

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

API 47 - 095 - 02701 County Tyler District Ellsworth
Quad Porter Falls Pad Name Pyles Pad Field/Pool Name -----
Farm name Richard D Pyles Well Number Vulcan 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop St 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 4372729m Easting 514003m
Landing Point of Curve Northing 4372467.56m Easting 513854.67m
Bottom Hole Northing 4368418m Easting 515282m

Elevation (ft) 1081' 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 06/05/2020 Date drilling commenced 8/6/2020 Date drilling ceased 10/30/2020
Date completion activities began 12/8/2020 Date completion activities ceased 2/10/2021
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 61 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2200 Void(s) encountered (Y/N) depths N
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

Reviewed by:

03/17/2023

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API 47-095 - 02701 Farm name Richard D Pyles Well number Vulcan 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"	80'	New	94# H-40	N/A	Y
Surface	17-1/2"	13-3/8"	345'	New	54.5# J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2587'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	21353'	New	23# P-110	N/A	Y
Tubing		2-3/8"	6815'		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	285 sx	15.6	1.18	60	0	8 Hrs
Surface	Class A	355 sx	15.6	1.20	76	0	8 Hrs
Coal							
Intermediate 1	Class A	883 sx	15.6	1.19	194	0	8 Hrs
Intermediate 2							
Intermediate 3							
Production	Class H	792 sx (Lead) 3340 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.4 (Lead), 1.26 (Tail)	479	-500' into Intermediate Casing	8 Hrs
Tubing							

Drillers TD (ft) 21399' MD, 6710' TVD (BHL), 6712' (Deepest Point Drilled) Loggers TD (ft) 21399' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5905'

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 ever 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 on top of cement

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____
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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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API 47- 095 - 02701 Farm name Richard D Pyles Well number Vulcan 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.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus	6586' (Top) TVD	6875' (Top) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 14931 mcfpd Oil 376 bpd NGL --- bpd Water 611 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)
	0		0		
*PLEASE SEE ATTACHED EXHIBIT 3					
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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 Schlumberger Oilfield Services
Address 300 Schlumberger Dr City Sugarland State TX Zip 77478

