

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

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MAY 16 2024

WV Department of
Environmental Protection

API 47 - 085 - 10500 County Ritchie District Union
Quad Oxford 7.5' Pad Name Cashew Pad Field/Pool Name -----
Farm name Elmer W. Pierce Well Number Key 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 4335915m Easting 512317m
Landing Point of Curve Northing 4336142.50m Easting 512935.20m
Bottom Hole Northing 4340211m Easting 511247m

Elevation (ft) 1019' 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 7/17/2023 Date drilling commenced 8/10/2023 Date drilling ceased 10/18/2023
Date completion activities began 1/22/2024 Date completion activities ceased 3/5/2024
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 53', 184', 236' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1709', 1759', 1847' 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:
J. N.

06/14/2024

API 47-085 - 10500 Farm name Elmer W. Pierce Well number Key Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24"	20"	130'	New	91.59#, J-55	N/A	Y
Surface	17 1/2"	13-3/8"	371'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3023'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	21933'	New	23#, P-110/ICY	N/A	Y
Tubing		2-3/8"	6918'		4.7#, P-110		
Packer type and depth set		N/A					

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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	218 sx	15.6	1.18	257	0'	8 Hrs.
Surface	Class C	325 sx	15.8	1.16	377	0'	8 Hrs.
Coal							
Intermediate 1	Class C	1050 sx	15.8	1.16	1218	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H		12.5 (Lead), 13.5(Tail)	1.53 (Tail)		-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 21933' MD, 6520' TVD (BHL), 6512' (Deepest Point Drilled) Loggers TD (ft) 21933' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5635'

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

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0
 Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
 Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface
 Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6374' (TOP)	TVD	7153' (TOP) MD

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Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2251 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 13161 mcfpd Oil 188 bpd NGL --- bpd Water 615 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
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***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 Baker Hughes
Address 1681 E Main St City Bridgeport State WV Zip 26330

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 Carly Marvel Telephone 303-357-7373
Signature *Carly Marvel* Title Permitting Agent Date 5/8/2024

