

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

API 47 - 017 - 06764 County Doddridge District West Union
Quad West Union 7.5' Pad Name Addie Pad Field/Pool Name ----
Farm name Antero Resources Corporation Well Number Addie 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 4353811m Easting 516763m
Landing Point of Curve Northing 4353954m Easting 516893m
Bottom Hole Northing 4355732m Easting 516173m

Elevation (ft) 891' 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 2/26/2016 Date drilling commenced 7/6/2017 Date drilling ceased 11/17/2017
Date completion activities began 2/7/2018 Date completion activities ceased 7/14/2018
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 370' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1495', 1535' Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

API 47-017 - 06764

Farm name Antero Resources Corporation Well number Addie 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"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	493'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2484'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	13345'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6663'		6.5#, 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	204 sx	15.6	1.18	241	0'	8 Hrs.
Surface	Class A	417 sx	15.6	1.19	496	0'	8 Hrs.
Coal							
Intermediate 1	Class A	858 sx	15.6	1.18	1012	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	874sx (Lead) 1112sx (Tail)	13.5(Lead), 15.2 (Tail)	1.53 (Lead), 1.83 (Tail)	3066	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 113345' MD, 6470' TVD (BHL), 6487' (Deepest Point Drilled)

Loggers TD (ft) 13345' MD

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 5885'

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

API 47- 017 - 06764 Farm name Antero Resources Corporation Well number Addie Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6445' (TOP)</u>	<u>TVD</u>	<u>6678' (TOP)</u> <u>MD</u>

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 13179 mcfpd Oil 105 bpd NGL --- bpd Water 3139 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</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 Frontier Drilling LLC
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Allied Horizontal
Address 381 Colonial Manor Rd City North Huntington State PA Zip 15642

Cementing Company C&J Energy Services
Address 1650 Hackers Creek City Lane Jew State WV Zip 26378

Stimulating Company Keane Group
Address 5825 North Sam Houston Parkway West, Suite 600 City Houston State TX Zip 77086

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-6820
Signature  Title Permitting Agent Date 11/9/2018

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

API 47-017-06764 Farm Name Antero Resources Corp Well Number Addie Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/7/2018	13077	13244	48	Marcellus
2	2/26/2018	12880	13046	48	Marcellus
3	2/26/2018	12682	12849	48	Marcellus
4	2/27/2018	12484	12651	48	Marcellus
5	2/27/2018	12287	12453	48	Marcellus
6	2/28/2018	12089	12256	48	Marcellus
7	2/28/2018	11891	12058	48	Marcellus
8	3/1/2018	11693	11860	48	Marcellus
9	3/1/2018	11496	11662	48	Marcellus
10	3/2/2018	11298	11465	48	Marcellus
11	3/2/2018	11100	11267	48	Marcellus
12	3/3/2018	10902	11069	48	Marcellus
13	3/4/2018	10705	10871	48	Marcellus
14	3/4/2018	10507	10674	48	Marcellus
15	3/5/2018	10309	10476	48	Marcellus
16	3/5/2018	10111	10278	48	Marcellus
17	3/6/2018	9914	10081	48	Marcellus
18	3/6/2018	9716	9883	48	Marcellus
19	3/7/2018	9518	9685	48	Marcellus
20	3/7/2018	9321	9487	48	Marcellus
21	3/7/2018	9123	9290	48	Marcellus
22	3/8/2018	8925	9092	48	Marcellus
23	3/8/2018	8727	8894	48	Marcellus
24	3/8/2018	8530	8696	48	Marcellus
25	3/9/2018	8332	8499	48	Marcellus
26	3/9/2018	8134	8301	48	Marcellus
27	3/10/2018	7936	8103	48	Marcellus
28	3/10/2018	7739	7905	48	Marcellus
29	3/10/2018	7541	7708	48	Marcellus
30	3/11/2018	7343	7510	48	Marcellus
31	3/11/2018	7146	7312	48	Marcellus
32	3/11/2018	6948	7115	48	Marcellus
33	3/12/2018	6750	6917	48	Marcellus

API 47-017-06764 Farm Name Antero Resources Corp Well Number Addie 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	2/7/2018	73	7294	5394	4964	457411	10470	N/A
2	2/26/2018	75	7344	5603	4087	461180	10272	N/A
3	2/26/2018	73.2	7255	5561	4890	462660	10200	N/A
4	2/27/2018	76.7	7150	5503	4565	502000	12254	N/A
5	2/27/2018	80.4	7632	5617	4453	502960	10205	N/A
6	2/28/2018	75.6	6931	5445	4146	501775	10192	N/A
7	2/28/2018	79	7088	5367	3897	501700	10028	N/A
8	3/1/2018	73.3	7130	5786	4981	493513	10341	N/A
9	3/1/2018	79.5	7677	5449	5250	504980	10297	N/A
10	3/2/2018	74.4	7065	5974	5404	508750	10092	N/A
11	3/2/2018	79.2	6926	5825	3528	504550	9969	N/A
12	3/3/2018	73	7125	5611	5367	502580	10136	N/A
13	3/4/2018	79.1	7737	5511	3514	503193	10681	N/A
14	3/4/2018	74.7	6945	5293	3977	502000	10029	N/A
15	3/5/2018	78.3	7110	5518	4940	503960	11705	N/A
16	3/5/2018	80.7	6800	3850	5582	505680	10087	N/A
17	3/6/2018	80	6935	5893	5122	502380	9940	N/A
18	3/6/2018	79.3	7117	5519	5307	501000	10124	N/A
19	3/7/2018	76.7	6837	5558	5041	503000	10076	N/A
20	3/7/2018	78	6882	5754	4327	501775	10022	N/A
21	3/7/2018	77.7	6858	5710	5611	505000	10083	N/A
22	3/8/2018	79.8	6956	5449	5102	506510	10070	N/A
23	3/8/2018	79.3	6691	4538	5102	506000	10035	N/A
24	3/8/2018	79.1	6795	5309	4659	504000	10127	N/A
25	3/9/2018	77.8	6725	5514	3571	502081	10096	N/A
26	3/9/2018	78.7	6731	5570	6725	503000	10127	N/A
27	3/10/2018	77.3	6621	5116	6042	504000	10124	N/A
28	3/10/2018	78.7	6674	5391	5776	502037	9975	N/A
29	3/10/2018	79.2	6762	5433	5379	501000	10067	N/A
30	3/11/2018	79	6873	5425	3938	508000	10176	N/A
31	3/11/2018	79.8	6816	5209	5166	508095	10000	N/A
32	3/11/2018	77.2	6547	5309	4588	509000	10087	N/A
33	3/12/2018	77.7	6340	7062	4054	504000	10163	N/A
	AVG=	78	6,981	5,487	4,820	16,489,770	338,250	TOTAL

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	0	197	0	197
Sandy shale	197	357	197	357
Sandstone	357	417	357	417
Sandstone tr coal	417	437	417	437
Sandy shale	437	537	437	537
Shale	537	737	537	737
Silty sandstone	737	817	737	817
Silty shale	817	997	817	997
Sandstone	997	1,017	997	1,017
Silty shale	1,017	1,277	1,017	1,277
Sandstone	1,277	1,417	1,277	1,417
Sandy shale	1,417	1,677	1,417	1,677
Silty shale	1,677	1,740	1,677	1,741
Big Lime	1,740	2,284	1,741	2,286
Fifty Foot Sandstone	2,284	2,482	2,286	2,483
Gordon	2,482	2,709	2,483	2,711
Fifth Sandstone	2,709	2,770	2,711	2,772
Bayard	2,770	3,559	2,772	3,569
Speechley	3,559	3,743	3,569	3,758
Balltown	3,743	4,351	3,758	4,383
Bradford	4,351	4,793	4,383	4,837
Benson	4,793	5,082	4,837	5,135
Alexander	5,082	6,040	5,135	6,123
Sycamore	6,040	6,219	6,123	6,333
Middlesex	6,219	6,350	6,333	6,534
Burkett	6,350	6,378	6,534	6,592
Tully	6,378	6,420	6,592	6,678
Marcellus	6,420	NA	6,678	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.

