

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

API 47-085-10422 County Ritchie District Union
Quad Oxford 7.5' Pad Name Cashew Field/Pool Name ----
Farm name Elmer W. Pierce Well Number Shays 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 4335819m Easting 512286m
Landing Point of Curve Northing 4335696.73m Easting 512164.89m
Bottom Hole Northing 4331879m Easting 513487m

Elevation (ft) 1040' 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

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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 4/6/2022 Date drilling commenced 5/20/2022 Date drilling ceased 8/24/2022
Date completion activities began 10/20/2022 Date completion activities ceased 12/22/2022
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 184,53,236' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1847,1759,1709' Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Reported Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

Reviewed by:
IMR
05/11/2023

API 47- 085 - 10422 Farm name Elmer W. Pierce Well number Shays Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>			
	<u>6366' (TOP)</u>	<u>TVD</u>	<u>6698' (TOP)</u>	<u>MD</u>
<u>Marcellus</u>				

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1831 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 13945 mcfpd Oil 186 bpd NGL --- bpd Water 1616 bpd GAS MEASURED BY Estimated Orifice Pilot

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

***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

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Logging Company GR Energy Services
Address 2315 PA-66 City Delmont State PA Zip 16026

WV Department of Environmental Protection
PA

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 3/14/2023

Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/21/2022	19935.5	19891.1	60	Marcellus
2	10/21/2022	19853.41	19686.96	60	Marcellus
3	10/22/2022	19651.27	19484.82	60	Marcellus
4	10/22/2022	19449.13	19282.68	60	Marcellus
5	10/23/2022	19246.99	19080.54	60	Marcellus
6	10/23/2022	19044.85	18878.40	60	Marcellus
7	10/23/2022	18842.71	18676.26	60	Marcellus
8	10/24/2022	18640.57	18474.12	60	Marcellus
9	10/24/2022	18438.43	18271.98	60	Marcellus
10	10/25/2022	18236.29	18069.84	60	Marcellus
11	10/25/2022	18034.15	17867.70	60	Marcellus
12	10/26/2022	17832.01	17665.56	60	Marcellus
13	10/26/2022	17629.87	17463.42	60	Marcellus
14	10/27/2022	17427.73	17261.28	60	Marcellus
15	10/27/2022	17225.59	17059.14	60	Marcellus
16	10/28/2022	17023.45	16857.00	60	Marcellus
17	10/28/2022	16821.31	16654.86	60	Marcellus
18	10/29/2022	16619.17	16452.72	60	Marcellus
19	10/29/2022	16417.03	16250.58	60	Marcellus
20	10/29/2022	16214.89	16048.44	60	Marcellus
21	10/30/2022	16012.75	15846.30	60	Marcellus
22	10/30/2022	15810.61	15644.16	60	Marcellus
23	10/31/2022	15608.47	15442.02	60	Marcellus
24	10/31/2022	15406.33	15239.88	60	Marcellus
25	11/1/2022	15204.19	15037.74	60	Marcellus
26	11/1/2022	15002.05	14835.60	60	Marcellus
27	11/1/2022	14799.91	14633.46	60	Marcellus
28	11/2/2022	14597.77	14431.32	60	Marcellus
29	11/2/2022	14395.63	14229.18	60	Marcellus
30	11/2/2022	14193.49	14027.04	60	Marcellus
31	11/3/2022	13991.35	13824.90	60	Marcellus
32	11/3/2022	13789.21	13622.76	60	Marcellus
33	11/4/2022	13587.07	13420.62	60	Marcellus
34	11/4/2022	13384.93	13218.48	60	Marcellus
35	11/5/2022	13182.79	13016.34	60	Marcellus
36	11/5/2022	12980.65	12814.20	60	Marcellus
37	11/5/2022	12778.51	12612.06	60	Marcellus
38	11/5/2022	12576.37	12409.92	60	Marcellus
39	11/6/2022	12374.23	12207.78	60	Marcellus
40	11/6/2022	12172.09	12005.64	60	Marcellus
41	11/6/2022	11969.95	11803.50	60	Marcellus
42	11/6/2022	11767.81	11601.36	60	Marcellus
43	11/6/2022	11565.67	11399.22	60	Marcellus
44	11/6/2022	11363.53	11197.08	60	Marcellus
45	11/7/2022	11161.39	10994.94	60	Marcellus
46	11/7/2022	10959.25	10792.80	60	Marcellus
47	11/7/2022	10757.11	10590.66	60	Marcellus
48	11/7/2022	10554.97	10388.52	60	Marcellus
49	11/8/2022	10352.83	10186.38	60	Marcellus
50	11/8/2022	10150.69	9984.24	60	Marcellus
51	11/8/2022	9948.55	9782.10	60	Marcellus
52	11/9/2022	9746.41	9579.96	60	Marcellus
53	11/9/2022	9544.27	9377.82	60	Marcellus
54	11/9/2022	9342.13	9175.68	60	Marcellus
55	11/9/2022	9139.99	8973.54	60	Marcellus
56	11/9/2022	8937.85	8771.40	60	Marcellus
57	11/9/2022	8735.71	8569.26	60	Marcellus
58	11/10/2022	8533.57	8367.12	60	Marcellus
59	11/10/2022	8331.43	8164.98	60	Marcellus
60	11/10/2022	8129.29	7962.84	60	Marcellus
61	11/10/2022	7927.15	7760.70	60	Marcellus
62	11/10/2022	7725.01	7558.56	60	Marcellus
63	11/11/2022	7522.87	7356.42	60	Marcellus
64	11/11/2022	7320.73	7154.28	60	Marcellus
65	11/11/2022	7118.59	6952.14	60	Marcellus
66	11/11/2022	6916.45	6750	60	Marcellus

