

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

API 47 - 103 - 03600 County Wetzel District Green
Quad Porter Falls 7.5' Pad Name Big Run Field/Pool Name -----
Farm name Antero Resources Corporation Well Number Arenado 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 4378375m Easting 515567m
Landing Point of Curve Northing 4378115.99m Easting 515163.32m
Bottom Hole Northing 4383861m Easting 513243m

Elevation (ft) 1250' 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 9/5/2023 Date drilling commenced 9/8/2023 Date drilling ceased 12/9/2023
Date completion activities began 2/23/2024 Date completion activities ceased 5/11/2024
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A RECEIVED
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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug **JUL 29 2024**

Freshwater depth(s) ft 31' Open mine(s) (Y/N) depths No www Department of Environmental Protection
Salt water depth(s) ft 2311' Void(s) encountered (Y/N) depths No
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED
Reviewed by: [Signature]
08/16/2024

API 47- 103 - 03600 Farm name Antero Resources Corporation Well number Arenado 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	28"	20"	130'	New	91.59#, J-55	N/A	Y
Surface	17-1/2"	13-3/8"	378'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3624'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" /8-1/2"	5-1/2"	27632'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7266'		4.7#, J-55		
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	215 sx	15.6	1.18	254	0'	8 Hrs.
Surface	Class A	330 sx	15.8	1.17	386	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1279 sx	15.8	1.16	1484	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	4635 sx (Tail)	13.5 (Spacer), 15.2(Lead)	1.35 (Tail)	6257	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 27632' MD, 6750' TVD (BHL), 6821' TVD (Deepest Point Drilled) Loggers TD (ft) 27632' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5634'

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 JUL 29 2024

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS WV Department of Environmental Protection

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

08/16/2024 

API 47- 103 - 03600 Farm name Antero Resources Corporation Well number Arenado Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
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***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)
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***PLEASE SEE ATTACHED EXHIBIT 2**

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Please insert additional pages as applicable.

08/16/2024 

API 47- 103 - 03600 Farm name Antero Resources Corporation Well number Arenado Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6761' (TOP)</u> TVD	<u>7470' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

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 16109.34 mcfpd Oil 855.62 bpd NGL --- bpd Water 1187.97 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/</u> <u>FORMATION</u>	<u>TOP</u> <u>DEPTH IN FT</u>	<u>BOTTOM</u> <u>DEPTH IN FT</u>	<u>TOP</u> <u>DEPTH IN FT</u>	<u>BOTTOM</u> <u>DEPTH IN FT</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND</u> <u>TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>NAME</u>	<u>TVD</u>	<u>MD</u>	<u>MD</u>	
*PLEASE SEE ATTACHED EXHIBIT 3					

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JUL 29 2024					
WV Department of Environmental Protection					

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 N Sam Houston Pkwy E City Houston State TX Zip 77032

Stimulating Company Halliburton
Address 3000 N Sam Houston Pkwy E. City Houston State TX Zip 77032

Please insert additional pages as applicable.

Completed by Stefan Gaspar Telephone 303-357-6959
Signature *S Gaspar* Title Permitting Agent Date 7/26/24