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 2/2/2023

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

03/17/2023




Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	12/08/2020	21279.9	21235.6	60	Marcellus
2	12/08/2020	21196.80986	21030.8592	60	Marcellus
3	12/09/2020	20995.26901	20829.3183	60	Marcellus
4	12/09/2020	20793.72817	20627.7775	60	Marcellus
5	12/09/2020	20592.18732	20426.2366	60	Marcellus
6	12/09/2020	20390.64648	20224.6958	60	Marcellus
7	12/10/2020	20189.10563	20023.1549	60	Marcellus
8	12/10/2020	19987.56479	19821.6141	60	Marcellus
9	12/10/2020	19786.02394	19620.0732	60	Marcellus
10	12/10/2020	19584.4831	19418.5324	60	Marcellus
11	12/10/2020	19382.94225	19216.9915	60	Marcellus
12	12/11/2020	19181.40141	19015.4507	60	Marcellus
13	12/11/2020	18979.86056	18813.9099	60	Marcellus
14	12/11/2020	18778.31972	18612.369	60	Marcellus
15	12/11/2020	18576.77887	18410.8282	60	Marcellus
16	12/12/2020	18375.23803	18209.2873	60	Marcellus
17	12/12/2020	18173.69718	18007.7465	60	Marcellus
18	12/12/2020	17972.15634	17806.2056	60	Marcellus
19	12/13/2020	17770.61549	17604.6648	60	Marcellus
20	12/13/2020	17569.07465	17403.1239	60	Marcellus
21	12/13/2020	17367.5338	17201.5831	60	Marcellus
22	12/13/2020	17165.99296	17000.0423	60	Marcellus
23	12/14/2020	16964.45211	16798.5014	60	Marcellus
24	12/14/2020	16762.91127	16596.9606	60	Marcellus
25	12/14/2020	16561.37042	16395.4197	60	Marcellus
26	12/14/2020	16359.82958	16193.8789	60	Marcellus
27	12/15/2020	16158.28873	15992.338	60	Marcellus
28	12/15/2020	15956.74789	15790.7972	60	Marcellus
29	12/15/2020	15755.20704	15589.2563	60	Marcellus
30	12/15/2020	15553.6662	15387.7155	60	Marcellus
31	12/16/2020	15352.12535	15186.1746	60	Marcellus
32	12/16/2020	15150.58451	14984.6338	60	Marcellus
33	12/16/2020	14949.04366	14783.093	60	Marcellus
34	12/16/2020	14747.50282	14581.5521	60	Marcellus
35	12/17/2020	14545.96197	14380.0113	60	Marcellus
36	12/17/2020	14344.42113	14178.4704	60	Marcellus
37	12/18/2020	14142.88028	13976.9296	60	Marcellus
38	12/18/2020	13941.33944	13775.3887	60	Marcellus
39	12/19/2020	13739.79859	13573.8479	60	Marcellus
40	12/19/2020	13538.25775	13372.307	60	Marcellus
41	12/19/2020	13336.7169	13170.7662	60	Marcellus
42	12/20/2020	13135.17606	12969.2254	60	Marcellus
43	12/20/2020	12933.63521	12767.6845	60	Marcellus
44	12/20/2020	12732.09437	12566.1437	60	Marcellus
45	12/21/2020	12530.55352	12364.6028	60	Marcellus
46	12/21/2020	12329.01268	12163.062	60	Marcellus
47	12/21/2020	12127.47183	11961.5211	60	Marcellus
48	12/22/2020	11925.93099	11759.9803	60	Marcellus
49	12/23/2020	11724.39014	11558.4394	60	Marcellus
50	12/23/2020	11522.8493	11356.8986	60	Marcellus
51	12/23/2020	11321.30845	11155.3577	60	Marcellus
52	12/23/2020	11119.76761	10953.8169	60	Marcellus
53	12/24/2020	10918.22676	10752.2761	60	Marcellus
54	12/24/2020	10716.68592	10550.7352	60	Marcellus
55	12/26/2020	10515.14507	10349.1944	60	Marcellus
56	12/26/2020	10313.60423	10147.6535	60	Marcellus
57	12/27/2020	10112.06338	9946.11268	60	Marcellus
58	12/27/2020	9910.522535	9744.57183	60	Marcellus
59	12/27/2020	9708.98169	9543.03099	60	Marcellus
60	12/28/2020	9507.440845	9341.49014	60	Marcellus
61	12/28/2020	9305.9	9139.9493	60	Marcellus
62	12/28/2020	9104.359155	8938.40845	60	Marcellus
63	12/28/2020	8902.81831	8736.86761	60	Marcellus
64	12/29/2020	8701.277465	8535.32676	60	Marcellus
65	12/29/2020	8499.73662	8333.78592	60	Marcellus
66	12/29/2020	8298.195775	8132.24507	60	Marcellus
67	12/29/2020	8096.65493	7930.70423	60	Marcellus
68	12/30/2020	7895.114085	7729.16338	60	Marcellus
69	12/30/2020	7693.573239	7527.62254	60	Marcellus
70	12/30/2020	7492.032394	7326.08169	60	Marcellus
71	12/30/2020	7290.491549	7124.54085	60	Marcellus
72	12/30/2020	7088.950704	6923	60	Marcellus