ANTERO RESOURCES CORPORATION

Location: Doddridge Co., WV
 Slot: Slot #06
 Field: Doddridge
 Well: Addie Unit 1H
 Facility: Addie Pad
 Wellbore: Addie Unit 1H PWB



Projected MD at TD: 13345' : 6468.24ft TVD, 6303.30ft N, 1934.81ft W

API: 47-017-06754-0000

BHI Job #: 8863555

Rig: Frontier 22

Duration: 11/13/2017-11/15/2017

Pkt reference wellbore is Addie Unit 1H PWB Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 914.0 feet	Depth are in feet
Mean Sea Level to Mud line (At Slot Slot #06): -980 feet	Created by: deliaet on 2018-01-11
Coordinates are in feet, referenced to Slot	Database: WA_MPL_EasternUS_Defn

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude
Addie Pad	1655325.147	14283415.126	39°20'00.530"N
Slot	Local E (ft)	Grid East (US ft)	Latitude
Slot #06	-0.33	1655385.267	39°20'00.520"N
Comment	Addie Unit 1H		80°46'20.420"W
Frontier 22 (RKB) to Mud line (At Slot Slot #06)			24.5R
Mean Sea Level to Mean Sea Level			-80R
Frontier 22 (RKB) to Mean Sea Level			914.6R
WFT EM <8-3/4"> (2400)(2500-8379) : 1.73° Inc, 2508.56ft MD, 2508.04ft TVD, -32.10R VS			

Well Profile Data					
Design Comment	MD (ft)	Inc. (°)	Az. (°)	TVD (ft)	Local N (ft)
Tile On	6385.50	41.700	350.590	5267.16	-91.50
Prop. To Bottom	6461.50	47.910	352.820	5318.93	-40.82
POE	6709.07	72.013	347.900	6442.00	168.63
Landing PL	6965.00	90.000	347.900	6482.00	415.96
On Azimuth	7505.77	90.000	337.142	6482.00	928.14
BHL	13335.44	90.000	337.142	6482.00	6301.86
					-1946.53
					0.00
					731.41
					196.80
					8.88
					-51.50
					559.74
					8.77
					-308.50
					8.78
					DLS (/100R)
					VS (ft)

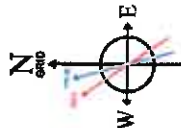
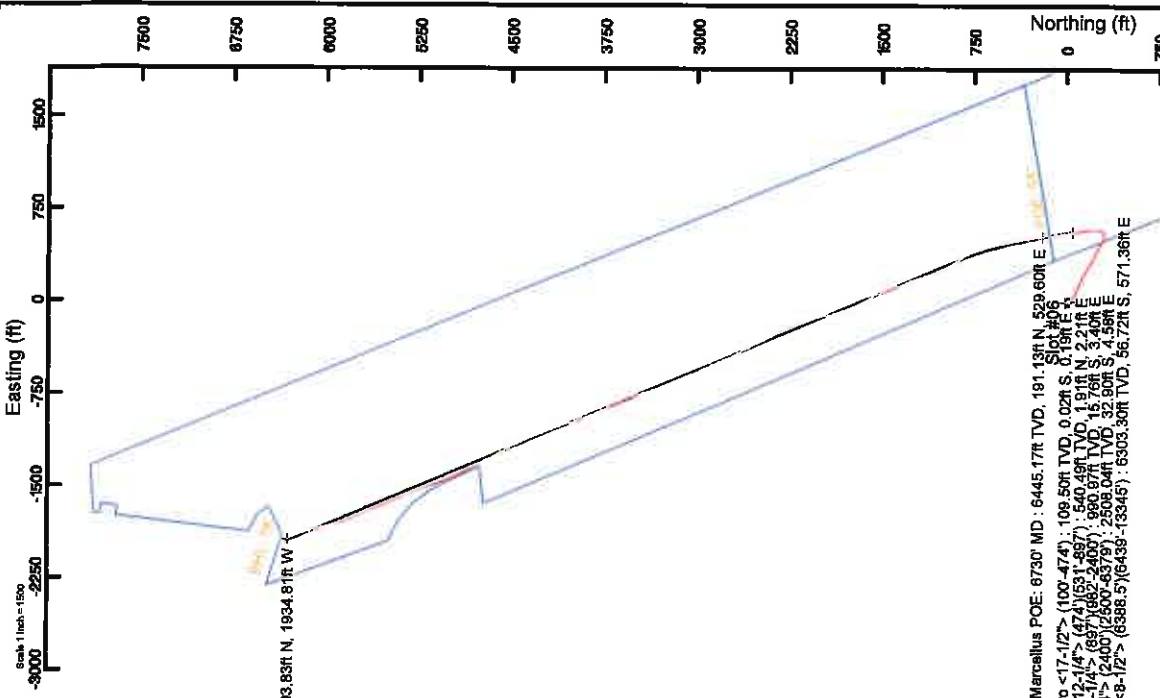
Well Data		
Slot	Well	Wellbore
Slot #06	Addie Unit 1H	Addie Unit 1H PWB
	Addie Unit 1H	Addie Unit 1H PWB Rev-A.0

BHI AT Curve <6-1/2"> (6388.5)(6439-13345) : 46.86° Inc, 6439.00ft MD, 6303.30ft TVD, -274.23ft VS
 Marcellus POE: 6730' MD : 72.19° Inc, 6730.00ft MD, 6445.17ft TVD, -29.62ft VS

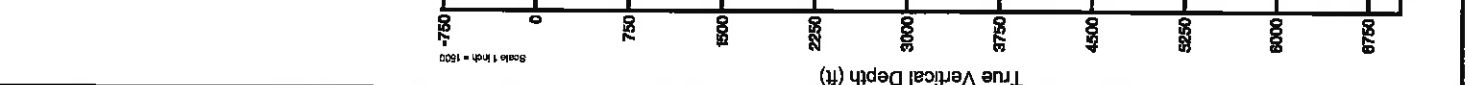
Projected MD at TD: 13345' : 90.18° Inc, 13345.00ft MD, 8468.24ft TVD, 6560.34ft VS

Azimuth 337.14° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500



User specified Dip: 08.59° Field: 52075 NT
 Magnetic North is 7.55 degrees West of True North (at 10Nov2017)
 Grid North is 0.12 degrees East of True North
 To correct azimuth from True to Grid subtract 0.12 degrees
 To correct azimuth from Magnetic to Grid subtract 7.75 degrees





Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #06
Area	Doddridge Co., WV	Addie Unit 1H
Field	Doddridge	Addie Unit 1H AWB
Facility	Addie Pad	

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999603	Report Generated	11/Jan/2018 at 10:42
Convergence at slot	0.12° East	Database/Source file	WA_MPL_EasternUS_Defn/Addie_Unit_1H_AWP_Proj_13345.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Northing[US ft]	Easting[US ft]	Latitude	Longitude
Slot Location	-0.93	40.08	14283414.20	1695365.21	39°20'00.520"N	80°48'20.420"W
Facility Reference Pt			14283415.13	1695325.15	39°20'00.530"N	80°48'20.930"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM

Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	24.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	914.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Mud Line at Slot (Slot #06)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	337.14°



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Doddridge Co., WV	Well	Addie Unit 1H
Field	Doddridge	Wellbore	Addie Unit 1H AWB
Facility	Addie Pad		

