

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

API 47 - 085 - 10515 County Ritchie District Clay
Quad Ellenboro 7.5' Pad Name Olympus Field/Pool Name -----
Farm name Nelson Mark Hayhurst Well Number Boxcar 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 4348389m Easting 499336m
Landing Point of Curve Northing 4348083.65m Easting 499925.89m
Bottom Hole Northing 4343275m Easting 501587m

Elevation (ft) 1025' 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 2/26/2024 Date drilling commenced 5/1/2024 Date drilling ceased 6/18/2024
Date completion activities began 9/25/2024 Date completion activities ceased 11/2/2024
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 173', 230' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 430' 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:

04/11/2025

3-14-25

API 47- 085 - 10515 Farm name Nelson Mark Hayhurst Well number Boxcar 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"	125.5'	New	91.59#, J-55	N/A	Y
Surface	17-1/2"	13-3/8"	398'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	3201'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" /8-1/2"	5-1/2"	23734'	New	23#, P-110-ICY	N/A	Y
Tubing		2-3/8"	6568'		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	198 sx	15.6	1.18	234	0'	8 Hrs.
Surface	Class A	321 sx	15.6	1.19	382	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1182	15.6	1.18	1395	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	4174 sx (Tail)	13.5 (Spacer), 15.2(Tail)	1.26 (Tail)	5259	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 23,734' MD, 6,310' TVD (BHL), 6317' TVD (Deepest Point Drilled) Loggers TD (ft) 23,704' MD

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

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Kick off depth (ft) 5,925'

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Check all wireline logs run ☐ caliper ☐ density ☐ deviated/directional ☐ induction
☐ neutron ☐ resistivity ☐ gamma ray ☐ temperature ☐ sonic

Well cored ☐ Yes ☒ No Conventional Sidewall Were cuttings collected ☐ Yes ☒ No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0

Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface

Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface

Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE ☐ Yes ☒ No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? ☐ Yes ☒ No DETAILS _____

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

04/11/2025

API 47- 085 - 10515 Farm name Nelson Mark Hayhurst Well number Boxcar Unit 1H

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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Please insert additional pages as applicable.

04/11/2025

Well number **Boxcar Unit 1H**

DEPTHS

Marcellus	6245' (TOP)	TVD	6733' (TOP)	MD
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[illegible]

***PLEASE SEE ATTACHED EXHIBIT 3**

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Attach copy of FRACFOCUS Registry 04/11/2025