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

06/14/2024

API 47-085-10500 Farm Name Elmer W. Pierce Well Number Key Unit 1H

Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/22/2024	21804.5	21760.4	36	Marcellus
2	1/22/2024	21721.5	21555.1	36	Marcellus
3	1/22/2024	21519.4	21353.0	36	Marcellus
4	1/23/2024	21317.3	21150.9	36	Marcellus
5	1/23/2024	21115.2	20948.7	36	Marcellus
6	1/23/2024	20913.1	20746.6	36	Marcellus
7	1/24/2024	20710.9	20544.5	36	Marcellus
8	1/24/2024	20508.8	20342.4	36	Marcellus
9	1/24/2024	20306.7	20140.3	36	Marcellus
10	1/24/2024	20104.6	19938.2	36	Marcellus
11	1/25/2024	19902.5	19736.1	36	Marcellus
12	1/25/2024	19700.4	19533.9	36	Marcellus
13	1/25/2024	19498.3	19331.8	36	Marcellus
14	1/26/2024	19296.1	19129.7	36	Marcellus
15	1/26/2024	19094.0	18927.6	36	Marcellus
16	1/26/2024	18891.9	18725.5	36	Marcellus
17	1/26/2024	18689.8	18523.4	36	Marcellus
18	1/27/2024	18487.7	18321.3	36	Marcellus
19	1/27/2024	18285.6	18119.2	36	Marcellus
20	1/27/2024	18083.5	17917.0	36	Marcellus
21	1/27/2024	17881.4	17714.9	36	Marcellus
22	1/28/2024	17679.2	17512.8	36	Marcellus
23	1/28/2024	17477.1	17310.7	36	Marcellus
24	1/28/2024	17275.0	17108.6	36	Marcellus
25	1/28/2024	17072.9	16906.5	36	Marcellus
26	1/29/2024	16870.8	16704.4	36	Marcellus
27	1/29/2024	16668.7	16502.2	36	Marcellus
28	1/29/2024	16466.6	16300.1	36	Marcellus
29	1/29/2024	16264.4	16098.0	36	Marcellus
30	1/30/2024	16062.3	15895.9	36	Marcellus
31	1/30/2024	15860.2	15693.8	36	Marcellus
32	1/30/2024	15658.1	15491.7	36	Marcellus
33	1/30/2024	15456.0	15289.6	36	Marcellus
34	1/31/2024	15253.9	15087.4	36	Marcellus
35	1/31/2024	15051.8	14885.3	36	Marcellus
36	1/31/2024	14849.6	14683.2	36	Marcellus
37	1/31/2024	14647.5	14481.1	36	Marcellus
38	1/31/2024	14445.4	14279.0	36	Marcellus
39	2/1/2024	14243.3	14076.9	36	Marcellus
40	2/1/2024	14041.2	13874.8	36	Marcellus
41	2/1/2024	13839.1	13672.6	36	Marcellus
42	2/2/2024	13637.0	13470.5	36	Marcellus
43	2/2/2024	13434.8	13268.4	36	Marcellus
44	2/2/2024	13232.7	13066.3	36	Marcellus
45	2/2/2024	13030.6	12864.2	36	Marcellus
46	2/3/2024	12828.5	12662.1	36	Marcellus
47	2/3/2024	12626.4	12460.0	36	Marcellus
48	2/3/2024	12424.3	12257.8	36	Marcellus
49	2/3/2024	12222.2	12055.7	36	Marcellus
50	2/3/2024	12020.0	11853.6	36	Marcellus
51	2/4/2024	11817.9	11651.5	36	Marcellus
52	2/4/2024	11615.8	11449.4	36	Marcellus
53	2/4/2024	11413.7	11247.3	36	Marcellus
54	2/4/2024	11211.6	11045.2	36	Marcellus
55	2/5/2024	11009.5	10843.1	36	Marcellus
56	2/5/2024	10807.4	10640.9	36	Marcellus
57	2/5/2024	10605.3	10438.8	36	Marcellus
58	2/5/2024	10403.1	10236.7	36	Marcellus
59	2/5/2024	10201.0	10034.6	36	Marcellus
60	2/6/2024	9998.9	9832.5	36	Marcellus
61	2/6/2024	9796.8	9630.4	36	Marcellus
62	2/6/2024	9594.7	9428.3	36	Marcellus
63	2/6/2024	9392.6	9226.2	36	Marcellus
64	2/6/2024	9190.5	9024.0	36	Marcellus
65	2/7/2024	8988.3	8821.9	36	Marcellus
66	2/7/2024	8786.2	8619.8	36	Marcellus
67	2/7/2024	8584.1	8417.7	36	Marcellus
68	2/7/2024	8382.0	8215.6	36	Marcellus
69	2/8/2024	8179.9	8013.5	36	Marcellus
70	2/8/2024	7977.8	7811.3	36	Marcellus
71	2/8/2024	7775.7	7609.2	36	Marcellus
72	2/8/2024	7573.5	7407.1	36	Marcellus
73	2/9/2024	7371.4	7205.0	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	1/22/2024	72.9	9187.0	8180.0	3313.0	184200	5281.7	N/A
2	1/22/2024	94.5	10158.0	6571.1	3619.0	411200	7281.6	N/A
3	1/22/2024	94.0	10301.4	5322.9	3319.4	410880	6912.3	N/A
4	1/23/2024	93.1	9900.7	6769.0	3266.0	400300	7057.2	N/A
5	1/23/2024	93.4	10296.9	6857.2	3294.9	403220	7036.4	N/A
6	1/23/2024	94.1	10142.2	6939.4	3404.5	412560	6997.3	N/A
7	1/24/2024	89.9	10063.5	4010.3	3702.1	407560	6938.6	N/A
8	1/24/2024	95.6	10241.4	6848.2	3587.3	409540	7084.4	N/A
9	1/24/2024	96.3	10431.7	6547.2	3741.3	411080	7034.2	N/A
10	1/24/2024	94.3	10368.0	4373.9	3198.3	414320	7052.1	N/A
11	1/25/2024	97.2	10104.1	6127.7	3575.2	416780	6990.0	N/A
12	1/25/2024	97.0	10121.5	5873.6	4119.0	407100	7115.0	N/A
13	1/25/2024	96.6	9939.8	6658.3	1891.0	421680	6822.7	N/A
14	1/26/2024	96.6	9810.1	5857.2	3550.2	416420	7014.1	N/A
15	1/26/2024	96.2	9887.5	6606.2	3773.0	405240	7083.4	N/A
16	1/26/2024	95.4	9648.6	6609.0	3579.0	406060	6958.1	N/A
17	1/26/2024	94.4	9292.1	4754.9	3304.8	403740	6973.4	N/A
18	1/27/2024	96.3	9580.1	4201.2	3273.0	410140	6980.2	N/A
19	1/27/2024	95.3	9621.9	7017.3	3373.6	412180	7066.3	N/A
20	1/27/2024	97.1	9914.3	6879.4	4203.0	413900	6903.5	N/A
21	1/27/2024	96.2	9773.8	6859.0	3518.2	415220	6947.9	N/A
22	1/28/2024	96.1	9736.2	4906.1	3425.8	409840	6808.9	N/A
23	1/28/2024	96.8	9867.1	5939.7	4186.0	410880	6941.1	N/A
24	1/28/2024	97.0	9806.9	7388.6	3748.0	409480	6831.3	N/A
