

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

API 47 - 095 - 02739 County Tyler District McElroy  
Quad Shirley Pad Name Shepherd Field/Pool Name -----  
Farm name John Shepherd Well Number Rapids 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 4360476m Easting 520567m  
Landing Point of Curve Northing 4359989.32m Easting 520069.74m  
Bottom Hole Northing 4364708m Easting 518517m

Elevation (ft) 935' 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 6/28/2021 Date drilling commenced 7/24/2021 Date drilling ceased 9/7/2021  
Date completion activities began 10/13/2021 Date completion activities ceased 11/8/2021  
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 662' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1586' 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: \_\_\_\_\_

WR-35  
Rev. 8/23/13

API 47-095 - 02739 Farm name John Shepherd Well number Rapids 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"	80'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	363'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3313'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	24041'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7362'		4.7#, 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	350 sx	15.6	1.18	73	0'	8 Hrs.
Surface	Class A	417 sx	15.6	1.20	92	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1138 sx	15.6	1.19	239	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	792 sx (Lead) 3803 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.4 (Lead), 1.26 (Tail)	853	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 24085' MD, 6656' TVD (BHL), 6674' (Deepest Point Drilled) Loggers TD (ft) 24085' MD  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6420'

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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PRODUCING FORMATION(S)	DEPTHS		
	DEPTH IN FT	TVD	MD
Marcellus	6619' (TOP)	7431' (TOP)	

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs  
 OPEN FLOW Gas 8623 mcfpd Oil 84 bpd NGL --- bpd Water 863 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	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 H & P Drilling  
 Address 912 N Eagle Valley Rd City Howard State PA Zip 16841  
 Logging Company Nine Energy Services  
 Address 6500 West Fwy City Fort Worth State TX Zip 76116  
 Cementing Company Schlumberger  
 Address 5599 San Felipe St City Houston State TX Zip 77056  
 Stimulating Company Halliburton  
 Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Please insert additional pages as applicable.