API 47-085-10515 Farm Name Nelson Mark Hayhurst Well Number Boxcar Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/25/2024	23649.5	23605.2	36	Marcellus
2	9/26/2024	23566.57341	23401.4405	36	Marcellus
3	9/26/2024	23366.01389	23200.881	36	Marcellus
4	9/27/2024	23165.45437	23000.3214	36	Marcellus
5	9/27/2024	22964.89484	22799.7619	36	Marcellus
6	9/28/2024	22764.33532	22599.2024	36	Marcellus
7	9/28/2024	22563.77579	22398.6429	36	Marcellus
8	9/28/2024	22363.21627	22198.0833	36	Marcellus
9	9/29/2024	22162.65675	21997.5238	36	Marcellus
10	9/29/2024	21962.09722	21796.9643	36	Marcellus
11	9/30/2024	21761.5377	21596.4048	36	Marcellus
12	10/1/2024	21560.97817	21395.8452	36	Marcellus
13	10/1/2024	21360.41865	21195.2857	36	Marcellus
14	10/1/2024	21159.85913	20994.7262	36	Marcellus
15	10/2/2024	20959.2996	20794.1667	36	Marcellus
16	10/2/2024	20758.74008	20593.6071	36	Marcellus
17	10/3/2024	20558.18056	20393.0476	36	Marcellus
18	10/3/2024	20357.62103	20192.4881	36	Marcellus
19	10/3/2024	20157.06151	19991.9286	36	Marcellus
20	10/4/2024	19956.50198	19791.369	36	Marcellus
21	10/4/2024	19755.94246	19590.8095	36	Marcellus
22	10/4/2024	19555.38294	19390.25	36	Marcellus
23	10/5/2024	19354.82341	19189.6905	36	Marcellus
24	10/5/2024	19154.26389	18989.131	36	Marcellus
25	10/5/2024	18953.70437	18788.5714	36	Marcellus
26	10/6/2024	18753.14484	18588.0119	36	Marcellus
27	10/6/2024	18552.58532	18387.4524	36	Marcellus
28	10/7/2024	18352.02579	18186.8929	36	Marcellus
29	10/7/2024	18151.46627	17986.3333	36	Marcellus
30	10/7/2024	17950.90675	17785.7738	36	Marcellus
31	10/8/2024	17750.34722	17585.2143	36	Marcellus
32	10/8/2024	17549.7877	17384.6548	36	Marcellus
33	10/8/2024	17349.22817	17184.0952	36	Marcellus
34	10/9/2024	17148.66865	16983.5357	36	Marcellus
35	10/9/2024	16948.10913	16782.9762	36	Marcellus
36	10/9/2024	16747.5496	16582.4167	36	Marcellus
37	10/10/2024	16546.99008	16381.8571	36	Marcellus
38	10/10/2024	16346.43056	16181.2976	36	Marcellus
39	10/10/2024	16145.87103	15980.7381	36	Marcellus
40	10/11/2024	15945.31151	15780.1786	36	Marcellus
41	10/11/2024	15744.75198	15579.619	36	Marcellus
42	10/12/2024	15544.19246	15379.0595	36	Marcellus
43	10/12/2024	15343.63294	15178.5	36	Marcellus
44	10/12/2024	15143.07341	14977.9405	36	Marcellus
45	10/12/2024	14942.51389	14777.381	36	Marcellus
46	10/13/2024	14741.95437	14576.8214	36	Marcellus
47	10/13/2024	14541.39484	14376.2619	36	Marcellus
48	10/13/2024	14340.83532	14175.7024	36	Marcellus
49	10/13/2024	14140.27579	13975.1429	36	Marcellus
50	10/14/2024	13939.71627	13774.5833	36	Marcellus
51	10/14/2024	13739.15675	13574.0238	36	Marcellus
52	10/14/2024	13538.59722	13373.4643	36	Marcellus
53	10/15/2024	13338.0377	13172.9048	36	Marcellus
54	10/15/2024	13137.47817	12972.3452	36	Marcellus
55	10/15/2024	12936.91865	12771.7857	36	Marcellus
56	10/15/2024	12736.35913	12571.2262	36	Marcellus
57	10/15/2024	12535.7996	12370.6667	36	Marcellus
58	10/16/2024	12335.24008	12170.1071	36	Marcellus
59	10/16/2024	12134.68056	11969.5476	36	Marcellus
60	10/16/2024	11934.12103	11768.9881	36	Marcellus
61	10/16/2024	11733.56151	11568.4286	36	Marcellus
62	10/16/2024	11533.00198	11367.869	36	Marcellus
63	10/16/2024	11332.44246	11167.3095	36	Marcellus
64	10/16/2024	11131.88294	10966.75	36	Marcellus
65	10/16/2024	10931.32341	10766.1905	36	Marcellus
66	10/17/2024	10730.76389	10565.631	36	Marcellus
67	10/17/2024	10530.20437	10365.0714	36	Marcellus
68	10/17/2024	10329.64484	10164.5119	36	Marcellus
69	10/17/2024	10129.08532	9963.95238	36	Marcellus
70	10/17/2024	9928.525794	9763.39286	36	Marcellus
71	10/17/2024	9727.96627	9562.83333	36	Marcellus
72	10/17/2024	9527.406746	9362.27381	36	Marcellus
73	10/17/2024	9326.847222	9161.71429	36	Marcellus
74	10/18/2024	9126.287698	8961.15476	36	Marcellus
75	10/18/2024	8925.728175	8760.59524	36	Marcellus
76	10/18/2024	8725.168651	8560.03571	36	Marcellus
77	10/18/2024	8524.609127	8359.47619	36	Marcellus
78	10/18/2024	8324.049603	8158.91667	36	Marcellus
79	10/19/2024	8123.490079	7958.35714	36	Marcellus
80	10/19/2024	7922.930556	7757.79762	36	Marcellus
81	10/19/2024	7722.371032	7557.2381	36	Marcellus
82	10/19/2024	7521.811508	7356.67857	36	Marcellus
83	10/19/2024	7321.251984	7156.11905	36	Marcellus
84	10/19/2024	7120.69246	6955.55952	36	Marcellus
85	10/19/2024	6920.132937	6755	36	Marcellus

