

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

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AUG 21 2023

WV Department of
Environmental Protection

API 47 - 095 - 02821 County Tyler/Wetzel District Ellsworth/Magnolia
Quad Porter Falls 7.5' Pad Name Heintzman Field/Pool Name -----
Farm name Dennis & Clista Heintzman Well Number Mamba Unit 2H
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 4377043.775m Easting 512407.203m
Landing Point of Curve Northing 4377590.20m Easting 512434.12m
Bottom Hole Northing 4382126.923m Easting 510891.950m

Elevation (ft) 1193' 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 9/20/2022 Date drilling commenced 10/31/2022 Date drilling ceased 1/19/2023
Date completion activities began 3/10/2023 Date completion activities ceased 4/22/2023
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 479' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1774' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 412' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

Reviewed by: [Signature]
02/09/2024

API 47-095 - 02821 Farm name Dennis & Clista Heintzman Well number Mamba Unit 2H

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	28"	20"	130'	New	78.67#, X-60	N/A	Y
Surface	17-1/2"	13-3/8"	580'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3440'	New	36#, K-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	23017'	New	23#, P-110/ICY	N/A	Y
Tubing		2-3/8"	6765'		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	266 sx	15.6	1.18	313	0'	8 Hrs.
Surface	Class C	650 sx	15.8	1.17	760	0'	8 Hrs.
Coal							
Intermediate 1	Class C	1175 sx	15.8	1.16	1363	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	3715 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.25 (Tail)	4643	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 23017' MD, 6622' TVD (BHL), 6654' TVD (Deepest Point Drilled) Loggers TD (ft) 23017' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6137'

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

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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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)
*PLEASE SEE ATTACHED EXHIBIT 1					

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)
*PLEASE SEE ATTACHED EXHIBIT 2								

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PRODUCING FORMATION(S)	DEPTHS		
	6599' (TOP)	TVD	7022' (TOP) MD
Marcellus			

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

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

OPEN FLOW Gas 13906.12 mcfpd Oil 678.67 bpd NGL --- bpd Water 948.71 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 ₂ 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 Halliburton Energy Services
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Stimulating Company Halliburton
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Please insert additional pages as applicable.

Completed by Stefan Gaspar Telephone 303-357-6959
Signature S Gaspar Title Permitting Agent Date 8/7/23

