

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

API 47-103-03481 County Wetzel District Green
Quad Porter Falls Pad Name Red Lady Field/Pool Name -----
Farm name Margaret Lancaster Well Number Cavatica 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 4375196m Easting 520469m
Landing Point of Curve Northing 4375629.559m Easting 519763.514m
Bottom Hole Northing 4380986m Easting 517942m

Elevation (ft) 1206' 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

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Date permit issued 3/2/2022 Date drilling commenced 4/4/2022 Date drilling ceased 8/4/2022
Date completion activities began 8/18/2022 Date completion activities ceased 11/13/2022
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 1040' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1592' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 851' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

Reviewed by: [Signature]
08/11/2023
5/31/23

API 47-103 - 03481 Farm name Margaret Lancaster Well number Cavatica Unit 1H

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	26"	20"	328'	New	78.67#, X-60	N/A	Y
Surface	17-1/2"	13-3/8"	1139'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3814'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	26419'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7353'		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 ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	270 sx	15.6	1.18	319	0'	8 Hrs.
Surface	Class A	739 sx	15.6	1.20	887	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1161 sx	15.6	1.20	1393	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class G	4317 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.26 (Tail)	5439	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 26216' MD, 6882' TVD (BHL), 6905' (Deepest Point Drilled) Loggers TD (ft) 26216' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6706'

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 _____ RECEIVED _____
Conductor - 0
 Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface Office of Oil and Gas
 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 FEB 24 2023

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____ WV Department of Environmental Protection