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API 47-085-10515, Farm Name, Nelson Mark Hixhurst, Well Number Boxcar Unit 1H								
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	9/25/2024	76.80759	10093.91	6767.02	3027.98	167910	5555.3571	N/A
2	9/26/2024	34.45542	9964.553	7033.81	4167.022	20334	5864.9524	N/A
3	9/26/2024	62.66955	9626.857	6407.12	2439.621	417980	13727.143	N/A
4	9/27/2024	76.9026	9238.112	6002.55	2778.028	401880	7289.0238	N/A
5	9/27/2024	86.24953	9761.187	6139.5	3482.761	399340	7118.119	N/A
6	9/28/2024	91.74797	10042.91	5966.37	3572.344	401600	7562.5714	N/A
7	9/28/2024	93.17153	9834.062	5754.44	4101	397820	7056.5952	N/A
8	9/28/2024	85.77001	9032.585	4888.32	3524.197	392230	9314.7381	N/A
9	9/29/2024	96.34534	10210.5	6005.09	3797	414280	7228.6429	N/A
10	9/29/2024	93.24948	10072.53	6252.07	3739	396960	7402.1667	N/A
11	9/30/2024	96.88621	10227.22	6058.78	3154.552	402980	7170.619	N/A
12	10/1/2024	95.7394	9863.741	5927	3548.723	412180	7188.7857	N/A
13	10/1/2024	94.35871	9953.655	6061.39	4120	393970	7069.4286	N/A
14	10/1/2024	96.43406	9780.755	5799.58	3925.738	398400	7186.619	N/A
15	10/2/2024	95.78369	9691.548	6251.67	3987.583	400080	7098.1429	N/A
16	10/2/2024	95.61738	9851.997	6173.79	4281	413000	7130.2619	N/A
17	10/3/2024	95.82132	9815.618	6206.37	3657.299	415060	7129.9524	N/A
18	10/3/2024	94.79484	9744.695	5714.39	3746	401630	6925.1667	N/A
19	10/3/2024	95.87511	9814.27	5897.62	3819	421660	7101.3095	N/A
20	10/4/2024	95.73805	9677.905	5573.13	3394.102	420140	7324.4762	N/A
21	10/4/2024	97.30856	9938.422	5885.03	4103	414888	7192.0476	N/A
22	10/4/2024	94.65927	9554.578	5944.42	3791.933	422280	7346.0714	N/A
23	10/5/2024	94.81719	9434.521	5859.66	3601.909	424580	7123.2857	N/A
24	10/5/2024	97.0114	9694.708	5612.36	3747	420560	7101.7381	N/A
25	10/5/2024	95.93505	9379.276	5836.98	3542.528	420540	7081.8571	N/A
26	10/6/2024	97.03407	9734.535	6041.27	3268.549	427480	7135.0952	N/A
27	10/6/2024	94.23489	9581.718	5647.49	3952	415748	7028.3571	N/A
28	10/7/2024	96.55808	9604.15	5526.42	3828.305	421700	7057.2381	N/A
29	10/7/2024	96.22534	9155.44	5472.53	4065	416320	6998.0952	N/A
30	10/7/2024	96.49967	9160.805	6012.48	3648.808	422520	7087.5	N/A
31	10/8/2024	95.44339	9067.638	5843.83	3677.859	415520	7073.9524	N/A
32	10/8/2024	96.55588	9688.84	5639.53	3483	417060	7024.9524	N/A
33	10/8/2024	98.0563	9940.866	5929.63	3132.791	421080	7096.6667	N/A
34	10/9/2024	96.58776	9443.146	5685.76	3511.358	398450	6845.0476	N/A
35	10/9/2024	92.25616	9020.813	5629	3095.481	398990	6780.2381	N/A
36	10/9/2024	95.32377	9300.414	5651.7	3735.108	403080	6971.9762	N/A
37	10/10/2024	97.01094	9566.951	5885.41	3423.539	419300	7085.7619	N/A
38	10/10/2024	97.80467	9080.57	5928.89	3419.084	398500	6812.6429	N/A
39	10/10/2024	97.3647	9334.93	5852.44	3304.741	422260	7069.9524	N/A
40	10/11/2024	95.37516	9088.479	5696.26	3339.976	399020	6865.119	N/A
41	10/11/2024	89.69711	9051.016	6661.09	3947.209	414700	7806.381	N/A
42	10/12/2024	97.34957	8993.111	5729.25	3388.801	405560	6937.2381	N/A
43	10/12/2024	98.09558	9367.983	5748.55	3388	416680	6906.8333	N/A
44	10/12/2024	97.46462	9380.059	5686.9	3727	418320	6851.4524	N/A
45	10/12/2024	97.88085	9143.894	5703.36	2985.994	400370	6970.5714	N/A
46	10/13/2024	97.77739	9143.649	5998.93	3080.778	400040	7010.7143	N/A
47	10/13/2024	95.87154	8845.003	5055.16	3300	404610	6669.8571	N/A
48	10/13/2024	97.70297	8722.318	5241.52	3809	402570	6651	N/A
49	10/13/2024	96.25583	9263.905	5403.52	3133.844	397640	6821.7143	N/A
50	10/14/2024	97.37963	8825.877	5555.06	3186.843	401120	6877.2619	N/A
51	10/14/2024	98.16776	9097.303	5391.8	3397	404540	6648.3095	N/A
52	10/14/2024	97.57351	9219.229	6126.13	3829	401960	6606.5952	N/A
53	10/15/2024	97.92312	8623.982	5823.41	3311.593	401630	6822	N/A
54	10/15/2024	93.67935	8476.735	6054.45	3251	403930	6846.7619	N/A
55	10/15/2024	96.53107	8690.41	5991	3382	417160	6875.2381	N/A
56	10/15/2024	96.38866	8502.147	5690.6	3244	398780	6838.5714	N/A
57	10/15/2024	95.04629	8938.698	5974	2823.17	398400	6804.3095	N/A
58	10/16/2024	96.87081	8886.07	6208.29	2820.954	413720	6925.9286	N/A
59	10/16/2024	97.52734	8527.86	5465.98	2824.04	415720	6866	N/A
60	10/16/2024	96.73921	8558.737	5319.81	3102	395900	6668.8333	N/A
61	10/16/2024	96.49258	8770.205	5503.97	3146	403090	6806.4762	N/A
62	10/16/2024	96.82776	8344.271	5942.89	3512	399010	6787.8333	N/A
63	10/16/2024	96.95878	8267.692	5361.37	3057.326	399430	6780.0476	N/A
64	10/16/2024	97.83787	8142.126	5742.92	3028.651	395660	6731.381	N/A
65	10/16/2024	98.00579	8224.576	5695.2	3059.411	398820	6643.6429	N/A
66	10/17/2024	98.11638	7990.079	5832.77	3047.364	403260	6711.4286	N/A
67	10/17/2024	98.29476	8022.706	5650.65	3143.358	421840	6858.5714	N/A
68	10/17/2024	96.35498	7912.904	5289.9	3272	404040	6686.7619	N/A
69	10/17/2024	96.26363	7816.868	5464.18	3350	400540	6718.7857	N/A
70	10/17/2024	97.62603	7763.198	5354.54	3323	417500	6879.2381	N/A
71	10/17/2024	95.70127	7674.039	6003.25	3152	418600	6815	N/A
72	10/17/2024	97.83044	7814.875	5570.81	3315.007	394090	6639.0238	N/A
73	10/17/2024	97.78029	7567.74	5611.91	3354.812	399010	6635.6667	N/A
74	10/18/2024	97.92383	7815.574	5142.55	3506.15	397620	6657.3333	N/A
75	10/18/2024	96.96575	7829.005	5262.68	3353	399410	6609.5476	N/A
76	10/18/2024	91.41153	7571.956	6056.28	3353	415680	6782.2381	N/A
77	10/18/2024	96.72196	7541.603	5530.15	3348	402380	6659.0476	N/A
78	10/18/2024	97.21443	7705.175	6177.79	3110.711	403040	7056.1667	N/A
79	10/19/2024	86.18883	8442.071	5599.28	3398.8	409590	6877.0952	N/A
80	10/19/2024	96.99667	7774.887	5536.68	3261.159	399440	6629.6905	N/A
81	10/19/2024	97.80423	7600.001	5315.83	3158	417460	6725.9286	N/A
82	10/19/2024	87.91399	6853.181	4965.14	3353	419120	6747.9524	N/A
83	10/19/2024	82.53126	7386.434	5045.1	3373	439400	8338.619	N/A
84	10/19/2024	93.9199	7135.668	5002.91	3364.305	419800	6826.4524	N/A
85	10/19/2024	94.97555	6828.097	5229.88	2940.449	420760	7299.2619	N/A
AVERAGE		94.0	8,919	5,755	3,425	34,100,750	598,530	0