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

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EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	3/10/2023	22888	22843	60	Marcellus
2	3/10/2023	22804.7384	22640.4304	60	Marcellus
3	3/10/2023	22605.16878	22440.8608	60	Marcellus
4	3/11/2023	22405.59916	22241.2911	60	Marcellus
5	3/11/2023	22206.02954	22041.7215	60	Marcellus
6	3/11/2023	22006.45992	21842.1519	60	Marcellus
7	3/11/2023	21806.8903	21642.5823	60	Marcellus
8	3/12/2023	21607.32068	21443.0127	60	Marcellus
9	3/12/2023	21407.75105	21243.443	60	Marcellus
10	3/12/2023	21208.18143	21043.8734	60	Marcellus
11	3/12/2023	21008.61181	20844.3038	60	Marcellus
12	3/12/2023	20809.04219	20644.7342	60	Marcellus
13	3/13/2023	20609.47257	20445.1646	60	Marcellus
14	3/13/2023	20409.90295	20245.5949	60	Marcellus
15	3/13/2023	20210.33333	20046.0253	60	Marcellus
16	3/13/2023	20010.76371	19846.4557	60	Marcellus
17	3/13/2023	19811.19409	19646.8861	60	Marcellus
18	3/14/2023	19611.62447	19447.3165	60	Marcellus
19	3/14/2023	19412.05485	19247.7468	60	Marcellus
20	3/14/2023	19212.48523	19048.1772	60	Marcellus
21	3/14/2023	19012.91561	18848.6076	60	Marcellus
22	3/14/2023	18813.34599	18649.038	60	Marcellus
23	3/15/2023	18613.77637	18449.4684	60	Marcellus
24	3/15/2023	18414.20675	18249.8987	60	Marcellus
25	3/15/2023	18214.63713	18050.3291	60	Marcellus
26	3/15/2023	18015.06751	17850.7595	60	Marcellus
27	3/15/2023	17815.49789	17651.1899	60	Marcellus
28	3/15/2023	17615.92827	17451.6203	60	Marcellus
29	3/15/2023	17416.35865	17252.0506	60	Marcellus
30	3/16/2023	17216.78903	17052.481	60	Marcellus
31	3/16/2023	17017.21941	16852.9114	60	Marcellus
32	3/16/2023	16817.64979	16653.3418	60	Marcellus
33	3/16/2023	16618.08017	16453.7722	60	Marcellus
34	3/16/2023	16418.51055	16254.2025	60	Marcellus
35	3/16/2023	16218.94093	16054.6329	60	Marcellus
36	3/17/2023	16019.37131	15855.0633	60	Marcellus
37	3/17/2023	15819.80169	15655.4937	60	Marcellus
38	3/17/2023	15620.23207	15455.9241	60	Marcellus
39	3/17/2023	15420.66245	15256.3544	60	Marcellus
40	3/17/2023	15221.09283	15056.7848	60	Marcellus
41	3/17/2023	15021.52321	14857.2152	60	Marcellus
42	3/17/2023	14821.95359	14657.6456	60	Marcellus
43	3/18/2023	14622.38397	14458.0759	60	Marcellus
44	3/18/2023	14422.81435	14258.5063	60	Marcellus
45	3/18/2023	14223.24473	14058.9367	60	Marcellus
46	3/18/2023	14023.67511	13859.3671	60	Marcellus
47	3/18/2023	13824.10549	13659.7975	60	Marcellus
48	3/18/2023	13624.53586	13460.2278	60	Marcellus
49	3/18/2023	13424.96624	13260.6582	60	Marcellus
50	3/19/2023	13225.39662	13061.0886	60	Marcellus
51	3/19/2023	13025.827	12861.519	60	Marcellus
52	3/19/2023	12826.25738	12661.9494	60	Marcellus
53	3/19/2023	12626.68776	12462.3797	60	Marcellus
54	3/19/2023	12427.11814	12262.8101	60	Marcellus
55	3/19/2023	12227.54852	12063.2405	60	Marcellus
56	3/19/2023	12027.9789	11863.6709	60	Marcellus
57	3/20/2023	11828.40928	11664.1013	60	Marcellus
58	3/20/2023	11628.83966	11464.5316	60	Marcellus
59	3/20/2023	11429.27004	11264.962	60	Marcellus
60	3/20/2023	11229.70042	11065.3924	60	Marcellus
61	3/20/2023	11030.1308	10865.8228	60	Marcellus
62	3/20/2023	10830.56118	10666.2532	60	Marcellus
63	3/20/2023	10630.99156	10466.6835	60	Marcellus
64	3/21/2023	10431.42194	10267.1139	60	Marcellus
65	3/21/2023	10231.85232	10067.5443	60	Marcellus
66	3/21/2023	10032.2827	9867.97468	60	Marcellus
67	3/21/2023	9832.71308	9668.40506	60	Marcellus
68	3/21/2023	9633.14346	9468.83544	60	Marcellus
69	3/21/2023	9433.57384	9269.26582	60	Marcellus
70	3/22/2023	9234.004219	9069.6962	60	Marcellus
71	3/22/2023	9034.434599	8870.12658	60	Marcellus
72	3/22/2023	8834.864979	8670.55696	60	Marcellus
73	3/22/2023	8635.295359	8470.98734	60	Marcellus
74	3/22/2023	8435.725738	8271.41772	60	Marcellus
75	3/22/2023	8236.156118	8071.8481	60	Marcellus
76	3/22/2023	8036.586498	7872.27848	60	Marcellus
77	3/23/2023	7837.016878	7672.70886	60	Marcellus
78	3/23/2023	7637.447257	7473.13924	60	Marcellus
79	3/23/2023	7437.877637	7273.56962	60	Marcellus
80	3/23/2023	7238.308017	7074	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	3/10/2023	79.68284	9623.785	8269.11	3887.754	177960	5639.4531	N/A
2	3/10/2023	92.59054	9994.763	4801.24	4180.351	399260	7587.236	N/A
3	3/10/2023	96.42852	10106.67	5018.06	4147.44	411270	7785.5743	N/A
4	3/11/2023	95.5933	10166.42	5994.43	4333.8	410060	7078.1986	N/A
5	3/11/2023	95.21	10072	4119	4195	407450	7149.314	N/A
6	3/11/2023	98.0252	10168.69	5261.56	3939.979	396660	7019.2645	N/A
7	3/11/2023	92.47811	10169.42	5695.57	3822.532	412020	7126.8667	N/A
8	3/12/2023	94.58	10022	5375	4141	405400	7048.0717	N/A
9	3/12/2023	93.07554	10073.41	5148.44	3948.619	398760	6946.2762	N/A