Completed by Brandi Hankins Telephone 303-357-7223  
 Signature  Title Completions Technician Date 3/31/22  
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Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/14/2021	23966.8	23922.7	36	Marcellus
2	10/14/2021	23881.06549	23666.2585	36	Marcellus
3	10/14/2021	23628.12396	23413.3169	36	Marcellus
4	10/15/2021	23375.18242	23160.3754	36	Marcellus
5	10/15/2021	23122.24088	22907.4338	36	Marcellus
6	10/15/2021	22869.29934	22654.4923	36	Marcellus
7	10/15/2021	22616.3578	22401.5508	36	Marcellus
8	10/15/2021	22363.41626	22148.6092	36	Marcellus
9	10/16/2021	22110.47473	21895.6677	36	Marcellus
10	10/16/2021	21857.53319	21642.7262	36	Marcellus
11	10/16/2021	21604.59165	21389.7846	36	Marcellus
12	10/16/2021	21351.65011	21136.8431	36	Marcellus
13	10/17/2021	21098.70857	20883.9015	36	Marcellus
14	10/17/2021	20845.76703	20630.96	36	Marcellus
15	10/17/2021	20592.82549	20378.0185	36	Marcellus
16	10/17/2021	20339.88396	20125.0769	36	Marcellus
17	10/18/2021	20086.94242	19872.1354	36	Marcellus
18	10/18/2021	19834.00088	19619.1938	36	Marcellus
19	10/18/2021	19581.05934	19366.2523	36	Marcellus
20	10/18/2021	19328.1178	19113.3108	36	Marcellus
21	10/19/2021	19075.17626	18860.3692	36	Marcellus
22	10/19/2021	18822.23473	18607.4277	36	Marcellus
23	10/19/2021	18569.29319	18354.4862	36	Marcellus
24	10/19/2021	18316.35165	18101.5446	36	Marcellus
25	10/20/2021	18063.41011	17848.6031	36	Marcellus
26	10/20/2021	17810.46857	17595.6615	36	Marcellus
27	10/20/2021	17557.52703	17342.72	36	Marcellus
28	10/20/2021	17304.58549	17089.7785	36	Marcellus
29	10/21/2021	17051.64396	16836.8369	36	Marcellus
30	10/21/2021	16798.70242	16583.8954	36	Marcellus
31	10/21/2021	16545.76088	16330.9538	36	Marcellus
32	10/21/2021	16292.81934	16078.0123	36	Marcellus
33	10/22/2021	16039.8778	15825.0708	36	Marcellus
34	10/22/2021	15786.93626	15572.1292	36	Marcellus
35	10/22/2021	15533.99473	15319.1877	36	Marcellus
36	10/22/2021	15281.05319	15066.2462	36	Marcellus
37	10/23/2021	15028.11165	14813.3046	36	Marcellus
38	10/23/2021	14775.17011	14560.3631	36	Marcellus
39	10/23/2021	14522.22857	14307.4215	36	Marcellus
40	10/23/2021	14269.28703	14054.48	36	Marcellus
41	10/23/2021	14016.34549	13801.5385	36	Marcellus
42	10/24/2021	13763.40396	13548.5969	36	Marcellus
43	10/24/2021	13510.46242	13295.6554	36	Marcellus
44	10/24/2021	13257.52088	13042.7138	36	Marcellus
45	10/24/2021	13004.57934	12789.7723	36	Marcellus
46	10/24/2021	12751.6378	12536.8308	36	Marcellus
47	10/25/2021	12498.69626	12283.8892	36	Marcellus
48	10/25/2021	12245.75473	12030.9477	36	Marcellus
49	10/25/2021	11992.81319	11778.0062	36	Marcellus
50	10/25/2021	11739.87165	11525.0646	36	Marcellus
51	10/25/2021	11486.93011	11272.1231	36	Marcellus
52	10/26/2021	11233.98857	11019.1815	36	Marcellus
53	10/26/2021	10981.04703	10766.24	36	Marcellus
54	10/26/2021	10728.10549	10513.2985	36	Marcellus
55	10/26/2021	10475.16396	10260.3569	36	Marcellus
56	10/27/2021	10222.22242	10007.4154	36	Marcellus
57	10/27/2021	9969.280879	9754.47385	36	Marcellus
58	10/27/2021	9716.339341	9501.53231	36	Marcellus
59	10/27/2021	9463.397802	9248.59077	36	Marcellus
60	10/27/2021	9210.456264	8995.64923	36	Marcellus
61	10/28/2021	8957.514725	8742.70769	36	Marcellus
62	10/28/2021	8704.573187	8489.76615	36	Marcellus
63	10/28/2021	8451.631648	8236.82462	36	Marcellus
64	10/28/2021	8198.69011	7983.88308	36	Marcellus
65	10/29/2021	7945.748571	7730.94154	36	Marcellus
66	10/29/2021	7692.807033	7478	36	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	10/14/2021	69.9	10168	8806	3911	184290	220129	N/A
