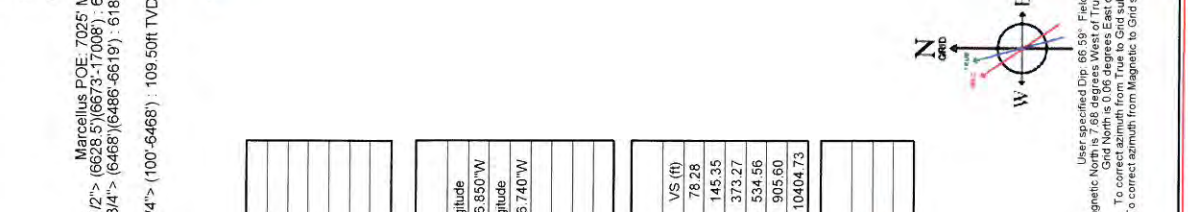
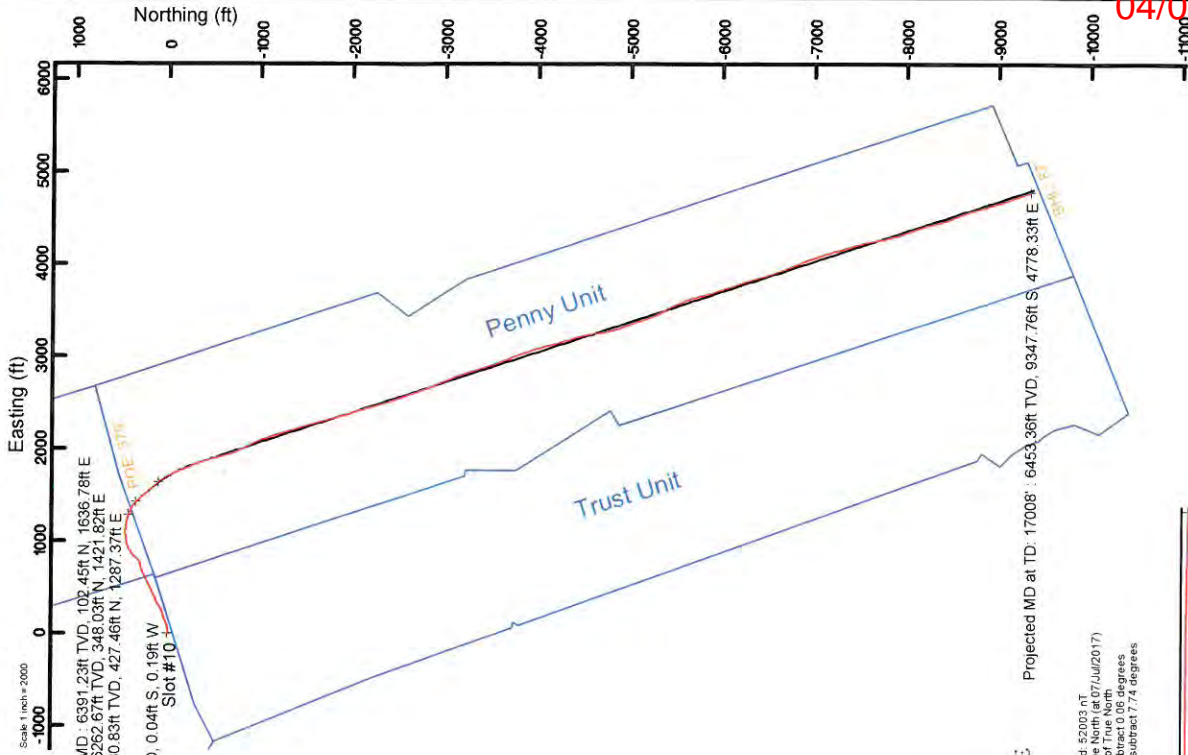




ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
 Field: Ritchie
 Facility: Mulvay Pad
 Slot: Slot #10
 Well: Penny Unit 2H
 Wellbore: Penny Unit 2H PWB



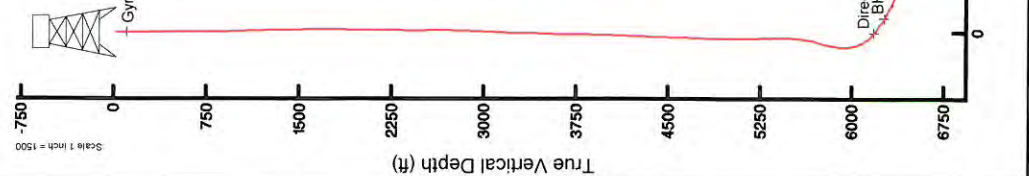
API: 47-085-10299-0000
 BHI Job #: 8651747
 Rig: Frontier 22
 Duration: 07/12/2017-07/15/2017

Plot reference wellpath is Penny Unit 2H PWB Rev-A.0	Grid System: MD27/UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	* = Wellpath was transformed from a different geoid/bc datum
Measured depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Frontier 22 (RKB) to Mean Sea Level: 1053.5 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #10): -1029 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: delaset on 2017-07-21
	Database: WA_MPL_EasternUS_Defn

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Mulvay Pad	1668944.745	14279379.196	80°53'56.850"W
Slot	Local N (ft)	Local E (ft)	Local N (ft)
Slot #10	-39.45	8.69	39°19'21.050"N
Comment:	1668953.430	14279339.763	39°19'20.660"N
Frontier 22 (RKB) to Mud line (At Slot: Slot #10)			80°53'56.740"W
Mean Sea Level to Mud line (At Slot: Slot #10)			24.5ft
Frontier 22 (RKB) to Mean Sea Level			-1029ft
			1053.5ft

Well Profile Data					
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)
Tie On	6628.50	61.780	127.020	6241.49	373.45
Proj. To Bottom	6715.50	61.250	140.000	6283.12	320.98
POE	6981.22	74.490	140.001	6383.00	132.84
Landing PL	7151.71	90.000	150.668	6406.00	-5.64
On Azimuth	7525.12	90.000	161.870	6406.00	-346.93
BHL	17024.25	90.000	161.870	6406.00	-9374.46
					4806.57
					0.00
					10404.73

Well Data		
Slot	Well	Wellbore
Slot #10	Penny Unit 2H	Penny Unit 2H AWP
Slot #10	Penny Unit 2H	Penny Unit 2H PWB
		Penny Unit 2H AWP Proj: 17008'
		Penny Unit 2H PWB Rev-A.0