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EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	12/08/2020	73	9639	9208	3445	182820	236849	N/A
2	12/08/2020	84.4	9484	5967	4388	415400	312322	N/A
3	12/09/2020	88.25	9723	4960	4703	409180	308977	N/A
4	12/09/2020	89.27	9646	5122	4229	411940	310473	N/A
5	12/09/2020	85.52	9534	5216	4313	412450	306536	N/A
6	12/09/2020	82.71	8910	5938	4237	408180	312504	N/A
7	12/10/2020	89.41	9261	4799	4431	417650	314225	N/A
8	12/10/2020	85.57	9345	5965	4013	416940	311953	N/A
9	12/10/2020	85.92	9173	5722	4468	407735	308143	N/A
10	12/10/2020	92.93	9550	4326	4369	399205	310671	N/A
11	12/10/2020	92.94	9800	5591	4399	413080	310195	N/A
12	12/11/2020	88.95	9741	6615	4125	417140	309985	N/A
13	12/11/2020	87.53	9489	5459	4220	409490	304222	N/A
14	12/11/2020	87.25	9818	5829	4078	415670	304936	N/A
15	12/11/2020	83.7	9341	5549	3982	417660	313075	N/A
16	12/12/2020	87.42	9545	5914	4110	408980	299991	N/A
17	12/12/2020	93.79	9925	5053	4150	407760	301168	N/A
18	12/12/2020	85.72	9475	5467	3893	416520	305132	N/A
19	12/13/2020	86.23	9871	8691	3573	418440	310729	N/A
20	12/13/2020	91.1	9470	5283	3829	418280	307864	N/A
21	12/13/2020	93.11	9786	4841	4074	410460	299710	N/A
22	12/13/2020	93.8	9555	4848	4026	406690	298196	N/A
23	12/14/2020	70.28	8207	5215	4537	416520	456847	N/A
24	12/14/2020	90.23	8861	4934	3942	416450	312284	N/A
25	12/14/2020	91.66	9431	5181	4039	411430	301177	N/A
26	12/14/2020	89.89	8964	5511	3892	416010	307134	N/A
27	12/15/2020	87.15	9611	6576	3856	412500	304273	N/A
28	12/15/2020	86.59	8341	5352	4262	413430	305978	N/A
29	12/15/2020	88.91	8789	5711	3680	416000	288255	N/A
30	12/15/2020	89.86	8725	5609	3735	414330	296892	N/A
31	12/16/2020	90.74	8887	5642	3845	417110	295708	N/A
32	12/16/2020	90.8	8822	5493	4017	411220	288150	N/A
33	12/16/2020	91.38	9057	5465	3774	406850	298644	N/A
34	12/16/2020	92.76	9045	5476	4006	418020	309182	N/A
35	12/17/2020	88.59	8525	5511	4020	416760	298397	N/A
36	12/17/2020	92.83	8637	5898	3740	410320	298971	N/A
37	12/18/2020	90.38	8561	5492	3668	414600	291978	N/A
38	12/18/2020	91.99	8757	5744	3694	414900	294685	N/A
39	12/19/2020	91.37	8647	5263	3931	415200	297797	N/A
40	12/19/2020	92.96	8765	5610	3827	417770	297949	N/A
41	12/19/2020	91.2	8476	5447	4381	407700	291015	N/A
42	12/20/2020	89.09	8747	6229	4572	409150	291717	N/A
43	12/20/2020	91.37	8432	5874	3966	412830	293288	N/A
44	12/20/2020	90.44	8311	5774	4301	407230	288462	N/A
45	12/21/2020	91.24	8523	5878	4276	398790	286730	N/A
46	12/21/2020	91.78	8740	5696	4257	404130	288118	N/A
47	12/21/2020	91.55	8775	5415	4202	409450	292097	N/A
48	12/22/2020	90.47	9099	5483	3915	417090	294497	N/A
49	12/23/2020	91.43	8755	5324	4187	413520	294062	N/A
50	12/23/2020	94.93	8626	5554	4067	413720	294895	N/A
51	12/23/2020	89.91	8570	5400	4030	412640	290843	N/A
52	12/23/2020	89.64	8120	5179	4110	418180	290133	N/A
53	12/24/2020	89.35	8154	4942	4110	410550	288477	N/A
54	12/24/2020	91.97	8247	5209	4069	413520	290487	N/A
55	12/26/2020	94.52	8549	5297	4037	416470	291307	N/A
56	12/26/2020	90.21	7967	5561	4426	409280	285155	N/A
57	12/27/2020	95.26	8121	5569	4261	413500	288344	N/A
58	12/27/2020	93.14	8034	5105	3723	414720	296498	N/A
59	12/27/2020	94.45	8158	5584	3779	413910	286795	N/A
60	12/28/2020	93.97	7982	5928	3730	409590	285908	N/A
61	12/28/2020	93.01	7906	5086	4285	396560	279671	N/A
62	12/28/2020	95.65	8133	5036	4454	410720	298638	N/A
63	12/28/2020	93.37	7822	5283	4029	414570	286758	N/A
64	12/29/2020	94.89	7736	5407	3956	404440	284467	N/A
65	12/29/2020	94.31	7823	4972	3728	409020	287479	N/A
66	12/29/2020	92.86	7629	5289	3354	407760	281971	N/A
67	12/29/2020	94.12	7627	5537	4135	403440	281851	N/A
68	12/30/2020	93.97	7502	5407	4939	407520	282658	N/A
69	12/30/2020	95.22	7508	5539	4341	413120	286238	N/A
70	12/30/2020	92.68	7475	5385	4227	412430	278432	N/A
71	12/30/2020	95.25	7451	6276	4245	409710	278065	N/A
72	12/30/2020	90.42	6932	5989	4385	409870	281899	N/A
	AVG=	90	8,731	5,579	4,083	29,426,220	21,459,112	TOTAL