WELLPATH DATA (169 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
0.00	0.00	95.510	0.00	0.00	0.00	0.00	14283414.20	39°20'00.520"N	80°48'20.420"W	0.00	0.000	0.00	0.00	0.00	0.00	
24.50	0.00	95.510	24.50	0.00	0.00	0.00	14283414.20	39°20'00.520"N	80°48'20.420"W	0.00	0.000	0.00	0.00	0.00	0.00	
109.50	0.260	95.510	109.50	-0.09	-0.02	0.19	16953665.40	14283414.18	39°20'00.520"N	80°48'20.418"W	0.19	95.510	0.31	0.31	112.36	Gyrodata MS Gyro <17-1/2"> (100'-474')
209.50	0.820	59.750	209.50	-0.11	0.32	1.04	16953662.24	14283414.52	39°20'00.523"N	80°48'20.407"W	1.08	72.825	0.53	0.56	-35.76	
309.50	0.470	22.810	309.49	0.27	1.06	1.81	1695367.02	14283415.26	39°20'00.530"N	80°48'20.397"W	2.10	59.866	0.53	-0.35	-37.14	
409.50	0.230	14.800	409.49	0.72	1.63	2.02	1695367.23	14283415.83	39°20'00.536"N	80°48'20.394"W	2.60	51.075	0.24	-0.24	-7.81	
483.50	0.100	34.550	483.49	0.90	1.84	2.04	1695367.25	14283416.04	39°20'00.538"N	80°48'20.394"W	2.75	48.013	0.20	-0.18	-39.80	
540.50	0.360	82.990	540.49	0.90	1.91	2.21	1695367.41	14283416.11	39°20'00.539"N	80°48'20.392"W	2.92	49.162	0.68	0.46	29.38	
631.50	0.870	109.790	631.48	0.35	1.71	3.14	1695368.35	14283415.91	39°20'00.537"N	80°48'20.380"W	3.58	61.444	0.63	0.56	17.30	Gyrodata MS Gyro <12-1/4"> (474')(631'-897')
721.50	2.030	162.810	721.45	-1.69	-0.04	4.26	1695369.46	14283414.16	39°20'00.519"N	80°48'20.366"W	4.26	90.591	1.84	1.29	58.98	
811.50	3.000	179.890	811.37	-5.45	-3.92	4.73	1695369.94	14283410.28	39°20'00.481"N	80°48'20.367"W	6.15	129.553	1.35	1.08	18.97	
906.50	3.890	189.330	906.20	-10.47	-9.59	4.21	1695369.42	14283404.62	39°20'00.425"N	80°48'20.367"W	10.47	156.271	1.11	0.94	9.95	
991.50	4.510	185.980	990.97	-15.84	-15.76	3.40	1695368.61	14283398.45	39°20'00.364"N	80°48'20.377"W	16.12	167.823	0.78	0.73	-3.96	WFT EM <12-1/4"> (897')(982'-2400')
1086.50	3.730	189.500	1084.72	-21.66	-22.45	2.61	1695367.72	14283391.76	39°20'00.298"N	80°48'20.389"W	22.59	173.616	0.87	-0.83	3.77	
1180.50	1.950	212.460	1179.61	-25.19	-26.86	1.13	1695368.34	14283387.35	39°20'00.254"N	80°48'20.406"W	26.88	177.582	2.19	-1.87	24.17	
1274.50	1.680	246.310	1273.56	-26.12	-28.76	-0.99	1695364.22	14283395.45	39°20'00.236"N	80°48'20.433"W	28.78	181.953	1.16	-0.29	36.01	
1369.50	1.220	247.270	1368.53	-26.14	-29.71	-3.19	1695362.01	14283384.50	39°20'00.226"N	80°48'20.461"W	29.89	186.135	0.48	-0.48	1.01	
1463.50	0.420	118.300	1462.52	-26.41	-30.26	-3.81	1695361.39	14283383.95	39°20'00.221"N	80°48'20.469"W	30.50	187.162	1.62	-0.85	-137.20	
1558.50	1.560	97.350	1557.51	-27.33	-30.59	-2.22	1695362.98	14283383.62	39°20'00.218"N	80°48'20.449"W	30.68	184.159	1.24	1.20	-22.05	
1652.50	2.470	98.660	1651.45	-29.03	-31.06	1.05	1695366.25	14283383.16	39°20'00.213"N	80°48'20.408"W	31.08	178.070	0.97	0.97	1.39	
1747.50	1.760	115.210	1746.38	-31.19	-31.99	4.39	1695369.60	14283382.22	39°20'00.204"N	80°48'20.365"W	32.29	172.186	0.98	-0.75	17.42	
1842.50	1.150	196.070	1841.36	-33.01	-33.53	5.45	1695370.65	14283380.68	39°20'00.188"N	80°48'20.352"W	33.97	170.773	2.05	-0.64	85.12	
1936.50	3.220	261.360	1935.30	-33.10	-34.83	2.57	1695367.78	14283379.38	39°20'00.176"N	80°48'20.388"W	34.93	175.772	3.12	2.20	69.46	
2031.50	2.390	260.010	2030.19	-31.37	-34.89	-2.01	1695363.19	14283379.32	39°20'00.175"N	80°48'20.447"W	34.95	183.303	1.29	-0.87	19.63	
2125.50	0.800	356.970	2124.15	-29.69	-33.89	-3.98	1695361.23	14283380.32	39°20'00.185"N	80°48'20.472"W	34.13	186.895	2.49	-1.69	81.87	
2220.50	1.420	76.000	2216.14	-29.24	-32.95	-2.87	1695362.34	14283381.27	39°20'00.194"N	80°48'20.457"W	33.07	184.981	1.57	0.65	83.19	
2315.50	1.450	91.060	2314.11	-29.91	-32.68	-0.53	1695364.68	14283381.53	39°20'00.197"N	80°48'20.428"W	32.69	180.925	0.40	0.03	15.85	
2409.50	1.430	94.730	2408.08	-30.94	-32.80	1.83	1695367.04	14283381.41	39°20'00.186"N	80°48'20.398"W	32.85	176.806	0.10	-0.02	3.90	
2509.50	1.730	89.910	2508.04	-32.10	-32.90	4.58	1695368.79	14283381.31	39°20'00.195"N	80°48'20.363"W	33.22	172.070	0.33	0.30	-4.52	WFT EM <8-3/4"> (2400')(2500'-6379')
2604.50	1.720	94.200	2603.00	-33.30	-33.01	7.44	1695372.64	14283381.21	39°20'00.194"N	80°48'20.326"W	33.83	167.298	0.14	-0.01	4.52	



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Doddridge Co., WV	Well	Addie Unit 1H
Field	Doddridge	Wellbore	Addie Unit 1H AWB
Facility	Addie Pad		

WELLPATH DATA (169 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US FT)	Grid North (US FT)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (M)	DLS (ft/100ft)	Bulld Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
2699.50	3.630	96.210	2697.89	-35.41	-33.44	11.85	1695377.05	14283380.78	39°20'00.189"N	80°48'20.270"W	35.47	160.483	2.01	2.01	2.12	
2793.50	5.460	110.360	2791.60	-39.92	-35.31	19.00	1695384.20	14283378.90	39°20'00.171"N	80°48'20.179"W	40.10	151.714	2.27	1.95	15.05	
2987.50	6.770	125.740	2885.06	-47.71	-40.11	27.69	1695392.89	14283374.11	39°20'00.123"N	80°48'20.069"W	48.74	145.375	2.22	1.39	16.36	
2982.50	6.800	129.980	2979.40	-57.50	-46.99	36.55	1695401.74	14283367.23	39°20'00.055"N	80°48'19.958"W	59.53	142.125	0.53	0.03	4.46	
3076.50	6.290	128.900	3072.79	-66.97	-53.77	44.84	1695410.03	14283360.45	39°19'59.988"N	80°48'19.851"W	70.02	140.174	0.57	-0.54	-1.57	
3171.50	5.820	128.850	3167.26	-75.70	-59.90	52.77	1695417.96	14283354.82	39°19'59.927"N	80°48'19.750"W	79.83	138.621	0.53	-0.49	-1.74	
3267.50	5.920	118.950	3262.75	-83.79	-65.22	61.00	1695426.18	14283349.01	39°19'59.874"N	80°48'19.646"W	89.30	136.914	0.85	0.10	-8.23	
3456.50	11.020	113.930	3449.40	-103.38	-74.82	88.61	1695437.91	14283344.88	39°19'59.833"N	80°48'19.496"W	100.50	133.833	4.31	3.73	-16.56	
3551.50	13.140	113.850	3542.30	-117.83	-82.85	108.80	1695471.86	14283331.38	39°19'59.779"N	80°48'19.294"W	115.97	130.174	2.57	1.67	11.00	
3645.50	14.690	115.900	3633.53	-134.53	-92.32	127.32	1695492.48	14283321.92	39°19'59.699"N	80°48'18.063"W	135.17	127.903	2.23	2.23	0.02	
3740.50	14.330	116.370	3725.50	-152.45	-102.75	148.72	1695513.86	14283311.49	39°19'59.501"N	80°48'18.530"W	157.27	125.947	1.71	1.65	1.86	
3835.50	13.770	115.830	3817.66	-169.85	-112.90	169.43	1695534.57	14283301.35	39°19'59.401"N	80°48'18.267"W	180.76	124.841	0.43	-0.38	0.81	
3929.50	12.640	114.290	3909.18	-185.79	-122.00	188.87	1695554.00	14283292.25	39°19'59.310"N	80°48'18.020"W	203.60	123.877	0.61	-0.59	-0.57	
4024.50	11.840	113.020	4002.01	-200.41	-130.09	207.32	1695572.44	14283284.16	39°19'59.230"N	80°48'17.765"W	224.85	122.861	1.26	-1.20	-1.64	
4118.50	13.020	118.520	4093.81	-215.61	-138.92	225.50	1695590.61	14283275.34	39°19'59.142"N	80°48'17.564"W	244.75	122.708	0.89	-0.84	-1.34	
4213.50	12.780	120.220	4186.42	-232.37	-149.32	243.98	1695609.09	14283264.95	39°19'59.039"N	80°48'17.319"W	264.85	121.635	1.78	1.26	5.85	
4308.50	14.160	119.330	4278.80	-249.95	-160.30	283.19	1695628.28	14283253.97	39°19'58.939"N	80°48'17.075"W	286.04	121.467	0.47	-0.25	1.79	
4402.50	14.370	118.900	4369.90	-268.20	-171.57	283.43	1695648.52	14283242.70	39°19'58.818"N	80°48'16.818"W	308.16	121.344	1.47	1.45	-0.94	
4497.50	14.280	118.510	4461.95	-286.61	-182.86	304.05	1695669.13	14283231.41	39°19'58.706"N	80°48'16.566"W	331.31	121.188	0.25	0.22	-0.46	
4591.50	13.590	119.010	4553.18	-304.36	-193.75	323.90	1695688.98	14283220.53	39°19'58.598"N	80°48'16.303"W	354.80	121.023	0.13	-0.08	-0.41	
4685.50	12.750	120.030	4644.70	-321.32	-204.30	342.54	1695707.61	14283209.98	39°19'58.493"N	80°48'16.066"W	377.43	120.887	0.76	-0.74	0.53	
4780.50	12.230	119.370	4737.46	-337.64	-214.48	360.38	1695725.45	14283199.81	39°19'58.392"N	80°48'15.840"W	398.84	120.813	0.93	-0.89	1.09	
4875.50	13.910	116.730	4829.99	-354.29	-224.55	379.35	1695744.41	14283189.74	39°19'58.293"N	80°48'15.588"W	419.38	120.759	0.57	-0.55	-0.69	
4969.50	14.060	115.550	4921.21	-371.43	-234.56	399.75	1695764.79	14283179.74	39°19'58.193"N	80°48'15.339"W	440.83	120.623	1.88	1.77	-2.78	
5064.50	13.890	115.520	5013.39	-388.58	-244.45	420.45	1695785.49	14283169.85	39°19'58.095"N	80°48'15.076"W	463.48	120.403	0.34	0.16	-1.26	
5159.50	14.090	114.900	5105.56	-405.67	-254.23	441.23	1695806.26	14283160.07	39°19'57.998"N	80°48'14.812"W	486.35	120.174	0.18	-0.18	-0.03	
5254.50	13.350	118.570	5197.87	-422.81	-264.34	461.35	1695826.37	14283149.96	39°19'57.897"N	80°48'14.556"W	509.23	119.950	0.26	0.21	-0.65	
5348.50	12.210	123.090	5289.54	-439.53	-274.96	479.21	1695844.22	14283138.35	39°19'57.792"N	80°48'14.329"W	531.71	119.812	1.20	-0.78	3.86	
5443.50	11.090	114.590	5382.59	-454.58	-284.25	495.94	1695860.94	14283130.06	39°19'57.700"N	80°48'14.116"W	552.49	119.846	1.61	-1.21	4.81	
											571.62	119.920	2.15	-1.18	-8.95	