Directional ONE MWD <8-1/2"> (6465)(6465:661°) : 63.71° Inc. 6465.50ft MD, 6160.83ft TVD, -5.64ft VS
 BHI A.C. <8-1/2"> (6623)(6623:6623°) : 63.71° Inc. 6623.50ft MD, 6160.83ft TVD, -5.64ft VS
 Marcellus POE: 7025 MD, 77.41° Inc. 7025.00ft MD, 6397.23ft TVD, 411.36ft VS

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Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot #10	
Area	Ritchie County, WV	Well	Penny Unit 2H
Field	Ritchie	Wellbore	Penny Unit 2H AWB
Facility	Mulvay Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	21/Jul/2017 at 13:09
Convergence at slot	0.06° East	Database/Source file	WA_MPL_EasternUS_Defn/Penny_Unit_2H_AWP_Proj_17008_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-39.45	8.69	1668953.43	14279339.76	39°19'20.660"N	80°53'56.740"W
Facility Reference Pt			1668944.75	14279379.20	39°19'21.050"N	80°53'56.850"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
Horizontal Reference Pt	Slot	24.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Mean Sea Level
MD Reference Pt	Frontier 22 (RKB)	24.50ft
Field Vertical Reference	Mean Sea Level	N 0.00, E 0.00 ft
		161.87°



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Ritchie County, WV	Well	Penny Unit 2H
Field	Ritchie	Wellbore	Penny Unit 2H AWB
Facility	Mulway Pad		

WELLPATH DATA (191 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 (°/100ft)	Comments
0.00H	0.000	257.060	0.00	0.00	0.00	0.00	1668953.43	14279339.76	39°19'20.660"N	80°53'56.740"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	257.060	24.50	0.00	0.00	0.00	1668953.43	14279339.76	39°19'20.660"N	80°53'56.740"W	0.00	0.000	0.00	0.00	0.00	
109.50	0.260	257.060	109.50	-0.02	-0.04	-0.19	1668953.24	14279339.72	39°19'20.660"N	80°53'56.742"W	0.19	257.060	0.31	0.31	-121.11	Syrodada MS Gyro <8.3/4"> (100'-6468')
209.50	0.120	244.810	209.50	-0.03	-0.14	-0.50	1668952.93	14279339.62	39°19'20.659"N	80°53'56.748"W	0.52	254.823	0.14	0.14	-0.14	
309.50	0.100	200.950	309.50	0.06	-0.26	-0.63	1668952.80	14279339.50	39°19'20.657"N	80°53'56.748"W	0.68	247.209	0.08	-0.02	-43.86	
409.50	0.210	140.230	409.50	0.29	-0.49	-0.54	1668952.89	14279339.28	39°19'20.655"N	80°53'56.747"W	0.73	228.154	0.18	0.11	-60.72	
509.50	0.220	138.860	509.50	0.64	-0.77	-0.30	1668953.13	14279338.99	39°19'20.652"N	80°53'56.744"W	0.83	201.243	0.01	0.01	-1.35	
609.50	0.370	143.460	609.50	1.12	-1.18	0.02	1668953.45	14279338.59	39°19'20.648"N	80°53'56.740"W	1.18	179.114	0.15	0.15	4.58	
709.50	0.490	143.620	709.49	1.84	-1.78	0.46	1668953.89	14279337.98	39°19'20.642"N	80°53'56.734"W	1.84	165.389	0.12	0.12	0.16	
809.50	1.590	105.060	809.48	3.00	-2.48	2.06	1668955.49	14279337.28	39°19'20.635"N	80°53'56.714"W	3.23	140.376	1.24	1.10	-38.56	
909.50	4.320	91.750	909.34	5.04	-2.96	7.16	1668960.59	14279336.80	39°19'20.631"N	80°53'56.649"W	7.75	112.457	2.80	2.73	-13.31	
1009.50	7.050	88.180	1008.83	8.05	-2.88	17.06	1668970.49	14279336.88	39°19'20.631"N	80°53'56.523"W	17.30	99.583	2.75	2.73	-3.57	
1109.50	8.620	87.150	1107.90	11.75	-2.31	30.68	1668984.10	14279337.45	39°19'20.637"N	80°53'56.350"W	30.77	94.311	1.58	1.57	-1.03	
1209.50	8.430	83.520	1206.79	15.20	-1.11	45.45	1668998.86	14279338.65	39°19'20.648"N	80°53'56.162"W	45.46	91.403	0.57	-0.19	-3.63	
1309.50	8.090	78.960	1305.76	17.55	1.06	59.64	1669013.05	14279340.82	39°19'20.670"N	80°53'55.981"W	59.65	88.980	0.74	-0.34	-4.56	
1409.50	8.150	77.360	1404.75	19.10	3.96	73.46	1669026.86	14279343.72	39°19'20.698"N	80°53'55.805"W	73.57	86.914	0.23	0.06	-1.60	
1509.50	8.320	76.100	1503.72	20.31	7.25	87.40	1669040.80	14279347.01	39°19'20.731"N	80°53'55.628"W	87.70	85.259	0.25	0.17	-1.26	
1609.50	8.160	74.120	1602.69	21.12	10.93	101.25	1669054.84	14279350.69	39°19'20.767"N	80°53'55.451"W	101.84	83.839	0.33	-0.16	-1.98	
1709.50	7.890	71.450	1701.71	21.35	15.05	114.58	1669067.97	14279354.81	39°19'20.808"N	80°53'55.282"W	115.57	82.515	0.46	-0.27	-2.67	
1809.50	7.870	70.010	1800.77	21.08	19.58	127.53	1669080.90	14279358.33	39°19'20.852"N	80°53'55.117"W	129.02	81.272	0.20	-0.02	-1.44	
1909.50	8.310	68.070	1899.77	20.38	24.62	140.66	1669094.04	14279364.37	39°19'20.902"N	80°53'54.950"W	142.80	80.073	0.52	0.44	-1.94	
2009.50	8.830	67.300	1998.66	19.28	30.28	154.45	1669107.82	14279370.03	39°19'20.958"N	80°53'54.774"W	157.39	78.908	0.53	0.52	-0.77	
2109.50	7.830	69.820	2097.60	18.43	35.59	167.92	1669121.28	14279375.34	39°19'21.010"N	80°53'54.603"W	171.65	78.033	1.06	-1.00	2.52	
2209.50	7.330	66.810	2196.73	17.62	40.45	180.18	1669133.54	14279380.20	39°19'21.058"N	80°53'54.447"W	184.66	77.346	0.64	-0.50	-3.01	
2309.50	7.480	64.790	2295.89	16.26	45.74	191.93	1669145.29	14279385.48	39°19'21.110"N	80°53'54.297"W	197.31	76.597	0.30	0.15	-2.02	
2409.50	7.830	69.690	2395.00	15.20	50.87	204.21	1669157.56	14279390.62	39°19'21.161"N	80°53'54.141"W	210.45	76.011	0.74	0.35	4.90	
2509.50	7.750	74.620	2494.08	15.26	55.03	217.10	1669170.44	14279394.77	39°19'21.201"N	80°53'53.977"W	223.96	75.777	0.67	-0.08	4.93	
2609.50	7.350	76.990	2593.21	16.16	58.25	229.83	1669183.17	14279397.99	39°19'21.233"N	80°53'53.815"W	237.10	75.777	0.51	-0.40	2.37	
2709.50	8.420	68.230	2692.27	16.26	62.41	242.87	1669196.20	14279402.15	39°19'21.274"N	80°53'53.649"W	250.76	75.588	1.61	1.07	-8.76	
2809.50	10.610	62.830	2790.89	14.35	69.33	257.86	1669211.18	14279409.07	39°19'21.342"N	80°53'53.458"W	267.01	74.951	2.36	2.19	-5.40	