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

08/16/2024 *dm*

API 47-103-03600 Farm Name Antero Resources Corporation Well Number Arenado Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/23/2024	27495.00	27451.00	36	Marcellus
2	2/24/2024	27412.45	27246.73	36	Marcellus
3	2/24/2024	27211.18	27045.45	36	Marcellus
4	2/25/2024	27009.91	26844.18	36	Marcellus
5	2/26/2024	26808.64	26642.91	36	Marcellus
6	2/26/2024	26607.36	26441.64	36	Marcellus
7	2/27/2024	26406.09	26240.36	36	Marcellus
8	2/28/2024	26204.82	26039.09	36	Marcellus
9	2/28/2024	26003.55	25837.82	36	Marcellus
10	2/29/2024	25802.27	25636.55	36	Marcellus
11	3/1/2024	25601.00	25435.27	36	Marcellus
12	3/1/2024	25399.73	25234.00	36	Marcellus
13	3/2/2024	25198.45	25032.73	36	Marcellus
14	3/2/2024	24997.18	24831.45	36	Marcellus
15	3/3/2024	24795.91	24630.18	36	Marcellus
16	3/3/2024	24594.64	24428.91	36	Marcellus
17	3/4/2024	24393.36	24227.64	36	Marcellus
18	3/4/2024	24192.09	24026.36	36	Marcellus
19	3/5/2024	23990.82	23825.09	36	Marcellus
20	3/6/2024	23789.55	23623.82	36	Marcellus
21	3/6/2024	23588.27	23422.55	36	Marcellus
22	3/7/2024	23387.00	23221.27	36	Marcellus
23	3/7/2024	23185.73	23020.00	36	Marcellus
24	3/7/2024	22984.45	22818.73	36	Marcellus
25	3/8/2024	22783.18	22617.45	36	Marcellus
26	3/9/2024	22581.91	22416.18	36	Marcellus
27	3/9/2024	22380.64	22214.91	36	Marcellus
28	3/10/2024	22179.36	22013.64	36	Marcellus
29	3/11/2024	21978.09	21812.36	36	Marcellus
30	3/11/2024	21776.82	21611.09	36	Marcellus
31	3/12/2024	21575.55	21409.82	36	Marcellus
32	3/12/2024	21374.27	21208.55	36	Marcellus
33	3/13/2024	21173.00	21007.27	36	Marcellus
34	3/13/2024	20971.73	20806.00	36	Marcellus
35	3/14/2024	20770.45	20604.73	36	Marcellus
36	3/14/2024	20569.18	20403.45	36	Marcellus
37	3/15/2024	20367.91	20202.18	36	Marcellus
38	3/15/2024	20166.64	20000.91	36	Marcellus
39	3/15/2024	19965.36	19799.64	36	Marcellus
40	3/16/2024	19764.09	19598.36	36	Marcellus
41	3/16/2024	19562.82	19397.09	36	Marcellus
42	3/16/2024	19361.55	19195.82	36	Marcellus
43	3/16/2024	19160.27	18994.55	36	Marcellus
44	3/17/2024	18959.00	18793.27	36	Marcellus
45	3/17/2024	18757.73	18592.00	36	Marcellus
46	3/17/2024	18556.45	18390.73	36	Marcellus
47	3/18/2024	18355.18	18189.45	36	Marcellus
48	3/18/2024	18153.91	17988.18	36	Marcellus
49	3/18/2024	17952.64	17786.91	36	Marcellus
50	3/19/2024	17751.36	17585.64	36	Marcellus
51	3/19/2024	17550.09	17384.36	36	Marcellus
52	3/19/2024	17348.82	17183.09	36	Marcellus
53	3/20/2024	17147.55	16981.82	36	Marcellus
54	3/20/2024	16946.27	16780.55	36	Marcellus
55	3/21/2024	16745.00	16579.27	36	Marcellus
56	3/21/2024	16543.73	16378.00	36	Marcellus
57	3/21/2024	16342.45	16176.73	36	Marcellus
58	3/22/2024	16141.18	15975.45	36	Marcellus
59	3/22/2024	15939.91	15774.18	36	Marcellus
60	3/22/2024	15738.64	15572.91	36	Marcellus
61	3/23/2024	15537.36	15371.64	36	Marcellus
62	3/23/2024	15336.09	15170.36	36	Marcellus
63	3/23/2024	15134.82	14969.09	36	Marcellus
64	3/24/2024	14933.55	14767.82	36	Marcellus
65	3/24/2024	14732.27	14566.55	36	Marcellus
66	3/24/2024	14531.00	14365.27	36	Marcellus