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

08/11/2023 

Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	08/18/2022	26081.0	26038.0	60	Marcellus
2	08/18/2022	25999.2	25832.9	60	Marcellus
3	08/18/2022	25797.3	25631.0	60	Marcellus
4	08/19/2022	25595.4	25429.2	60	Marcellus
5	08/19/2022	25393.5	25227.3	60	Marcellus
6	08/19/2022	25191.6	25025.4	60	Marcellus
7	08/20/2022	24989.8	24823.5	60	Marcellus
8	08/20/2022	24787.9	24621.7	60	Marcellus
9	08/20/2022	24586.0	24419.8	60	Marcellus
10	08/21/2022	24384.1	24217.9	60	Marcellus
11	08/21/2022	24182.3	24016.0	60	Marcellus
12	08/21/2022	23980.4	23814.2	60	Marcellus
13	08/22/2022	23778.5	23612.3	60	Marcellus
14	08/22/2022	23576.6	23410.4	60	Marcellus
15	08/22/2022	23374.8	23208.5	60	Marcellus
16	08/23/2022	23172.9	23006.6	60	Marcellus
17	08/23/2022	22971.0	22804.8	60	Marcellus
18	08/23/2022	22769.1	22602.9	60	Marcellus
19	08/24/2022	22567.2	22401.0	60	Marcellus
20	08/24/2022	22365.4	22199.1	60	Marcellus
21	08/24/2022	22163.5	21997.3	60	Marcellus
22	08/24/2022	21961.6	21795.4	60	Marcellus
23	08/25/2022	21759.7	21593.5	60	Marcellus
24	08/25/2022	21557.9	21391.6	60	Marcellus
25	08/25/2022	21356.0	21189.8	60	Marcellus
26	08/25/2022	21154.1	20987.9	60	Marcellus
27	08/26/2022	20952.2	20786.0	60	Marcellus
28	08/26/2022	20750.4	20584.1	60	Marcellus
29	08/26/2022	20548.5	20382.2	60	Marcellus
30	08/26/2022	20346.6	20180.4	60	Marcellus
31	08/27/2022	20144.7	19978.5	60	Marcellus
32	08/27/2022	19942.8	19776.6	60	Marcellus
33	08/27/2022	19741.0	19574.7	60	Marcellus
34	08/27/2022	19539.1	19372.9	60	Marcellus
35	08/28/2022	19337.2	19171.0	60	Marcellus
36	08/28/2022	19135.3	18969.1	60	Marcellus
37	08/28/2022	18933.5	18767.2	60	Marcellus
38	08/28/2022	18731.6	18565.4	60	Marcellus
39	08/29/2022	18529.7	18363.5	60	Marcellus
40	08/29/2022	18327.8	18161.6	60	Marcellus
41	08/29/2022	18126.0	17959.7	60	Marcellus
42	08/30/2022	17924.1	17757.8	60	Marcellus
43	08/30/2022	17722.2	17556.0	60	Marcellus
44	08/31/2022	17520.3	17354.1	60	Marcellus
45	08/31/2022	17318.4	17152.2	60	Marcellus
46	08/31/2022	17116.6	16950.3	60	Marcellus
47	09/01/2022	16914.7	16748.5	60	Marcellus
48	09/01/2022	16712.8	16546.6	60	Marcellus
49	09/01/2022	16510.9	16344.7	60	Marcellus
50	09/02/2022	16309.1	16142.8	60	Marcellus
51	09/03/2022	16107.2	15941.0	60	Marcellus
52	09/04/2022	15905.3	15739.1	60	Marcellus
53	09/04/2022	15703.4	15537.2	60	Marcellus
54	09/04/2022	15501.6	15335.3	60	Marcellus
55	09/05/2022	15299.7	15133.4	60	Marcellus
56	09/05/2022	15097.8	14931.5	60	Marcellus
57	09/05/2022	14895.9	14729.7	60	Marcellus
58	09/05/2022	14694.0	14527.8	60	Marcellus
59	09/06/2022	14492.2	14325.9	60	Marcellus
60	09/06/2022	14290.3	14124.1	60	Marcellus
61	09/06/2022	14088.4	13922.2	60	Marcellus
62	09/06/2022	13886.5	13720.3	60	Marcellus
63	09/06/2022	13684.7	13518.4	60	Marcellus
64	09/07/2022	13482.8	13316.5	60	Marcellus
65	09/07/2022	13280.9	13114.7	60	Marcellus
66	09/07/2022	13079.0	12912.8	60	Marcellus
67	09/07/2022	12877.2	12710.9	60	Marcellus
68	09/07/2022	12675.3	12509.0	60	Marcellus
69	09/08/2022	12473.4	12307.2	60	Marcellus
70	09/08/2022	12271.5	12105.3	60	Marcellus
71	09/08/2022	12069.6	11903.4	60	Marcellus
72	09/08/2022	11867.8	11701.5	60	Marcellus
73	09/08/2022	11665.9	11499.7	60	Marcellus
74	09/09/2022	11464.0	11297.8	60	Marcellus
75	09/09/2022	11262.1	11095.9	60	Marcellus
76	09/09/2022	11060.3	10894.0	60	Marcellus
77	09/09/2022	10858.4	10692.2	60	Marcellus
78	09/10/2022	10656.5	10490.3	60	Marcellus
79	09/10/2022	10454.6	10288.4	60	Marcellus
80	09/10/2022	10252.8	10086.5	60	Marcellus
81	09/10/2022	10050.9	9884.6	60	Marcellus
82	09/10/2022	9849.0	9682.8	60	Marcellus
83	09/11/2022	9647.1	9480.9	60	Marcellus
84	09/11/2022	9445.2	9279.0	60	Marcellus
85	09/11/2022	9243.4	9077.1	60	Marcellus
86	09/11/2022	9041.5	8875.3	60	Marcellus
87	09/11/2022	8839.6	8673.4	60	Marcellus
88	09/11/2022	8637.7	8471.5	60	Marcellus
89	09/12/2022	8435.9	8269.6	60	Marcellus
90	09/12/2022	8234.0	8067.8	60	Marcellus
91	09/12/2022	8032.1	7865.9	60	Marcellus
92	09/12/2022	7830.2	7664.0	60	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	08/18/2022	65.7	10155	10307	3869	167500	414433	N/A
2	08/18/2022	74.7	9908	6147	4195	402660	325003	N/A
3	08/18/2022	82.3	10090	5444	4276	403787	340194	N/A
4	08/19/2022	81.2	10054	5871	4771	407035	339367	N/A
5	08/19/2022	86.4	10193	6159	4200	402649	324298	N/A
6	08/19/2022	90.6	10332	5128	4789	409958	346975	N/A
7	08/20/2022	89.3	9870	5015	4095	409051	320528	N/A
8	08/20/2022	86.4	9715	5096	3925	417503	314433	N/A
9	08/20/2022	88.8	9917	5121	4435	367777	307981	N/A
10	08/21/2022	87.4	10100	4877	4409	410018	311612	N/A
11	08/21/2022	78.7	9068	5104	4371	411519	309668	N/A
12	08/21/2022	86.1	10399	5295	3983	415856	320563	N/A
13	08/22/2022	88.5	10129	5608	4608	400955	308305	N/A
14	08/22/2022	91.2	10184	5048	4924	412421	308820	N/A
15	08/22/2022	92.9	10367	9510	4600	404147	295426	N/A
16	08/23/2022	92.9	10329	9642	3985	411832	286968	N/A
17	08/23/2022	91.3	10055	4495	5060	415672	305509	N/A
18	08/23/2022	92.7	10040	5806	4968	413632	290496	N/A
19	08/24/2022	94.1	10307	8017	4328	418522	298307	N/A
20	08/24/2022	87.8	9980	9512	4487	406448	298348	N/A
21	08/24/2022	91.8	9904	5621	4966	415304	289931	N/A
22	08/24/2022	92.1	10276	8708	4027	407391	297463	N/A
23	08/25/2022	90.7	10373	9394	4339	406957	301107	N/A
24	08/25/2022	91.8	10358	10412	4878	400430	288002	N/A
25	08/25/2022	86.4	10177	5975	4693	397502	292058	N/A
26	08/25/2022	89.0	9937	6011	4301	399511	303287	N/A
27	08/26/2022	93.5	10147	8906	4335	414797	299753	N/A
28	08/26/2022	93.8	10056	9270	3983	414628	300451	N/A
29	08/26/2022	93.0	9750	6241	5076	399808	288252	N/A
30	08/26/2022	90.7	9646	4634	4265	407810	284276	N/A
31	08/27/2022	87.8	9571	10679	4182	405204	359738	N/A
32	08/27/2022	90.2	9853	10611	3723	406968	292975	N/A
33	08/27/2022	91.7	9876	5455	4070	405419	291976	N/A
34	08/27/2022	95.0	9913	8623	3724	398854	290248	N/A
35	08/28/2022	92.9	9617	9820	4315	404503	288527	N/A
36	08/28/2022	90.5	9723	9237	4029	407012	295401	N/A
37	08/28/2022	91.6	9797	6088	4760	413558	304700	N/A
38	08/28/2022	94.9	9812	10485	4288	411831	301917	N/A
39	08/29/2022	89.6	9869	10059	4172	410576	301911	N/A
40	08/29/2022	95.9	9732	5939	4977	408666	305203	N/A
41	08/29/2022	96.5	9639	6982	4500	402747	306852	N/A
42	08/30/2022	97.5	9340	5873	4336	405364	288544	N/A
43	08/30/2022	89.4	8905	6008	4546	403314	286533	N/A
44	08/31/2022	94.4	9405	5237	4135	399235	287373	N/A
45	08/31/2022	93.0	8133	6775	4575	408297	291799	N/A
46	08/31/2022	95.7	9255	6263	5012	407581	290850	N/A
47	09/01/2022	95.2	9278	7002	4232	413478	283468	N/A
48	09/01/2022	94.3	9184	6367	3928	409107	288545	N/A
49	09/01/2022	94.6	9216	6905	4501	416245	286645	N/A
50	09/02/2022	81.3	9331	6088	3927	396699	313082	N/A
51	09/03/2022	94.3	9332	6262	4623	398344	276725	N/A
52	09/04/2022	94.8	9146	7069	4501	400667	273390	N/A
53	09/04/2022	96.0	9219	5801	4507	397999	275098	N/A
54	09/04/2022	95.5	9478	5756	4741	402156	282603	N/A
55	09/05/2022	2.4	3712	4941	4991	8312	313709	N/A
56	09/05/2022	95.2	9446	5776	4015	404437	279741	N/A
57	09/05/2022	95.2	9088	5508	3993	402833	278086	N/A
58	09/05/2022	88.7	8727	6761	3724	408616	281205	N/A
59	09/06/2022	93.7	9178	7063	4000	402983	274070	N/A
60	09/06/2022	94.3	9219	6352	4281	410721	288552	N/A
61	09/06/2022	96.4	9093	6534	4207	406197	284490	N/A
62	09/06/2022	96.5	8834	6117	3928	399294	294061	N/A
63	09/06/2022	91.2	8574	6483	4186	404876	287351	N/A
64	09/07/2022	93.8	8612	6369	4460	405846	289264	N/A
65	09/07/2022	95.0	8537	6586	4109	403078	297500	N/A
66	09/07/2022	95.3	8609	6675	4482	398185	292339	N/A
67	09/07/2022	92.6	8347	6634	4200	407834	279849	N/A
68	09/07/2022	92.6	8554	6573	4258	402170	268144	N/A
69	09/08/2022	92.3	8518	6699	4253	400701	273009	N/A
70	09/08/2022	96.6	8638	6108	4038	412307	282197	N/A
71	09/08/2022	95.5	8410	6699	4187	405397	290542	N/A
72	09/08/2022	96.1	8517	6099	4072	405418	276541	N/A
73	09/08/2022	97.6	8410	6495	4026	404500	272768	N/A
74	09/09/2022	96.1	8467	6834	4587	408215	287161	N/A
75	09/09/2022	95.0	8472	6117	4112	405777	271261	N/A
76	09/09/2022	95.9	8467	6494	4301	410441	287552	N/A
77	09/09/2022	88.5	8279	6435	4194	406163	276429	N/A
78	09/10/2022	91.8	8434	6515	4182	417079	284072	N/A
79	09/10/2022	96.5	8482	6488	4549	400604	273060	N/A
80	09/10/2022	97.3	8188	5987	4945	414294	279005	N/A
81	09/10/2022	97.2	8376	6374	4329	396486	266272	N/A
82	09/10/2022	94.2	8014	5697	3934	402802	270080	N/A
83	09/11/2022	92.3	7720	6599	4059	398288	263209	N/A
84	09/11/2022	89.5	8141	6518	3969	407176	266204	N/A
85	09/11/2022	97.5	8332	6453	4345	406350	280436	N/A
86	09/11/2022	98.4	8084	5917	5040	403868	279247	N/A
87	09/11/2022	97.5	7967	6767	4719	407231	276012	N/A
88	09/11/2022	91.4	7502	6870	4300	413319	285498	N/A
89	09/12/2022	92.5	8032	6114	4592	396074	278630	N/A
90	09/12/2022	95.8	7749	5903	4762	404472	287770	N/A
91	09/12/2022	98.2	7966	6466	4617	396762	283437	N/A
92	09/12/2022	98.2	7779	6133	4625	413432	296932	N/A
	AVG=	91	9,189	6,727	4,359	36,709,442	27,071,512	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandstone	99	194	99	194
Silty Sandstone, tr shale	194	424	194	424
Silty Sandstone, occ shale	424	724	424	724
Shaley Sandstone, occ Limestone	724	874	724	874
Silty Sandstone, tr shale	874	924	874	924
Sandstone, tr Siltstone, tr shale	924	1,124	924	1,124
Shaley Siltstone, tr coal	1,124	1,424	1,124	1,424
Sandstone	1,424	1,524	1,424	1,524
Silty Sandstone, occ shale	1,524	1,724	1,524	1,724
Sandstone, tr Siltstone, tr shale	1,724	1,874	1,724	1,874
Sandstone, Tr Shale, Tr Silt	1,874	1,924	1,874	1,924
Silty Sandstone, tr shale	1,924	2,024	1,924	2,024
Sandy Shale, Tr Coal, Tr Limestone	2,024	2,087	2,024	2,107
Big Lime	2,113	2,889	2,107	2,994
Fifty Foot Sandstone	2,889	2,943	2,968	3,052
Gordon	2,943	3,219	3,026	3,358
Fifth Sandstone	3,219	3,274	3,332	3,419
Bayard	3,274	3,962	3,393	4,185
Speechley	3,962	4,092	4,159	4,329
Balltown	4,092	4,548	4,303	4,834
Bradford	4,548	5,098	4,808	5,438
Benson	5,098	5,527	5,412	5,917
Alexander	5,527	6,671	5,891	7,217
Sycamore	6,525	6,645	7,027	7,191
Middlesex	6,645	6,741	7,191	7,362
Burkett	6,741	6,773	7,362	7,431
Tully	6,773	6,838	7,431	7,616
Marcellus	6,838	NA	7,616	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:	8/17/2022
Job End Date:	9/12/2022
State:	West Virginia
County:	Wetzel
API Number:	47-103-03481-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	CAVATICA UNIT 1H
Latitude:	39.52609000
Longitude:	-80.76201000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,905
Total Base Water Volume (gal):	29,053,905
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	86.85096	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.16607	