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05/11/2023

API 47-085-10422 Farm Name Elmer W. Pierce Well Number Shavs Unit 2H

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	10/21/2022	48.0	8660	8130	4039	177300	248365	N/A
2	10/21/2022	70.3	8601	6914	3441	396560	351221	N/A
3	10/22/2022	69.8	8540	7337	3964	413956	302362	N/A
4	10/22/2022	74.8	8777	7054	3322	415182	321883	N/A
5	10/23/2022	71.2	8627	6850	3776	416756	321368	N/A
6	10/23/2022	73.2	8768	6935	3321	414093	323098	N/A
7	10/23/2022	68.0	8671	6533	4103	414601	309854	N/A
8	10/24/2022	60.2	8723	7493	3831	401795	449548	N/A
9	10/24/2022	69.9	8659	7361	3500	414918	298868	N/A
10	10/25/2022	75.3	8545	8775	3308	413924	307355	N/A
11	10/25/2022	78.4	8545	6367	3583	413819	305341	N/A
12	10/26/2022	78.5	8645	6828	3502	418947	298924	N/A
13	10/26/2022	77.2	8551	8733	3201	415307	309963	N/A
14	10/27/2022	78.8	8705	8811	3325	409770	310074	N/A
15	10/27/2022	77.5	8662	6474	3137	408734	297640	N/A
16	10/28/2022	78.3	8532	6657	3104	400445	360427	N/A
17	10/28/2022	77.9	8374	8575	3515	410793	310605	N/A
18	10/29/2022	78.9	8503	6758	3625	412220	297977	N/A
19	10/29/2022	76.7	8286	5558	3211	417168	377937	N/A
20	10/29/2022	78.2	8502	9118	3074	414158	295574	N/A
21	10/30/2022	78.2	8465	8535	3313	415145	306257	N/A
22	10/30/2022	79.6	8562	6748	3401	411581	297597	N/A
23	10/31/2022	76.6	8154	7146	3134	412714	331520	N/A
24	10/31/2022	81.8	8484	8184	3069	397741	293409	N/A
25	11/1/2022	80.4	8473	6397	3215	415184	294678	N/A
26	11/1/2022	82.8	8436	6848	3485	413864	299330	N/A
27	11/1/2022	83.4	8386	4276	3261	411823	340087	N/A
28	11/2/2022	84.7	8595	5976	3193	410524	305115	N/A
29	11/2/2022	84.3	8511	5769	3907	409990	295783	N/A
30	11/2/2022	84.1	8502	7007	3173	406415	338263	N/A
31	11/3/2022	79.2	7963	7122	3090	401874	308323	N/A
32	11/3/2022	75.0	8488	6790	3014	418387	523693	N/A
33	11/4/2022	77.9	8256	7094	3370	415894	306435	N/A
34	11/4/2022	79.1	7890	6688	3017	411176	403208	N/A