25	1/28/2024	95.1	9645.1	5345.0	3402.6	405300	6933.1	N/A
26	1/29/2024	95.9	9687.8	5968.3	3438.1	407540	6904.3	N/A
27	1/29/2024	96.4	9784.8	6159.6	4007.0	404260	7119.9	N/A
28	1/29/2024	95.5	9910.8	7340.7	3664.0	402200	6824.2	N/A
29	1/29/2024	96.7	9707.9	7277.5	3096.9	409820	6954.0	N/A
30	1/30/2024	95.7	9737.1	6920.7	2990.0	403200	6842.0	N/A
31	1/30/2024	96.7	9787.4	7171.6	3566.0	403400	6786.6	N/A
32	1/30/2024	96.7	9623.7	6624.3	3263.0	405100	6805.0	N/A
33	1/30/2024	96.6	9499.4	5586.1	2849.0	399300	7146.0	N/A
34	1/31/2024	96.3	9257.6	6609.1	2828.0	398280	7105.2	N/A
35	1/31/2024	97.1	9382.6	6706.0	3254.0	413780	6956.7	N/A
36	1/31/2024	97.1	9746.7	6998.2	3164.0	405340	6753.6	N/A
37	1/31/2024	96.8	9800.9	7049.5	2941.0	427317	7195.6	N/A
38	1/31/2024	96.4	9517.7	8405.8	2736.3	411480	7522.2	N/A
39	2/1/2024	96.6	9576.4	6117.0	2832.0	413840	7126.0	N/A
40	2/1/2024	97.4	9907.0	6852.5	3222.0	416580	7217.2	N/A
41	2/1/2024	97.2	9458.6	6890.3	3492.0	409980	7125.7	N/A
42	2/2/2024	96.0	9805.3	7710.7	3013.0	420660	7327.4	N/A
43	2/2/2024	97.1	9609.1	6424.2	3679.0	408900	7085.1	N/A
44	2/2/2024	97.2	9398.6	5561.8	3271.0	424920	7045.9	N/A
45	2/2/2024	96.9	9019.9	5073.0	3058.0	413760	7045.6	N/A
46	2/3/2024	96.5	9219.2	6831.4	3243.0	412680	7194.6	N/A
47	2/3/2024	97.0	9582.5	4623.2	3663.0	407840	7139.5	N/A
48	2/3/2024	97.0	9052.1	4528.7	3978.0	416280	7213.3	N/A
49	2/3/2024	95.2	8720.9	7999.1	3212.0	422180	7198.0	N/A
50	2/3/2024	97.7	9197.4	6876.1	2943.0	420380	7117.9	N/A
51	2/4/2024	97.3	9084.6	5495.2	3030.0	420740	7241.7	N/A
52	2/4/2024	97.1	9597.5	7109.5	3340.0	421840	7160.0	N/A
53	2/4/2024	97.6	8525.8	6081.0	3293.0	424820	7148.0	N/A
54	2/4/2024	97.3	8187.5	5828.4	2815.0	402160	7049.0	N/A
55	2/5/2024	97.3	8621.9	7288.4	2765.0	411520	7182.9	N/A
56	2/5/2024	97.0	8405.9	6036.4	3188.0	406488	7036.4	N/A
57	2/5/2024	97.3	8492.3	6236.0	3138.0	424740	7216.5	N/A
58	2/5/2024	97.3	8034.2	5510.8	2621.0	421760.0	7183.7	N/A
59	2/5/2024	97.1	8103.6	5562.9	2748.0	419060.0	6975.8	N/A
60	2/6/2024	96.1	7868.2	5100.3	2527.0	414460.0	7002.0	N/A
61	2/6/2024	96.4	8141.0	6203.1	2518.8	414860.0	7172.8	N/A
62	2/6/2024	97.9	7983.1	6283.4	2675.8	416900.0	6783.7	N/A
63	2/6/2024	97.0	7896.5	5017.9	2632.9	418680.0	7115.9	N/A
64	2/6/2024	97.6	8326.9	5654.5	2736.0	419420.0	7132.7	N/A
65	2/7/2024	96.9	8155.1	6175.4	2897.0	416460.0	7017.4	N/A
66	2/7/2024	98.1	8376.0	7032.1	2896.6	414860.0	7132.4	N/A
67	2/7/2024	98.0	7996.7	7397.6	2744.7	415420.0	7173.8	N/A
68	2/7/2024	97.4	7882.7	6211.1	2690.0	420400.0	7093.5	N/A
69	2/8/2024	97.3	7729.5	7562.1	2720.0	413360.0	6980.5	N/A
70	2/8/2024	97.6	7814.1	6421.0	2823.0	412760.0	6982.7	N/A
71	2/8/2024	94.7	7473.7	6121.2	2750.1	420960.0	7057.9	N/A
72	2/8/2024	98.2	7538.1	5763.1	2900.1	416480.0	7128.6	N/A
73	2/9/2024	98.0	7434.7	6023.4	2861.6	414640.0	8477.3	N/A
	AVERAGE	96	9,226	6,299	3,207	29,890,625	514,241	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
Sandy Siltstone, tr LS	100	280	100	280
Sandy Siltstone, occ LS	280	430	280	430
Shaly Siltstone, tr SS	430	490	430	490
Shaly Siltstone, Coal	490	520	490	520
Shaly Siltstone, occ SS, tr Coal	520	610	520	610
Shaly Siltstone	610	730	610	730
Silty Shale, tr ls, coal	730	820	730	820
Sandy Shale, tr coal	820	970	820	970
Shaly Sandstone, tr coal	970	1,300	970	1,300
Sandy Shale, occ Siltstone	1,300	1,540	1,300	1,540
Silty Shale, occ sandstone	1,540	1,930	1,540	1,930
Shale, occ sandstone	1,930	1,835	1,930	1,916
Big Lime	1,865	2,378	1,916	2,517
Fifty Foot Sandstone	2,378	2,577	2,487	2,735
Gordon	2,577	2,859	2,705	3,042
Fifth Sandstone	2,859	2,947	3,012	3,139
Bayard	2,947	3,671	3,109	3,939
Speechley	3,671	3,820	3,909	4,104
Balltown	3,820	4,371	4,074	4,710
Bradford	4,371	4,771	4,680	5,149
Benson	4,771	5,018	5,119	5,419
Alexander	5,018	6,222	5,389	6,785
Sycamore	6,011	6,192	6,516	6,755
Middlesex	6,192	6,302	6,755	6,956
Burkett	6,302	6,349	6,956	7,071
Tully	6,349	6,374	7,071	7,153
Marcellus	6,374	NA	7,153	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:	01/22/2024
Job End Date:	02/09/2024
State:	West Virginia
County:	Ritchie
API Number:	47-085-10500-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	KEY UNIT 1H
Latitude:	39.172
Longitude:	-80.857
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6521
Total Base Water Volume (gal)*:	22675127
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
FDP-S1464-22	Halliburton	Friction Reducer					
HAI-501	Halliburton	Acid Corrosion Inhibitor					
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
LCA-1	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					
WG-36 GELLING AGENT	Halliburton	Gelling Agent					