Handwritten mark

RECEIVED
 Office of Oil and Gas
 FEB 24 2023
 WV Department of
 Environmental Protection

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

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 Office of Oil and Gas
 FEB 24 2023
 WV Department of
 Environmental Protection

Sand-Premium White-30/70	Halliburton	Proppant					
				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	12.91019	
			Guar gum	9000-30-0	100.00000	0.03701	
			Hydrochloric acid	7647-01-0	30.00000	0.03675	
			Complex Amine Compound	Proprietary	60.00000	0.03544	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01772	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00295	
			Surfactant	Proprietary	5.00000	0.00295	
			Glutaraldehyde	111-30-8	30.00000	0.00244	
			Proprietary	Proprietary	20.00000	0.00218	
			Ammonium persulfate	7727-54-0	100.00000	0.00113	
			Proprietary	Proprietary	10.00000	0.00109	
			Ethoxylated alcohols	Proprietary	5.00000	0.00060	
			Alkoxyated polyhydric alcohol	Proprietary	1.00000	0.00059	
			Organic chloride compound	Proprietary	1.00000	0.00059	
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00041	
			Oxylated phenolic resin	Proprietary	30.00000	0.00034	
			Methanol	67-56-1	100.00000	0.00023	
			Ethanol	64-17-5	1.00000	0.00008	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Propargyl alcohol	107-19-7	5.00000	0.00001	