35	11/5/2022	84.9	8099.301	4628.51	3082.154	405447	302836	N/A
36	11/5/2022	85.3	8192	5894	3505	412233	297377	N/A
37	11/5/2022	86.8	8260	6398	3461	403202	303185	N/A
38	11/5/2022	85.8	7728	6864	2990	400788	300745	N/A
39	11/6/2022	84.5	7569	6717	3776	406610	307332	N/A
40	11/6/2022	85.1	7377	6862	3546	406539	312892	N/A
41	11/6/2022	88.5	8054	6578	3245	411256	303205	N/A
42	11/6/2022	77.8	7330	5947	3326	404320	359561	N/A
43	11/6/2022	86.1	7468	5933	3332	415087	304837	N/A
44	11/6/2022	82.1	7094	6239	3081	412445	308221	N/A
45	11/7/2022	74.9	7969	6962	2931	413864	367719	N/A
46	11/7/2022	84.1	7349	5427	3734	415003	301190	N/A
47	11/7/2022	85.5	7452	6647	3500	406393	297683	N/A
48	11/7/2022	82.9	7512	7321	3409	376220	298468	N/A
49	11/8/2022	82.5	7468	5757	3312	401372	291705	N/A
50	11/8/2022	85.3	7374	5742	3228	410180	284814	N/A
51	11/8/2022	84.4	7716	6279	3281	404877	294689	N/A
52	11/9/2022	85.2	7331	4929	3380	400884	296264	N/A
53	11/9/2022	82.0	7244	6974	3266	400415	293866	N/A
54	11/9/2022	87.2	7636	7311	3472	403864	282929	N/A
55	11/9/2022	86.8	7470	5876	3383	414063	292870	N/A
56	11/9/2022	85.4	8007	6234	2750	411007	297068	N/A
57	11/9/2022	85.1	7557	7392	3024	407462	297090	N/A
58	11/10/2022	82.8	7400.0	6207.0	3017.0	420396.0	362131.0	N/A
59	11/10/2022	81.2	7332.0	5865.0	3245.0	403505.0	282202.0	N/A
60	11/10/2022	82.3	7578.0	4833.0	2907.0	401550.0	292052.0	N/A
61	11/10/2022	85.8	7452.0	6258.0	3125.0	409881.0	301387.0	N/A
62	11/10/2022	82.2	7552.0	7248.0	3095.0	402864.0	283918.0	N/A
63	11/11/2022	84.6	7175.0	6270.0	3021.0	401557.0	301323.0	N/A
64	11/11/2022	84.2	7269.0	6294.0	3238.0	415259.0	298890.0	N/A
65	11/11/2022	85.9	7443.0	6300.0	3260.0	406373.0	294835.0	N/A
66	11/11/2022	85.0	7529.0	6057.0	2928.0	404233.0	277444.0	N/A
AVERAGE		80	8,046	6,698	3,324	26,761,907	20,732,810	TOTAL

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Environmental Protection

05/11/2023

LATITUDE 39°12'30" 6,978'