67	3/25/2024	14329.73	14164.00	36	Marcellus
68	3/25/2024	14128.45	13962.73	36	Marcellus
69	3/25/2024	13927.18	13761.45	36	Marcellus
70	3/26/2024	13725.91	13560.18	36	Marcellus
71	3/26/2024	13524.64	13358.91	36	Marcellus
72	3/26/2024	13323.36	13157.64	36	Marcellus
73	3/26/2024	13122.09	12956.36	36	Marcellus
74	3/27/2024	12920.82	12755.09	36	Marcellus
75	3/27/2024	12719.55	12553.82	36	Marcellus
76	3/27/2024	12518.27	12352.55	36	Marcellus
77	3/28/2024	12317.00	12151.27	36	Marcellus
78	3/28/2024	12115.73	11950.00	36	Marcellus
79	3/28/2024	11914.45	11748.73	36	Marcellus
80	3/29/2024	11713.18	11547.45	36	Marcellus
81	3/29/2024	11511.91	11346.18	36	Marcellus
82	3/29/2024	11310.64	11144.91	36	Marcellus
83	3/29/2024	11109.36	10943.64	36	Marcellus
84	3/30/2024	10908.09	10742.36	36	Marcellus
85	3/30/2024	10706.82	10541.09	36	Marcellus
86	3/30/2024	10505.55	10339.82	36	Marcellus
87	3/31/2024	10304.27	10138.55	36	Marcellus
88	3/31/2024	10103.00	9937.27	36	Marcellus
89	3/31/2024	9901.73	9736.00	36	Marcellus
90	3/31/2024	9700.45	9534.73	36	Marcellus
91	4/1/2024	9499.18	9333.45	36	Marcellus
92	4/1/2024	9297.91	9132.18	36	Marcellus
93	4/1/2024	9096.64	8930.91	36	Marcellus
94	4/1/2024	8895.36	8729.64	36	Marcellus
95	4/2/2024	8694.09	8528.36	36	Marcellus
96	4/2/2024	8492.82	8327.09	36	Marcellus
97	4/2/2024	8291.55	8125.82	36	Marcellus
98	4/3/2024	8090.27	7924.55	36	Marcellus
99	4/3/2024	7889.00	7723.27	36	Marcellus
100	4/3/2024	7687.73	7522.00	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	2/23/2024	74.786	10387.12	11191.24	3426.873	164720	5460.52381	N/A
2	2/24/2024	83.300	10286.63	5607.16	3931.957	415580	7511.92857	N/A
3	2/24/2024	82.355	10365.54	6306.16	3878.255	411480	7423.09524	N/A
4	2/25/2024	84.217	10341.22	5963.92	3972.343	414140	7432.5	N/A
5	2/26/2024	83.090	10467.2	5898.22	4028.24	414540	7317.85714	N/A
6	2/26/2024	81.371	10320.89	5843.03	4061.886	419500	7123.47619	N/A
7	2/27/2024	86.516	10543.58	6569.26	4259.951	413980	7254.09524	N/A
8	2/28/2024	84.133	10557.64	6703.02	3965	421000	7409.11905	N/A
9	2/28/2024	85.930	10625.25	6764.14	3850.919	413420	7299.78571	N/A
10	2/29/2024	84.061	10415.91	6771.63	4025.565	418560	7307.83333	N/A
11	3/1/2024	85.101	10306.81	4980.38	4133	418560	7254.42857	N/A
12	3/1/2024	89.021	10525.17	6091.94	3936.998	422720	7253.54762	N/A
13	3/2/2024	86.135	10565.99	6813.57	4008.955	414588	7245.57143	N/A
14	3/2/2024	83.478	10273.69	7019.4	4083.411	422480	7231.83333	N/A
15	3/3/2024	89.321	10559.7	5979.99	4142.823	413040	7159.07143	N/A
16	3/3/2024	86.749	10579.63	6932.37	4010	423200	7232.28571	N/A
17	3/4/2024	88.058	10651.55	5992.84	4073.336	416000	7408.04762	N/A
18	3/4/2024	87.892	10413.61	3776.9	4209.509	421620	7391.7619	N/A
19	3/5/2024	87.139	10504.5	2120.81	3975.372	416480	7347.71429	N/A
20	3/6/2024	88.539	10363.75	5675.09	4267.749	404610	7372.95238	N/A
21	3/6/2024	84.611	10348.3	6407.38	3748.096	418960	7317.7381	N/A
22	3/7/2024	88.344	10470.19	7287.68	4110	416240	7299.66667	N/A
23	3/7/2024	93.887	10528.81	6833.92	4133.112	410160	7194.7381	N/A
24	3/7/2024	94.212	10389.37	6795.31	4420	415700	7388	N/A