WV Department of
 Environmental Protection

FEB 24 2023

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 Offshore Oil and Gas

			Hexadecene	629-73-2	5.00000	0.00001	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00001	
			Organic salt #2	Proprietary	0.01000	0.00001	
			Organic salt #1	Proprietary	0.01000	0.00001	
			Sodium glycolate	2836-32-0	0.01000	0.00001	
			Acrylamide	79-06-1	0.01000	0.00001	
			Sodium hydroxide	1310-73-2	0.01000	0.00001	
			Nitrated acetate salt	Proprietary	0.01000	0.00001	
			Formaldehyde	50-00-0	0.01000	0.00001	

* 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.

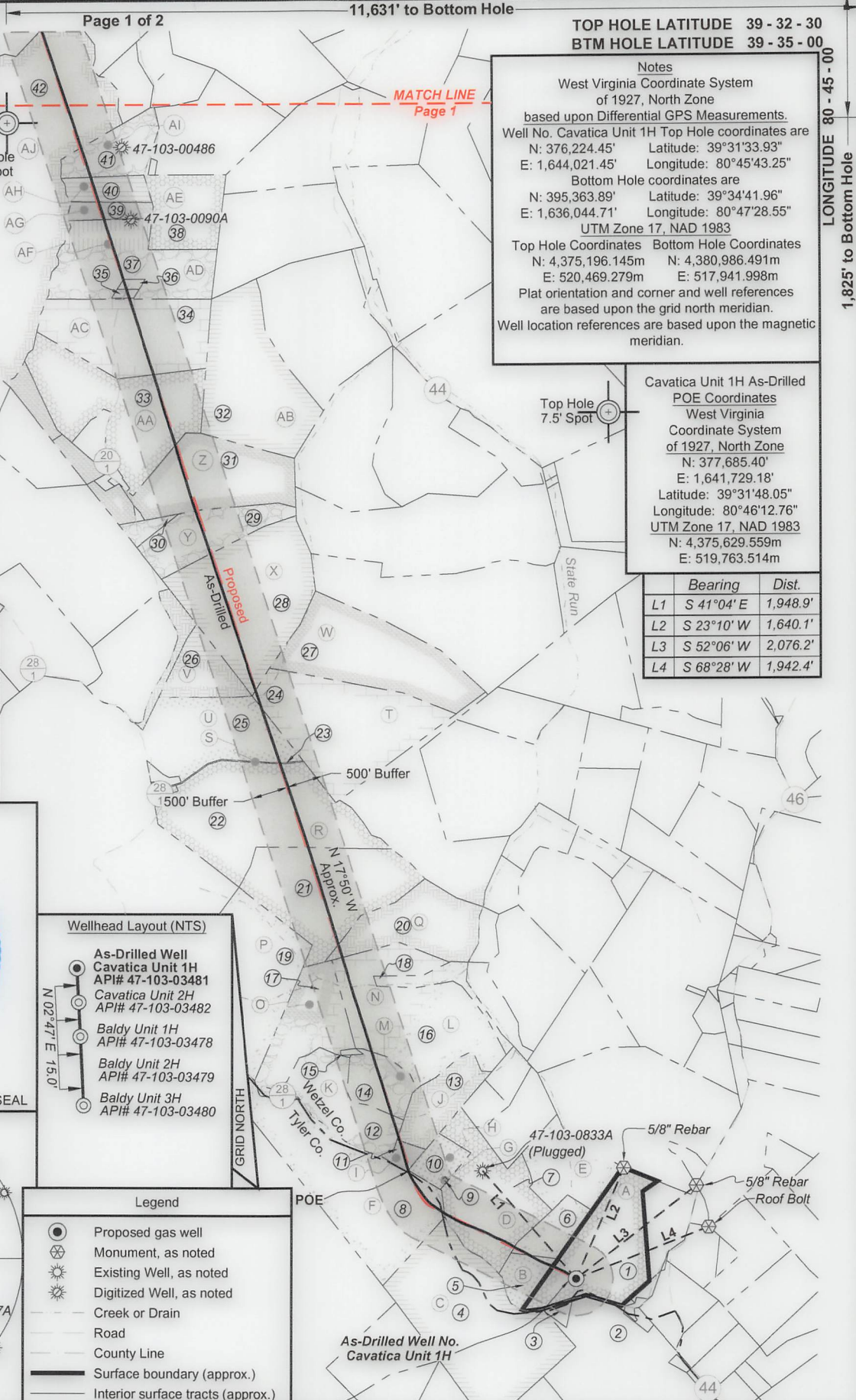
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

RECEIVED
Office of Oil and Gas
FEB 24 2023
WV Department of
Environmental Protection

Antero Resources
Well No. Cavatica 1H
As-Drilled
 Antero Resources Corporation



BTM Hole
7.5' Spot



TOP HOLE LATITUDE 39 - 32 - 30
 BTM HOLE LATITUDE 39 - 35 - 00

Notes
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Cavatica Unit 1H Top Hole coordinates are
 N: 376,224.45' Latitude: 39°31'33.93"
 E: 1,644,021.45' Longitude: 80°45'43.25"
 Bottom Hole coordinates are
 N: 395,363.89' Latitude: 39°34'41.96"
 E: 1,636,044.71' Longitude: 80°47'28.55"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,375,196.145m N: 4,380,986.491m
 E: 520,469.279m E: 517,941.998m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.