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Doddridge Co., WV	Well	Addie Unit 1H
Field	Doddridge	Wellbore	Addie Unit 1H AWB
Facility	Addie Pad		

WELLPATH DATA (169 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert.Sect (ft)	North (ft)	East (ft)	Grid East (US FT)	Grid North (US FT)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
5538.50	11.270	111.820	5475.79	-467.82	-291.47	1512.87	1695877.88	14283122.85	39°19'57.628"N	80°48'13.901"W	589.91	119.610	0.64	0.19	-3.13	
5532.50	11.780	112.140	5567.89	-481.04	-298.47	1530.30	1695896.30	14283115.86	39°19'57.569"N	80°48'13.679"W	608.53	119.372	0.55	0.54	0.55	
5727.50	11.850	105.960	5660.88	-494.02	-304.81	1548.66	1695919.65	14283109.51	39°19'57.496"N	80°48'13.448"W	627.66	119.065	1.33	0.07	-6.48	
5759.50	11.140	84.000	5692.24	-497.47	-305.93	1554.90	1695919.89	14283108.39	39°19'57.484"N	80°48'13.367"W	633.66	118.869	7.77	-2.22	-37.44	
5790.50	10.820	80.680	5722.68	-499.51	-305.67	1560.76	1695925.75	14283108.65	39°19'57.487"N	80°48'13.292"W	638.96	118.595	8.23	-1.03	-42.97	
5822.50	11.000	69.480	5754.11	-500.34	-304.11	1566.59	1695931.57	14283110.21	39°19'57.502"N	80°48'13.218"W	643.04	118.225	6.84	0.56	-35.00	
5853.50	10.830	53.470	5784.55	-499.77	-301.34	1571.70	1695936.68	14283112.98	39°19'57.529"N	80°48'13.153"W	646.26	117.794	9.76	-0.55	-51.85	
5885.50	11.680	40.380	5815.94	-497.60	-297.08	1576.21	1695941.19	14283117.23	39°19'57.571"N	80°48'13.095"W	648.29	117.275	8.39	2.66	-40.91	
5916.50	13.070	31.730	5846.22	-494.15	-291.71	1580.09	1695945.07	14283122.60	39°19'57.624"N	80°48'12.960"W	649.31	116.697	7.46	4.48	-27.90	
5946.50	14.910	25.520	5877.27	-489.32	-284.92	1583.77	1695948.74	14283129.40	39°19'57.691"N	80°48'12.989"W	649.59	116.016	7.41	5.75	-19.41	
5979.50	16.460	17.720	5907.12	-483.34	-277.14	1586.92	1695951.80	14283137.18	39°19'57.768"N	80°48'12.960"W	648.97	115.280	8.43	5.00	-25.16	
6011.50	17.960	9.980	5937.69	-475.76	-267.96	1589.06	1695954.03	14283146.35	39°19'57.859"N	80°48'12.931"W	647.14	114.460	8.55	4.98	-24.19	
6042.50	19.040	6.160	5967.08	-467.31	-258.22	1590.43	1695955.40	14283156.08	39°19'57.955"N	80°48'12.913"W	644.43	113.622	5.24	3.48	-12.32	
6073.50	19.910	3.760	5996.32	-458.17	-247.83	1591.32	1695956.29	14283166.37	39°19'58.057"N	80°48'12.901"W	641.19	112.747	3.81	2.81	-7.74	
6105.60	22.190	0.640	6026.18	-447.75	-236.44	1591.74	1695956.71	14283177.85	39°19'58.170"N	80°48'12.896"W	637.23	111.780	7.94	7.13	-9.75	
6136.50	24.150	358.030	6054.88	-436.48	-224.25	1591.59	1695956.56	14283190.04	39°19'58.291"N	80°48'12.897"W	632.67	110.760	7.14	6.32	-8.42	
6168.50	26.030	356.700	6083.86	-423.73	-210.70	1590.96	1695955.93	14283203.59	39°19'58.425"N	80°48'12.905"W	627.40	109.623	6.13	5.87	-4.16	
6199.50	27.880	356.920	6111.29	-410.50	-196.67	1590.18	1695955.15	14283217.61	39°19'58.564"N	80°48'12.915"W	622.09	108.430	5.98	5.97	0.71	
6231.50	29.680	356.540	6139.34	-395.98	-181.29	1589.30	1695954.27	14283232.98	39°19'58.716"N	80°48'12.925"W	616.55	107.100	5.65	5.62	-1.19	
6262.50	31.760	354.850	6165.99	-380.97	-165.50	1588.10	1695953.08	14283248.77	39°19'58.872"N	80°48'12.940"W	610.96	105.717	7.26	6.71	-5.45	
6294.50	34.040	352.730	6192.85	-364.32	-148.22	1586.21	1695951.19	14283266.04	39°19'59.042"N	80°48'12.964"W	604.66	104.190	7.98	7.12	-6.63	
6325.50	36.290	350.900	6218.19	-347.05	-130.56	1583.67	1695949.64	14283283.70	39°19'59.217"N	80°48'12.996"W	598.09	102.609	8.01	7.26	-5.90	
6357.00†	38.610	350.285	6240.02	-330.78	-114.06	1580.93	1695945.91	14283300.19	39°19'59.380"N	80°48'13.030"W	592.02	101.108	8.55	8.44	-2.24	Middlesex: 6353' MD
6357.50	38.960	350.190	6243.53	-328.04	-111.28	1580.45	1695945.43	14283302.96	39°19'59.408"N	80°48'13.036"W	591.02	100.853	8.55	8.44	-2.11	
6388.50	41.700	350.590	6267.16	-308.50	-91.50	1577.10	1695942.08	14283322.74	39°19'59.603"N	80°48'13.078"W	584.31	99.006	8.78	6.74	1.28	
6439.00	46.860	350.650	6303.30	-274.23	-56.72	1571.36	1695936.34	14283357.50	39°19'59.947"N	80°48'13.150"W	574.17	95.670	10.22	10.22	0.12	BHI AT Curve -8-1/2"> (6388.5')(6439-13345)
6481.00	51.240	350.410	6330.82	-243.38	-25.44	1566.14	1695931.12	14283386.77	39°20'00.256"N	80°48'13.216"W	566.71	92.573	10.44	10.43	-0.57	
6528.00	56.210	350.130	6358.62	-206.49	11.89	1559.74	1695924.72	14283426.09	39°20'00.626"N	80°48'13.266"W	559.86	88.783	10.59	10.57	-0.80	
6559.00†	58.802	350.424	6375.27	-181.03	37.66	1555.32	1695920.31	14283451.85	39°20'01.860"N	80°48'13.352"W	556.60	86.120	8.40	8.36	0.96	Burkett: 6559' MD
6575.00	60.140	350.570	6383.40	-167.62	51.25	1553.05	1695918.03	14283465.43	39°20'01.015"N	80°48'13.380"W	555.42	84.705	8.40	8.36	0.91	



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #06
Area	Doddridge Co., WV	Addie Unit 1H
Field	Doddridge	Addie Unit 1H AWB
Facility	Addie Pad	