10	3/12/2023	94.46311	10011.03	5262.81	4076.768	394630	7232.6179	N/A
11	3/12/2023	96.59	10219	4963	4096	400780	7147.2069	N/A
12	3/12/2023	97.88	10282	5223	4181	411720	7134.4419	N/A
13	3/13/2023	97.47	9984	5224	4005	416800	7177.4017	N/A
14	3/13/2023	96.28585	10026.26	5380.09	4423.13	395750	6896.815	N/A
15	3/13/2023	98.17681	10290.6	5284.39	4009.927	396840	7013.6107	N/A
16	3/13/2023	96.55783	9943.935	5122.77	3871.226	412050	7265.9979	N/A
17	3/13/2023	93.67459	9889.21	4488.26	4032.627	408650	7175.2367	N/A
18	3/14/2023	96.49	10101	5774	3827	410610	7195.5248	N/A
19	3/14/2023	95.72997	10048.73	5013.41	3955.282	409970	7100.4524	N/A
20	3/14/2023	96.91932	10005.93	4940.85	3600.201	405590	7014.035	N/A
21	3/14/2023	95.55142	9691.254	4824.33	3983.5	414790	6997.5148	N/A
22	3/14/2023	94.6956	9620.848	5285.62	3849.65	416170	7054.3502	N/A
23	3/15/2023	96.45658	9732.366	5310.23	3995.706	397990	6996.0121	N/A
24	3/15/2023	96.72312	9681.419	4959.45	3733.916	410520	6946.8017	N/A
25	3/15/2023	97.11807	9946.365	5061.81	3856.039	413960	7146.3521	N/A
26	3/15/2023	97.50935	10087.98	5596.28	3591.37	412700	7109.6419	N/A
27	3/15/2023	97.19591	10050.73	5206.04	3989.991	407740	6941.8619	N/A
28	3/15/2023	96.8908	9890.643	5657.91	3849.461	412670	7015.784	N/A
29	3/15/2023	97.76086	9642.15	4889.98	3789.728	411320	7331	N/A
30	3/16/2023	96.5296	9422.635	4999	3895.771	410740	7154.4133	N/A
31	3/16/2023	96.45355	9681.608	4614.35	3721.611	393350	6968.5086	N/A
32	3/16/2023	95.96108	9517.496	4976.01	3334.485	409590	6996.8898	N/A
33	3/16/2023	96.97191	9647.786	4899	3954.421	394180	6877.0617	N/A
34	3/16/2023	97.5687	9763.116	5152.51	3636.427	403530	7082.9771	N/A
35	3/16/2023	97.1948	9605.617	5567.63	3615.774	408140	6948.4605	N/A
36	3/17/2023	95.47627	9342.023	5179.56	4137.775	393300	8605.0836	N/A
37	3/17/2023	96.6949	9407.325	5011.22	3900.35	393150	6727.3029	N/A
38	3/17/2023	97.73084	9516.331	4974.26	4151.147	398710	6767.9579	N/A
39	3/17/2023	98.06206	9742.509	5109.2	3822.589	411340	7075.4902	N/A
40	3/17/2023	97.4464	9221.293	4860.16	4334.001	394820	7151.3612	N/A
41	3/17/2023	97.35954	9056.372	4815.41	4014.179	393660	6940.0212	N/A
42	3/17/2023	97.23353	9143.251	5379.52	4028.864	394470	6863.8564	N/A
43	3/18/2023	96.41	9255	5664	4574	296430	6534.4464	N/A
44	3/18/2023	96.3594	8800.209	5767.83	3881.962	400820	7021.9707	N/A
45	3/18/2023	97.56588	9116.693	5755	3654.485	410300	6935.4107	N/A
46	3/18/2023	97.65642	8964.912	5081.39	3920.918	392590	7024.1445	N/A
47	3/18/2023	96.59116	8916.99	5421.4	3974.941	392310	6735.126	N/A
48	3/18/2023	98.20201	8911.684	5799.17	4218.799	409230	6842.0279	N/A
49	3/18/2023	97.27346	8883.75	5312.54	3725.188	412930	6948.2621	N/A
50	3/19/2023	98.29248	8777.532	5498	3733.461	412320	6940.1381	N/A
51	3/19/2023	97.62049	8659.024	5210.2	3712.623	392930	6682.925	N/A
52	3/19/2023	97.46898	8574.753	5150.27	3909.936	395560	6654.5655	N/A
53	3/19/2023	97.56212	8791.269	5027.85	3398.198	395980	6775.1821	N/A
54	3/19/2023	98.32108	8611.571	4488.97	3678.13	393190	6732.0564	N/A
55	3/19/2023	98.66647	8634.35	4294.35	3311	402070	7036.7064	N/A
56	3/19/2023	97.79	8367	5576	3414	401070	6864.2231	N/A
57	3/20/2023	95.51	8727	5804	3406	394970	6670.6483	N/A
58	3/20/2023	97.319	8158.141	5058.41	4006.739	394640	6892.104	N/A
59	3/20/2023	97.51627	8274.71	3993.41	3380.087	393740	6659.6224	N/A
60	3/20/2023	97.29	8149	4473	3489	411710	6844.3057	N/A
61	3/20/2023	97.6312	8092.312	5679.44	3507.9	400240	6666.2486	N/A
62	3/20/2023	97.47	7895	5296	3999	397760	6727.526	N/A
63	3/20/2023	98.26499	7879.947	4434.24	3691.789	399020	6764.7481	N/A
64	3/21/2023	98.55	7912	5024	3492	412910	6948.4717	N/A
65	3/21/2023	98.15153	8004.14	5320.41	4167.09	412380	7078.6867	N/A
66	3/21/2023	93.03508	8181.129	4851.13	3262.798	399060	6763.3912	N/A
67	3/21/2023	96.53911	8046.216	5140.76	3753.816	392350	6676.465	N/A
68	3/21/2023	97.63758	7888.062	5294.35	3744.469	398980	7284.3838	N/A
69	3/21/2023	96.31634	7843.568	4854.12	3500.338	394170	7358.1074	N/A
70	3/22/2023	98.08949	7899.362	5398.23	3616.662	392950	7435.5814	N/A
71	3/22/2023	97.85749	7749.52	4594.42	3914.719	407870	7542.4969	N/A
72	3/22/2023	97.82	8130	5582	3400	414940	7602.594	N/A
73	3/22/2023	96.27245	8230.913	4751.32	3327.284	404740	7173.9729	N/A
74	3/22/2023	97.54213	8106.333	4974.73	3503.511	415630	7420.2938	N/A
75	3/22/2023	97.35721	7950.857	3908.76	3576.644	414740	7383.9883	N/A
76	3/22/2023	97.2611	7848.054	5202.4	3624.878	394600	7388.0586	N/A
77	3/23/2023	98.19758	7928.48	5802.04	3682.64	392410	7160.4348	N/A
78	3/23/2023	94.6375	7507.15	4354.52	3663.385	406940	8851.269	N/A
79	3/23/2023	97.46985	7655.663	4995.97	3778.521	396450	7091.7221	N/A
80	3/23/2023	97.37	7560	4708	3565	394260	7094.4026	N/A
AVERAGE		96.6	9,094	5,153	3,825	31,924,260	564,639	0