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Silty Sandstone	104	174	104	174
Silty Sandstone, Occ LS	174	374	174	374
Silty Sandstone	374	574	374	574
Sandstone. Scat SLTST, Scat LS	574	774	574	774
Silty Sandstone, tr LS	774	974	774	974
Sandy Siltstone	974	1,174	974	1,174
Sandy Siltstone	1,174	1,374	1,174	1,374
Silty Sandstone, tr MICA	1,374	1,774	1,374	1,774
Silty Sandstone, tr LS, tr PYR	1,774	1,874	1,774	1,874
Sandy Limestone, rr Shale	1,874	1,830	1,874	1,872
Big Lime	1,856	2,559	1,872	2,646
Fifty Foot Sandstone	2,559	2,666	2,620	2,759
Gordon	2,666	2,872	2,733	2,975
Fifth Sandstone	2,872	3,351	2,949	3,479
Bayard	3,351	3,883	3,453	4,044
Speechley	3,883	4,195	4,018	4,375
Balltown	4,195	4,581	4,349	4,785
Bradford	4,581	4,880	4,759	5,102
Benson	4,880	5,129	5,076	5,365
Alexander	5,129	6,112	5,339	6,467
Sycamore	5,993	6,086	6,307	6,441
Middlesex	6,086	6,186	6,441	6,624
Burkett	6,186	6,209	6,624	6,681
Tully	6,209	6,219	6,681	6,707
Marcellus	6,219	NA	6,707	NA