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'

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REFERENCE WELLPATH IDENTIFICATION		Slot #10
Operator	ANTERO RESOURCES CORPORATION	Penny Unit 2H
Area	Ritchie County, WV	Penny Unit 2H AWB
Field	Ritchie	
Facility	Mulvay Pad	

WELLPATH DATA (191 stations)																
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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
2909.50	12.340	60.730	2888.89	10.84	78.76	275.37	1669228.69	14279418.49	39°19'21.435"N	80°53'53.235"W	286.41	74.039	1.78	1.73	-2.10	
3009.50	12.680	57.860	2986.51	6.12	89.82	293.98	1669247.30	14279429.55	39°19'21.545"N	80°53'52.998"W	307.40	73.010	0.71	0.34	-2.87	
3109.50	13.210	56.340	3083.97	0.40	101.99	312.79	1669266.09	14279441.72	39°19'21.665"N	80°53'52.758"W	329.00	71.940	0.63	0.53	-1.52	
3209.50	13.730	63.300	3181.23	-4.43	113.66	332.90	1669286.20	14279453.38	39°19'21.780"N	80°53'52.502"W	351.77	71.149	1.70	0.52	6.96	
3309.50	14.980	68.430	3278.11	-6.97	123.75	355.53	1669308.81	14279463.46	39°19'21.879"N	80°53'52.214"W	376.45	70.809	1.78	1.25	5.13	
3409.50	15.010	69.220	3374.70	-8.35	133.09	379.65	1669332.93	14279472.80	39°19'21.971"N	80°53'51.907"W	402.30	70.681	0.21	0.03	0.79	
3509.50	13.590	63.320	3471.61	-10.69	142.96	402.26	1669355.53	14279482.67	39°19'22.069"N	80°53'51.619"W	426.91	70.435	2.03	-1.42	-5.90	
3609.50	12.340	57.750	3569.06	-15.05	153.94	421.79	1669375.06	14279493.64	39°19'22.177"N	80°53'51.371"W	449.01	69.950	1.77	-1.25	-5.57	
3709.50	13.200	68.650	3666.60	-18.29	163.80	441.47	1669394.72	14279503.50	39°19'22.274"N	80°53'51.120"W	470.88	69.643	2.55	0.86	10.90	
3809.50	12.560	72.290	3764.08	-18.86	171.27	462.48	1669415.72	14279510.96	39°19'22.348"N	80°53'50.853"W	493.17	69.679	1.02	-0.62	3.64	
3909.50	10.260	68.020	3862.10	-19.37	177.92	481.11	1669434.35	14279517.61	39°19'22.413"N	80°53'50.616"W	512.96	69.706	2.47	-2.32	-4.27	
4009.50	11.070	63.570	3960.37	-21.36	185.52	497.97	1669451.20	14279525.21	39°19'22.488"N	80°53'50.401"W	531.41	69.567	1.15	0.81	-4.45	
4109.50	12.410	60.870	4058.28	-24.79	195.03	515.95	1669469.18	14279534.71	39°19'22.582"N	80°53'50.172"W	551.58	69.294	1.45	1.34	-2.70	
4209.50	11.760	58.700	4156.06	-29.17	205.55	534.05	1669487.26	14279545.23	39°19'22.686"N	80°53'49.942"W	572.24	68.948	0.79	-0.65	-2.17	
4309.50	11.730	64.240	4253.97	-32.84	215.27	551.91	1669505.12	14279554.94	39°19'22.781"N	80°53'49.714"W	592.40	68.692	1.13	-0.03	5.54	
4409.50	11.610	65.070	4351.90	-35.38	223.92	570.19	1669523.39	14279563.60	39°19'22.867"N	80°53'49.481"W	612.58	68.559	0.21	-0.12	0.83	
4509.50	10.790	61.410	4450.00	-38.27	232.65	587.53	1669540.73	14279572.31	39°19'22.953"N	80°53'49.261"W	631.92	68.398	1.08	-0.82	-3.66	
4609.50	12.870	67.420	4547.87	-40.83	241.40	606.04	1669559.23	14279581.07	39°19'23.039"N	80°53'49.025"W	652.35	68.281	2.41	2.08	6.01	
4709.50	12.900	63.510	4645.36	-43.32	250.66	626.31	1669579.49	14279590.32	39°19'23.130"N	80°53'48.767"W	674.61	68.188	0.87	0.03	-3.91	
4809.50	12.680	59.970	4742.88	-47.21	261.13	645.81	1669598.88	14279600.79	39°19'23.234"N	80°53'48.519"W	696.60	67.984	0.81	-0.22	-3.64	
4909.50	13.030	69.410	4840.38	-49.95	270.59	665.86	1669619.03	14279610.24	39°19'23.327"N	80°53'48.263"W	718.74	67.885	2.13	0.35	9.44	
5009.50	12.830	66.340	4937.85	-51.51	279.01	686.59	1669639.74	14279618.66	39°19'23.410"N	80°53'48.000"W	741.11	67.885	0.72	-0.20	-3.07	
5109.50	11.910	68.700	5035.53	-53.15	287.21	706.37	1669659.52	14279626.86	39°19'23.491"N	80°53'47.748"W	762.53	67.873	1.05	-0.92	2.36	
5209.50	10.550	79.170	5133.62	-52.56	292.68	724.98	1669678.12	14279632.33	39°19'23.545"N	80°53'47.511"W	781.83	68.016	2.45	-1.36	10.47	
5309.50	9.500	86.510	5232.09	-49.31	294.90	742.21	1669696.94	14279634.55	39°19'23.566"N	80°53'47.292"W	798.65	68.330	1.65	-1.05	7.34	
5409.50	7.930	73.360	5330.95	-47.04	297.38	757.06	1669710.18	14279637.03	39°19'23.591"N	80°53'47.103"W	813.37	68.554	2.53	-1.57	-13.15	
5509.50	8.370	70.940	5429.94	-46.98	301.73	770.55	1669723.67	14279641.38	39°19'23.634"N	80°53'46.931"W	827.52	68.615	0.56	0.44	-2.42	
5609.50	11.450	54.900	5528.45	-50.00	309.82	785.55	1669738.67	14279649.46	39°19'23.713"N	80°53'46.740"W	844.44	68.476	4.11	3.08	-16.04	
5709.50	20.190	39.560	5624.61	-62.15	328.88	804.71	1669757.82	14279668.51	39°19'23.902"N	80°53'46.496"W	869.32	67.771	9.62	8.74	-15.34	
5809.50	27.410	40.660	5716.05	-83.32	359.68	830.73	1669783.83	14279699.30	39°19'24.206"N	80°53'46.164"W	905.26	66.589	7.23	7.22	-1.10	