WELLPATH DATA (169 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert. Sect. (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude (°)	Longitude (ft)	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6617.00†	63.652	350.929	6403.18	-131.62	87.81	547.09	1695912.08	14283501.98	39°20'01.376"N	80°48'13.455"W	554.10	80.881	8.40	8.36	0.85	July: 6617' MD
6622.00	64.076	350.970	6405.38	-127.26	92.25	546.39	1695911.38	14283508.41	39°20'01.420"N	80°48'13.464"W	554.12	80.417	8.40	8.36	0.82	
6671.00	67.990	350.410	6425.29	-83.74	136.42	539.14	1695904.13	14283550.67	39°20'01.857"N	80°48'13.555"W	556.13	78.800	8.07	8.00	-1.14	
6703.00†	70.550	350.060	6436.61	-54.59	165.91	534.07	1695899.06	14283580.05	39°20'02.148"N	80°48'13.619"W	559.24	72.742	8.06	8.00	-1.08	Hamilton: 6703' MD
6718.00	71.750	349.900	6441.46	-40.75	179.89	531.60	1695896.59	14283594.02	39°20'02.287"N	80°48'13.650"W	561.21	71.304	8.06	8.00	-1.07	
6730.00†	72.195	349.950	6445.17	-29.62	191.13	529.60	1695894.60	14283605.25	39°20'02.398"N	80°48'13.675"W	563.03	70.156	3.73	3.71	0.42	Marcellus POE: 6730' MD
6766.00	73.530	350.100	6455.78	3.91	225.01	523.64	1695886.64	14283639.12	39°20'02.733"N	80°48'13.750"W	569.94	66.747	3.73	3.71	0.42	
6813.00	77.410	350.270	6467.57	48.23	269.83	515.99	1695880.89	14283683.92	39°20'03.176"N	80°48'13.847"W	582.19	62.388	8.28	8.28	0.36	
6861.00	80.040	350.370	6476.95	94.06	316.23	507.97	1695872.98	14283730.31	39°20'03.635"N	80°48'13.947"W	598.36	58.096	5.48	5.48	0.21	
6908.00	84.450	349.780	6483.29	139.43	362.09	499.95	1695864.98	14283776.15	39°20'04.088"N	80°48'14.047"W	617.30	54.086	9.48	9.38	-1.23	
6955.00	88.150	350.170	6488.33	185.15	408.27	491.79	1695856.80	14283822.31	39°20'04.545"N	80°48'14.150"W	639.18	50.302	7.91	7.87	0.81	
7049.00	90.650	347.740	6487.31	277.14	500.51	473.79	1695838.80	14283914.51	39°20'05.457"N	80°48'14.377"W	689.19	43.429	3.71	2.66	-2.59	
7144.00	90.580	344.690	6486.29	370.94	592.76	451.15	1695816.18	14284006.72	39°20'06.369"N	80°48'14.662"W	744.92	37.275	3.21	-0.07	-3.21	
7239.00	91.110	344.100	6484.89	465.17	684.25	425.60	1695790.64	14284098.17	39°20'07.274"N	80°48'14.985"W	805.81	31.882	0.83	0.56	-0.82	
7332.00	90.030	336.050	6483.96	557.96	771.60	393.94	1695758.99	14284185.49	39°20'08.138"N	80°48'15.385"W	866.35	27.046	8.73	-1.18	-8.66	
7427.00	90.150	329.280	6483.81	652.62	856.94	350.34	1695715.41	14284269.80	39°20'08.972"N	80°48'15.938"W	924.87	22.259	7.13	0.13	-7.13	
7523.00	89.720	330.090	6483.92	747.80	938.82	301.88	1695666.97	14284352.84	39°20'09.792"N	80°48'16.552"W	986.16	17.826	0.96	-0.45	0.84	
7617.00	89.910	337.150	6484.23	841.57	1022.97	260.14	1695625.25	14284436.77	39°20'10.625"N	80°48'17.081"W	1055.53	14.268	7.51	0.20	7.51	
7712.00	90.180	340.700	6484.15	936.50	1111.61	225.99	1695591.10	14284525.36	39°20'11.502"N	80°48'17.513"W	1134.34	11.492	3.75	0.28	3.74	
7807.00	90.370	342.530	6483.70	1031.21	1201.75	198.03	1695561.15	14284615.47	39°20'12.393"N	80°48'17.892"W	1217.93	9.264	1.94	0.20	1.93	
7902.00	89.880	336.610	6483.49	1126.08	1290.74	162.88	1695528.02	14284704.42	39°20'13.274"N	80°48'18.312"W	1300.97	7.192	6.25	-0.52	-6.23	
7997.00	89.940	337.500	6483.64	1221.08	1378.22	125.84	1695491.00	14284791.87	39°20'14.139"N	80°48'18.781"W	1383.95	5.217	0.94	0.06	0.94	
8091.00	90.520	341.190	6483.28	1314.99	1466.16	92.69	1695457.86	14284879.78	39°20'15.009"N	80°48'19.200"W	1469.08	3.618	3.97	0.62	3.93	
8186.00	90.060	332.630	6482.78	1409.90	1553.47	55.47	1695420.66	14284967.05	39°20'15.873"N	80°48'19.671"W	1554.46	2.045	9.02	-0.48	-9.01	
8281.00	89.970	330.790	6482.75	1504.47	1637.12	10.46	1695375.65	14285050.66	39°20'16.700"N	80°48'20.242"W	1637.15	0.368	1.94	-0.03	-1.94	
8376.00	90.000	337.360	6482.78	1599.28	1722.51	-31.06	1695334.16	14285135.02	39°20'17.545"N	80°48'20.768"W	1722.79	358.967	6.92	0.03	6.92	
8471.00	90.120	339.860	6482.68	1694.25	1810.96	-85.71	1695299.53	14285224.44	39°20'18.420"N	80°48'21.207"W	1812.15	357.922	2.63	0.13	2.63	
8565.00	90.000	343.010	6482.58	1787.87	1900.06	-95.63	1695269.61	14285313.50	39°20'19.301"N	80°48'21.585"W	1902.46	357.119	3.35	-0.13	3.35	
8661.00	90.800	344.620	6481.91	1883.31	1992.25	-122.99	1695242.87	14285405.65	39°20'20.213"N	80°48'21.923"W	1996.00	356.485	1.87	0.83	1.88	
8756.00	90.150	340.570	6481.13	1976.87	2081.90	-150.55	1695214.72	14285495.28	39°20'21.100"N	80°48'22.279"W	2087.34	355.864	4.43	-0.69	-4.37	



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345
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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot #06
ANTERO RESOURCES CORPORATION	Addie Unit 1H
Area	Addie Unit 1H AWB
Field	
Facility	