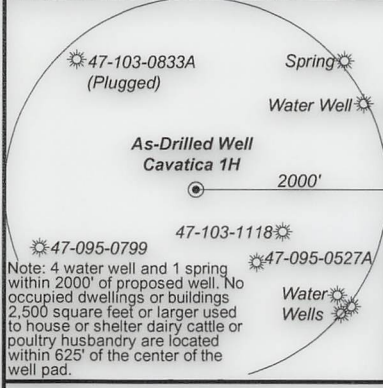
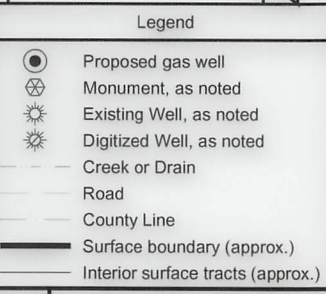
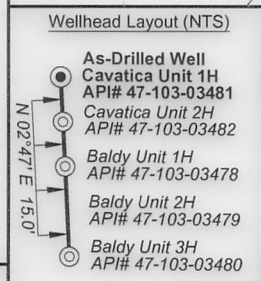
Cavatica Unit 1H As-Drilled
POE Coordinates
 West Virginia Coordinate System of 1927, North Zone
 N: 377,685.40'
 E: 1,641,729.18'
 Latitude: 39°31'48.05"
 Longitude: 80°46'12.76"
 UTM Zone 17, NAD 1983
 N: 4,375,629.559m
 E: 519,763.514m

	Bearing	Dist.
L1	S 41°04' E	1,948.9'
L2	S 23°10' W	1,640.1'
L3	S 52°06' W	2,076.2'
L4	S 68°28' W	1,942.4'

Top Hole Coordinates, 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.

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



FILE NO: 116-34-G-18
 DRAWING NO: Cavatica 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: CORS, Monroe County, OH

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

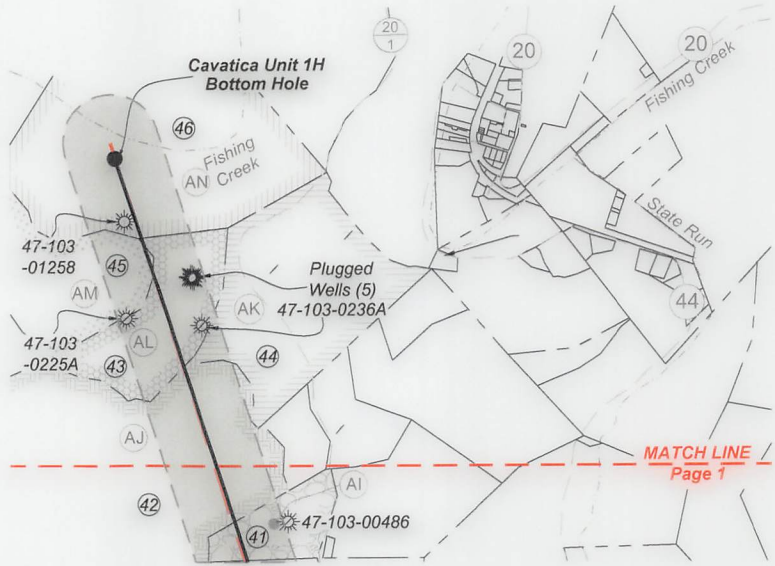
DATE: February 22 2023
 OPERATOR'S WELL NO. Cavatica Unit 1H
 API WELL NO
 47 - 103 - 03481
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,206' WATERSHED: Fishing Creek QUADRANGLE: Porter Falls 0.8: 30;
 DISTRICT: Green Margaret COUNTY: Wayne 17: 175; 7: 125; 261.75
 SURFACE OWNER: Lancaster ROYALTY OWNER: Shiben Estates, Inc. (3); Ernest & Cathy Stewart 2019 Irrevocable Trust (2); Antero Minerals, LLC (2); Barbara A. King; LEASE NO: ACREAGE: 60.72; 50; 36; 71.61
 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: 6,882' TVD
 26,216' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Bridgeport, WV 26330

Antero Resources
Well No. Cavatica 1H
As-Drilled
 Antero Resources Corporation



ID	TM-Par	Owner	Bk/Pg	Acres
1	19-31	Margaret Lancaster	333 / 440	39.00
2	12-27	Crystal A. Muzzy (Tyler Co.)	W69 / 226	60.91
3	-	Garrett Cemetery	85 / 62	1.80
4	12-25	Cecil & Margaret Lancaster	170 / 48	78.17
5	19-52	Joshua Highley	464 / 208	8.01
6	19-30	Richard R. & Mary J. Scyoc	452 / 177	13.00
7	19-21	Joshua Highley	464 / 208	41.75
8	12-21	Mary Adaline Lewis, et al	AR53 / 75	67.00
9	19-21.1	McCormick Cemetery	--- / ---	---
10	19-37	Joshua Highley	464 / 208	7.12
11	19-1	Joshua Highley	464/208	3.00
12	19-56	Frank & Deborah Van Schaik	378/104	26.68
13	19-12	Joshua Highley	464 / 208	17.17
14	19-55	Olive M. Moore	392/158	13.99
15	19-11	Hill Cemetery	62/149	0.50
16	19-54	Susan J. Fair	378 / 97	59.75
17	19-57	Frank & Deborah Van Schaik	378/104	27.20
18	16-75	Gregg John Weis	317 / 157	7.50
19	16-51	David Randolph Gifford	428/619	67.00
20	16-53	Edward D. & Heather M. Stewart	390 / 10	32.60
21	16-52	RBMA, LLC	431 / 526	43.25
22	16-43	RBMA, LLC	431 / 526	76.30
23	16-36.1	Kenneth E. Stewart	424/821	0.80
24	16-36	Kenneth E. Stewart Keystone Trust	424 / 821	53.00
25	16-35	Eugene D. Jr. & Diane Mason	405 / 291	26.00
26	16-35.1	Janet Carroll Jones	417/190	20.50
27	16-29	Kenneth E. Stewart Keystone Trust	424 / 821	53.50
28	16-19	Eugene D., Jr. & Diane Mason	405 / 291	64.70
29	16-18	Cathy A. & Ernest E. Stewart	355 / 280	28.50
30	16-17	Cathy A. & Ernest E. Stewart	355/280	3.00
31	16-7	Wilbur B. Dawson & Loretta P. Ueltschey	408 / 192	54.50
32	12-53	Robert E. Midcap	399 / 40	57.00
33	16-1	Richard Coleman Nolan	264 / 313	60.72
34	12-52	Linda Lou Jackson	399 / 34	50.00
35	12-45.1	Jess S. & Linda L. Jackson	255/474	1.00
36	12-45.2	Roger Dale & Martha M. Midcap	275/481	1.00
37	12-45	Roger Dale Midcap	399 / 37	46.00
38	12-47	Linda K. Ice	447 / 793	26.25
39	12-44	Jerome E. Staley II, et al	453 / 271	6.00
40	12-36	Jerome E. Staley II, et al	453 / 271	6.00
41	12-37	Roger D. & Tina S. Midcap	342 / 74	13.30
42	12-43	Coastal Forest Resources Co.	444 / 105	172.70
43	12-16	Charmaine A. & Heath C. Starkweather	427 / 930	36.00
44	12-17	Charmaine A. & Heath C. Starkweather	427 / 930	69.00
45	12-15	Coastal Forest Resources Co.	444/105	51.00
46	12-1	Bradley W. Ueltschey	476 / 310	78.13

