Easting 510402m  
Landing Point of Curve Northing 4343089m Easting 510136m  
Bottom Hole Northing 4346120m Easting 508719m

Elevation (ft) 1095' 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 7/13/2017 Date drilling commenced 8/1/2018 Date drilling ceased 9/29/2018  
Date completion activities began 10/10/2018 Date completion activities ceased 11/20/2018  
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 15' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft None Identified 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:

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API 47-017 - 06837 Farm name Stanley Webb et al Well number Hattie Unit 3H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	105'	New	78.67#, ASTM A500-13	N/A	Y
Surface	17-1/2"	13-3/8"	565'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2598'	New	36#, HCP-110	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	18370'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6894'		23#, P-110		
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	1.20	247	0'	8 Hrs.
Surface	Class A	376 sx	15.6	1.21	455	0'	8 Hrs.
Coal							
Intermediate 1	Class A	876 sx	15.6	1.19	1042	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	690 sx (Lead) 2130 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.40 (Lead), 1.60 (Tail)	4372	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 18390' MD, 6472' TVD (BHL), 6595' (Deepest Point Drilled) Loggers TD (ft) 18390' MD

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

Plug back procedure N/A

Kick off depth (ft) 6355'

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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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
<b>*PLEASE SEE ATTACHED EXHIBIT 1</b>					


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)
<b>*PLEASE SEE ATTACHED EXHIBIT 2</b>								


Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus	6548' (TOP) TVD	6959' (TOP) MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3000 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 15854 mcfpd Oil 21 bpd NGL --- bpd Water 1 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
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**\*PLEASE SEE ATTACHED EXHIBIT 3**


Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company LLC  
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Reach Wireline  
Address 600 Alpha Drive City Canonsburg State PA Zip 15317

Cementing Company Schlumberger  
Address 300 Schlumberger Dr City Sugar Land State TX Zip 77478

Stimulating Company US Well Service  
Address 535 Industrial Park Drive City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-7310  
Signature *Karin Cox* Title Permitting Agent Date 3/4/2019

API 47-017-06837 Farm Name Stanley Webb et al Well Number Hattie Unit 3H

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/10/2018	18167.5	18267	24	Marcellus
2	10/13/2018	17968.15	18136.275	48	Marcellus
3	10/14/2018	17768.8	17936.925	48	Marcellus
4	10/15/2018	17569.45	17737.575	48	Marcellus
5	10/15/2018	17370.1	17538.225	48	Marcellus
6	10/16/2018	17170.75	17338.875	48	Marcellus
7	10/17/2018	16971.4	17139.525	48	Marcellus
8	10/17/2018	16772.05	16940.175	48	Marcellus
9	10/18/2018	16572.7	16740.825	48	Marcellus
10	10/18/2018	16373.35	16541.475	48	Marcellus
11	10/19/2018	16174	16342.125	48	Marcellus
12	10/19/2018	15974.65	16142.775	48	Marcellus
13	10/20/2018	15775.3	15943.425	48	Marcellus
14	10/20/2018	15575.95	15744.075	48	Marcellus
15	10/20/2018	15376.6	15544.725	48	Marcellus
16	10/21/2018	15177.25	15345.375	48	Marcellus
17	10/21/2018	14977.9	15146.025	48	Marcellus
18	10/22/2018	14778.55	14946.675	48	Marcellus
19	10/22/2018	14579.2	14747.325	48	Marcellus
20	10/23/2018	14379.85	14547.975	48	Marcellus
21	10/23/2018	14180.5	14348.625	48	Marcellus
22	10/23/2018	13981.15	14149.275	48	Marcellus
23	10/24/2018	13781.8	13949.925	48	Marcellus
24	10/24/2018	13582.45	13750.575	48	Marcellus
25	10/25/2018	13383.1	13551.225	48	Marcellus
26	10/25/2018	13183.75	13351.875	48	Marcellus
27	10/26/2018	12984.4	13152.525	48	Marcellus
28	10/26/2018	12785.05	12953.175	48	Marcellus
29	10/26/2018	12585.7	12753.825	48	Marcellus
30	10/27/2018	12386.35	12554.475	48	Marcellus
31	10/27/2018	12187	12355.125	48	Marcellus
32	10/27/2018	11987.65	12155.775	48	Marcellus
33	10/28/2018	11788.3	11956.425	48	Marcellus
34	10/28/2018	11588.95	11757.075	48	Marcellus
35	10/28/2018	11389.6	11557.725	48	Marcellus
36	10/29/2018	11190.25	11358.375	48	Marcellus
37	10/29/2018	10990.9	11159.025	48	Marcellus
38	10/29/2018	10791.55	10959.675	48	Marcellus
39	10/30/2018	10592.2	10760.325	48	Marcellus
40	10/30/2018	10392.85	10560.975	48	Marcellus
41	10/30/2018	10193.5	10361.625	48	Marcellus
42	10/30/2018	9994.15	10162.275	48	Marcellus
43	10/31/2018	9794.8	9962.925	48	Marcellus
44	10/31/2018	9595.45	9763.575	48	Marcellus
45	10/31/2018	9396.1	9564.225	48	Marcellus
46	10/31/2018	9196.75	9364.875	48	Marcellus
47	10/31/2018	8997.4	9165.525	48	Marcellus
48	11/1/2018	8798.05	8966.175	48	Marcellus
49	11/1/2018	8598.7	8766.825	48	Marcellus
50	11/1/2018	8399.35	8567.475	48	Marcellus
51	11/1/2018	8200	8368.125	48	Marcellus
52	11/2/2018	8000.65	8168.775	48	Marcellus
53	11/2/2018	7801.3	7969.425	48	Marcellus
54	11/2/2018	7601.95	7770.075	48	Marcellus
55	11/3/2018	7402.6	7570.725	48	Marcellus
56	11/3/2018	7203.25	7371.375	48	Marcellus
57	11/3/2018	7003.9	7172.025	48	Marcellus