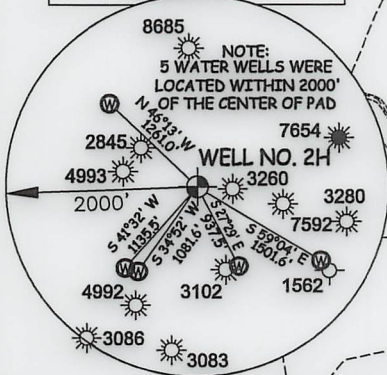
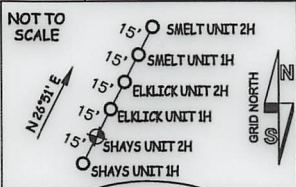
LATITUDE 39°10'00" 3,073' TO BOTTOM HOLE

Antero Resources Corporation Well No. Shays 2H

AS DRILLED DATA: WELL 2H TOP HOLE INFORMATION: N: 247,455ft E: 1,615,012ft ... BOTTOM HOLE INFORMATION: N: 234,577ft E: 1,618,725ft ... WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE.

(NAD) 83 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 4,335,819m E: 512,286m ... BOTTOM HOLE INFORMATION: N: 4,331,914m E: 513,483m

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 14,224,383ft E: 1,680,677ft ... POINT OF ENTRY INFORMATION: N: 14,224,184ft E: 1,680,276ft ... BOTTOM HOLE INFORMATION: N: 14,211,574ft E: 1,684,604ft



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 # 21-015WA DRAWING # SHAYS2HAD SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

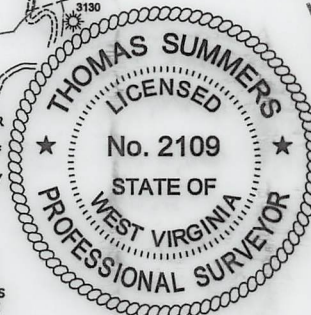
LEGEND Surface Owner Boundary Lines +/- Interior Surface Tracts +/- Proposed Well Path As Drilled Well Path

THOMAS SUMMERS P.S. 2109

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

DATE 03/17/23 OPERATOR'S WELL# SHAYS 2H

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.



WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 085 - 10422 (IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 1,019'-AS BUILT WATERSHED SOUTH FORK HUGHES RIVER QUADRANGLE OXFORD 7.5 DISTRICT UNION COUNTY RITCHIE SURFACE OWNER ELMER W. PIERCE ACREAGE 67.78 ACRES +/- 05/11/2023 OIL & GAS ROYALTY OWNER R.F. KEISTER ET AL; DELLA M. SHEPLER ET AL; RALPH JETT ET UX; LEASE ACREAGE 70 AC.±; 48 AC.±; 148 AC.±; O.M. BRITTON ET AL; DJ RICHARDS ET UX; MAUDE PIERCE ET AL; LARRY J. TOWNSEND ET AL; 50 AC.±; 38.2 AC.±; 60.26 AC.±; 20 AC.±; CHAD W. JOHNSON; ANTERO MINERALS LLC.; HARVEY SHEPLER ET AL 165 AC.±; 107 AC.±; 188 AC.±; 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 6,397' TVD 20,072' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS ADDRESS 1615 WYNKOOP ST. ADDRESS 535 WHITE OAKS BLVD DENVER, CO 80202 BRIDGEPORT, WV 26330

Table with 2 columns: Southwest District - Doddridge County and Union District - Ritchie County. Lists well numbers and names of landowners.