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9/22/23
03/17/2023

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Shale	79	124	79	124
Shaley Siltstone	124	474	124	474
Silty Shale	474	574	474	574
Siltstone, Tr Shale	574	724	574	724
Silty Shale	724	824	724	824
Shaley Sandstone	824	1,024	824	1,024
Shale, Tr Siltstone	1,024	1,274	1,024	1,274
Shale, Tr Sandstone	1,274	1,524	1,274	1,524
Silty Shale	1,524	1,624	1,524	1,624
Sandstone, Tr Shale	1,624	1,724	1,624	1,724
Sandy Shale	1,724	1,774	1,724	1,774
Shaley Siltstone	1,774	1,824	1,774	1,824
Shale	1,824	1,950	1,824	1,952
Big Lime	1,976	2,696	1,978	2,698
Fifty Foot Sandstone	2,696	2,791	2,698	2,794
Gordon	2,791	3,097	2,794	3,100
Fifth Sandstone	3,097	3,172	3,100	3,176
Bayard	3,172	4,043	3,176	4,056
Speechley	4,043	4,170	4,056	4,186
Balltown	4,170	4,699	4,186	4,720
Bradford	4,699	4,988	4,720	5,014
Benson	4,988	5,361	5,014	5,389
Alexander	5,361	6,435	5,389	6,536
Sycamore	6,293	6,409	6,359	6,510
Middlesex	6,409	6,505	6,510	6,666
Burkett	6,505	6,531	6,666	6,717
Tully	6,531	6,586	6,717	6,875
Marcellus	6,586	NA	6,875	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.

SM
03/17/2023

Antero Resources
Well No. Vulcan 1H
As-Drilled
Antero Resources Corporation



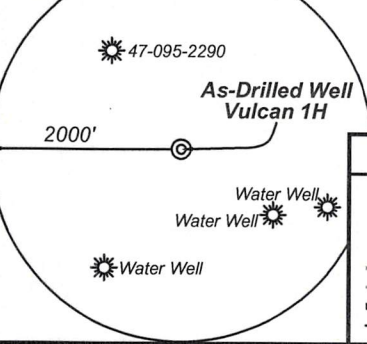
- Wellhead Layout**
As-Drilled
- Vulcan Unit 1H
47-095-02701
 - Vulcan Unit 2H
47-095-02702
 - Prosper Unit 1H
47-095-02699
 - Prosper Unit 2H
47-095-02700
 - Friend Unit 1H
47-095-02695
 - Friend Unit 2H
47-095-02696
 - Seagrave Unit 1H
47-095-02697
 - Seagrave Unit 2H
47-095-02698



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

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

Note: 3 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



Legend

- Proposed gas well
- Found corner, as noted
- ⊙ Existing Well, as noted
- ⊙ Digitized Well
- - - Existing Road
- Existing Road
- Surface boundary (approx.)
- Interior surface tracts (approx.)