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LATITUDE 39°17'30" 2,228'

LATITUDE 39°15'00"

Antero Resources Corporation
Well No. Boxcar #1H

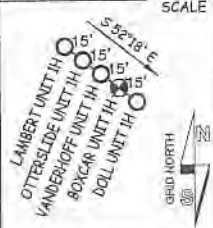
AS DRILLED DATA:

WELL 1H TOP HOLE INFORMATION:
N: 289,415ft E: 1,573,203ft
LAT: 39°17'05.21" LON: 81°00'28.33"
BOTTOM HOLE INFORMATION:
N: 272,511ft E: 1,580,310ft
LAT: 39°14'19.32" LON: 80°58'54.42"
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.

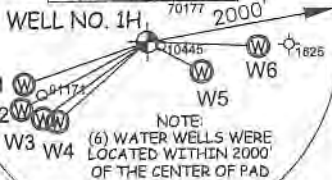
(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
N: 4,348,389m E: 499,336m
BOTTOM HOLE INFORMATION:
N: 4,343,275m E: 501,587m

(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
N: 14,265,625ft E: 1,638,190ft
POINT OF ENTRY INFORMATION:
N: 14,264,943ft E: 1,640,083ft
BOTTOM HOLE INFORMATION:
N: 14,248,848ft E: 1,645,575ft

PAD LAYOUT



W1	S 71°25' W	1358.7'
W2	S 62°13' W	1490.5'
W3	S 54°03' W	1347.9'
W4	S 48°45' W	1249.2'
W5	S 61°19' E	645.2'
W6	S 87°36' E	1455.5'



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 # 23-023WA
DRAWING # BOXCAR1HAD
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 02/11/25

OPERATOR'S WELL# BOXCAR UNIT #1H

PENNSBORO CORPORATION RITCHIE COUNTY	
10-1	JPE Hardwood Lumber Inc.
10-1.1	Tracey Tallman
10-1.3	Brenda Edmisten
10-4	Kenneth Church
10-6	Lawilda Satterfield
10-7	JPE Hardwood Lumber Inc.
15-1	Simonton Building Products Inc.
15-2	Pennsboro Industrial Park Dev. Authority
15-3	Pennsboro Industrial Park
15-3.1	Simonton Building Products Inc.
15-3.2	Simonton Building Products Inc.
15-3.3	Simonton Building Products Inc.
15-3.4	Simonton Building Products Inc.
15-3.5	Simonton Building Products Inc.
15-3.6	Simply Blessed Designs & Rentals LLC
15-3.7	Simonton Building Products Inc.
15-4	Lisa Randolph
15-5	Lisa Randolph
15-6	Charles Richards
15-7	Neal Satterfield
15-8	Kimberly Freeland
15-9	Neal Satterfield

- 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.
- TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 1 AND 2, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
- WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