WELLPATH DATA (169 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US M)	Grid North (US M)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
8851.00	90.090	337.980	6480.93	2072.80	2171.67	-184.56	1695180.72	1428585.00	39°20'21.988"N	80°48'22.710"W	2179.49	355.142	2.64	-0.06	-2.64	
8946.00	90.430	337.470	6480.50	2167.79	2259.58	-220.57	1695144.72	1428567.88	39°20'22.957"N	80°48'23.166"W	2270.32	354.425	0.85	0.36	-0.54	
9041.00	90.280	334.580	6479.91	2262.76	2346.37	-259.17	1695106.14	1428559.63	39°20'23.716"N	80°48'23.654"W	2360.64	353.697	3.05	-0.16	-3.04	
9136.00	89.910	331.620	6479.75	2357.51	2431.08	-302.15	1695063.18	1428544.31	39°20'24.554"N	80°48'24.199"W	2449.78	352.915	3.14	-0.39	-3.12	
9230.00	90.030	335.510	6478.80	2451.31	2515.23	-343.98	1695021.36	1428528.43	39°20'25.387"N	80°48'24.728"W	2538.65	352.213	4.14	0.13	4.14	
9325.00	90.000	333.980	6478.78	2546.23	2601.15	-384.51	1694980.85	1428601.43	39°20'26.237"N	80°48'25.243"W	2629.42	351.591	1.61	-0.03	-1.61	
9419.00	89.570	333.650	6480.13	2640.07	2686.50	-425.99	1694939.38	1428609.63	39°20'27.072"N	80°48'25.768"W	2719.08	350.986	0.58	-0.46	-0.35	
9514.00	89.850	337.640	6480.61	2735.01	2772.03	-465.16	1694900.23	1428616.13	39°20'27.928"N	80°48'26.285"W	2810.79	350.474	4.21	0.29	4.20	
9609.00	90.000	335.890	6480.73	2830.01	2859.32	-502.84	1694862.77	1428627.38	39°20'28.791"N	80°48'26.799"W	2903.17	350.030	1.85	0.16	-1.84	
9704.00	89.750	334.010	6480.94	2924.93	2945.38	-542.86	1694822.56	1428635.41	39°20'29.643"N	80°48'27.249"W	2994.99	349.557	2.00	-0.26	-1.98	
9798.00	89.540	337.350	6481.52	3018.89	3031.03	-581.57	1694783.87	1428644.02	39°20'30.490"N	80°48'27.739"W	3086.32	349.139	3.56	-0.22	3.55	
9894.00	90.030	337.940	6481.88	3114.88	3119.81	-618.08	1694747.37	1428653.77	39°20'31.368"N	80°48'28.202"W	3180.45	348.794	0.80	0.51	0.61	
9988.00	89.910	337.140	6481.93	3208.88	3206.88	-653.99	1694711.48	1428661.60	39°20'32.227"N	80°48'28.656"W	3272.69	348.473	0.86	-0.13	-0.85	
10083.00	90.060	336.400	6481.96	3303.88	3293.98	-691.46	1694674.02	1428670.67	39°20'33.091"N	80°48'29.131"W	3365.77	348.146	0.79	0.16	-0.78	
10179.00	90.090	342.290	6481.83	3399.76	3383.77	-725.31	1694640.19	1428679.82	39°20'33.979"N	80°48'29.559"W	3460.63	347.902	6.14	0.03	6.14	
10273.00	90.180	342.890	6481.61	3493.35	3473.41	-753.59	1694611.92	1428686.23	39°20'34.866"N	80°48'29.917"W	3554.22	347.759	0.44	0.10	0.43	
10368.00	90.180	336.040	6481.31	3588.23	3562.27	-787.05	1694578.47	1428697.05	39°20'35.745"N	80°48'30.340"W	3648.18	347.541	7.00	0.00	-7.00	
10463.00	90.120	335.450	6481.06	3683.17	3648.48	-826.93	1694538.60	1428706.123	39°20'36.596"N	80°48'30.846"W	3741.02	347.230	1.82	-0.06	-1.82	
10558.00	90.120	335.450	6480.87	3778.09	3734.50	-867.26	1694498.28	14287147.21	39°20'37.449"N	80°48'31.357"W	3833.86	346.926	1.20	0.00	1.20	
10653.00	90.060	336.940	6480.72	3873.08	3821.41	-905.61	1694459.98	14287234.09	39°20'38.308"N	80°48'31.842"W	3927.25	346.668	1.57	-0.06	1.57	
10748.00	90.180	339.020	6480.52	3968.06	3909.48	-941.22	1694424.36	14287322.12	39°20'39.180"N	80°48'32.283"W	4021.18	346.463	2.19	0.13	2.19	
10843.00	90.580	339.740	6479.89	4062.99	3998.39	-974.68	1694390.92	14287411.00	39°20'40.059"N	80°48'32.717"W	4115.47	346.300	0.87	0.42	0.76	
10938.00	90.090	338.040	6479.33	4157.94	4087.01	-1008.89	1694356.72	14287499.58	39°20'40.936"N	80°48'33.150"W	4209.69	346.134	1.86	-0.52	-1.79	
11033.00	90.090	338.840	6479.18	4252.81	4175.36	-1043.80	1694321.82	14287587.90	39°20'41.810"N	80°48'33.592"W	4303.85	345.984	0.84	0.00	0.64	
11223.00	90.250	336.020	6478.54	4442.89	4350.91	-1116.43	1694249.23	14287673.38	39°20'42.682"N	80°48'34.038"W	4398.01	345.798	1.29	0.14	-1.28	
11318.00	90.520	337.170	6477.90	4537.88	4438.09	-1154.16	1694211.51	14287763.09	39°20'43.546"N	80°48'34.511"W	4491.86	345.609	1.68	0.03	-1.68	
11412.00	90.340	332.010	6477.19	4631.75	4522.97	-1194.48	1694171.20	14287855.36	39°20'44.409"N	80°48'34.969"W	4585.71	345.423	1.24	0.28	1.21	
11507.00	90.220	332.380	6476.73	4726.40	4607.00	-1236.79	1694126.91	14288019.36	39°20'45.248"N	80°48'35.500"W	4678.03	345.206	5.49	-0.19	-5.49	
11601.00	90.860	334.410	6475.84	4820.19	4691.03	-1280.89	1694084.83	14288103.37	39°20'46.080"N	80°48'36.062"W	4770.64	344.948	0.41	-0.13	0.39	
									39°20'46.911"N	80°48'36.536"W	4862.78	344.728	2.26	0.68	2.16	



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Doddridge Co., WV	Well	Addie Unit 1H
Field	Doddridge	Wellbore	Addie Unit 1H AWB
Facility	Addie Pad		

WELLPATH DATA (169 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	ft	ft	°	°	ft	°	ft/100ft	ft/100ft	ft/100ft	
11696.00	90.620	330.950	6474.61	4914.88	4775.42	-1324.48	1694041.28	14288187.72	39°20'47.746"N	80°48'37.148"W	4955.69	344.498	3.65	-0.25	-3.64	
11791.00	90.060	331.230	6474.05	5009.34	4858.88	-1370.40	1693995.35	14288270.84	39°20'48.669"N	80°48'37.731"W	5048.15	344.248	0.66	-0.59	0.29	
11886.00	90.090	334.170	6473.93	5104.05	4942.99	-1413.97	1693951.90	14288355.22	39°20'49.404"N	80°48'38.283"W	5141.25	344.037	3.09	0.03	3.09	
11981.00	89.850	338.000	6473.98	5199.01	5028.81	-1452.47	1693913.31	14288442.01	39°20'50.263"N	80°48'38.771"W	5235.33	343.893	4.04	-0.26	4.03	
12076.00	90.280	343.030	6473.87	5293.82	5119.34	-1484.15	1693868.65	14288531.51	39°20'51.149"N	80°48'39.172"W	5330.14	343.833	5.31	0.45	5.29	
12171.00	91.020	342.930	6472.79	5388.32	5210.18	-1511.96	1693853.85	14288622.30	39°20'52.047"N	80°48'39.523"W	5425.12	343.818	0.79	0.78	-0.11	
12266.00	90.090	336.880	6471.87	5483.16	5298.29	-1544.73	1693821.09	14288711.38	39°20'53.928"N	80°48'39.938"W	5519.84	343.749	6.65	-0.98	-6.58	
12361.00	90.000	334.860	6471.79	5578.13	5385.91	-1593.72	1693782.12	14288797.97	39°20'53.785"N	80°48'40.432"W	5613.93	343.614	1.92	-0.09	-1.92	
12456.00	90.090	336.060	6471.72	5672.09	5471.42	-1622.76	1693743.09	14288883.44	39°20'54.831"N	80°48'40.927"W	5707.00	343.480	1.28	0.10	1.28	
12550.00	90.000	337.440	6471.65	5767.09	5558.71	-1660.26	1693705.61	14288970.68	39°20'55.495"N	80°48'41.402"W	5801.35	343.370	1.46	-0.09	1.45	
12645.00	90.490	339.060	6471.24	5862.06	5646.94	-1695.46	1693670.42	14289058.88	39°20'56.368"N	80°48'41.847"W	5895.97	343.288	1.78	0.52	1.71	
12740.00	90.520	335.670	6470.40	5957.05	5734.60	-1732.02	1693633.88	14289146.52	39°20'57.235"N	80°48'42.310"W	5990.46	343.194	3.57	0.03	-3.57	
12835.00	89.850	336.800	6470.10	6052.03	5821.55	-1770.30	1693595.61	14289233.43	39°20'58.095"N	80°48'42.795"W	6084.77	343.086	1.38	-0.71	1.19	
12931.00	90.180	344.180	6470.07	6147.80	5911.97	-1802.34	1693563.59	14289323.82	39°20'58.989"N	80°48'43.201"W	6180.60	343.046	7.70	0.34	7.69	
13025.00	90.180	344.490	6469.77	6241.06	6002.48	-1827.72	1693538.22	14289414.29	39°20'59.884"N	80°48'43.521"W	6274.58	343.065	0.33	0.00	0.33	
13120.00	90.460	341.490	6469.24	6336.55	6093.31	-1855.51	1693510.44	14289505.08	39°21'00.783"N	80°48'43.873"W	6369.57	343.064	3.17	0.29	-3.16	
13215.00	90.220	339.440	6468.67	6431.38	6183.78	-1887.61	1693478.35	14289595.92	39°21'01.678"N	80°48'44.279"W	6465.46	343.025	2.15	-0.25	-2.14	
13311.00	90.180	338.010	6468.34	6526.35	6272.30	-1922.07	1693443.90	14289684.00	39°21'02.553"N	80°48'44.715"W	6560.19	342.963	1.51	-0.04	-1.51	
13345.00	90.180	338.010	6468.24	6590.34	6303.83	-1934.81	1693431.17	14289715.92	39°21'02.865"N	80°48'44.877"W	6594.07	342.937	0.00	0.00	0.00	Projected MD at TD: 13345'



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Doddridge Co., WV	Well	Addie Unit 1H
Field	Doddridge	Wellbore	Addie Unit 1H AWB
Facility	Addie Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Addie Unit 1H AWB Ref Wellpath: Addie Unit 1H AWP Proj: 13345'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
20in Conductor	24.50	104.50	80.00	24.50	104.50	0.00	0.00	-0.02	0.17
17.5in Open Hole	104.50	502.20	397.70	104.50	502.19	-0.02	0.17	1.87	2.05
13.375in Casing Surface	24.50	502.20	477.70	24.50	502.19	0.00	0.00	1.87	2.05
12.25in Open Hole	502.20	2493.70	1991.50	502.19	2492.25	1.87	2.05	-32.90	4.11
9.625in Casing Intermediate	24.50	2493.70	2469.20	24.50	2492.25	0.00	0.00	-32.90	4.11
8.75in Open Hole	2493.70	6461.50	3967.80	2492.25	6318.34	-32.90	4.11	-40.22	568.62
8.5in Open Hole	6461.50	13345.00	6883.50	6318.34	6468.24	-40.22	568.62	6303.83	-1934.81
5.5in Casing Production	24.50	13345.00	13320.50	24.50	6468.24	0.00	0.00	6303.83	-1934.81