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Items above are Trade Names. Items below are the individual ingredients.							
			Water	7732-18-5	100.00000	88.20694	None
			Crystalline silica, quartz	14808-60-7	100.00000	11.62756	None
			Water	7732-18-5	100.00000	0.14297	None
			Hydrochloric acid	7647-01-0	30.00000	0.03302	None
			Complex amine compound	Proprietary	60.00000	0.02575	None
			Hydrotreated distillate	Proprietary	100.00000	0.01341	None
			Guar gum	9000-30-0	100.00000	0.00449	None
			Glutaraldehyde	111-30-8	30.00000	0.00215	None
			Ammonium chloride	12125-02-9	5.00000	0.00215	None
			Fatty nitrogen derived amides	Proprietary	5.00000	0.00215	None
			Ethoxylated alcohol	Proprietary	5.00000	0.00215	None
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	1.00000	0.00043	None
	RECEIVED Office of Oil and Gas		Sorbitan monooleate polyoxyethylene derivative	9005-65-6	1.00000	0.00043	None
	MAY 16 2024 WV Department of Environmental Protection		Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00036	None
			Methanol	67-56-1	100.00000	0.00021	None
			Ammonium persulfate	7727-54-0	100.00000	0.00014	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
			Oxylated phenolic resin	Proprietary	30.00000	0.00004	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