WELL TYPE: OIL ☐ GAS ☒ LIQUID INJECTION ☐ WASTE DISPOSAL ☐ 47 ☐ 085 ☐ 10515
(IF "GAS") PRODUCTION ☒ STORAGE ☐ DEEP ☐ SHALLOW ☒ STATE COUNTY PERMIT
LOCATION: ELEVATION AS BUILT -1,025' WATERSHED NORTH FORK HUGHES RIVER 04/11/2025
QUADRANGLE ELLENBORO 7.5' DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER NELSON MARK HAYHURST ACREAGE 9.65 ACRES +/-
OIL & GAS ROYALTY OWNER EVELYN HAYHURST LEASE ACREAGE 9.65 ACRES +/-
PROPOSED WORK: DRILL ☐ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐ OTHER PHYSICAL CHANGE IN WELL ☐
(SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,310' TVD 23,734' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS
ADDRESS 1615 WYNKOOP ST. ADDRESS 535 WHITE OAKS BLVD
FORM WW-6 DENVER, CO 80202 BRIDGEPORT, WV 26330

COUNTY NAME

PERMIT

LATITUDE 39°15'00"
LATITUDE 39°17'30"
2,228'

Antero Resources Corporation
Well No. Boxcar #1H

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BOTTOM HOLE INFORMATION:
N: 14,248,848ft E: 1,645,575ft

PAD LAYOUT NOT TO SCALE

W1 S 71°25' W 1358.7'
W2 S 62°13' W 1490.5'
W3 S 54°03' W 1347.9'
W4 S 48°45' W 1249.2'
W5 S 61°19' E 645.2'
W6 S 87°36' E 1455.5'

WELL NO. 1H

NOTE:
(6) WATER WELLS WERE LOCATED WITHIN 2000' OF THE CENTER OF PAD

LESSOR

A	WV DIVISION OF MULTIMODAL TRANSPORTATION FACILITIES
B	CHARLES W. ANDERSON
C	DONNA M. CAIN
D	MILDRED MAY LAMBERT
E	SCOTT GREGORY LAMBERT
F	THE CARL G. NIELSEN FAMILY TRUST
G	ELEANOR D. MAPLE
H	HARRY E. SHAFFER
I	FRED B. BUSCH AND CLARA V. BUSCH
J	HAUGHT FAMILY TRUST
K	WAYMOND L. MAHANEY AND MARY E. MAHANEY
L	NICHOLAS E. RIDDLE AND CONNIE M. RIDDLE
M	ALICE D. ZEGREA
N	RIDGETOP CAPITOL VI, LP.
O	RIDGETOP APPALACHIA, LLC.
P	RIDGETOP APPALACHIA, LLC.
Q	SW2 MINERALS, LLC.
R	TERRY A. BUNNER
S	GREENBRIER ROYALTY FUND II, LLC.
T	JUDITH A. BEARY
U	GREENBRIER ROYALTY FUND II, LLC.
V	GREENBRIER ROYALTY FUND II, LLC.
W	SANDRA KAY REED
X	HAUGHT FAMILY TRUST
Y	NEAL COLLINS
Z	CHAD WILLIAM JOHNSON
AA	EIGG LAND LIMITED
AB	ORVILLE R. BONNELL, ET AL
AC	BURL DODD, ET AL
AD	EVELYN HAYHURST
AE	ERNEST R. DOLL
AF	ANTERO MINERALS, LLC.
AG	JAMES MERCER
AH	REX FREELAND ET AL
AI	JAMES E. RAINES ET AL
AJ	JPE HARDWOOD LUMBER, INC.
AK	LOWELL E. AND JANEY GOFF
AL	CHARLES HEADLEY, ET AL
AM	GREENBRIER ROYALTY FUND II, LLC.
AN	CHAD W. JOHNSON
AO	BEVERLY J. WRIGHT