Leases	
A	Shiben Estates, Inc.
B	Randy Bradley
C	BRC Appalachian Minerals I, LLC
D	Shiben Estates, Inc.
E	Richard R. & Mary J. Scyoc
F	Antero Minerals, LLC
G	Joshua Highley
H	Joshua Highley
I	Bounty Minerals II, Acquisitions, LLC
J	Allen Vincent Wilcox
K	Tribune Resources Minerals, LLC
L	Susan J. Fair
M	Olive M. Moore
N	Antero Minerals, LLC
O	Harold Ice, et ux
P	Deanna R. Cochran
Q	Edward D. & Heather M. Stewart
R	RBMA, LLC
S	Kenneth Stewart Keystone Trust
T	Kenneth Stewart Keystone Trust
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V	Janet Carroll Jones
W	Kenneth Stewart Keystone Trust
X	BRC Appalachian Minerals I, LLC
Y	Ernest & Cathy Stewart 2019 Irrevocable Trust
Z	Shiben Estates, Inc.
AA	John Ray Nolan
AB	Robert E. & Michaelmary Midcap
AC	Linda Lou Jackson & Jess Stephen Jackson
AD	Barbara Anne Amos King
AE	Linda Ice Long
AF	Barbara A. King
AG	Ridgetop Appalachia, LLC
AH	Jerome E. Staley, II, et ux
AI	Roger D. & Tina S. Midcap
AJ	Chesapeake Appalachia, LLC
AK	Charmaine A. Starkweather, et vir
AL	Charmaine A. Starkweather, et vir
AM	BRC Appalachia Minerals I, LLC
AN	Stone Hill Minerals Holdings, LLC

FILE NO: 116-34-G-18
 DRAWING NO: Cavatica 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
Submeter
 PROVEN SOURCE OF ELEVATION:
CORS, Monroe County, OH

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

DATE: February 22 2023
 OPERATOR'S WELL NO. Cavatica Unit 1H
 API WELL NO
47 - 103 - 03481
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,206' WATERSHED: Fishing Creek QUADRANGLE: Porter Falls 0.8; 30;

DISTRICT: Green Margaret Joshua Highley; Allen Vincent Wilcox; John Ray Nolan; Tribune Resources Minerals, LLC; COUNTY: Wetzel 2261.75

SURFACE OWNER: Lancaster Linda Lou Jackson & Jess Stephen Jackson; Charmaine A. Starkweather, et vir; Stone Hill Minerals Holdings, LLC; ACREAGE: 39.00 39.41; 2.23; 28.5;

ROYALTY OWNER: Shiben Estates, Inc. (3); Ernest & Cathy Stewart 2019 Irrevocable Trust (2); Antero Minerals, LLC (2); Barbara A. King; LEASE NO: _____ ACREAGE: _____ 40; 8; 67; 36.75; 64.5;

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 51; 6; 53; 8.01; 38; 3;

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 26,216' MD 6,882' TVD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
Denver, CO 80202 Bridgeport, WV 26330

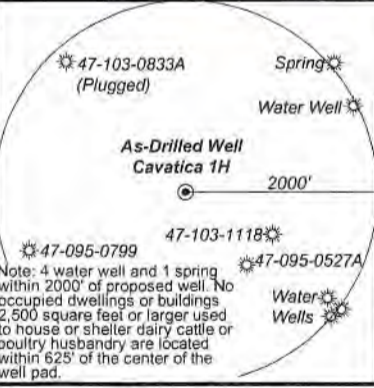
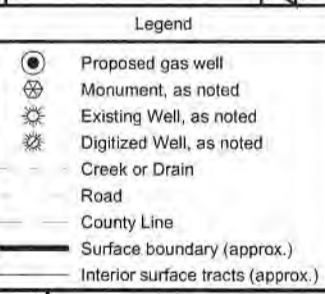
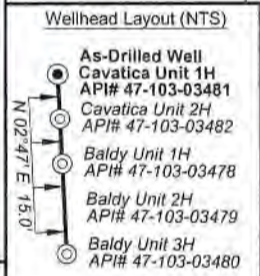
Antero Resources
Well No. Cavatica 1H
As-Drilled
 Antero Resources Corporation



Top Hole Coordinates, 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.