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Addie Unit 1H POE - Rev-2	6442.00	168.83	533.02	1695698.02	14283562.97	39°20'02.177"N	80°48'13.632"W	point
Addie Unit 1H BHL - Rev-2	6482.00	6301.96	-1946.53	1693419.45	14289713.55	39°21'02.846"N	80°48'45.026"W	point
Addie Unit 1H LP - Rev-1	6482.00	415.96	480.04	1695645.05	14283830.00	39°20'04.621"N	80°48'14.299"W	point



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot #06	Addie Unit 1H
Area	Doddridge Co., WV	Well	Addie Unit 1H
Field	Doddridge	Wellbore	Addie Unit 1H AWB
Facility	Addie Pad		

WELLPATH COMPOSITION - Ref Wellbore: Addie Unit 1H AWB Ref Wellpath: Addie Unit 1H AWP Proj: 13345'			
Start MD	End MD	Log Name/Comment	Wellbore
		Positional Uncertainty Model	
24.50	483.50	Gyrodata standard - Drop gyro or Multi-shot	Addie Unit 1H AWB
483.50	906.50	Gyrodata standard - Drop gyro or Multi-shot	Addie Unit 1H AWB
906.50	2409.50	ISCWSA MWD, Rev. 4 (Standard)	Addie Unit 1H AWB
2409.50	6388.50	ISCWSA MWD, Rev. 4 (Standard)	Addie Unit 1H AWB
6388.50	13311.00	BH/AutoTrak Curve (Short)	Addie Unit 1H AWB
13311.00	13345.00	Blind Drilling (std)	Addie Unit 1H AWB
		01 Gyrodata MS Gyro <17-1/2">(100-474)	Addie Unit 1H AWB
		02 Gyrodata MS Gyro <12-1/4">(474)(531-987)	Addie Unit 1H AWB
		03 WFT EM <12-1/4">(887)(982-2400)	Addie Unit 1H AWB
		04 WFT EM <8-3/4">(2400)(2500-6379)	Addie Unit 1H AWB
		05 BH ATCurve <8-1/2">(6388.5)(6439-13311)	Addie Unit 1H AWB
		Protection to bit	Addie Unit 1H AWB



Actual Wellpath Report

Addie Unit 1H AWP Proj: 13345'
Page 10 of 10



REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Doddridge Co., WV	Well	Addie Unit 1H
Field	Doddridge	Wellbore	Addie Unit 1H AWB
Facility	Addie Pad		

COMMENTS

Wellpath general comments
 API: 47-017-06764-0000
 BHI Job #: 8863555
 Rig: Frontier 22
 Duration: 11/13/2017-11/15/2017
 Gyrodatta MS Gyro <17-1/2"> (100'-474')
 Gyrodatta MS Gyro <12-1/4"> (474')(531'-897')
 WFT EM <12-1/4"> (897')(982'-2400')
 WFT EM <8-3/4"> (2400')(2500'-6379')
 BHI AT Curve <8-1/2"> (6388.5')(6439'-13345')
 Middlesex: 6353' MD
 Burkett: 6559' MD
 Tully: 6617' MD
 Hamilton: 6703' MD
 Marcellus POE: 6730' MD
 Projected MD at TD: 13345'

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/25/2018
Job End Date:	3/12/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06764-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Addie 1H
Latitude:	39.33348000
Longitude:	-80.80567000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,487
Total Base Water Volume (gal):	14,458,416
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
Water	Ascent	Carrier/Base Fluid	Water	7732-18-5	100.00000	87.75055	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	11.99165	None
KWG-111LS	Keane	Gel	Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.02696	None
			Guar gum	9000-30-0	55.00000	0.02696	None
KFR-16FW	Keane	Friction Reducer	Water	7732-18-5	60.00000	0.03073	None
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01024	None
			oleic acid diethanolamide	93-83-4	1.50000	0.00077	None
			ammonium chloride	12125-02-9	1.50000	0.00077	None
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00051	None
Hydrochloric Acid (15%)	Keane	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.02001	None
MBC-516W	Keane	Biocide					

			Water	7732-18-5	56.70000	0.0051	None
			Glutaral	111-30-8	28.70000	0.00240	None
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00072	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00048	None
			ethonal	64-17-5	2.80000	0.00025	None
KSI-19	Keane	Scale Inhibitor	Methanol	67-56-1	30.00000	0.00413	None
KWBO-2	Keane	Breaker	Sodium persulfate	7775-27-1	99.00000	0.00097	None
KAI-12	Keane	Acid Inhibitor	Ethylene glycol	107-21-1	40.00000	0.00004	None
			dipropylene glycol, monomethyl ether	34590-94-8	20.00000	0.00002	None
			Cinnamaldehyde	104-55-2	10.00000	0.00001	None
			formic acid	64-18-6	10.00000	0.00001	None
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00001	None
			Ethoxylated alcohol	68131-39-5	10.00000	0.00001	None
			soproyl alcohol	67-63-0	5.00000	0.00001	None
KFEAC-30	Keane	Iron Control	Citric acid	77-92-9	30.00000	0.00009	None
			Acetic acid	64-19-7	5.00000	0.00002	None
(50) ingredients shown above are subject to 29 CFR 19.10.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.02696	
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01024	
			Glutaral	111-30-8	26.70000	0.00240	
			oleic acid diethanolamide	93-83-4	1.50000	0.00077	
			ammonium chloride	12125-02-9	1.50000	0.00077	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00072	
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00051	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00048	
			ethonal	64-17-5	2.80000	0.00025	
			Citric acid	77-92-9	30.00000	0.00009	
			dipropylene glycol, monomethyl ether	34590-94-8	20.00000	0.00002	
			Ethoxylated alcohol	68131-39-5	10.00000	0.00001	
			formic acid	64-18-6	10.00000	0.00001	
			Cinnamaldehyde	104-55-2	10.00000	0.00001	
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00001	

			isopropyl alcohol	67-63-0	5.00000	0.00001
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* Total Water Volume sources may include fresh water, produced water, and/or 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(f) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Discharge Monitoring Report
Oil and Gas General Permit

Company Name: Antero Resources Corporation
API No: 47-017-06764 County: Doddridge
District: West Union Well No: Addie Unit 1H
Farm Name: Antero Resources Corporation
Discharge Date/s From: (MMDDYY) 7/30/18 To: (MMDDYY) 8/29/18
Discharge Times. From: 0:00 To: 24:00
Total Volume to be Disposed from this facility (gallons): 1,148,712
Disposal Option(s) Utilized (write volumes in gallons):

- (1) Land Application: _____ (Include a topographical map of the Area.)
(2) UIC: 505,004 Permit No. 340523821, 3416729543, 3416729464, 3416729445, 4708509721,
(3) Offsite Disposal: 1,811 Site Location: Mud Masters
(4) Reuse: 641,897 Alternate Permit Number: _____
(5) Centralized Facility: _____ Permit No. _____
(6) Other method: _____ (Include an explanation)

Follow Instructions below to determine your treatment category:

Optional Pretreatment test: n/a Cl- mg/l n/a DO mg/l

1. Do you have permission to use expedited treatment from the Director or his representative?
(Y/N) n/a If yes, who? _____ and place a four (4) on line 7.
If not go to line 2
2. Was Frac Fluid or flowback put into the pit? (Y/N) n/a If yes, go to line 5. If not, go to line 3.
3. Do you have a chloride value pretreatment (see above)? (Y/N) n/a If yes, go to line 4
If not, go to line 5.
4. Is the Chloride level less than 5000 mg/l? (Y/N) n/a If yes, then enter a one (1) on line 7.
5. Do you have a pretreatment value for DO? (See above) (Y/N) n/a If yes, go to line 6
If not, enter a three (3) in line 7.
6. Is the DO level greater than 2.5 mg/l? (Y/N) n/a If yes, enter a two (2) on line 7. If not, enter a three (3) on line 7.
7. n/a is the category of your pit. Use the Appropriate section.
8. Comments on Pit condition: n/a No pit on site.

Name of Principal Exec. Officer: Gretchen Kohler

Title of Officer: Senior Environmental and Regulatory Manager

Date Completed: 9/17/18

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Signature of a Principal Exec. Officer or Authorized agent.