FILE NO: 190-54-E-19
 DRAWING NO: Vulcan Unit 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV

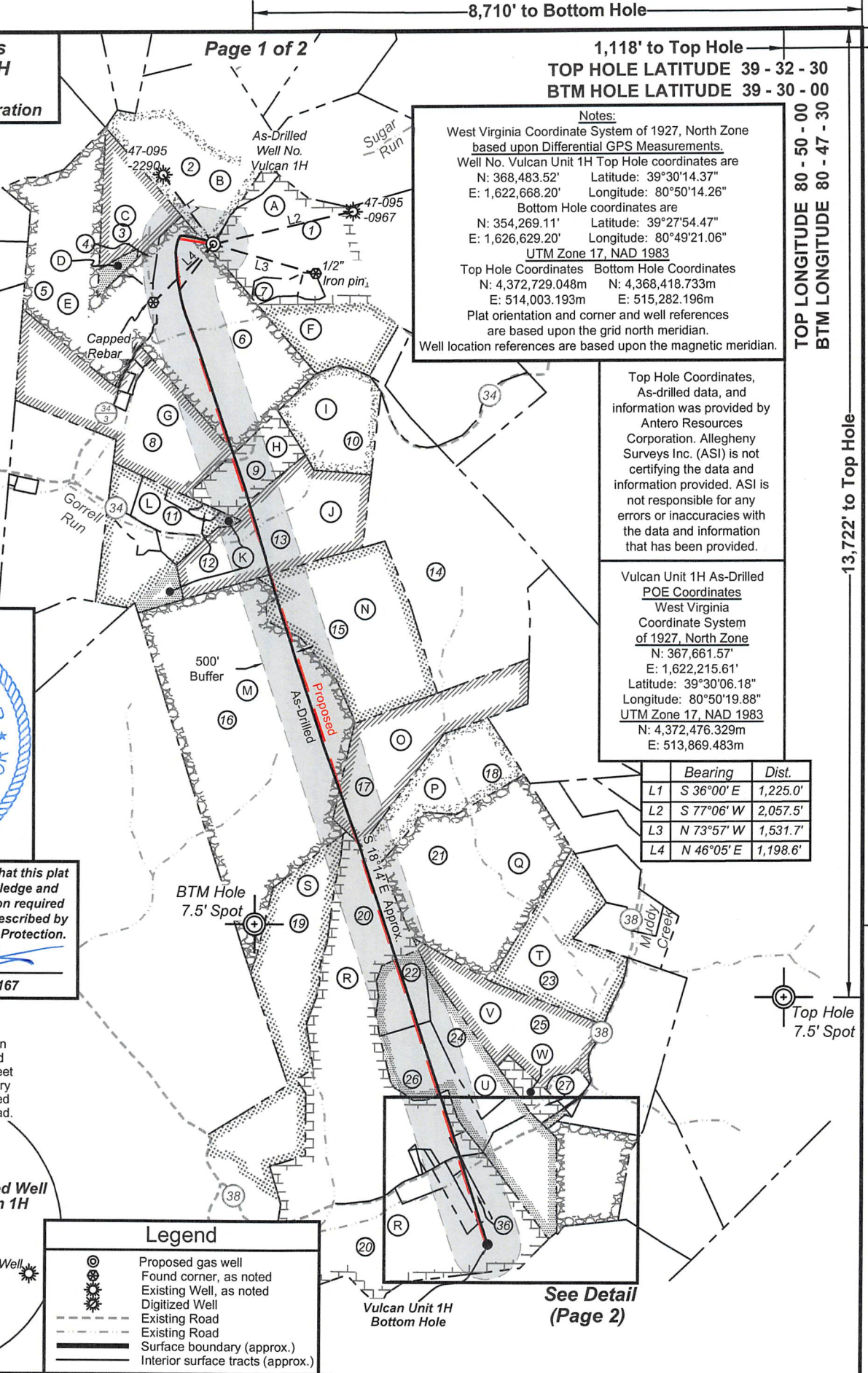
STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: February 24 2021
 OPERATOR'S WELL NO. Vulcan 1H
 API WELL NO
 47 - 095 - 02701
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,081' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Shirley
 DISTRICT: Ellsworth COUNTY: Tyler
 SURFACE OWNER: Richard D. Pyles Ronald P. Webb; Richard L. White, II; Kendra K. Wyke; ACREAGE: 168.5
 RIDGETOP CAPITAL II, LP (2); BRC APPALACHIAN MINERALS I, LLC; ANTHONY BRUCE PARR; 22.95; 69.50;
 ROYALTY OWNER: Richard D. & Cathy J. Pyles; Joseph L. Sitko, et ux; William S. Nash, et al; Helen E. Boggs; LEASE NO: ACREAGE: 97.2; 271
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,710' TVD
 21,399' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
 Denver, CO 80202 Charleston, WV 25313



Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Vulcan Unit 1H Top Hole coordinates are
 N: 368,483.52' Latitude: 39°30'14.37"
 E: 1,622,668.20' Longitude: 80°50'14.26"
 Bottom Hole coordinates are
 N: 354,269.11' Latitude: 39°27'54.47"
 E: 1,626,629.20' Longitude: 80°49'21.06"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,372,729.048m N: 4,368,418.733m
 E: 514,003.193m E: 515,282.196m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.

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

Vulcan Unit 1H As-Drilled POE Coordinates
 West Virginia Coordinate System of 1927, North Zone
 N: 367,661.57'
 E: 1,622,215.61'
 Latitude: 39°30'06.18"
 Longitude: 80°50'19.88"
 UTM Zone 17, NAD 1983
 N: 4,372,476.329m
 E: 513,869.483m

	Bearing	Dist.
L1	S 36°00' E	1,225.0'
L2	S 77°06' W	2,057.5'
L3	N 73°57' W	1,531.7'
L4	N 46°05' E	1,198.6'

8,710' to Bottom Hole

1,118' to Top Hole
 TOP HOLE LATITUDE 39 - 32 - 30
 BTM HOLE LATITUDE 39 - 30 - 00

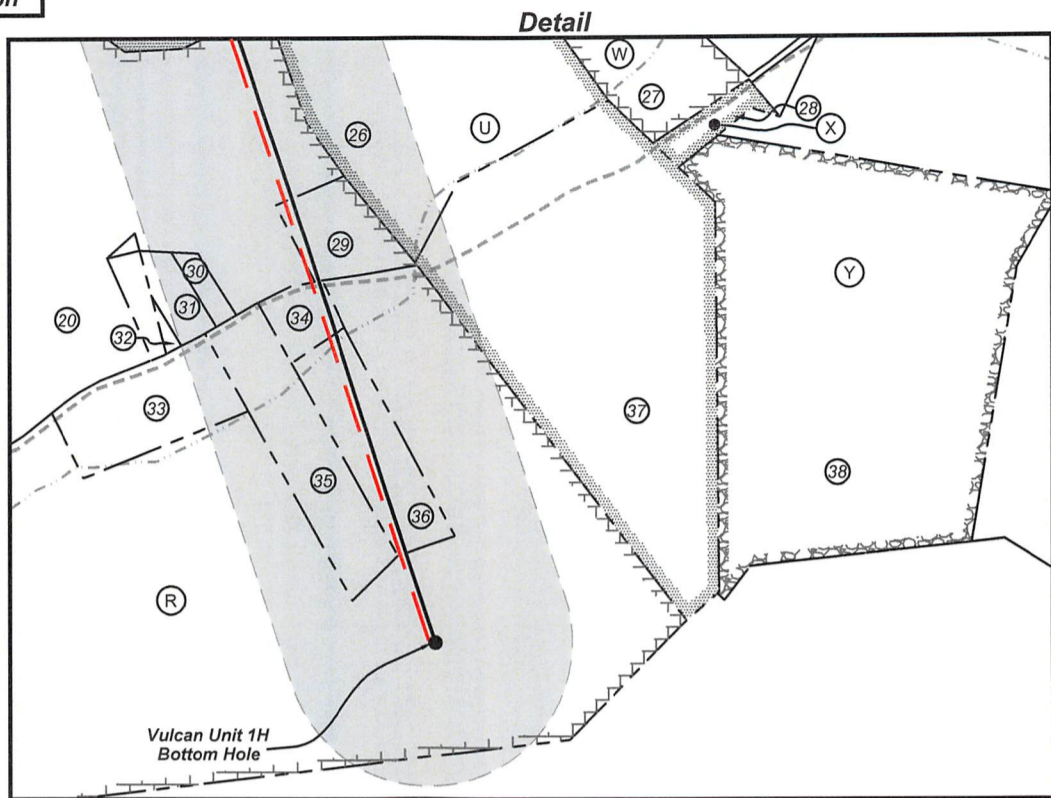
TOP LONGITUDE 80 - 50 - 00
 BTM LONGITUDE 80 - 47 - 30