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## 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	10/10/2018	65.9999	8527.778	6491	4064	201200	7073	N/A
2	10/13/2018	67.73333	8097.333	5745	5065	398000	10597	N/A
3	10/14/2018	64.6219	8151.507	5295	4152	399040	9988	N/A
4	10/15/2018	68.6609	7930.953	5157	3992	397450	8410	N/A
5	10/15/2018	64.6439	7888.079	5404	3681	401080	8236	N/A
6	10/16/2018	68.0431	8174.262	5368	3448	397080	8037	N/A
7	10/17/2018	65.4794	7987.5	6343	3957	397350	8329	N/A
8	10/17/2018	64.6401	8127.731	6181	3658	400020	7997	N/A
9	10/18/2018	65.7318	8164.183	6294	3410	400010	8154	N/A
10	10/18/2018	66.8417	8193.04	6750	3458	398060	7841	N/A
11	10/19/2018	67.8072	7941.518	5936	3763	396850	9158	N/A
12	10/19/2018	75.4577	8154.668	6007	3231	398500	8020	N/A
13	10/20/2018	76.8028	8138.185	6038	3972	395080	7909	N/A
14	10/20/2018	76.9091	7918.789	6123	4107	397400	8589	N/A
15	10/20/2018	73.6236	8116.211	5923	3923	400100	9144	N/A
16	10/21/2018	70.3723	8270.346	5177	3963	397100	7944	N/A
17	10/21/2018	75.3895	8021.372	5572	3915	397550	7827	N/A
18	10/22/2018	76.5464	8141.516	5462	3864	398500	8007	N/A
19	10/22/2018	70.9712	8032.182	5668	3061	396800	7992	N/A
20	10/23/2018	66.8115	7795.761	5340	3766	398900	9534	N/A
21	10/23/2018	72.2497	8248.538	5327	3764	398550	7906	N/A
22	10/23/2018	69.868	7874.555	5619	3592	398500	9725	N/A
23	10/24/2018	75.2687	7972.495	5313	3540	397100	7807	N/A
24	10/24/2018	74.5662	7867.32	5701	3630	396600	7840	N/A
25	10/25/2018	78.3574	8014.597	5269	3689	398250	7906	N/A
26	10/25/2018	77.5255	7853.254	5720	3697	396600	7877	N/A
27	10/26/2018	73.4148	7670.326	6229	3780	396600	7872	N/A
28	10/26/2018	74.194	8073.139	5334	3247	398350	7823	N/A
29	10/26/2018	72.4524	7984.379	5944	3452	398600	7853	N/A
30	10/27/2018	70.8753	8132.318	5902	3463	396700	7783	N/A
31	10/27/2018	76.3144	8070.136	5608	3418	398280	7799	N/A
32	10/27/2018	73.8288	8053.055	5292	3476	396600	7746	N/A
33	10/28/2018	77.9001	7878.655	5866	3459	398450	7797	N/A
34	10/28/2018	78.2633	8066.601	5612	3458	396098	7730	N/A
35	10/28/2018	80.0772	7497.25	6211	3195	396700	7772	N/A
36	10/29/2018	78.7785	7840.51	5711	3499	398020	7773	N/A
37	10/29/2018	76.3938	7897.832	6318	3795	397080	7697	N/A
38	10/29/2018	79.3587	7694.827	6277	3463	398500	8010	N/A
39	10/30/2018	80.3047	7521.61	6373	3777	398700	7721	N/A
40	10/30/2018	79.9061	7173.741	5612	3936	397080	7694	N/A
41	10/30/2018	76.9588	7739.01	6077	3521	402010	7687	N/A
42	10/30/2018	80.2215	7524.38	6571	3000	398700	7759	N/A
43	10/31/2018	79.6485	7891.835	5208	3294	398700	7678	N/A
44	10/31/2018	79.2758	7210.928	5691	3683	398080	7684	N/A
45	10/31/2018	78.2832	7099.592	5541	3985	398070	7575	N/A
46	10/31/2018	77.0969	7412.528	6120	3351	396600	7677	N/A
47	10/31/2018	80.2332	7359.143	5653	3383	396600	7606	N/A
48	11/1/2018	79.9838	7329.837	5045	3819	400880	7641	N/A
49	11/1/2018	79.3917	7225.287	5991	3188	395660	7604	N/A
50	11/1/2018	75.4536	7585.739	6684	3696	400010	7623	N/A
51	11/1/2018	80.0457	7420.171	6036	3285	396700	7561	N/A
52	11/2/2018	79.6712	7513.228	6069	3410	398600	7631	N/A
53	11/2/2018	79.7093	7098.822	5781	3346	397600	7608	N/A
54	11/2/2018	79.0084	7346.3	5853	3413	396800	7589	N/A
55	11/3/2018	80.1153	7479.777	5518	3517	398700	7567	N/A
56	11/3/2018	81.0079	6938.27	5965	3673	395060	7524	N/A
57	11/3/2018	78.9448	6958.505	5663	3637	415010	8119	N/A
	AVG=	75	7,795	5,807	3,631	22,501,208	457,050	TOTAL