2	10/14/2021	90.15	10800	7864	3980	521240	390357	N/A
3	10/14/2021	78.98	10077	6017	3614	502300	380310	N/A
4	10/15/2021	74.6	9817	8067	3963	499260	383038	N/A
5	10/15/2021	79.52	10043	6071	3744	502220	370202	N/A
6	10/15/2021	80.27	10064	6082	3922	502620	375753	N/A
7	10/15/2021	81.42	10029	8711	3887	525000	361078	N/A
8	10/15/2021	82.63	10079	8384	3999	509790	359906	N/A
9	10/16/2021	84.1	10035	10312	3988	503220	360301	N/A
10	10/16/2021	82.73	10053	8208	4300	500490	354182	N/A
11	10/16/2021	84.55	10091	8918	3915	504090	357976	N/A
12	10/16/2021	82.02	10092	10359	4019	504870	359277	N/A
13	10/17/2021	80.86	10085	8352	3837	506570	358379	N/A
14	10/17/2021	80.49	10061	10710	3830	506560	360600	N/A
15	10/17/2021	80.64	10054	9884	3811	513610	358562	N/A
16	10/17/2021	79.12	10064	7848	3885	508100	355251	N/A
17	10/18/2021	78.89	10040	10473	4025	508130	358602	N/A
18	10/18/2021	80.72	10048	8021	4136	509040	361742	N/A
19	10/18/2021	88.21	10066	7208	3876	506660	359652	N/A
20	10/18/2021	92.12	10042	7188	4053	508270	356813	N/A
21	10/19/2021	88	10059	7733	3983	505830	359837	N/A
22	10/19/2021	90.7	10069	6255	3889	508280	365329	N/A
23	10/19/2021	92.44	10086	9020	4404	517100	359315	N/A
24	10/19/2021	92.5	10095	7447	4463	504390	359296	N/A
25	10/20/2021	88.81	9997	9390	4325	506170	372329	N/A
26	10/20/2021	88.03	10072	7363	4008	513000	355651	N/A
27	10/20/2021	92.86	10047	6800	4105	515050	357066	N/A
28	10/20/2021	95.21	10033	7173	4265	507790	357993	N/A
29	10/21/2021	95.94	9995	7676	3762	510200	353872	N/A
30	10/21/2021	94.53	10055	7842	4118	502620	350541	N/A
31	10/21/2021	90.61	9450	6513	4090	506710	349621	N/A
32	10/21/2021	96.01	10009	5926	4009	503950	351152	N/A
33	10/22/2021	94.02	9929	8578	4249	501840	402533	N/A
34	10/22/2021	94.78	10070	7603	4525	513400	357767	N/A
35	10/22/2021	95.89	10052	7234	4574	501340	354447	N/A
36	10/22/2021	90.14	9888	7199	3949	506850	353413	N/A
37	10/23/2021	90.05	10018	6368	4214	505060	350249	N/A
38	10/23/2021	90.67	10075	7103	4243	500820	353072	N/A
39	10/23/2021	90.72	10039	7775	4043	503760	353255	N/A
40	10/23/2021	90.06	10066	7369	3944	502700	351494	N/A
41	10/23/2021	92.48	10101	7938	4168	502660	354394	N/A
42	10/24/2021	90.46	10088	7760	4175	503170	353617	N/A
43	10/24/2021	94.53	10066	7756	4189	499280	355829	N/A
44	10/24/2021	96	9737	8184	4415	505630	356988	N/A
45	10/24/2021	96.82	9050	7445	4640	502630	355220	N/A
46	10/24/2021	96.09	9051	8165	4722	510920	352895	N/A
47	10/25/2021	94.76	9031	7499	4580	503930	349535	N/A
48	10/25/2021	96.1	8999	6483	4599	502410	356791	N/A
49	10/25/2021	97.38	8977	6566	4768	506710	400581	N/A
50	10/25/2021	97.02	8934	5970	4876	504580	373530	N/A
51	10/25/2021	97.26	9030	7312	4685	507120	398248	N/A
52	10/26/2021	96.6	9090	7623	5063	506640	399368	N/A
53	10/26/2021	97.39	8954	7003	5159	504590	398416	N/A
54	10/26/2021	97.45	8926	5842	4934	503030	396326	N/A
55	10/26/2021	97.33	8987	6936	5028	503040	395134	N/A
56	10/27/2021	97.64	8897	8845	5162	504440	397112	N/A
57	10/27/2021	97.05	8980	8077	5204	501900	395521	N/A
58	10/27/2021	97.3	9031	6698	4994	499200	392904	N/A
59	10/27/2021	97.11	9047	7601	4634	498290	393050	N/A
60	10/27/2021	98.07	8764	7774	4557	500760	392402	N/A
61	10/28/2021	98.58	8876	6714	4530	505580	394463	N/A
62	10/28/2021	97.91	8911	6807	4583	507640	396224	N/A
63	10/28/2021	94.39	8104	6560	4497	504850	389986	N/A
64	10/28/2021	97.55	8236	6869	4762	508240	396642	N/A
65	10/29/2021	98.7	8012	6439	4516	508680	391614	N/A
66	10/29/2021	97.71	7734	6629	4085	506040	407532	N/A
	AVG=	91	9,629	7,626	4,294	33,075,150	24,254,664	TOTAL