25	3/8/2024	88.795	10530.89	6090.4	4085.407	413440	7272.42857	N/A
26	3/9/2024	93.334	10465.53	6629.32	4250.221	412580	7305.88095	N/A
27	3/9/2024	91.291	10412.86	5474.06	3988.654	417160	7185.09524	N/A
28	3/10/2024	90.475	10439.67	7169.68	3709.437	414940	7221.30952	N/A
29	3/11/2024	94.267	10541.88	6701.67	4155.122	417520	7348.09524	N/A
30	3/11/2024	96.218	10331.8	5532.61	3959.781	414620	7154.28571	N/A
31	3/12/2024	94.513	10516.43	7067.91	4091	413280	7197.7619	N/A
32	3/12/2024	94.194	10233.17	6280.51	3804.318	412880	7179.90476	N/A
33	3/13/2024	95.379	10497.1	7030.51	3852.716	416860	7325.21429	N/A
34	3/13/2024	89.826	10258.41	7263.46	3886.491	396010	6926.92857	N/A
35	3/14/2024	95.902	10387.99	7096.84	4085.61	414320	7240.7619	N/A
36	3/14/2024	97.122	10402.01	7136.68	3987.308	413100	7218.88095	N/A
37	3/15/2024	97.198	10078.2	7178.08	4084.72	418760	7343.85714	N/A
38	3/15/2024	96.483	10276.09	5327.75	3910.234	395680	7007.92857	N/A
39	3/15/2024	97.045	10090.61	6797.42	3938.657	415500	7177.30952	N/A
40	3/16/2024	97.961	10059.49	6992.91	3844.131	425900	7233.2381	N/A
41	3/16/2024	96.686	10029.95	5619.36	4321	422180	7232.92857	N/A
42	3/16/2024	96.997	10369.49	6976.63	4121.96	419060	7303.30952	N/A
43	3/16/2024	95.888	9976.647	6642.61	3942.478	419020	7221.80952	N/A
44	3/17/2024	96.864	9933.29	6385.74	4116.727	417560	7276.5	N/A
45	3/17/2024	90.022	9706.223	7077.5	3774.647	419460	7233.09524	N/A
46	3/17/2024	97.012	9988.951	6475.33	4090.31	417980	7168	N/A
47	3/18/2024	96.012	9952.094	6566.51	4003.6	420560	7229.57143	N/A
48	3/18/2024	97.603	10003.09	6745.58	4092.514	415300	7204.95238	N/A
49	3/18/2024	97.021	9987.23	6077.3	3871.096	422060	7317.85714	N/A
50	3/19/2024	96.521	10012.52	5668.84	3889.86	416440	7290.11905	N/A
51	3/19/2024	77.039	8864.72	6139.28	4344.199	417020	11317.4286	N/A
52	3/19/2024	93.578	9507.977	6123.37	3903.209	412500	7170.92857	N/A
53	3/20/2024	93.531	9680.402	5364.82	4349	420140	7333.92857	N/A
54	3/20/2024	96.811	9829.138	6318.18	4344.847	417280	7210.92857	N/A
55	3/21/2024	93.072	9781.706	6556.81	4253	416360	7171.5	N/A
56	3/21/2024	94.213	9830.212	6428.32	3799.662	416820	7002.85714	N/A
57	3/21/2024	94.308	9815.456	6251.36	3949.609	421740	7157.40476	N/A
58	3/22/2024	95.098	9875.823	6316.99	4192.807	413480	7018	N/A
59	3/22/2024	91.792	10019.06	5624.44	3809.686	416220	7058.95238	N/A
60	3/22/2024	94.869	9632.084	6515.93	3893.852	421280	7055.57143	N/A
61	3/23/2024	94.820	9638.041	5621.61	4045.849	414460	7115.11905	N/A
62	3/23/2024	95.226	9566.344	5572.75	4041	414120	7028.14286	N/A
63	3/23/2024	96.384	9765.602	5556.77	3895.316	415040	7077.92857	N/A
64	3/24/2024	95.938	9483.287	5497.59	3756.673	416280	7057.85714	N/A
65	3/24/2024	96.818	9773.527	5077.76	3791.615	420520	7097.7619	N/A
66	3/24/2024	94.806	9624.489	5279.37	3873.392	422500	7177.54762	N/A
67	3/25/2024	94.855	9626.176	5668.54	3721.685	408440	6915.09524	N/A
68	3/25/2024	96.571	9081.943	5490.24	4007.526	411000	6997.16667	N/A
69	3/25/2024	94.882	9631.514	5252.51	3737.444	411060	7061.04762	N/A
70	3/26/2024	94.887	9470.809	6854.84	3535.89	421380	7065.54762	N/A
71	3/26/2024	94.723	9087.238	4959.62	3511.329	412720	6927.28571	N/A