API 47-017-06837 Farm Name Stanley Webb et al Well Number Hattie Unit 3H

## EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Freshwater	15'	N/A	15'	N/A
Silty Sandstone	0	335	0	335
Sandy siltstone	est 335	835	est 335	835
Sandstone	est 835	915	est 835	915
Silty Sandstone	est 915	1,055	est 915	1,055
limey siltstone	est 1055	1,175	est 1055	1,175
silty sandstone, tr. coal	est 1175	1,315	est 1175	1,315
silty sandstone	est 1315	1,375	est 1315	1,375
silty shale	est 1375	1,635	est 1375	1,635
sandstone, tr coal	est 1635	1,675	est 1635	1,675
silty sandstone	est 1675	1,815	est 1675	1,815
sandstone	est 1815	1,875	est 1815	1,875
sandy shale	est 1875	1,955	est 1875	1,955
shaly sand	est 1955	2,035	est 1955	2,036
Big Lime	2,035	2,220	2,036	2,222
Big Injun	2,220	2,606	2,222	2,607
Gantz Sand	2,606	2,893	2,607	2,894
Fifty Foot Sandstone	2,893	3,005	2,894	3,007
Gordon	3,005	3,160	3,007	3,164
Fifth Sandstone	3,160	3,419	3,164	3,428
Bayard	3,419	3,232	3,428	3,543
Warren	3,232	3,986	3,543	4,014
Speechley	3,986	4,219	4,014	4,256
Balltown	4,219	4,656	4,256	4,710
Bradford	4,656	5,051	4,710	5,123
Benson	5,051	5,311	5,123	5,394
Alexander	5,311	5,912	5,394	6,019
Rhinestreet	5,912	6,214	6,019	6,344
Sycamore	6,214	6,376	6,344	6,552
Middlesex	6,376	6,489	6,552	6,762
Burkett	6,489	6,522	6,762	6,854
Tully	6,522	6,548	6,854	6,959
Marcellus	6,548	NA	6,959	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.