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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
Shaley Siltstone	70	190	70	190
Shaley Sandstone	190	280	190	280
Shaley Siltstone	280	360	280	360
Limestone, Tr Shale	360	490	360	490
Sandstone	490	580	490	580
Limestone, Tr Shale	580	790	580	790
Shaley Sandstone	790	880	790	880
Shale, Tr Sandstone	880	1,130	880	1,130
Sandy Shale, Limestone	1,130	1,240	1,130	1,240
Sandy Shale	1,240	1,480	1,240	1,480
Sandstone, Tr Shale	1,480	1,660	1,480	1,660
Silty Shale, tr SS	1,660	1,750	1,660	1,750
Shale, Tr Sst	1,750	2,002	1,750	2,019
Big Lime	2,032	2,828	2,019	2,863
Fifty Foot Sandstone	2,828	2,897	2,833	2,933
Gordon	2,897	3,119	2,903	3,161
Fifth Sandstone	3,119	3,208	3,131	3,253
Bayard	3,208	4,035	3,223	4,105
Speechley	4,035	4,304	4,075	4,383
Balltown	4,304	4,749	4,353	4,841
Bradford	4,749	5,171	4,811	5,275
Benson	5,171	5,386	5,245	5,496
Alexander	5,386	6,466	5,466	6,667
Sycamore	6,329	6,436	6,490	6,637
Middlesex	6,436	6,525	6,637	6,797
Burkett	6,525	6,542	6,797	6,837
Tully	6,542	6,599	6,837	7,022
Marcellus	6,599	NA	7,022	NA