API 47-095-02739 Farm Name John Shepherd Well Number Rapids Unit 1H

**EXHIBIT 3**

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandy Limestone, tr coal	90	135	90	135
Sandy Siltstone, tr LS	135	285	135	285
Shaly Siltstone	285	495	285	495
Sandstone	495	795	495	795
Sandy Siltstone, occ LS	795	885	795	885
Shaly Siltstone, rr LS	885	945	885	945
Shaly Sandstone, rr LS	945	975	945	975
Sandstone, tr coal	975	1,035	975	1,035
Silty Sandstone, tr coal, tr LS	1,035	1,125	1,035	1,125
Silty Sandstone, tr coal, tr shale	1,125	1,245	1,125	1,245
Silty Sandstone, occ shale	1,245	1,425	1,245	1,425
Sandstone, occ slst	1,425	1,695	1,425	1,695
Sandstone, occ sh	1,695	1,837	1,695	1,928
Big Lime	1,862	2,532	1,928	2,709
Fifty Foot Sandstone	2,532	2,641	2,684	2,832
Gordon	2,641	2,962	2,807	3,190
Fifth Sandstone	2,962	3,056	3,165	3,294
Bayard	3,056	3,729	3,269	4,054
Speechley	3,729	4,015	4,029	4,379
Balltown	4,015	4,508	4,354	4,928
Bradford	4,508	4,972	4,903	5,445
Benson	4,972	5,211	5,420	5,716
Alexander	5,211	6,436	5,691	7,063
Sycamore	6,243	6,411	6,841	7,038
Middlesex	6,411	6,541	7,038	7,233
Burkett	6,541	6,571	7,233	7,291
Tully	6,571	6,619	7,291	7,431
Marcellus	6,619	NA	7,431	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:	10/14/2021
Job End Date:	10/29/2021
State:	West Virginia
County:	Tyler
API Number:	47-095-02739-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	RAPIDS 1H
Latitude:	39.39344700
Longitude:	-80.76132800
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,674
Total Base Water Volume (gal):	25,284,370
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
Produced Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	86.53950	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.05742	



HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
FLUID Enviro-Syn HCR-7000-WL	Fluid Energy Group	Acid Replacement					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			
MC B-8614A	MultiChem	Biocide					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			

Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.						
			Crystalline silica, quartz	14808-60-7	100.00000	13.31820
			Complex Amine Compound	Proprietary	60.00000	0.03841
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01920
			Proprietary	Proprietary	20.00000	0.01108
			Proprietary	Proprietary	10.00000	0.00554
			Guar gum	9000-30-0	100.00000	0.00381
			Hydrochloric acid	7647-01-0	30.00000	0.00324
			Surfactant	Proprietary	5.00000	0.00320
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00320
			Glutaraldehyde	111-30-8	30.00000	0.00246
			Ethoxylated alcohols	Proprietary	5.00000	0.00064
			Alkoxylated polyhydric alcohol	Proprietary	1.00000	0.00064
			Organic chloride compound	Proprietary	1.00000	0.00064
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00041
			Ethanol	64-17-5	1.00000	0.00008
			Ammonium persulfate	7727-54-0	100.00000	0.00008
			Oxylated phenolic resin	Proprietary	30.00000	0.00002
			Methanol	67-56-1	100.00000	0.00002
			Acrylamide	79-06-1	0.01000	0.00001
			Organic salt #1	Proprietary	0.01000	0.00001
			Sodium hydroxide	1310-73-2	0.01000	0.00001
			Formaldehyde	50-00-0	0.01000	0.00001
			Nitrated acetate salt	Proprietary	0.01000	0.00001
			Organic salt #2	Proprietary	0.01000	0.00001
			Sodium glycolate	2836-32-0	0.01000	0.00001

			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00001	
			Modified thiourea polymer	Proprietary	30.00000	0.00001	
			Propargyl alcohol	107-19-7	5.00000	0.00000	
			Hexadecene	629-73-2	5.00000	0.00000	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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°27'30"

LATITUDE 39°25'00"

3,201'

Antero Resources Corporation  
Well No. Rapids Unit 1H

(NAD) 27 (UTM) ZONE 17 COORDS:  
WELL 1H TOP HOLE INFORMATION:  
N: 14,305,279ft E: 1,707,847ft  
POINT OF ENTRY INFORMATION:  
N: 14,303,404ft E: 1,706,392ft  
BOTTOM HOLE INFORMATION:  
N: 14,319,165ft E: 1,701,121ft

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 327,914ft E: 1,643,537ft  
LAT: 39°23'36.41" LON: 80°45'40.78"  
BOTTOM HOLE INFORMATION:  
N: 341,915ft E: 1,637,042ft  
LAT: 39°25'53.87" LON: 80°47'06.05"  
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM 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 1H TOP HOLE INFORMATION:  
N: 4,360,476m E: 520,567m  
BOTTOM HOLE INFORMATION:  
N: 4,364,708m E: 518,517m