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'
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04/05/2019

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Ritchie County, WV	Well	Penny Unit 2H
Field	Ritchie	Wellbore	Penny Unit 2H AWB
Facility	Mulvay Pad		

WELLPATH DATA (191 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
5909.50	33.640	51.710	5802.21	-104.84	394.37	867.53	1669820.62	14279733.97	39°19'24.548"N	80°53'45.695"W	952.97	65.554	8.36	6.23	11.05	
6009.50	38.670	64.180	5883.04	-118.59	425.20	917.50	1669870.56	14279764.79	39°19'24.852"N	80°53'45.059"W	1011.24	65.135	8.89	5.03	12.47	
6109.50	44.100	75.360	5958.14	-120.66	447.65	979.42	1669932.46	14279787.24	39°19'25.073"N	80°53'44.271"W	1076.87	65.437	9.16	5.43	11.18	
6209.50	49.250	85.900	6026.84	-109.33	459.18	1051.02	1670004.03	14279798.76	39°19'25.187"N	80°53'43.360"W	1146.95	66.400	9.22	5.15	10.54	
6309.50	55.430	93.840	6068.97	-84.70	459.13	1130.04	1670083.01	14279798.71	39°19'25.185"N	80°53'42.354"W	1219.75	67.888	8.81	6.18	7.94	
6409.50	60.640	101.550	6140.94	-47.65	447.63	1213.96	1670166.90	14279787.21	39°19'25.071"N	80°53'41.286"W	1293.86	69.759	8.36	5.21	7.71	
6477.50	63.480	107.660	6172.83	-15.16	432.45	1272.04	1670224.96	14279772.04	39°19'24.920"N	80°53'40.548"W	1343.54	71.224	8.97	4.18	8.99	
6495.50	63.710	108.400	6180.83	-5.64	427.46	1287.37	1670240.28	14279767.05	39°19'24.870"N	80°53'40.353"W	1356.48	71.632	3.90	1.28	4.11	Directional ONE MWD <-8.3/4"> (6488')(6486'-66'19')
6540.50	63.070	114.170	6201.00	19.88	412.87	1324.84	1670277.73	14279752.47	39°19'24.726"N	80°53'39.876"W	1387.68	72.691	11.55	-1.42	12.82	
6576.00†	62.856	119.025	6217.15	42.12	398.72	1353.10	1670305.99	14279738.32	39°19'24.586"N	80°53'39.517"W	1410.82	73.581	12.20	-0.60	13.68	Middlesex: 6576' MD
6584.50	62.830	120.190	6221.03	47.72	394.98	1359.67	1670312.56	14279734.59	39°19'24.549"N	80°53'39.433"W	1415.88	73.802	12.20	-0.31	13.70	
6628.50	61.780	127.020	6241.49	78.28	373.45	1392.10	1670344.97	14279713.06	39°19'24.335"N	80°53'39.021"W	1441.32	74.983	13.95	-2.39	15.52	
6673.00	61.440	134.070	6262.67	111.89	348.03	1421.82	1670374.68	14279687.65	39°19'24.084"N	80°53'38.643"W	1463.80	76.246	13.96	-0.76	15.84	BHI AT Curve <-1/2"> (6628.5')(6673'-17008')
6721.00	62.300	139.230	6285.31	149.97	317.26	1450.86	1670403.71	14279656.89	39°19'23.779"N	80°53'38.274"W	1485.14	77.665	9.65	1.79	10.75	
6771.00	64.620	139.880	6307.65	191.34	283.21	1479.87	1670432.71	14279622.86	39°19'23.442"N	80°53'37.905"W	1506.73	79.166	4.78	4.64	1.30	
6818.00	67.290	139.400	6326.80	231.07	250.51	1507.67	1670460.49	14279590.18	39°19'23.119"N	80°53'37.552"W	1528.34	80.566	5.76	5.68	-1.02	
6823.00†	67.512	139.366	6328.72	235.34	247.01	1510.67	1670463.50	14279586.67	39°19'23.084"N	80°53'37.514"W	1530.74	80.714	4.49	4.45	-0.69	Burket: 6823' MD
6865.00	69.380	139.080	6344.15	271.39	217.43	1536.19	1670489.00	14279557.11	39°19'22.792"N	80°53'37.190"W	1551.50	81.944	4.49	4.45	-0.68	
6912.00	71.050	138.460	6360.06	312.06	184.17	1565.33	1670518.14	14279523.86	39°19'22.463"N	80°53'36.819"W	1576.13	83.290	3.76	3.55	-1.32	Tully: 6912' MD
6960.00	73.270	138.070	6374.77	353.93	150.08	1595.75	1670548.54	14279489.78	39°19'22.125"N	80°53'36.433"W	1602.79	84.627	4.69	4.62	-0.81	
7007.00	76.240	139.570	6387.12	395.65	115.95	1625.60	1670578.38	14279455.67	39°19'21.788"N	80°53'36.053"W	1629.73	85.920	7.03	6.32	3.19	
7025.00†	77.412	141.182	6391.23	411.96	102.45	1636.78	1670589.55	14279442.17	39°19'21.654"N	80°53'35.911"W	1639.98	86.418	10.88	6.51	8.96	Marcellus POE: 7025' MD
7054.00	79.320	143.750	6397.08	438.75	79.93	1654.08	1670606.84	14279419.66	39°19'21.431"N	80°53'35.692"W	1656.01	87.234	10.88	6.58	8.85	
7101.00	82.290	148.490	6404.59	483.38	41.42	1679.92	1670632.68	14279381.17	39°19'21.050"N	80°53'35.363"W	1680.43	88.588	11.79	6.32	10.09	
7149.00	84.700	152.580	6410.03	530.13	-0.09	1703.37	1670656.12	14279339.67	39°19'20.640"N	80°53'35.066"W	1703.37	90.003	9.84	5.02	8.52	
7196.00	89.110	154.720	6412.57	576.57	-42.13	1724.19	1670676.93	14279297.65	39°19'20.224"N	80°53'34.801"W	1724.71	91.400	10.43	9.38	4.55	
7243.00	89.380	155.420	6413.19	623.23	-84.75	1744.00	1670696.73	14279255.05	39°19'19.803"N	80°53'34.550"W	1746.06	92.782	1.60	0.57	1.49	
7338.00	89.510	158.360	6414.11	717.86	-172.11	1781.28	1670734.00	14279167.72	39°19'18.939"N	80°53'34.077"W	1789.58	95.519	3.10	0.14	3.09	
7433.00	89.290	157.090	6415.10	812.60	-260.02	1817.29	1670769.99	14279079.85	39°19'18.069"N	80°53'33.620"W	1835.80	98.143	1.36	-0.23	-1.34	
7528.00	89.720	160.570	6415.92	907.45	-348.59	1851.59	1670804.28	14278991.31	39°19'17.194"N	80°53'33.185"W	1884.12	100.662	3.69	0.45	3.66	