RECEIVED
Office of Oil and Gas

AUG 21 2023

NY Department of
Environmental Protection

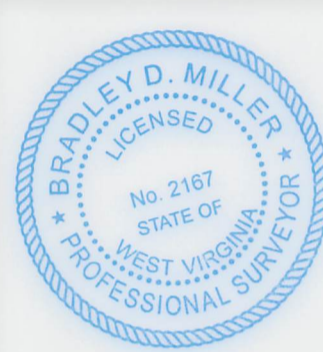
02/09/2024

**Antero Resources
Well No. Mamba 2H
As-Drilled**
Antero Resources Corporation



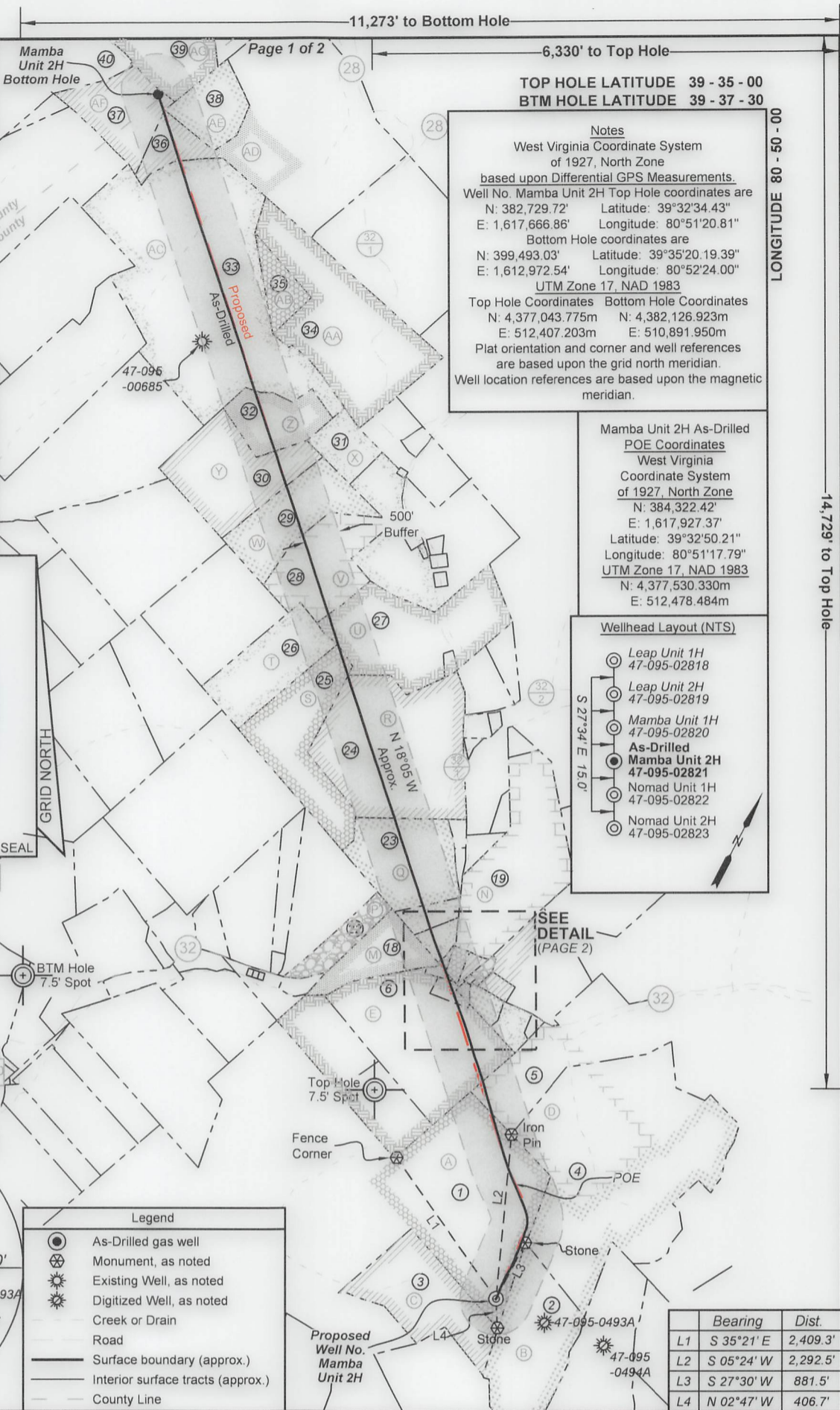
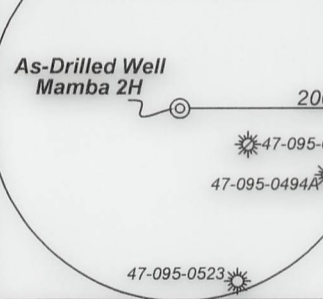
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

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



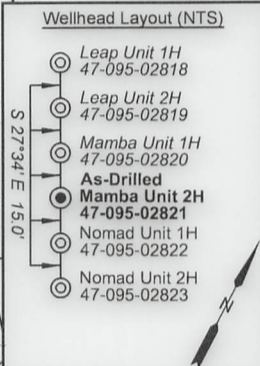
Top Hole Coordinates, As-drilled data, and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

Note: 0 water wells or springs were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



Notes
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Mamba Unit 2H Top Hole coordinates are
N: 382,729.72' Latitude: 39°32'34.43"
E: 1,617,666.86' Longitude: 80°51'20.81"
Bottom Hole coordinates are
N: 399,493.03' Latitude: 39°35'20.19.39"
E: 1,612,972.54' Longitude: 80°52'24.00"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,377,043.775m N: 4,382,126.923m
E: 512,407.203m E: 510,891.950m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Mamba Unit 2H As-Drilled POE Coordinates
West Virginia Coordinate System of 1927, North Zone
N: 384,322.42' E: 1,617,927.37'
Latitude: 39°32'50.21" Longitude: 80°51'17.79"
UTM Zone 17, NAD 1983
N: 4,377,530.330m E: 512,478.484m



Legend

- As-Drilled gas well
- Monument, as noted
- Existing Well, as noted
- Digitized Well, as noted
- Creek or Drain
- Road
- Surface boundary (approx.)
- Interior surface tracts (approx.)
- County Line

	Bearing	Dist.
L1	S 35°21' E	2,409.3'
L2	S 05°24' W	2,292.5'
L3	S 27°30' W	881.5'
L4	N 02°47' W	406.7'