* 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%

06/14/2024

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

MAY 16 2024

WV Department of
Environmental Protection

06/14/2024

LATITUDE 39°12'30" 10,361' TO BOTTOM HOLE 6,876'

LATITUDE 39°15'00" 10,361' TO BOTTOM HOLE

Antero Resources Corporation Well No. Key 1H

Union District - Ritchie County	
9-9.1	Naomi Cunningham
9-14	John Louke
9-15	Marvin Osborne
9-15.1	Marvin Osborne
9-16	Marvin Osborne
9-18	Jack Guthrie Trust
9-19	Twila Evtits
9-20	Twila Evtits
9-20.1	Mark Morrison
9-20.2	Brian Banner
9-21	Stephanie Knight
9-22	Stephanie Knight
9-23	Marvin Osborne
14-3.3	Mary Harms
14-4	Stephanie Knight
14-4.1	Stephanie Knight
14-11	Nathaniel Hendricks
14-11.6	Nathaniel Hendricks
14-11.7	Nathaniel Hendricks
14-11.8	Nathaniel Hendricks
14-17	Ralph Thacker
14-20	David Waszley
15-1	Timothy Alexander
15-1.1	Ralph Thacker
15-2	Ralph Thacker
15-3	Larry Gander
15-4	Stout Valley Trust
15-5	Larry Gander
15-6	Ralph Thacker
15-7	Stephanie Knight
15-8	Stephanie Knight
21-1	Ralph Thacker
21-2	Briar Fork Trust
21-3	Dallas Smith Et Al
21-4	Larry Gander
21-4.1	Joseph Bianchini
21-4.2	Marie Bianchini
21-4.3	Joseph Bianchini
21-5	James Beck Et Al
21-6	WF Smith
21-6.1	Lols Gander
21-7	Elmer Pierce
21-7.1	Larry Gander
21-7.2	Larry Gander
21-8.4	Brian Vansant
21-10	James Beck
21-10.1	Harvey Shepler
21-10.2	James Beck

NOTE

- 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 2 AND 3, 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.