WV NORTH ZONE GRID NORTH

LONGITUDE 80°50'00" 11,090' TO BOTTOM HOLE LONGITUDE 80°50'00" 13,444'

COUNTY NAME PERMIT

LATITUDE 39°12'30" ← 6,978'

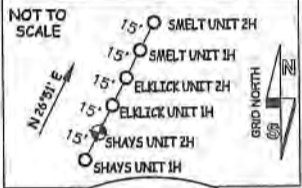
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**Antero Resources Corporation
Well No. Shays 2H**

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
 N: 247,455ft E: 1,615,012ft
 LAT: 39°10'17.11" LON: 80°51'28.60"
BOTTOM HOLE INFORMATION:
 N: 234,577ft E: 1,618,725ft
 LAT: 39°08'10.39" LON: 80°50'39.00"
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 2H TOP HOLE INFORMATION:
 N: 4,335,819m E: 512,286m
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BOTTOM HOLE INFORMATION:
 N: 14,211,574ft E: 1,684,604ft



Southwest District - Doddridge County		Union District - Ritchie County	
12-1	David Ball	21-4	Larry Gander
12-2	David Ball	21-6	WF Smith
12-2.1	Trustees of Baptist Church	21-6.1	Lola Gander
12-3	South Fork Cemetery	21-7	Elmer Pierce
12-4	Kevin Ball	21-7.1	Larry Gander
12-5	Isaac Richards	21-7.2	Larry Gander
12-6	James Haught	21-8	Brian Vansant
13-42	James Haught	21-8.1	Brian Vansant
13-43	Jeffrey Bailey	21-8.2	Brian Vansant
13-44	Brown Goodwin	21-8.3	Brian Vansant
13-45	Charles Leonard	21-8.4	Brian Vansant
13-70	Brown Goodwin	21-10	James Beck
16-1	Coy Adams	21-10.1	Harvey Shepler
16-5	Arden Cogar	21-10.2	James Beck
16-10	Danita Hiley	21-11	Brian Harriman
		21-12	Brian Vansant
		21-13	Mark Vansant
		21-14	Danita Hiley
		21-15	Brian Harriman
		27-2	Randall Hess
		27-3	Steven Lusik
		27-3.1	Kenny Osbourne
		27-3.2	Kenny Osbourne
		27-3.3	Kenny Osbourne
		27-3.4	Kent Grotjan
		27-3.5	Joshua Friedman
		27-4	Miles Ball
		27-5	M E Church
		27-6	Kenny Osbourne
		27-8	Kenny Osbourne
		27-9	Brian Vansant
		27-10	James Haught
		27-11	Miles Ball
		27-11.1	Kent Grotjan
		27-12	Douglas Maxson
		27-12.1	Douglas Maxson
		27-12.2	Douglas Maxson
		27-13	Mary Deberry
		27-14	Linda Jennings
		27-16	Clarence Bush
		27-17	Patricia Shepler
		27-18	Daryl Shepler
		27-19	Tarrell Henderson
		27-19.1	Sanli Itallano
		27-19.2	Sanli Itallano
		27-19.3	Sanli Itallano
		27-22	Clarence Bush
		27-23	Jon Bonnell
		27-23.1	Jon Bonnell
		27-23.2	Daryl Shepler
		27-23.3	Darlene Nailor
		27-24	Harold Pierce
		27-24.1	WV DOT

WV NORTH ZONE GRID NORTH

13,444'

11,090' TO BOTTOM HOLE LONGITUDE 80°50'00"

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.

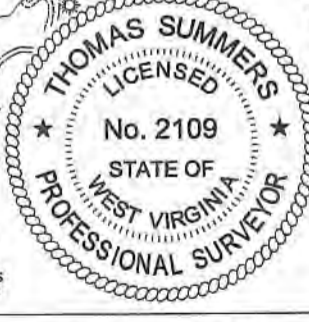


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 21-015WA
 DRAWING # SHAYS2HAD
 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 03/17/23
 OPERATOR'S WELL# SHAYS 2H

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 DATA AND 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.



WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 ___ 085 ___ 10422
 (IF "GAS") PRODUCTION X STORAGE ___ DEED APR 03 2023 DW X STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,019'-AS BUILT WATERSHED SOUTH FORK HUGHES RIVER
 QUADRANGLE OXFORD 7.5 WV Department of DISTRICT UNION COUNTY RITCHIE
 SURFACE OWNER ELMER W. PIERCE Environmental Protection ACREAGE 67.78 ACRES +/- 05/11/2023
 OIL & GAS ROYALTY OWNER R.F. KEISTER ET AL; DELLA M. SHEPLER ET AL; RALPH JETT ET UX; LEASE ACREAGE 70 AC.±; 48 AC.±; 148 AC.±;
O.M. BRITTON ET AL; DJ RICHARDS ET UX; MAUDE PIERCE ET AL; LARRY J. TOWNSEND ET AL; 50 AC.±; 38.2 AC.±; 60.26 AC.±; 20 AC.±;
CHAD W. JOHNSON; ANTERO MINERALS LLC.; HARVEY SHEPLER ET AL 165 AC.±; 107 AC.±; 188 AC.±;
 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 6,397' TVD 20,072' 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

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	2,050	1,930	2,050
Sandy Siltstone, occ shale	2,050	1,843	2,050	1,846
Big Lime	1,873	2,388	1,846	2,391
Fifty Foot Sandstone	2,388	2,567	2,361	2,571
Gordon	2,567	2,860	2,541	2,865
Fifth Sandstone	2,860	2,956	2,835	2,961
Bayard	2,956	3,678	2,931	3,694
Speechley	3,678	3,835	3,664	3,855
Balltown	3,835	4,383	3,825	4,417
Bradford	4,383	4,784	4,387	4,829
Benson	4,784	5,033	4,799	5,084
Alexander	5,033	6,226	5,054	6,358
Sycamore	6,019	6,196	6,105	6,328
Middlesex	6,196	6,306	6,328	6,519
Burkett	6,306	6,345	6,519	6,618
Tully	6,345	6,366	6,618	6,698
Marcellus	6,366	NA	6,698	NA

Marcellus

*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:	10/20/2022
Job End Date:	11/11/2022
State:	West Virginia
County:	Ritchie
API Number:	47-085-10422-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	SHAYS UNIT 2H
Latitude:	39.17142000
Longitude:	-80.85794000
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,427
Total Base Water Volume (gal):	21,862,967
Total Base Non Water Volume:	0



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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
Produced Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	87.20155	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.14333	

OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				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			
Sand-Premium White-30/70	Halliburton	Proppant					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			

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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	12.55788	
			Hydrochloric acid	7647-01-0	30.00000	0.03902	
			Guar gum	9000-30-0	100.00000	0.02628	
			Distillates, (petroleum), hydrotreated light	64742-47-8	25.00000	0.01664	
			Complex Amine Compound	Proprietary	60.00000	0.00508	
			Alcohols, C11-14-iso, C-13-rich, ethoxylated	78330-21-9	5.00000	0.00333	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.00254	
			Glutaraldehyde	111-30-8	30.00000	0.00245	
			Ammonium persulfate	7727-54-0	100.00000	0.00086	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00042	
			Surfactant	Proprietary	5.00000	0.00042	
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00041	
			Oxylated phenolic resin	Proprietary	30.00000	0.00026	
			Methanol	67-56-1	100.00000	0.00024	
			Ethoxylated alcohols	Proprietary	5.00000	0.00010	
			Organic chloride compound	Proprietary	1.00000	0.00008	
			Alkoxylated polyhydric alcohol	Proprietary	1.00000	0.00008	
			Ethanol	64-17-5	1.00000	0.00008	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	

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			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			Hexadecene	629-73-2	5.00000	0.00001	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00001	
			Nitrated acetate salt	Proprietary	0.01000	0.00000	
			Sodium hydroxide	1310-73-2	0.01000	0.00000	
			Acrylamide	79-06-1	0.01000	0.00000	
			Sodium glycolate	2836-32-0	0.01000	0.00000	
			Organic salt #1	Proprietary	0.01000	0.00000	
			Formaldehyde	50-00-0	0.01000	0.00000	
			Organic salt #2	Proprietary	0.01000	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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