FILE NO: 99-54-E-19
DRAWING NO: Mamba Unit 2H As-Drilled
SCALE: 1" = 2000'
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: July 28 2023
OPERATOR'S WELL NO. Mamba Unit 2H
API WELL NO
47 - 095 - 02821
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built: 1,193' WATERSHED: Outlet Middle Island Creek QUADRANGLE: TH:Porter Falls 164.28125; BH:Paden City 20.67.23.25
DISTRICT: Ellsworth/Magnolia COUNTY: Tyler/Wetzel 3.36.15.98.5
SURFACE OWNER: Dennis & Clista Heintzman ACREAGE: 417.6 30.9625; 48.796; 10.02; 33.48125; 44;
ROYALTY OWNER: BRC Appalachian Minerals I, LLC (2); TMP Properties, LLC; Judy P. Meyers; LEASE NO: ACREAGE: 42.46875; 99.4438

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: 6,622' TVD 23,017' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
Denver, CO 80202 Charleston, WV 25313

02/09/2024

Antero Resources
Well No. Mamba 2H
As-Drilled
 Antero Resources Corporation



ID	TM/Par	Owner	Bk/Pg	Acres
1	6-36	Dennis & Clista Heintzman	297/640	417.60
2	10-4	Stefan L. & Alberta B. Smolski	356/467	56.08
3	6-49	Dennis & Clista A. Heintzman	297/637	45.00
4	6-30.1	Larry M. & Amy B. Adams	369/344	150.33
5	6-30	Larry G. Rice	333/682	64.61
6	6-27	Ronnie L. VanCamp, et al	568/32	69.88
7	6-27.3	Laura A. Richeson	365/34	5.14
8	6-27.4	Joseph M. & Tammy A. Rice	634/778	3.79
9	6-21.2	Richard E. Leek	OR147/27	3.15
10	6-27.1	Larry G. Rice	333/682	0.81
11	6-27.5	David W. VanCamp	555/14	2.56
12	6-21.3	Richard E. Leek	OR147/27	0.28
13	6-21.1	Richard E. Leek	391/533	2.74
14	6-29	Richard Leek	402/216	1.00
15	6-28	David Wayne & Virginia VanCamp	395/557	2.00
16	6-47.1	Donna Faulk	408/113	1.00
17	6-27.2	David Wayne & Virginia VanCamp	395/557	1.0
18	6-47	Jeffrey Seckman	545/70	18.99
19	6-11	Jeffrey A. & Joann E. Seckman	343/153-A	68.72
20	6-20.2	Hiram Groves	98/195	7.50
21	6-20.1	Jeffrey Seckman	545/70	2.52
22	6-19	Linda J. & Jack E. Mason	OR101/678	10.00
23	6-20	Jeffrey Seckman	545/70	36.15
24	6-8	Matthew T. Ebert	361/219	98.50
25	6-7	Gary A. & Penny K. Midcap	301/265	30.90
26	3-26.1	Gary A. & Penny K. Midcap	301/265	40.00
27	3-34	Charlotte Terry, et al	WB76/367	57.19
28	3-27	Herbert & Phyllis Glendenning	349/827	33.25
29	3-25.1	Gary A. & Penny K. Midcap	304/230	33.48
30	3-25	Gary A. & Penny K. Midcap	301/265	42.47
31	3-28	Rhoda & Lawrence Morgan Est	317/413	61.33
32	3-19	Gary A. & Penny K. Midcap	301/265	20.94
33	3-9	Steven D. & Brenda M. Higgins	313/623	163.34
34	3-10	Steven D. & Brenda M. Higgins	313/623	79.75
35	3-10.1	Steven D. & Brenda M. Higgins	313/623	10.16
36	1-11	Daniel A. Witschey	541/326	122.81
37	16-64	Richard Todd Kay	420/650	29.00
38	1-16	Daniel A. & Amy J. Witschey	602/421	20.00
39	17-15	Don A. Stertzbach	367/623	37.90
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Leases	
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C	Dennis R. & Clista A. Heintzman
D	TMP Properties, LLC
E	Judy P. Meyers
F	Laura A. Richeson
G	Bobby J. Dennis
H	David W. VanCamp, et ux
I	BRC Appalachian Minerals I, LLC
J	Antero Mineral, LLC
K	Martha Elizabeth Matthews
L	David Wayne VanCamp, et ux
M	Jeffrey Seckman
N	Jon Keith Irvin
O	James D. VanCamp
P	Linda J. & Jack E. Mason
Q	David E. Bowyer
R	Christina L. Ebert
S	Gary A. Midcap, et ux
T	Gary A. Midcap, et ux
U	Lee Morgan
V	BRC Appalachian Minerals I, LLC
W	James D. VanCamp, et ux
X	MAP2012-OK
Y	William G. Baker
Z	Gary A. Midcap, et ux
AA	Mary F. Mutschelknaus
AB	Steven D. Higgins, et ux
AC	Beverly Kay Campbell
AD	Cider Run Mineral Holdings, LLC
AE	Don A. Stertzbach, et ux
AF	Michael Stillwagner
AG	Ridgetop Royalties