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #10
Operator	ANTERO RESOURCES CORPORATION	Well	Penny Unit 2H
Area	Ritchie County, WV	Wellbore	Penny Unit 2H AWB
Field	Ritchie		
Facility	Mulvay Pad		

WELLPATH DATA (191 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 (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
7623.00	89.750	162.570	6416.36	1002.44	-438.71	1881.62	1670834.30	14278901.23	39°19'16.302"N	80°53'32.804"W	1932.09	103.124	2.11	0.03	2.11	
7718.00	89.940	166.890	6416.62	1097.30	-530.34	1906.64	1670859.30	14278809.64	39°19'15.397"N	80°53'32.487"W	1979.02	105.544	4.55	0.20	4.55	
7813.00	89.880	165.080	6416.77	1192.05	-622.50	1929.64	1670882.30	14278717.51	39°19'14.485"N	80°53'32.196"W	2027.57	107.880	1.91	-0.06	-1.91	
7908.00	89.780	159.300	6417.05	1287.01	-712.91	1958.69	1670911.33	14278627.14	39°19'13.591"N	80°53'31.828"W	2084.40	110.000	6.09	-0.11	-6.08	
8003.00	89.880	155.730	6417.33	1381.72	-800.68	1995.01	1670947.64	14278539.41	39°19'12.724"N	80°53'31.367"W	2149.69	111.867	3.76	0.11	-3.76	
8098.00	89.780	153.720	6417.61	1475.98	-886.58	2035.57	1670988.19	14278453.54	39°19'11.874"N	80°53'30.852"W	2220.27	113.535	2.12	-0.11	-2.12	
8193.00	89.690	156.630	6418.05	1570.32	-972.79	2075.45	1671028.05	14278367.37	39°19'11.022"N	80°53'30.346"W	2292.12	115.113	3.06	-0.09	-3.06	
8288.00	89.750	158.920	6418.52	1665.06	-1060.69	2111.46	1671064.05	14278279.50	39°19'10.152"N	80°53'29.889"W	2362.91	116.873	2.31	0.06	2.31	
8384.00	89.690	162.890	6418.99	1761.03	-1151.36	2142.94	1671098.51	14278188.86	39°19'09.256"N	80°53'29.490"W	2432.66	118.248	4.24	-0.06	-4.24	
8479.00	89.720	163.720	6419.48	1856.00	-1242.36	2170.23	1671122.79	14278097.91	39°19'08.356"N	80°53'29.144"W	2500.67	119.789	0.87	0.03	0.87	
8574.00	89.660	163.630	6419.99	1950.95	-1333.52	2196.93	1671149.48	14278006.77	39°19'07.455"N	80°53'28.806"W	2569.98	121.257	0.11	-0.06	-0.09	
8669.00	89.750	163.420	6420.48	2045.91	-1424.62	2223.87	1671176.41	14277915.71	39°19'06.554"N	80°53'28.464"W	2641.05	122.644	0.24	0.09	-0.22	
8763.00	90.000	164.800	6420.68	2139.83	-1515.03	2249.61	1671202.14	14277825.34	39°19'05.660"N	80°53'28.138"W	2712.20	123.959	1.49	0.27	1.47	
8858.00	89.750	164.090	6420.89	2234.73	-1606.55	2275.08	1671227.60	14277733.86	39°19'04.755"N	80°53'27.815"W	2785.14	125.228	0.79	-0.26	-0.75	
8952.00	89.450	163.420	6421.56	2328.68	-1696.79	2301.38	1671253.89	14277643.65	39°19'03.863"N	80°53'27.482"W	2859.27	126.401	0.78	-0.32	-0.71	
9047.00	89.690	164.940	6422.26	2423.60	-1788.19	2327.28	1671279.77	14277552.29	39°19'02.959"N	80°53'27.154"W	2934.93	127.537	1.62	0.25	1.60	
9142.00	90.580	163.860	6422.04	2518.50	-1879.69	2352.82	1671305.31	14277460.83	39°19'02.055"N	80°53'26.831"W	3011.48	128.622	1.47	0.94	-1.14	
9236.00	88.030	161.990	6423.18	2612.47	-1969.52	2380.42	1671332.89	14277371.03	39°19'01.167"N	80°53'26.481"W	3089.57	129.604	3.36	-2.71	-1.99	
9330.00	89.510	162.390	6425.20	2706.44	-2059.00	2409.16	1671361.63	14277281.59	39°19'00.282"N	80°53'26.117"W	3169.15	130.519	1.63	1.57	0.43	
9425.00	89.420	163.600	6426.08	2801.42	-2149.84	2436.94	1671389.40	14277190.79	39°18'59.384"N	80°53'25.764"W	3249.69	131.418	1.28	-0.09	1.27	
9519.00	89.690	163.740	6426.81	2895.37	-2240.04	2463.37	1671415.81	14277100.62	39°18'58.492"N	80°53'25.430"W	3329.56	132.281	0.32	0.29	0.15	
9614.00	89.660	163.070	6427.35	2990.33	-2331.06	2490.50	1671442.94	14277009.61	39°18'57.592"N	80°53'25.086"W	3411.24	133.106	0.71	-0.03	-0.71	
9709.00	89.970	161.540	6427.66	3085.33	-2421.59	2519.38	1671471.80	14276919.15	39°18'56.697"N	80°53'24.720"W	3494.47	133.866	1.64	0.33	-1.61	
9803.00	89.970	159.780	6427.71	3179.30	-2510.28	2550.51	1671502.91	14276830.49	39°18'55.820"N	80°53'24.325"W	3578.63	134.545	1.87	0.00	-1.87	
9898.00	89.970	161.930	6427.76	3274.28	-2600.02	2581.66	1671534.06	14276740.79	39°18'54.933"N	80°53'23.930"W	3664.02	135.203	2.26	0.00	2.26	
9993.00	89.880	160.380	6427.88	3369.27	-2689.92	2612.35	1671564.73	14276650.92	39°18'54.044"N	80°53'23.541"W	3749.67	135.838	1.63	-0.09	-1.63	
10088.00	89.940	159.460	6428.03	3464.21	-2779.15	2644.96	1671597.33	14276561.73	39°18'53.161"N	80°53'23.127"W	3836.60	136.417	0.97	0.06	-0.97	
10183.00	89.970	159.170	6428.11	3559.12	-2868.02	2678.52	1671630.88	14276472.89	39°18'52.282"N	80°53'22.702"W	3924.29	136.957	0.31	0.03	-0.31	
10277.00	89.970	158.680	6428.15	3653.00	-2955.74	2712.32	1671664.66	14276385.21	39°18'51.415"N	80°53'22.273"W	4011.62	137.459	0.52	0.00	-0.52	
10372.00	89.970	158.180	6428.20	3747.82	-3044.06	2747.24	1671699.57	14276298.90	39°18'50.542"N	80°53'21.830"W	4100.46	137.934	0.52	0.00	-0.52	