72	3/26/2024	95.891	8896.395	5207.15	3869.166	417220	6980.97619	N/A
73	3/26/2024	95.562	8764.32	4727.42	3714.674	418100	6790.90476	N/A
74	3/27/2024	95.205	8808.837	5187.3	3720.032	417020	7028.11905	N/A
75	3/27/2024	95.111	8546.725	4923.42	3800.462	421100	6888.14286	N/A
76	3/27/2024	95.220	8978.278	6270.2	3848.033	414620	6863.7381	N/A
77	3/28/2024	95.856	9015.725	4893.5	3734.101	417120	6929.2381	N/A
78	3/28/2024	95.865	9015.009	6191.35	3658.041	420480	6970.35714	N/A
79	3/28/2024	96.059	8882.049	6607.47	3744.055	415540	6818.16667	N/A
80	3/29/2024	96.090	9002.272	5228.66	3754.242	412880	6903.69048	N/A
81	3/29/2024	96.173	8691.624	6415.08	3652.787	412680	6935.14286	N/A
82	3/29/2024	95.867	8309.92	5983.7	3860.156	416440	6990.5	N/A
83	3/29/2024	95.852	8128.337	6320.93	4066	417880	6969.2619	N/A
84	3/30/2024	95.791	8053.228	5947.15	3775.673	415160	7004.78571	N/A
85	3/30/2024	95.387	7856.174	6053.71	3565.798	421020	6985.47619	N/A
86	3/30/2024	95.563	8332.78	6023.66	3543.955	414300	6888.88095	N/A
87	3/31/2024	95.315	8022.018	6263.48	3728.01	417160	7238.88095	N/A
88	3/31/2024	95.003	7770.595	4839.81	3577.726	414620	6871.07143	N/A
89	3/31/2024	95.724	8387.713	6160.61	3502.099	411460	6916.30952	N/A
90	3/31/2024	95.335	7952.297	6010.32	3955	416420	6711	N/A
91	4/1/2024	92.040	7552.915	5882.76	3408	419160	6806.33333	N/A
92	4/1/2024	96.822	7636.445	4831.5	3631.82	419400	6772.14286	N/A
93	4/1/2024	95.639	8160.037	6312.27	3582.731	416940	6961.59524	N/A
94	4/1/2024	95.745	7547.759	5960.36	3749.188	413240	6774.97619	N/A
95	4/2/2024	96.015	7666.511	6115.44	3442.543	417460	6868.28571	N/A
96	4/2/2024	96.164	7619.979	5768.21	3699.542	414080	6898	N/A
97	4/2/2024	94.752	7386.894	6036.36	3909.957	420660	6826.61905	N/A
98	4/3/2024	95.861	7400.959	6075.47	3953	412440	6710.92857	N/A
99	4/3/2024	96.058	7282.116	5725.64	3790.013	419460	6756.40476	N/A
100	4/3/2024	95.342	7303.928	6189.3	3428.835	413800	6854.54762	N/A
	AVERAGE	93	9,548	6,110	3,909	41,361,048	714,387	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	70	470	70	470
Sandy Siltstone	470	720	470	720
Siltstone, occ Sandstone	720	820	720	820
Siltstone, rr Limestone	820	870	820	870
Siltstone, occ Sandstone	870	1,170	870	1,170
Shaly Siltstone, occ LS	1,170	1,270	1,170	1,270
Siltstone, rr SH, rr Coal	1,270	1,470	1,270	1,470
Shaly Siltstone	1,470	1,620	1,470	1,620
Shaly Sandstone	1,620	1,670	1,620	1,670
Silty, Shaly, Sandstone	1,670	1,920	1,670	1,920
Silty Sandstone, Tr Coal	1,920	1,970	1,920	1,970
Silty Sandstone	1,970	2,070	1,970	2,070
Silty Sandstone, calc cmt	2,070	2,116	2,070	2,185
Big Lime	2,146	2,850	2,215	2,977
Fifty Foot Sandstone	2,850	3,004	2,977	3,141
Gordon	3,004	3,241	3,141	3,397
Fifth Sandstone	3,241	3,280	3,397	3,439
Bayard	3,280	4,147	3,439	4,383
Speechley	4,147	4,379	4,383	4,640
Balltown	4,379	4,907	4,640	5,222
Bradford	4,907	5,148	5,222	5,496
Benson	5,148	5,516	5,496	5,897
Alexander	5,516	6,616	5,897	7,131
Sycamore	6,476	6,586	6,956	7,101
Middlesex	6,586	6,679	7,101	7,254
Burkett	6,679	6,697	7,254	7,291
Tully	6,697	6,761	7,291	7,470
Marcellus	6761	NA	7470	NA