13,722' to Top Hole

12,700' to Bottom Hole

03/17/2023

AS



ID	TM/Par	Owner	DB/PG	Acres
1	16-42	Richard D. Pyles	379/20	168.50
2	16-22	Joseph L. Jr. & Karen L. Sitko	296/13	81.70
3	16-23	Joseph L. Sitko	314/462	29.70
4	16-44.1	Carl Straight	543/ 598	3.70
5	15-38	Rodney A. & Candis L. Nash	351/701	85.48
6	16-44	Robert A. Pyles, et al	335/482	87.82
7	16-42.1	Richard D. Pyles	336/815	4.56
8	15-32	William S. & Opal Marie Nash	335/188	78.58
9	22-3	Harold L. & Deborah C. Holloway	287/669	22.95
10	16-43	Alfred L. Eddy	344/22	37.10
11	22-1	Robert I. Reed & Floyd W. Reed	321/763	37.60
12	22-2	Ronald Hartline & Jamie Barnhart	591/741	1.50
13	22-4	Stephen H. & Barbara J. Dunthorn	216/40	69.00
14	22-6	Antero Resources Inc.	662/782	131.57
15	22-5	Antero Resources Corporation	662/782	84.67
16	22-41	Anthony B. Parr	342/763	222.00
17	22-40	Ronald P. & Sandra L. Webb	282/1	65.00
18	22-39	Ronald P. & Sandra L. Webb	270/587	45.00
19	28-9	David & Cheryl L. Barrick	263/606	87.53
20	28-31	Victor A. & Lorraine B. Weekley	AR49/717	271.00
21	22-38	Bruce & Sandra L. Parr	368/790	113.0
22	22-37	B.W. Weekley	107/562	15.78
23	22-34	Raymond L. Parr, et al	329/181	55.25
24	22-36	B.W. Weekley	107/562	23.50
25	22-35	Marie Eddy	344/358	52.96
26	28-32	B.W. Weekley	107/562	33.31
27	28-43	Wanda J. Parr	327/435	8.02
28	28-42	Robert H. Anderson	238/76	0.99
29	28-31.1	Joshua M. & Crystal L. Rocchio	348/33	2.30
30	28-31.16	William Morgan	374/472	0.50
31	28-31.12	William Morgan	374/472	1.00
32	28-31.19	James & Peggy Morgan	377/10	0.14
33	28-31.10	Danny Swiger & Peggy Smith	356/675	4.00
34	28-31.20	Randy Wells	445/315	1.00
35	28-31.3	David Lantz & Rita Parr	618/689	5.00
36	28-31.2	David Lantz & Rita Parr	618/689	4.00
37	28-33	B.W. Weekley	107/562	25.30
38	28-35	Shirl N. Baker Jr.	WB 38/1	32.00