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'

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REFERENCE WELLPATH IDENTIFICATION		Slot #10
Operator	ANTERO RESOURCES CORPORATION	Penny Unit 2H
Area	Ritchie County, WV	Penny Unit 2H AWB
Field	Ritchie	
Facility	Mulway Pad	

WELLPATH DATA (191 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 (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (°/100ft)	Comments
10467.00	89.940	159.140	6428.28	3842.67	-3132.57	2781.80	1671734.12	14276208.45	39°18'49.667"N	80°53'21.392"W	4189.44	138.394	1.00	-0.03	1.00	
10562.00	89.910	161.920	6428.40	3937.64	-3222.13	2813.46	1671765.76	14276118.92	39°18'48.781"N	80°53'20.991"W	4277.58	138.874	2.93	-0.03	2.93	
10657.00	89.940	161.900	6428.53	4032.64	-3312.44	2842.96	1671795.25	14276028.66	39°18'47.888"N	80°53'20.617"W	4365.16	139.362	0.04	0.03	-0.02	
10751.00	90.000	163.450	6428.58	4126.63	-3402.17	2870.95	1671825.23	14275938.56	39°18'47.001"N	80°53'20.262"W	4451.64	139.840	1.65	0.06	1.65	
10846.00	90.030	160.950	6428.55	4221.62	-3492.61	2899.99	1671852.26	14275848.55	39°18'46.107"N	80°53'19.894"W	4539.64	140.296	2.63	0.03	-2.63	
10942.00	89.780	159.420	6428.71	4317.57	-3582.93	2932.53	1671884.79	14275758.27	39°18'45.214"N	80°53'19.481"W	4630.02	140.701	1.61	-0.26	-1.59	
11036.00	89.850	157.120	6429.01	4411.38	-3670.24	2967.33	1671919.57	14275670.99	39°18'44.350"N	80°53'19.040"W	4719.72	141.045	2.45	0.07	-2.45	
11130.00	89.630	157.820	6429.44	4505.10	-3757.07	3003.35	1671955.58	14275584.20	39°18'43.492"N	80°53'18.583"W	4809.95	141.362	0.78	-0.23	0.74	
11225.00	89.850	160.710	6429.87	4599.99	-3845.90	3036.98	1671989.19	14275495.40	39°18'42.613"N	80°53'18.157"W	4900.43	141.703	3.05	0.23	3.04	
11319.00	89.750	161.690	6430.20	4693.99	-3934.88	3067.27	1672019.47	14275406.46	39°18'41.733"N	80°53'17.733"W	4989.14	142.063	1.05	-0.11	1.04	
11413.00	89.820	164.280	6430.55	4787.96	-4024.76	3094.78	1672046.97	14275316.61	39°18'40.845"N	80°53'17.424"W	5077.04	142.442	2.76	0.07	2.76	
11508.00	89.910	166.080	6430.78	4882.80	-4116.60	3119.07	1672071.25	14275224.82	39°18'39.937"N	80°53'17.116"W	5164.79	142.849	1.90	0.09	1.89	
11603.00	89.850	164.470	6430.98	4977.63	-4208.47	3143.22	1672095.39	14275132.98	39°18'39.028"N	80°53'16.811"W	5252.72	143.245	1.70	-0.06	-1.69	
11698.00	89.970	162.980	6431.13	5072.57	-4299.66	3169.84	1672122.00	14275041.82	39°18'38.127"N	80°53'16.473"W	5341.82	143.601	1.57	0.13	-1.57	
11793.00	89.820	163.560	6431.30	5167.54	-4390.64	3197.19	1672149.34	14274950.88	39°18'37.227"N	80°53'16.127"W	5431.37	143.939	0.63	-0.16	0.61	
11888.00	89.970	165.570	6431.47	5262.43	-4482.21	3222.47	1672174.61	14274859.35	39°18'36.322"N	80°53'15.807"W	5520.38	144.286	2.12	0.16	2.12	
11983.00	90.120	170.010	6431.40	5356.90	-4575.04	3242.56	1672194.69	14274766.56	39°18'35.404"N	80°53'15.553"W	5607.60	144.673	4.68	0.16	4.67	
12077.00	90.000	173.230	6431.30	5449.53	-4668.02	3256.26	1672208.38	14274673.61	39°18'34.485"N	80°53'15.380"W	5691.54	145.102	3.43	-0.13	3.43	
12171.00	90.090	167.690	6431.23	5542.44	-4760.69	3271.83	1672223.95	14274580.98	39°18'33.569"N	80°53'15.183"W	5776.59	145.501	5.89	0.10	-5.89	
12266.00	89.780	159.600	6431.33	5637.32	-4851.77	3288.56	1672250.67	14274489.94	39°18'32.668"N	80°53'14.845"W	5866.87	145.789	8.52	-0.33	-8.52	
12361.00	89.780	161.300	6431.70	5732.28	-4941.29	3330.35	1672282.44	14274400.46	39°18'31.783"N	80°53'14.442"W	5958.82	146.021	1.79	0.00	1.79	
12456.00	89.630	161.870	6432.19	5827.28	-5031.42	3360.36	1672312.44	14274310.36	39°18'30.892"N	80°53'14.061"W	6050.39	146.262	0.62	-0.16	0.60	
12550.00	89.600	161.480	6432.82	5921.28	-5120.65	3389.91	1672341.98	14274221.16	39°18'30.010"N	80°53'13.687"W	6141.06	146.495	0.42	-0.03	-0.41	
12645.00	89.720	160.610	6433.38	6016.27	-5210.50	3420.77	1672372.83	14274131.35	39°18'29.121"N	80°53'13.296"W	6233.05	146.715	0.92	0.13	-0.92	
12740.00	89.910	152.140	6433.69	6110.74	-5297.46	3458.80	1672404.43	14274044.43	39°18'28.261"N	80°53'12.813"W	6326.64	146.859	8.92	0.20	-8.92	
12836.00	89.600	150.420	6434.10	6205.10	-5381.64	3504.93	1672456.96	14273960.28	39°18'27.429"N	80°53'12.228"W	6422.35	146.925	1.82	-0.32	-1.79	
12930.00	89.540	155.850	6434.81	6297.98	-5465.46	3547.39	1672499.40	14273876.49	39°18'26.600"N	80°53'11.689"W	6515.77	147.014	5.78	-0.06	5.78	
13025.00	89.630	158.170	6435.50	6392.63	-5552.91	3584.49	1672536.49	14273789.08	39°18'25.735"N	80°53'11.218"W	6609.34	147.157	2.44	0.09	2.44	
13120.00	89.750	160.700	6436.01	6487.53	-5641.85	3617.86	1672569.84	14273700.18	39°18'24.855"N	80°53'10.795"W	6702.19	147.330	2.67	0.13	2.66	
13214.00	89.970	164.750	6436.24	6581.50	-5731.59	3645.77	1672597.74	14273610.47	39°18'23.968"N	80°53'10.441"W	6792.84	147.540	4.31	0.23	4.31	