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	02/23/2024
Job End Date:	04/03/2024
State:	West Virginia
County:	Wetzel
API Number:	47-103-03600-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	ARENADO UNIT 1H
Latitude:	39.5548
Longitude:	-80.8189
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6812
Total Base Water Volume (gal)*:	31754151
Total Base Non Water Volume:	0



Water Source	Percent
Produced Water	100.00%

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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
Excelerate LX-21	Halliburton	Friction Reducer					
FDP-S1489-23	Halliburton	Friction Reducer					
HAI-501	Halliburton	Acid Corrosion Inhibitor					
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
MC B-8614A	MultiChem	Biocide					
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
Produced Water (Density 10.0)	Operator	Base Fluid					
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					

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WG-36 GELLING AGENT	Halliburton	Gelling Agent					
Items above are Trade Names. Items below are the individual ingredients.							
			Water	7732-18-5	100.00000	88.32315	None
			Crystalline silica, quartz	14808-60-7	100.00000	11.50445	None
			Water	7732-18-5	100.00000	0.14721	None
			Hydrochloric acid	7647-01-0	30.00000	0.03254	None
			Complex amine compound	Proprietary	60.00000	0.03176	None
			Hydrotreated distillate	Proprietary	30.00000	0.01570	None
			Guar gum	9000-30-0	100.00000	0.00362	None
			Ethoxylated alcohol	Proprietary	5.00000	0.00265	None
			Ammonium chloride	12125-02-9	5.00000	0.00262	None
			Fatty nitrogen derived amides	Proprietary	5.00000	0.00262	None
			Glutaraldehyde	111-30-8	30.00000	0.00213	None
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	1.00000	0.00052	None
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6	1.00000	0.00052	None
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00035	None
			Methanol	67-56-1	100.00000	0.00020	None
			Petroleum distillate	Proprietary	30.00000	0.00018	None
			Ammonium persulfate	7727-54-0	100.00000	0.00009	None
			Ethanol	64-17-5	1.00000	0.00007	None
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00006	None
			Modified thiourea polymer	Proprietary	30.00000	0.00006	None
			Sodium chloride	7647-14-5	5.00000	0.00003	None
			Amide	Proprietary	5.00000	0.00003	None
			Ethoxylated fatty acid	Proprietary	5.00000	0.00003	None
			Oxylated phenolic resin	Proprietary	30.00000	0.00003	None
			Propargyl alcohol	107-19-7	5.00000	0.00001	None
			Hexadecene	629-73-2	5.00000	0.00001	None
			Ethoxylated alcohols	Proprietary	5.00000	0.00001	None
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	None
			Diethanolamine	111-42-2	0.10000	0.00000	None
			Hydroquinone monomethyl	150-76-5	0.10000	0.00000	None