Southwest District - Doddridge County	
1-1	Jeffrey Polan
4-2	Cevasco Family Trust
4-10	James Webb
4-11	Juanita Leggett
4-14	Juanita Leggett
4-16	James Webb
4-18	James Webb
4-19.3	CNG Transmission Corp.
4-19.4	CNG Transmission Corp.
4-19.5	Dana Hurst
4-19.7	James Webb
4-19.8	James Webb
4-19.9	James Webb
4-21	Anthony Ayers
4-22	Reed Zinn
4-24	I L Morris
4-25	Tina Osborne
4-25.1	Stanley Chipps
4-28.3	Alfred Farley
4-31	Vicki Moore
4-31.2	Bradley Davis
4-34	Carl Ravin
8-1	Richard Brown
8-3	Randall Russell
8-4	John Gray Hrs
8-5	Larry Gander
12-1	David Ball

AS DRILLED DATA:

WELL 1H TOP HOLE INFORMATION:
N: 247,769ft E: 1,615,118ft
LAT: 39°10'20.23" LON: 80°51'27.31"

BOTTOM HOLE INFORMATION:
N: 261,925ft E: 1,611,843ft
LAT: 39°12'39.65" LON: 80°52'11.63"

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: 4,335,915m E: 512,317m

BOTTOM HOLE INFORMATION:
N: 4,340,211m E: 511,247m

(NAD) 27 (UTM) ZONE 17 COORDS:

WELL 1H TOP HOLE INFORMATION:
N: 14,224,699ft E: 1,680,778ft

POINT OF ENTRY INFORMATION:
N: 14,225,203ft E: 1,682,974ft

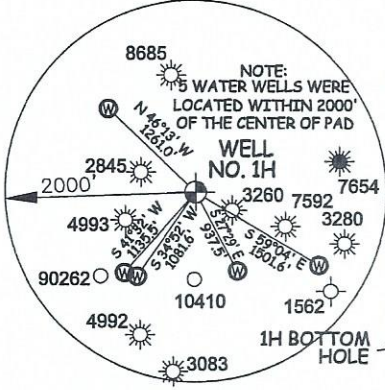
BOTTOM HOLE INFORMATION:
N: 14,238,794ft E: 1,677,269ft

WV NORTH ZONE GRID NORTH

14,199' TO BOTTOM HOLE

13,129'

LONGITUDE 80°50'00"



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 # 23-007WA
DRAWING # KEY1HAD
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

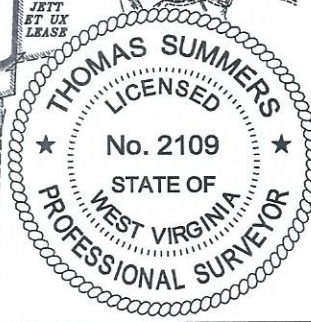
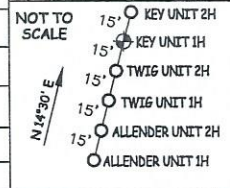
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND

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

Thomas Summers
THOMAS SUMMERS P.S. 2109

DATE 05/07/24
OPERATOR'S WELL# KEY 1H



WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 085 - 10500
(IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW STATE COUNTY PERMIT

LOCATION: ELEVATION 1,019' -AS-BUILT WATERSHED SOUTH FORK HUGHES RIVER
QUADRANGLE OXFORD 7.5' DISTRICT UNION COUNTY RITCHIE

SURFACE OWNER LARRY GANDER ET UX ACREAGE 17 ACRES +/- LEASE ACREAGE 50 AC.±

OIL & GAS ROYALTY OWNER B. GUY WHITEHAIR ET UX

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 6,520' TVD 21,933' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS

ADDRESS 1615 WYNKOOP ST. ADDRESS 535 WHITE OAK BLVD. BRIDGEPORT, WV 26330

COUNTY NAME PERMIT

06/14/2024