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Ritchie County, WV	Well	Penny Unit 2H
Field	Ritchie	Wellbore	Penny Unit 2H AWB
Facility	Mulvay Pad		

WELLPATH DATA (191 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 (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
13308.00	90.180	165.830	6436.12	6675.33	-5822.50	3669.64	1672621.80	14273519.59	39°18'23.069"N	80°53'10.139"W	6882.43	147.779	1.17	0.22	1.15	
13404.00	89.910	162.540	6436.04	6771.24	-5914.86	3695.80	1672647.75	14273427.28	39°18'22.156"N	80°53'09.808"W	6974.56	148.001	3.44	-0.28	-3.43	
13498.00	90.120	161.810	6436.02	6865.24	-6004.35	3724.57	1672676.51	14273337.83	39°18'21.271"N	80°53'09.443"W	7065.73	148.188	0.81	0.22	-0.78	
13593.00	90.090	162.200	6435.84	6960.24	-6094.70	3753.92	1672705.85	14273247.51	39°18'20.378"N	80°53'09.071"W	7158.02	148.370	0.41	-0.03	0.41	
13688.00	90.030	161.710	6435.74	7055.24	-6185.02	3783.35	1672735.26	14273157.22	39°18'19.485"N	80°53'08.699"W	7250.40	148.546	0.52	-0.06	-0.52	
13783.00	90.030	162.040	6435.69	7150.24	-6275.31	3812.90	1672764.80	14273066.97	39°18'18.592"N	80°53'08.324"W	7342.87	148.717	0.35	0.00	0.35	
13878.00	90.150	164.080	6435.54	7245.21	-6366.18	3840.58	1672792.47	14272976.13	39°18'17.694"N	80°53'07.973"W	7434.94	148.898	2.15	0.13	2.15	
13973.00	89.940	165.520	6435.47	7340.08	-6457.86	3865.49	1672817.37	14272884.50	39°18'16.787"N	80°53'07.658"W	7526.35	149.086	1.53	-0.22	1.52	
14069.00	90.060	160.510	6435.47	7436.03	-6549.64	3893.52	1672845.39	14272792.75	39°18'15.880"N	80°53'07.303"W	7619.54	149.270	5.22	0.12	-5.22	
14163.00	89.820	157.860	6435.57	7529.92	-6637.50	3926.92	1672878.78	14272704.93	39°18'15.011"N	80°53'06.879"W	7712.14	149.390	2.83	-0.26	-2.82	
14258.00	89.720	156.490	6435.95	7624.60	-6725.06	3963.77	1672915.61	14272617.40	39°18'14.145"N	80°53'06.412"W	7806.27	149.485	1.45	-0.11	-1.44	
14353.00	89.850	158.880	6436.31	7719.34	-6812.93	3999.84	1672951.67	14272529.56	39°18'13.276"N	80°53'05.955"W	7900.30	149.583	2.52	0.14	2.52	
14447.00	89.690	159.770	6436.68	7813.25	-6900.88	4033.03	1672984.84	14272441.65	39°18'12.406"N	80°53'05.534"W	7992.96	149.697	0.96	-0.17	0.95	
14542.00	89.690	159.770	6437.20	7908.18	-6990.02	4065.88	1673017.68	14272352.55	39°18'11.525"N	80°53'05.117"W	8086.51	149.815	0.00	0.00	0.00	
14637.00	89.570	161.820	6437.81	8003.16	-7079.72	4097.13	1673048.91	14272262.88	39°18'10.638"N	80°53'04.721"W	8179.79	149.941	2.16	-0.13	2.16	
14732.00	89.820	164.770	6438.32	8098.11	-7170.70	4124.43	1673076.21	14272171.94	39°18'09.738"N	80°53'04.376"W	8272.24	150.093	3.12	0.26	3.11	
14827.00	89.880	163.850	6438.57	8193.03	-7262.16	4150.12	1673101.89	14272080.51	39°18'08.834"N	80°53'04.050"W	8364.36	150.253	0.97	0.06	-0.97	
14922.00	89.880	164.280	6438.76	8287.98	-7353.51	4176.20	1673127.96	14271989.20	39°18'07.931"N	80°53'03.720"W	8456.64	150.407	0.45	0.00	0.45	
15016.00	89.910	165.030	6438.94	8381.85	-7444.16	4201.08	1673152.82	14271898.59	39°18'07.035"N	80°53'03.405"W	8547.78	150.562	0.80	0.03	0.80	
15111.00	89.910	166.160	6439.09	8476.64	-7536.17	4224.71	1673176.45	14271808.61	39°18'06.129"N	80°53'03.106"W	8639.56	150.725	1.19	0.00	1.19	
15206.00	90.000	168.620	6439.16	8571.20	-7628.87	4245.45	1673197.18	14271713.95	39°18'05.208"N	80°53'02.844"W	8730.61	150.904	2.59	0.09	2.59	
15301.00	89.910	168.000	6439.23	8665.60	-7721.90	4264.70	1673216.42	14271620.96	39°18'04.289"N	80°53'02.600"W	8821.30	151.089	0.66	-0.09	-0.65	
15396.00	89.940	166.630	6439.36	8760.16	-7814.58	4285.56	1673237.27	14271528.32	39°18'03.372"N	80°53'02.336"W	8912.56	151.259	1.44	0.03	-1.44	
15491.00	89.540	162.700	6439.79	8855.03	-7906.18	4310.68	1673262.38	14271436.75	39°18'02.467"N	80°53'02.018"W	9004.98	151.400	4.16	-0.42	-4.14	
15586.00	89.750	160.200	6440.38	8950.02	-7996.23	4340.90	1673292.59	14271346.74	39°18'01.576"N	80°53'01.635"W	9098.52	151.504	2.64	0.22	-2.63	
15681.00	90.060	160.480	6440.54	9044.99	-8085.70	4372.86	1673324.54	14271257.31	39°18'00.682"N	80°53'01.230"W	9192.41	151.595	0.44	0.33	0.29	
15776.00	89.480	162.020	6440.92	9139.98	-8175.65	4403.39	1673355.06	14271167.39	39°17'59.802"N	80°53'00.843"W	9286.07	151.693	1.73	-0.61	1.62	
15870.00	89.450	165.970	6441.80	9233.89	-8265.99	4429.31	1673380.96	14271077.09	39°17'58.909"N	80°53'00.515"W	9377.91	151.815	4.20	-0.03	4.20	
15966.00	90.490	165.520	6441.85	9329.67	-8359.03	4452.94	1673404.59	14270984.09	39°17'57.989"N	80°53'00.216"W	9471.12	151.955	1.18	1.08	-0.47	
16061.00	89.290	159.190	6442.03	9424.61	-8449.73	4481.73	1673433.36	14270893.64	39°17'57.094"N	80°52'59.851"W	9564.52	152.058	6.78	-1.26	-6.66	