FILE NO: 99-54-E-19
 DRAWING NO: Mamba Unit 2H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WV DOT, Harrisville, WV

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

DATE: July 28 2023
 OPERATOR'S WELL NO. Mamba Unit 2H
API WELL NO
 47 - 095 - 02821
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built: 1,193' WATERSHED: Outlet Middle Island Creek QUADRANGLE: BH: Paden City 164.28125; 29.62735
 DISTRICT: Ellsworth/Magnolia COUNTY: Tyler/Wetzel 3.3615; 98.5;
 SURFACE OWNER: Dennis & Clista Heintzman ROYALTY OWNER: BRC Appalachian Minerals I, LLC (2); TMP Properties, LLC; Judy P. Meyers; LEASE NO: ACREAGE: 417.6 30.9625; 48.796; 10.02; 33.48125; 44; 42.46875; 99.4438

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,622' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 23,017' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Charleston, WV 25313

11,273' to Bottom Hole

6,330' to Top Hole

LONGITUDE 80 - 50 - 00

13,215' to Bottom Hole
14,729' to Top Hole

Antero Resources
Well No. Mamba 2H
As-Drilled
Antero Resources Corporation



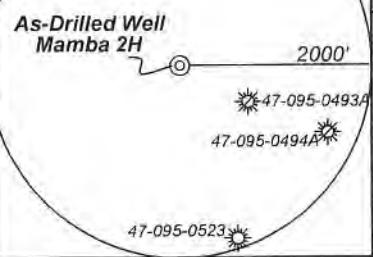
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

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



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.

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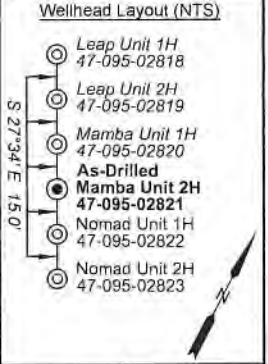


- Legend**
- As-Drilled gas well
 - ⊗ Monument, as noted
 - ☼ Existing Well, as noted
 - ☼ Digitized Well, as noted
 - Creek or Drain
 - Road
 - Surface boundary (approx.)
 - Interior surface tracts (approx.)
 - County Line

TOP HOLE LATITUDE 39 - 35 - 00
BTM HOLE LATITUDE 39 - 37 - 30

Notes
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements. Well No. Mamba Unit 2H Top Hole coordinates are N: 382,729.72' Latitude: 39°32'34.43" E: 1,617,666.86' Longitude: 80°51'20.81" Bottom Hole coordinates are N: 399,493.03' Latitude: 39°35'20.19.39" E: 1,612,972.54' Longitude: 80°52'24.00" UTM Zone 17, NAD 1983
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West Virginia Coordinate System of 1927, North Zone
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N: 4,377,530.330m E: 512,478.484m



SEE DETAIL (PAGE 2)

	Bearing	Dist.
L1	S 35°21' E	2,409.3'
L2	S 05°24' W	2,292.5'
L3	S 27°30' W	881.5'
L4	N 02°47' W	406.7'

FILE NO: 99-54-E-19
DRAWING NO: Mamba Unit 2H As-Drilled
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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

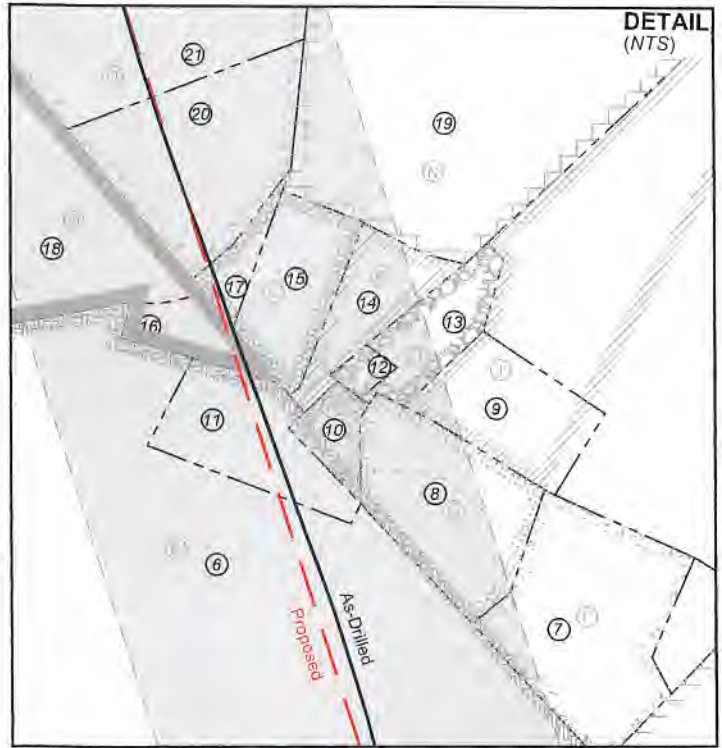
DATE: July 28 2023
OPERATOR'S WELL NO. Mamba Unit 2H
API WELL NO
47 — 095 — 02821
STATE COUNTY PERMIT