CLAY DISTRICT RITCHIE COUNTY

24-7	Tech Service Center
24-9	Richard Kelley
24-10	Nelson M. Hayhurst
24-12	Rex Freeland
24-12.3	Glen Newman
24-12.7	David Copeland
24-25.1	Don Slawson
24-26.1	WVSRA
24-27.1	WVSRA
24-27.3	Donna Cain
24-34.2	Stonewall Property Holdings LLC
24-35.2	Richard Lambert
24-48	John McCoy Living Trust
24-48.3	John McCoy Living Trust
24-49	Charles Headley
24-56	Justin Kram
24-57	Justin Kram
25-28	Harry Shaffer
25-28.4	Harry Shaffer
25-28.5	Fred Busch Irrevocable Trust
25-44	Everett Headley
25-44.1	Cinda Fleming
25-56	Charles Headley
25-58	Nicholas Riddle
30-2	William Burch
30-2.1	Harry Shaffer
30-12	Bobby Bunner
30-13	Randall Doll
30-19	David Riddle
30-20	Ida Riddle
30-21	Charles Copeland
30-23	Bobby Bunner
30-23.1	Charles Copeland
30-24	David Riddle
30-24.2	Charles Copeland
30-28	David Riddle
30-29	Bobby Bunner
30-30	Charles Copeland
30-34	Charles Copeland
30-35	Charles Copeland
30-36	Charles Copeland
30-37	Terry Fry
30-37.1	Terry Fry
30-37.2	Terry Fry
30-43	Charles Copeland
30-46	Charles Copeland
35-2	Debra Davis
35-3	Debra Davis
35-3.1	Terry Fry
35-8	Debra Clements
35-9.1	David Dotson
35-14	Darren Dodd
35-14.2	Chris Jones

THOMAS SUMMERS
LICENSED
No. 2109
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR

PENNSBORO CORPORATION RITCHIE COUNTY

10-1	JPE Hardwood Lumber Inc.
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LEGEND

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

THOMAS SUMMERS P.S. 2109

DATE 02/11/25

OPERATOR'S WELL# BOXCAR UNIT #1H

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 VIR



Nine

Well	Boxcar Uint 1 H
Field	Marcellus
County	Ritchie
State	WV

Country	USA
---------	-----

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	09/25/2024
Job End Date:	10/19/2024
State:	West Virginia
County:	Ritchie
API Number:	47-085-10515-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	BOXCAR Unit 1H
Latitude:	39.284855
Longitude:	-81.007699
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6317
Total Base Water Volume (gal)*:	26297506.11
Total Base Non Water Volume:	0



Water Source	Percent
Produced Water	100.00%

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-S1470-23	Halliburton	Friction Reducer					
HAI-501	Halliburton	Acid Corrosion Inhibitor					
HYDROCHLORIC ACID, 28%	Halliburton	Solvent					
LCA-1	Halliburton	Solvent					
MC B-8123	MultiChem	Biocide					
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
Produced Water (Density 8.8)	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	86.86896	None
			Crystalline silica, quartz	14808-60-7	100.00000	12.80066	None
			Water	7732-18-5	100.00000	0.28206	None
			Hydrochloric acid	7647-01-0	30.00000	0.07570	None
			Guar gum	9000-30-0	100.00000	0.01905	None
			Complex amine compound	Proprietary	60.00000	0.01808	None
			Ethanaminium, N,N,N-trimethyl-2-(1-oxo-2-propen-1-yl)oxy-, chloride (1:1), polymer with 2-propenamide	69418-26-4	60.00000	0.01188	None
			Hydrotreated distillate	Proprietary	100.00000	0.00930	None
			Hydrotreated light petroleum distillates	64742-47-8	30.00000	0.00594	None
			Ammonium chloride	12125-02-9	5.00000	0.00250	None
			Glutaraldehyde	111-30-8	30.00000	0.00244	None
			Fatty nitrogen derived amides	Proprietary	5.00000	0.00151	None
			Ethoxylated alcohol	Proprietary	5.00000	0.00151	None
			Amides, tall-oil fatty, N,N-bis(hydroxyethyl)	68155-20-4	5.00000	0.00099	None
			Ethoxylated branched C13 alcohol	78330-21-9	5.00000	0.00099	None
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	1.00000	0.00050	None
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6	1.00000	0.00050	None
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.00000	0.00041	None
			Methanol	67-56-1	100.00000	0.00037	None
			Ammonium persulfate	7727-54-0	100.00000	0.00032	None
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00011	None
			Modified thiourea polymer	Proprietary	30.00000	0.00011	None
			Oxylated phenolic resin	Proprietary	30.00000	0.00010	None
			Citric acid	77-92-9	1.00000	0.00008	None

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			Propargyl alcohol	107-19-7	5.00000	0.00002	None
			Hexadecene	629-73-2	5.00000	0.00002	None
			Ethoxylated alcohols	Proprietary	5.00000	0.00002	None
			C.I. pigment Orange 5	3468-63-1	1.00000	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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