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



BTM Hole 7.5' Spot

Top Hole 7.5' Spot

Notes
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	Bearing	Dist.
L1	S 41°04' E	1,948.9'
L2	S 23°10' W	1,640.1'
L3	S 52°06' W	2,076.2'
L4	S 68°28' W	1,942.4'

FILE NO: 116-34-G-18
 DRAWING NO: Cavatica 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: CORS, Monroe County, OH

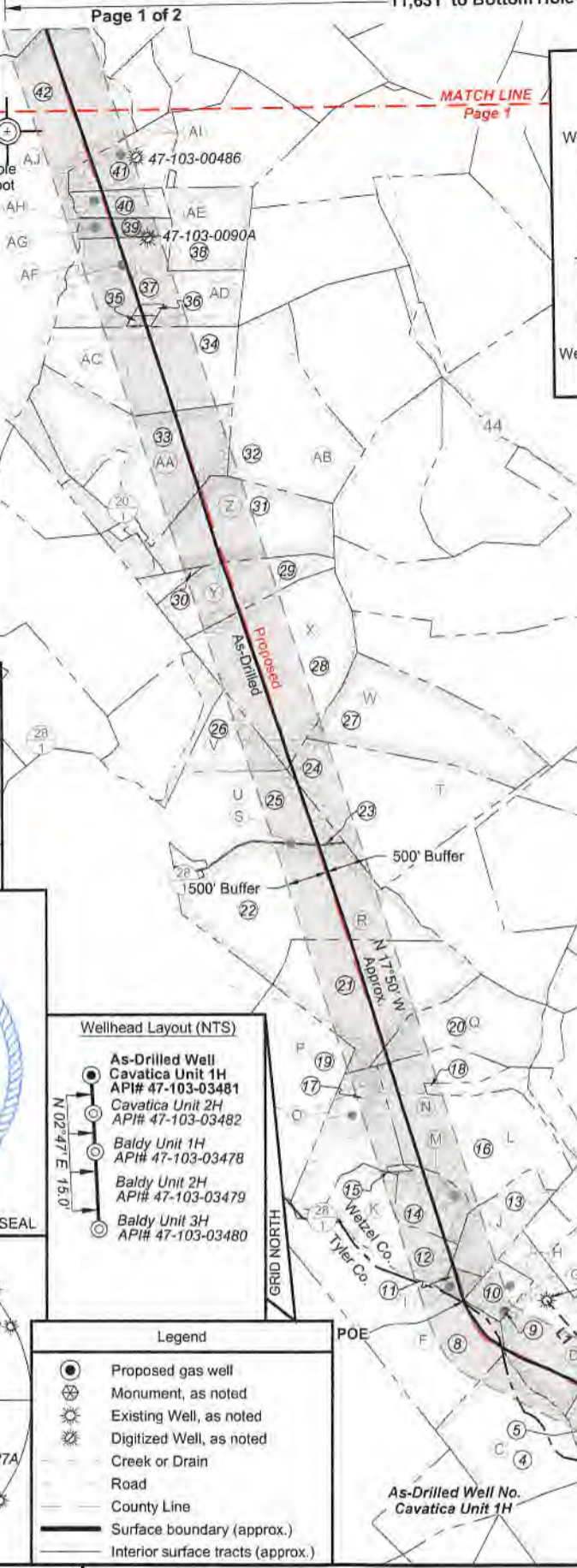
STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: February 22 2023
 OPERATOR'S WELL NO. Cavatica Unit 1H
 API WELL NO
 47 - 103 - 03481
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: As-Built 1,206' WATERSHED: Fishing Creek QUADRANGLE: Porter Falls 0.8; 30;
 DISTRICT: Green Margaret Joshua Highly; Allen Vincent Wilcox, John Ray Nolan; Tribune Resources Minerals, LLC; 17.175; 7.125; 261.75
 SURFACE OWNER: Lancaster Linda Lou Jackson & Jess Stephen Jackson, Charmaine A. Starkweather, et vir; Stone Hill Minerals Holdings, LLC; 38.4; 1.3; 2.3; 28.5;
 ROYALTY OWNER: Shiben Estates, Inc. (3); Ernest & Cathy Stewart 2019 Irrevocable Trust (2); Antero Minerals, LLC (2); Barbara A. King; Kenneth Stewart Keystone Trust (2); Randy Bradley, Richard R. & Mary J. Soyco; Bounty Minerals II, Acquisitions, LLC; 40; 5; 67; 36.75; 64.5;
 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: 26,216' MD 6,882' TVD
 LEASE NO: ACREAGE: 60.72; 50; 36; 71.61

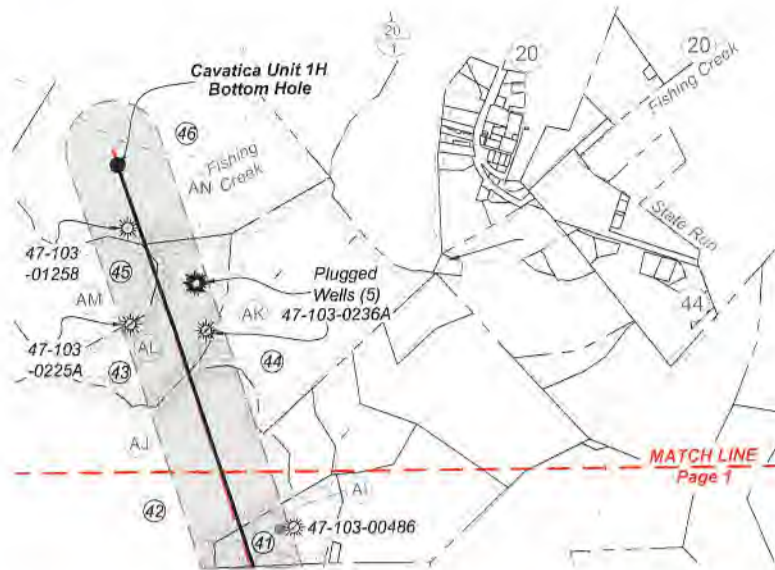
WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Bridgeport, WV 26330

3,389' to Top Hole
 11,631' to Bottom Hole
 TOP HOLE LATITUDE 39 - 32 - 30
 BTM HOLE LATITUDE 39 - 35 - 00
 LONGITUDE 80 - 45 - 00
 1,825' to Bottom Hole
 5,673' to Top Hole