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/10/2018
Job End Date:	11/3/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06837-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Hattie 3H
Latitude:	39.23679400
Longitude:	-80.87964400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,597
Total Base Water Volume (gal):	20,183,482
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	88.01450	
Sand	U.S. Well Services, LLC	Proppant					
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Crystalline Silica, quartz	14808-60-7	100.00000	11.76516	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	87.40000	0.12184	
			Hydrogen Chloride	7647-01-0	17.50000	0.02833	
			2-Propenoic acid, polymer with 2-propenamide	29003-06-9	30.00000	0.01748	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01407	
LGC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.01364	
			Petroleum Distillates	64742-47-8	60.00000	0.01292	
			Suspending agent (solid)	14808-60-7	3.00000	0.00209	
			Surfactant	68439-51-0	3.00000	0.00082	



Bioclear 2000	J.S. Well Services, LLC	Anti-Bacterial Agent						
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00406		
			Deionized Water	7732-18-5	28.00000	0.00232		
SI-1200	J.S. Well Services, LLC	Scale Inhibitor						
			Ethylene Glycol	107-21-1	40.00000	0.00091		
			Proprietary Scale Inhibitor	Proprietary	10.00000	0.00024		
SI-1200s	J.S. Well Services, LLC	Scale Inhibitor						
			Proprietary Scale Inhibitor	Proprietary	10.00000	0.00107		
AP One	J.S. Well Services, LLC	Gel Breakers						
			Ammonium Persulfate	7727-54-0	100.00000	0.00046		
AI-303	J.S. Well Services, LLC	Acid Corrosion Inhibitors						
			Ethylene glycol	107-21-1	40.00000	0.00004		
			Formic acid	64-18-6	20.00000	0.00001		
			Cinnamaldehyde	104-55-2	20.00000	0.00001		
			Butyl cellosolve	111-76-2	20.00000	0.00001		
			Polyether	60828-78-6	10.00000	0.00001		
			Acetophenone,thiourea,formaldehyde polymer	68527-49-1	5.00000	0.00000		

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)

LATITUDE 39°15'00" 1,316'

6,826' TO BOTTOM HOLE

LATITUDE 39°17'30"

LONGITUDE 80°23'30"

4,810'