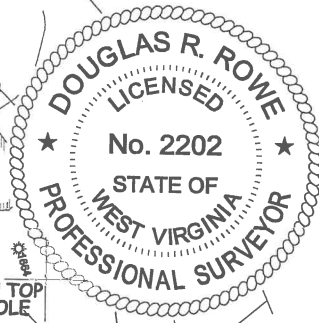
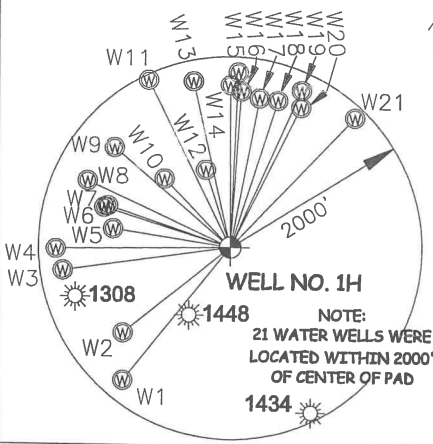


Table listing well owners and lease numbers, including Beverly Gwynn, Phillip Headley, Dale Dugan II, James Yeater, Alva Spencer, Donald Van Dine, Michael Sloss, Robert Kocher, Donald Moore, June Griffin, Jamie Straight, Rouddenholder III, Charles Kimball, Charles Straight, Charle Kimball, Judith Malloy, Isaac Williams, Orpha Williams, Brenda Cunningham, Gary Orr, Robert Smith, Shirley Vol. Fire Dept., Inc., Gary Orr, Marsh Orr, Harvey Burns, John Shepherd, John Shepherd, John Shepherd, Ann Burrola, Jay Jeffers, Larry Marable, Larry Marable, Larry Marable, Larry Marable, Justine Gile, Jacqueline Wichman Trust, and Roy L. Clevestine.

Table with columns LINE BEARING and DIST. listing well locations W1 through W21 with bearings and distances.



- 1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) 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 SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- 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.

JOB # 18-003WA  
DRAWING # RAPIDS1HAD  
SCALE: 1" = 2000'  
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

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

LEGEND  
- - - Surface Owner Boundary Lines +/-  
- - - Interior Surface Tracts +/-  
○ Proposed Well Path  
○ As Drilled Well Path  
DOUGLAS R. ROWE P.S. 2202  
DATE 02/24/22  
OPERATOR'S WELL# RAPIDS UNIT #1H

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
LOCATION: ELEVATION 935' - ASBUILT WATERSHED McELROY CREEK STATE 47 COUNTY 095 PERMIT 02739  
QUADRANGLE SHIRLEY 7.5' DISTRICT McELROY COUNTY TYLER  
SURFACE OWNER JOHN SHEPHERD ACREAGE 31.75 ACRES +/-  
OIL & GAS ROYALTY OWNER LAMOYNE SWEENEY; EDGAR B. HARTLEY; BAYARD SWEENEY JR. ET UX; ERMA MABEL PITTS; JAMES JEFFERS ET UX; LEASE ACREAGE 72.28 AC±; 16 AC±; 55AC±; 74 AC±; 83 AC±;  
NOBLE ENERGY INC. ET AL; ROBERT SMITH; GLENN DUCKWORTH, JR.; SHARON S. ADAMS; TOM WILLIAMS ET UX; JAMES MALLOY ET UX; REBECCA WILLIAMS; 55 AC±; 7.15 AC±; 8.625 AC±; 13.975 AC±; 40 AC±; 90.1 AC±; 210 AC±;  
ROSEMARY HAUGHT; HENRY M. WALLACE ET UX; JIMMY J. GRIFFIN ET UX; BOUNTY MINERALS, LLC; BRC APPALACHIAN I, LLC; TROY SPENCER UNDERWOOD 98.5 AC±; 219.39 AC±; 236 AC±; 502.8 AC±; 70AC±; 257 AC±  
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 PLUG & ABANDON CLEAN OUT & REPLUG  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,656' TVD 24,085' MD  
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM  
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD  
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

8,457' LONGITUDE 80°45'00" LONGITUDE 80°45'00"