JM

Antero Resources
Well No. Cavatica 1H
As-Drilled
 Antero Resources Corporation



ID	TM-Par	Owner	Bk/Pg	Acres
1	19-31	Margaret Lancaster	333 / 440	39.00
2	12-27	Crystal A. Muzzy (Tyler Co.)	W69 / 226	60.91
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6	19-30	Richard R. & Mary J. Scyoc	452 / 177	13.00
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8	12-21	Mary Adaline Lewis, et al	AR53 / 75	67.00
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15	19-11	Hill Cemetery	62/149	0.50
16	19-54	Susan J. Fair	378 / 97	59.75
17	19-57	Frank & Deborah Van Schaik	378/104	27.20
18	16-75	Gregg John Weis	317 / 157	7.50
19	16-51	David Randolph Gifford	428/619	67.00
20	16-53	Edward D. & Heather M. Stewart	390 / 10	32.60
21	16-52	RBMA, LLC	431 / 526	43.25
22	16-43	RBMA, LLC	431 / 526	76.30
23	16-36.1	Kenneth E. Stewart	424/821	0.80
24	16-36	Kenneth E. Stewart Keystone Trust	424 / 821	53.00
25	16-35	Eugene D. Jr. & Diane Mason	405 / 291	26.00
26	16-35.1	Janet Carroll Jones	417/190	20.50
27	16-29	Kenneth E. Stewart Keystone Trust	424 / 821	53.50
28	16-19	Eugene D., Jr. & Diane Mason	405 / 291	64.70
29	16-18	Cathy A. & Ernest E. Stewart	355 / 280	28.50
30	16-17	Cathy A. & Ernest E. Stewart	355/280	3.00
31	16-7	Wilbur B. Dawson & Loretta P. Ueltschey	408 / 192	54.50
32	12-53	Robert E. Midcap	399 / 40	57.00
33	16-1	Richard Coleman Nolan	264 / 313	60.72
34	12-52	Linda Lou Jackson	399 / 34	50.00
35	12-45.1	Jess S. & Linda L. Jackson	255/474	1.00
36	12-45.2	Roger Dale & Martha M. Midcap	275/481	1.00
37	12-45	Roger Dale Midcap	399 / 37	46.00
38	12-47	Linda K. Ice	447 / 793	26.25
39	12-44	Jerome E. Staley II, et al	453 / 271	6.00
40	12-36	Jerome E. Staley II, et al	453 / 271	6.00
41	12-37	Roger D. & Tina S. Midcap	342 / 74	13.30
42	12-43	Coastal Forest Resources Co.	444 / 105	172.70
43	12-16	Charmaine A. & Heath C. Starkweather	427 / 930	36.00
44	12-17	Charmaine A. & Heath C. Starkweather	427 / 930	69.00
45	12-15	Coastal Forest Resources Co.	444/105	51.00
46	12-1	Bradley W. Ueltschey	476 / 310	78.13

Leases	
A	Shiben Estates, Inc.
B	Randy Bradley
C	BRC Appalachian Minerals I, LLC
D	Shiben Estates, Inc.
E	Richard R. & Mary J. Scyoc
F	Antero Minerals, LLC
G	Joshua Highley
H	Joshua Highley
I	Bounty Minerals II, Acquisitions, LLC
J	Allen Vincent Wilcox
K	Tribune Resources Minerals, LLC
L	Susan J. Fair
M	Olive M. Moore
N	Antero Minerals, LLC
O	Harold Ice, et ux
P	Deanna R. Cochran
Q	Edward D. & Heather M. Stewart
R	RBMA, LLC
S	Kenneth Stewart Keystone Trust
T	Kenneth Stewart Keystone Trust
U	Ernest & Cathy Stewart 2019 Irrevocable Trust
V	Janet Carroll Jones
W	Kenneth Stewart Keystone Trust
X	BRC Appalachian Minerals I, LLC
Y	Ernest & Cathy Stewart 2019 Irrevocable Trust
Z	Shiben Estates, Inc.
AA	John Ray Nolan
AB	Robert E. & Michaelmary Midcap
AC	Linda Lou Jackson & Jess Stephen Jackson
AD	Barbara Anne Amos King
AE	Linda Ice Long
AF	Barbara A. King
AG	Ridgetop Appalachia, LLC
AH	Jerome E. Staley, II, et ux
AI	Roger D. & Tina S. Midcap
AJ	Chesapeake Appalachia, LLC
AK	Charmaine A. Starkweather, et vir
AL	Charmaine A. Starkweather, et vir
AM	BRC Appalachia Minerals I, LLC
AN	Stone Hill Minerals Holdings, LLC

FILE NO: 116-34-G-18
 DRAWING NO: Cavatica 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: CORS, Monroe County, OH

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

DATE: February 22 2023
 OPERATOR'S WELL NO. Cavatica Unit 1H
 API WELL NO
 47 - 103 - 03481
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,206' WATERSHED: Fishing Creek QUADRANGLE: Porter Falls 0.8: 30;
 DISTRICT: Green Margaret Joshua Highley; Allen Vincent Wilcox; John Ray Nolan; Tribune Resources Minerals, LLC; COUNTY: W 08/11/2023
 SURFACE OWNER: Lancaster Linda Lou Jackson & Jess Stephen Jackson; Charmaine A. Starkweather, et vir; Stone Hill Minerals Holdings, LLC;
 ROYALTY OWNER: Shiben Estates, Inc. (3); Ernest & Cathy Stewart 2019 Irrevocable Trust (2); Antero Minerals, LLC (2); Barbara A. King; ACREAGE: 39.00
 BRC Appalachia Minerals I, LLC (2); Barbara Anne Amos King; Ridgetop Appalachia, LLC; Jerome E. Staley, II, et ux; 17.475; 7.125; 261.75
 39.17; 28.5; 28.5; 40; 8; 67; 36.75; 64.5;
 51; 6; 6; 53; 8.01; 38; 3;
 13.25; 32.56; 119.75;
 60.72; 50; 36; 71.61

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,882' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 26,216' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Bridgeport, WV 26330