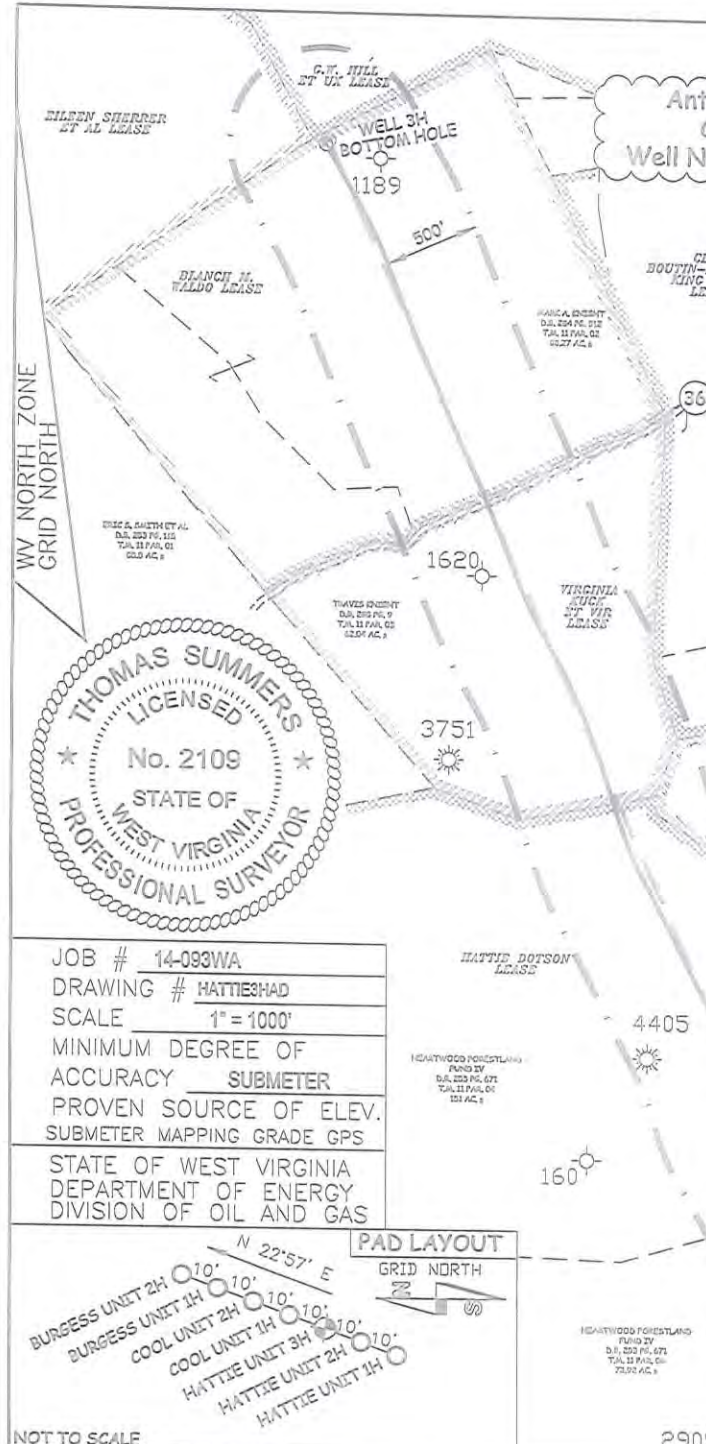
9,972' TO BOTTOM HOLE

LONGITUDE 80°52'30"

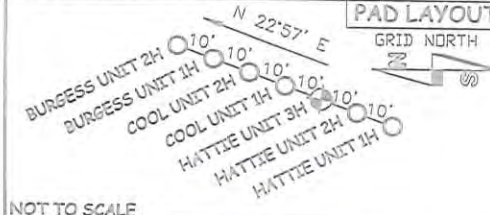
AS DRILLED DATA:  
 WELL 3H TOP HOLE INFORMATION:  
 N: 271,356ft E: 1,609,225ft  
 LAT: 39°14'12.46" LON: 80°52'46.73"  
 BOTTOM HOLE INFORMATION:  
 N: 281,454ft E: 1,603,869ft  
 LAT: 39°15'51.44" LON: 80°53'56.79"  
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE  
 MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD 83 (UTM) ZONE 17 COORDS:  
 WELL 3H TOP HOLE INFORMATION:  
 N: 4,343,070m E: 510,402m  
 BOTTOM HOLE INFORMATION:  
 N: 4,346,120m E: 508,719m

LINE	BEARING	DISTANCE
L1	S 77°00' E	1379.04'
L2	S 76°35' E	1804.51'
L3	S 75°04' E	1554.60'
L4	S 65°46' E	1596.34'
L5	S 64°01' E	1381.04'
L6	S 63°52' E	1035.73'
L7	S 60°31' E	1013.41'
L8	S 50°00' E	1045.00'
L9	S 51°10' E	1175.61'
L10	S 48°41' E	1080.70'
L11	S 44°24' E	1202.08'
L12	S 41°37' E	1125.04'
L13	S 32°54' E	947.63'
L14	S 21° E	1151.29'
L15	S 17°00' E	1113.08'
L16	S 08°33' E	1113.22'
L17	S 01°58' W	1414.85'
L18	S 05°17' W	1426.29'
L19	S 23°05' W	1800.45'
L20	S 42°21' W	1208.64'
L21	S 67°20' W	1416.97'
L22	S 73°24' W	1429.65'



JOB # 14-093WA  
 DRAWING # HATTIE3HAD  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS  
 STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS



LEGEND  
 --- Surface Owner Boundary Lines +/-  
 - - - Interior Surface Tracts +/-  
 --- Proposed Well Path  
 O --- As Drilled Well Path

THOMAS SUMMERS P.S. 2109  
 DATE 01/29/19  
 OPERATOR'S WELL # HATTIE UNIT #3H  
 API WELL # 47 - 017 - 06837  
 STATE COUNTY PERMIT

NOTE:  
 1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,000) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.  
 2. TOP HOLE DATA SHOWS HORIZON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.  
 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.  
 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.  
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
 WILLOW LAND SURVEYING PLLC  
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 1,095' AS BUILT WATERSHED NORTH FORK HUGHES RIVER  
 QUADRANGLE PULLMAN 7.5 (TH) PENNSBORO 7.5 (8H) DISTRICT CENTRAL COUNTY DODDRIDGE  
 SURFACE OWNER STANLEY WEBB ET AL ACREAGE 59.18 ACRES +/-  
 OIL & GAS ROYALTY OWNER RALPH LEGGETT ET UX; HAROLD BURGESS ET UX; I.L. MORRIS;  
 GERALDINE WILLARD; HATTIE DOTSON; VIRGINIA KUCK ET VIR; BLANCH M. WALDO  
 LEASE ACREAGE 75 ACRES:: 43.5 ACRES:: 26 ACRES:: 131.5 ACRES:: 240 ACRES:: 56 ACRES:: 95 ACRES::  
 PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_  
 PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED  
 TARGET FORMATION MARCELLUS PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_  
 ESTIMATED DEPTH 6,472' TVD 18,390' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER  
 ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM  
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