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			ether				
			Ethylenediaminetetraacetic acid, tetrasodium salt	64-02-8	0.10000	0.00000	None
			1,2,4 Trimethylbenzene	95-63-6	0.10000	0.00000	None
			Inorganic acid salt	Proprietary	0.10000	0.00000	None
			Fatty acid ester	Proprietary	0.10000	0.00000	None
			Oleic acids	112-80-1	0.01000	0.00000	None

* 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%

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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LATITUDE 39°35'00"

7,700'

LATITUDE 39°37'30"

3,545' TO BOTTOM HOLE

Antero Resources Corporation Well No. Arenado #1H

AS DRILLED DATA: WELL 1H TOP HOLE INFORMATION: N: 386,923ft E: 1,628,109ft LAT: 39°33'17.41" LON: 80°49'08.30" BOTTOM HOLE INFORMATION: N: 405,053ft E: 1,620,784ft LAT: 39°36'15.51" LON: 80°50'45.29" 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: 4,378,375m E: 515,567m BOTTOM HOLE INFORMATION: N: 4,383,861m E: 513,243m

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 14,364,002ft E: 1,691,442ft POINT OF ENTRY INFORMATION: N: 14,362,936ft E: 1,690,247ft BOTTOM HOLE INFORMATION: N: 14,382,001ft E: 1,683,818ft

WV NORTH ZONE GRID NORTH

7,538' TO BOTTOM HOLE

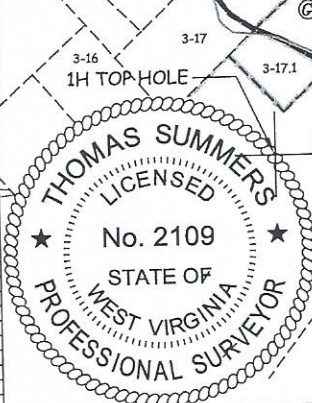
10,381'

LONGITUDE 80°50'00"

LONGITUDE 80°47'30"

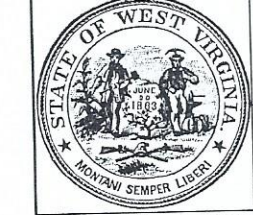


Table listing landowners and their addresses. Includes sections for Magnolia District - Wetzel County, Green District - Wetzel County, and Ellsworth District - Tyler County. Owners include Barbara McAdams, Jacob Morgan, M B Investments, etc.



NOTE: 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 LEASE BOUNDARIES. INFORMATION PROVIDED TO THE LEASE BOUNDARIES. 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

JOB # 21-011WA DRAWING # ARENADO1HAD 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

LEGEND: Surface Owner Boundary Lines +/-, Interior Surface Tracts +/-, Proposed Well Path, As Drilled Well Path. THOMAS SUMMERS P.S. 2109 DATE 07/15/24 OPERATOR'S WELL# ARENADO UNIT #1H 47 - 103 - 03600 STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ (IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X LOCATION: ELEVATION AS BUILT - 1250.0' WATERSHED FISHING CREEK QUADRANGLE PORTER FALLS 7.5' DISTRICT GREEN COUNTY WETZEL SURFACE OWNER ANTERO RESOURCES CORPORATION LEASE ACREAGE 50 ACRES +/- OIL & GAS ROYALTY OWNER MARY E. MIDCAP 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 6,750' TVD 27,632' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS ADDRESS 1615 WYNKOOP ST. BRIDGEPORT, WV 26330

08/16/2024

COUNTY NAME PERMIT