Category 1
Sampling Results

API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	5	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl	5,000	_____	5,000	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
Total Al***		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Disposal Area		_____	Monitor	_____	Acres

*** Al is only reported if the pH is above 9.0

Category 2
Sampling Results

API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	10	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
Total Al***		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Disposal Area		_____	Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

** Include a description of your aeration technique.

Aeration Code: _____

*** Al is only reported if the pH is above 9.0

Category 3
Sampling Results

API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	20	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
Total Al***		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Disposal Area		_____	Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

** Include a description of your aeration technique.

Aeration Code: _____

*** Al is only reported if the pH is above 9.0.

Category 4
Sampling Results

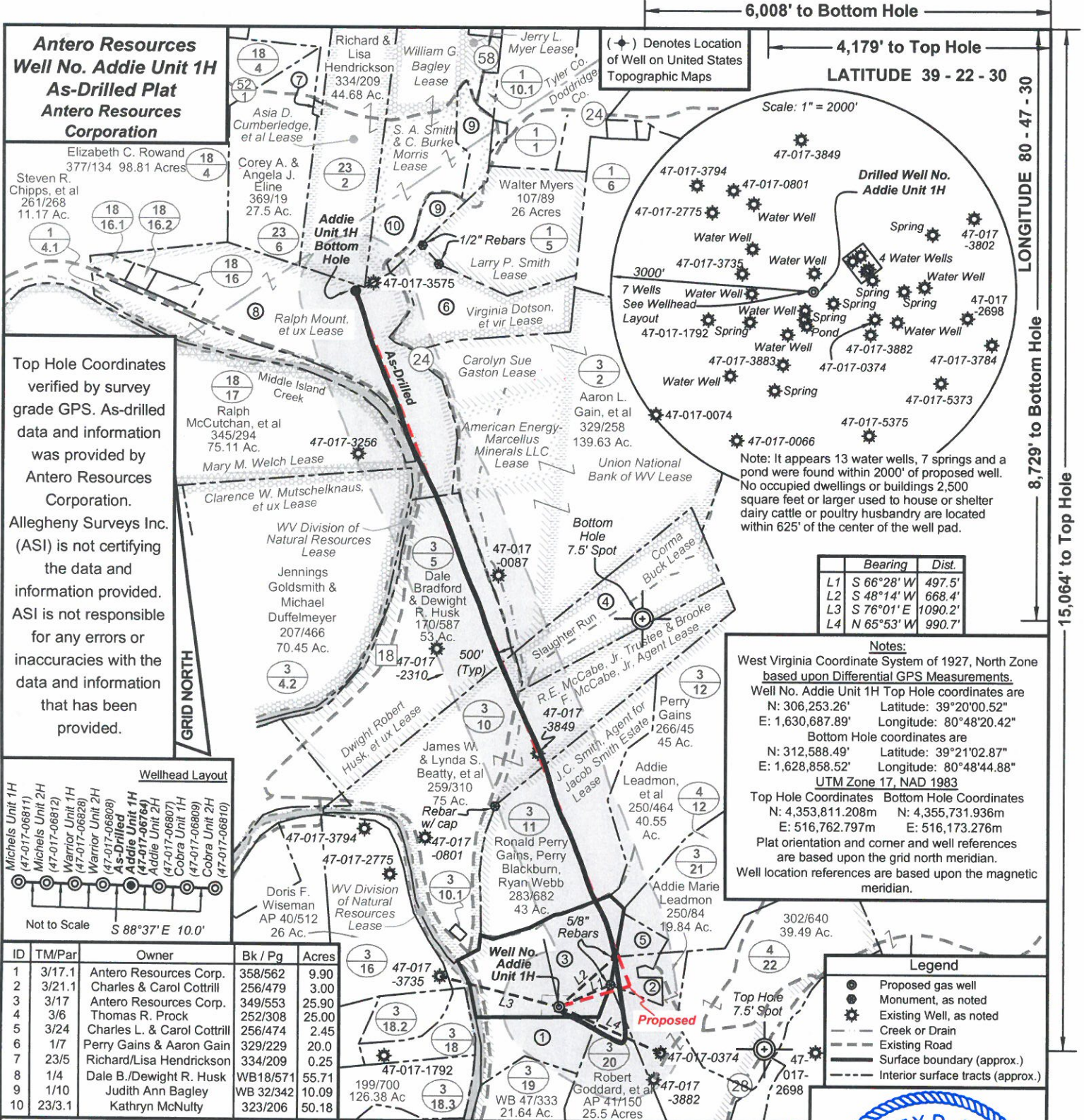
API No: _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	1	_____	N/A	N/A	Days
Fe	Monitor	_____	Monitor	_____	mg/l
D.O.	Monitor	_____	Monitor	_____	mg/l
Settleable Sol.	Monitor	_____	Monitor	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Activated Carbon (0.175)		_____	N/A	N/A	lb/B1
Date Site Reclaimed	N/A	N/A			10 days from dis.
Disposal Area		_____	Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

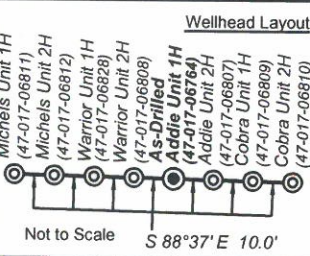


Antero Resources
Well No. Addie Unit 1H
As-Drilled Plat
Antero Resources
Corporation

Elizabeth C. Rowand
 377/134 98.81 Acres

Steven R. Chipps, et al
 261/268
 11.17 Ac.

Top Hole Coordinates verified by survey grade GPS. 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.



ID	TM/Par	Owner	Bk / Pg	Acres
1	3/17.1	Antero Resources Corp.	358/562	9.90
2	3/21.1	Charles & Carol Cottrill	256/479	3.00
3	3/17	Antero Resources Corp.	349/553	25.90
4	3/6	Thomas R. Prock	252/308	25.00
5	3/24	Charles L. & Carol Cottrill	256/474	2.45
6	1/7	Perry Gains & Aaron Gain	329/229	20.0
7	23/5	Richard/Lisa Hendrickson	334/209	0.25
8	1/4	Dale B./Dewight R. Husk	WB18/571	55.71
9	1/10	Judith Ann Bagley	WB 32/342	10.09
10	23/3.1	Kathryn McNulty	323/206	50.18

Richard & Lisa Hendrickson 334/209 44.68 Ac.

William G. Bagley Lease

Jerry L. Myer Lease

Asia D. Cumberledge, et al Lease

S. A. Smith & C. Burke Morris Lease

Walter Myers 107/89 26 Acres

Larry P. Smith Lease

Virginia Dotson, et vir Lease

Carolyn Sue Gaston Lease

American Energy-Marcellus Minerals LLC Lease

Union National Bank of WV Lease

Middle Island Creek

Ralph McCutchan, et al 345/294 75.11 Ac.

Mary M. Welch Lease

Clarence W. Mutschelknaus, et ux Lease

WV Division of Natural Resources Lease

Jennings Goldsmith & Michael Duffelmeyer 207/466 70.45 Ac.

Dale Bradford & Dewight R. Husk 170/587 53 Ac.

500' (Typ)

Slaughter Run

R.E. McCabe, Jr. Trustee & Brooke F. McCabe, Jr. Agent Lease

J.C. Smith Agent for Jacob Smith Estate

Perry Gains 1266/45 45 Ac.

Addie Leadmon, et al 250/464 40.55 Ac.

Ronald Perry Gains, Perry Blackburn, Ryan Webb 283/682 43 Ac.

Addie Marie Leadmon 250/84 19.84 Ac.

Doris F. Wiseman AP 40/512 26 Ac.

WV Division of Natural Resources Lease

Rebar w/ cap

5/8" Rebars

Robert Perry Goddard, et al AP 41/150 25.5 Acres

302/640 39.49 Ac.

6,008' to Bottom Hole

4,179' to Top Hole

LATITUDE 39 - 22 - 30

LONGITUDE 80 - 47 - 30

Scale: 1" = 2000'

Note: It appears 13 water wells, 7 springs and a pond 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.

Bearing	Dist.
L1 S 66°28' W	497.5'
L2 S 48°14' W	668.4'
L3 S 76°01' E	1090.2'
L4 N 65°53' W	990.7'

Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Addie Unit 1H Top Hole coordinates are
 N: 306,253.26' Latitude: 39°20'00.52"
 E: 1,630,687.89' Longitude: 80°48'20.42"
 Bottom Hole coordinates are
 N: 312,588.49' Latitude: 39°21'02.87"
 E: 1,628,858.52' Longitude: 80°48'44.88"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,353,811.208m N: 4,355,731.936m
 E: 516,762.797m E: 516,173.276m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.

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. 2267



FILE NO: 55-30-WU-15
 DRAWING NO: Addie 1H Well Plat As-Drilled
 SCALE: 1" = 1200'
 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: June 6 20 18
 OPERATOR'S WELL NO. Addie Unit 1H
 API WELL NO
 47 - 017 - 06764
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: 891' As-Drilled WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
 DISTRICT: West Union Ralph Mount, et ux COUNTY: Doddridge
 SURFACE OWNER: Antero Resources Corp. J. C. Smith, Agent for Jacob Smith Estate
 Dwight Robert Husk, et ux ACREAGE: 25.9
 ROYALTY OWNER: R. E. McCabe, Jr. Trustee & Brooke F. McCabe, Jr. Agent LEASE NO: ACREAGE: 53; 290; 75; 68
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,470' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 13,345' 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