Leases	
A	Richard D. & Cathy J. Pyles
B	Joseph L. Sitko, et ux
C	Joseph L. Sitko, et ux
D	Bruce Winkelmann
E	Helen E. Boggs
F	Richard D. & Cathy J. Pyles
G	William S. Nash, et al
H	Ridgetop Capital II, LP
I	Alfred Lonzo Eddy
J	Ridgetop Capital II, LP
K	Marjorie R. Asher Longston, et vir
L	Ridgetop Capital II, LP
M	Anthony Bruce Parr
N	BRC Appalachian Minerals I, LLC
O	Ronald P. Webb
P	Carol J. Knapp
Q	Anthony Bruce Parr, et ux
R	Kendra K. Wyke
S	OPEN
T	Nancy L. Mains
U	Richard Lee White, II
V	Larry Stevens
W	Wanda J. Parr
X	Lucille Adams
Y	Bounty Minerals, LLC

FILE NO: 190-54-E-19
 DRAWING NO: Vulcan Unit 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV

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

DATE: February 24 2021
 OPERATOR'S WELL NO. Vulcan 1H
 API WELL NO
 47 - 095 - 02701
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,081' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Shirley
 DISTRICT: Ellsworth COUNTY: Tyler 03/17/2023

SURFACE OWNER: Richard D. Pyles; Ronald P. Webb; Richard L. White, II; Kendra K. Wyke; ACREAGE: 168.5
 ROYALTY OWNER: Richard D. & Cathy J. Pyles; Joseph L. Sitko, et ux; William S. Nash, et al; Helen E. Boggs; LEASE NO: ACREAGE: 97.2; 271

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
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WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
 Denver, CO 80202 Charleston, WV 25313

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/8/2020
Job End Date:	12/30/2020
State:	West Virginia
County:	Tyler
API Number:	47-095-02701-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	VULCAN 1H
Latitude:	39.50401000
Longitude:	-80.83729000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,712
Total Base Water Volume (gal):	22,239,054
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Produced Water	Halliburton	Base Fluid	Water				
				7732-18-5	100.00000	86.20122	Density = 8.50
Ingredients	Listed Above	Listed Above	Water				
				7732-18-5	100.00000	0.35288	

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Sand-Premium White-40/70	Halliburton	Proppant					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			

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Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

			Crystalline silica, quartz	14808-60-7	100.00000	13.41878	
			Hydrochloric acid	7647-01-0	30.00000	0.09346	
			Complex Amine Compound	Proprietary	60.00000	0.03325	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01662	
			Guar gum	9000-30-0	100.00000	0.00462	
			Surfactant	Proprietary	5.00000	0.00277	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00277	
			Glutaraldehyde	111-30-8	30.00000	0.00243	
			Ethoxylated alcohols	Proprietary	5.00000	0.00057	
			Alkoxyated polyhydric alcohol	Proprietary	1.00000	0.00055	
			Organic chloride compound	Proprietary	1.00000	0.00055	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00040	
			Methanol	67-56-1	100.00000	0.00032	
			Ammonium persulfate	7727-54-0	100.00000	0.00011	
			Ethanol	64-17-5	1.00000	0.00008	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Oxylated phenolic resin	Proprietary	30.00000	0.00003	
			Hexadecene	629-73-2	5.00000	0.00001	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Sodium glycolate	2836-32-0	0.01000	0.00001	
			Nitrated acetate salt	Proprietary	0.01000	0.00001	
			Sodium hydroxide	1310-73-2	0.01000	0.00001	

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			Organic salt #2	Proprietary	0.01000	0.00001	
			Formaldehyde	50-00-0	0.01000	0.00001	
			Organic salt #1	Proprietary	0.01000	0.00001	
			Acrylamide	79-06-1	0.01000	0.00001	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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