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

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SURFACE OWNER: Dennis & Cista Heintzman GARY A. MIDCAP, ET UX (2); LEE MORGAN; JAMES D. VANCAMP; DAVID WAYNE VANCAMP, ET UX; DAVID E. BOWYER; CHRISTINA L. EBERT; MICHAEL STILLWAGNER; BEVERLY KAY CAMPBELL; JAMES D. VANCAMP, ET UX; WILLIAM G. BAKER; JEFFREY SECKMAN; 02/09/2024
ROYALTY OWNER: BRC Appalachian Minerals I, LLC (2); TMP Properties, LLC; Judy P. Meyers; LEASE NO: ACREAGE: 417.6 30.9625; 48.796; 10.02; 33.48125; 44; 42.46875; 99.4438
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
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 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,622' TVD 23,017' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
Denver, CO 80202 Charleston, WV 25313

Antero Resources
Well No. Mamba 2H
As-Drilled
 Antero Resources Corporation



ID	TM/Par	Owner	Bk/Pg	Acres
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18	6-47	Jeffrey Seckman	545/70	18.99
19	6-11	Jeffrey A. & Joann E. Seckman	343/153-A	68.72
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21	6-20.1	Jeffrey Seckman	545/70	2.52
22	6-19	Linda J. & Jack E. Mason	OR101/678	10.00
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29	3-25.1	Gary A. & Penny K. Midcap	304/230	33.48
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39	17-15	Don A. Stertzbach	367/623	37.90
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J	Antero Mineral, LLC
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L	David Wayne VanCamp, et ux
M	Jeffrey Seckman
N	Jon Keith Irvin
O	James D. VanCamp
P	Linda J. & Jack E. Mason
Q	David E. Bowyer
R	Christina L. Ebert
S	Gary A. Midcap, et ux
T	Gary A. Midcap, et ux
U	Lee Morgan
V	BRC Appalachian Minerals I, LLC
W	James D. VanCamp, et ux
X	MAP2012-OK
Y	William G. Baker
Z	Gary A. Midcap, et ux
AA	Mary F. Mutschelknaus
AB	Steven D. Higgins, et ux
AC	Beverly Kay Campbell
AD	Cider Run Mineral Holdings, LLC
AE	Don A. Stertzbach, et ux
AF	Michael Stillwagner
AG	Ridgetop Royalties

FILE NO: 99-54-E-19
 DRAWING NO: Mamba Unit 2H As-Drilled
 SCALE: 1" = 2000'
 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: July 28 20 23
 OPERATOR'S WELL NO. Mamba Unit 2H
 API WELL NO
 47 - 095 - 02821
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built: 1,193' WATERSHED: Outlet Middle Island Creek QUADRANGLE: TH:Porter Falls 164.28125; BH:Paden City 20.67; 33.25;
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 SURFACE OWNER: Dennis & Clista Heintzman ACREAGE: 417.6 30.9625; 48.796;
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 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 23,017' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Charleston, WV 25313

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/10/2023
Job End Date:	3/23/2023
State:	West Virginia
County:	Tyler
API Number:	47-095-02821-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Mamba Unit 2H
Latitude:	39.54289000
Longitude:	-80.85578000
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,654
Total Base Water Volume (gal):	24,889,327
Total Base Non Water Volume:	0



RECEIVED
Office of Oil and Gas

AUG 21 2023

West Virginia Department of
Environmental Protection

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	86.71632	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.13515	

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OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
HYDROCHLORI C ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
Chemstream StimSTREAM FR 2800	Chemstream, Inc.	Friction Reducer					
				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			
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	13.08549	RECEIVED Office of Oil and Gas
			Hydrochloric acid	7647-01-0	30.00000	0.03808	AUG 21 2023

			Distillates, (petroleum), hydrotreated light	64742-47-8	25.00000	0.01467	
			Guar gum	9000-30-0	100.00000	0.00403	
			Alcohols, C11-14-iso, C-13-rich, ethoxylated	78330-21-9	5.00000	0.00293	
			Glutaraldehyde	111-30-8	30.00000	0.00246	
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00041	
			Methanol	67-56-1	100.00000	0.00024	
			Ammonium persulfate	7727-54-0	100.00000	0.00009	
			Ethanol	64-17-5	1.00000	0.00008	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Oxylated phenolic resin	Proprietary	30.00000	0.00003	
			Hexadecene	629-73-2	5.00000	0.00001	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			Ethoxylated alcohols	Proprietary	5.00000	0.00001	
			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)

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