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #10
Area	Ritchie County, WV	Penny Unit 2H
Field	Ritchie	Penny Unit 2H AWB
Facility	Mulvay Pad	

WELLPATH DATA (191 stations)

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 [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
16156.00	90.000	156.770	6442.62	9519.39	-8537.57	4517.34	1673468.96	14270805.62	39°17'56.224"N	80°52'59.400"W	9659.01	152.116	2.65	0.75	-2.55	
16251.00	89.510	159.820	6443.02	9614.19	-8625.82	4552.47	1673504.07	14270717.40	39°17'55.351"N	80°52'58.954"W	9753.45	152.176	3.25	-0.52	3.21	
16346.00	88.920	163.230	6444.33	9709.16	-8715.91	4582.57	1673534.16	14270627.35	39°17'54.460"N	80°52'58.573"W	9847.18	152.266	3.64	-0.62	3.59	
16441.00	89.230	163.960	6445.86	9804.11	-8807.03	4609.39	1673560.97	14270536.27	39°17'53.559"N	80°52'58.233"W	9940.33	152.373	0.83	0.33	0.77	
16536.00	89.110	165.210	6447.24	9898.99	-8898.60	4634.64	1673586.21	14270444.73	39°17'52.654"N	80°52'57.914"W	10033.19	152.488	1.32	-0.13	1.32	
16631.00	89.170	164.930	6448.66	9993.83	-8990.38	4659.11	1673610.68	14270352.99	39°17'51.746"N	80°52'57.604"W	10125.92	152.605	0.30	0.06	-0.29	
16726.00	89.170	162.220	6450.04	10088.77	-9081.48	4685.97	1673637.52	14270261.92	39°17'50.846"N	80°52'57.264"W	10219.18	152.707	2.85	0.00	-2.85	
16820.00	89.110	158.900	6451.45	10182.72	-9170.10	4717.25	1673668.79	14270173.34	39°17'49.969"N	80°52'56.867"W	10312.29	152.778	3.53	-0.06	-3.53	
16915.00	89.510	159.710	6452.89	10277.62	-9258.97	4750.82	1673702.34	14270084.51	39°17'49.091"N	80°52'56.442"W	10406.67	152.837	0.95	0.42	0.85	
16984.00	89.540	164.600	6453.17	10346.59	-9324.62	4771.96	1673723.47	14270018.88	39°17'48.441"N	80°52'56.174"W	10474.74	152.899	7.09	0.04	7.09	
17008.00	89.540	164.600	6453.36	10370.57	-9347.76	4778.33	1673729.84	14269995.75	39°17'48.213"N	80°52'56.093"W	10498.24	152.925	0.00	0.00	0.00	Projected MD at TD: 17008'

HOLE & CASING SECTIONS - Ref Wellbore: Penny Unit 2H AWP Proj: 17008'

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	-0.04	-0.17
17.5in Open Hole	104.50	531.50	427.00	104.50	531.50	-0.04	-0.17	-0.84	-0.24
13.375in Casing Surface	24.50	531.50	507.00	24.50	531.50	0.00	0.00	-0.84	-0.24
12.25in Open Hole	531.50	2582.50	2051.00	531.50	2566.44	-0.84	-0.24	57.45	226.45
9.625in Casing Intermediate	24.50	2582.50	2558.00	24.50	2566.44	0.00	0.00	57.45	226.45
8.75in Open Hole	2582.50	6715.50	4133.00	2566.44	6282.75	57.45	226.45	320.93	1447.66
8.5in Open Hole	6715.50	17008.00	10292.50	6282.75	6453.36	320.93	1447.66	-9347.76	4778.33
5.5in Casing Production	24.50	17008.00	16983.50	24.50	6453.36	0.00	0.00	-9347.76	4778.33



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008*

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04/05/2019

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Ritchie County, WV	Well	Penny Unit 2H
Field	Ritchie	Wellbore	Penny Unit 2H AWB
Facility	Mutvay Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Penny Unit 2H POE - Rev-2	6383.00	132.84	1605.26	1670558.05	14279472.55	39°19'21.955"N	80°53'36.312"W	point
Penny Unit 2H BHL - Rev-2	6406.00	-9374.46	4806.57	1673758.07	14269969.06	39°17'47.948"N	80°52'55.735"W	point
Penny Unit 2H LP - Rev-2	6406.00	-5.64	1700.67	1670653.42	14279334.13	39°19'20.585"N	80°53'35.100"W	point

WELLPATH COMPOSITION - Ref Wellbore: Penny Unit 2H AWB Ref Wellpath: Penny Unit 2H AWP Proj: 17008*

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	6477.50	Gyrodata standard - Drop gyro or Multi-shot	04 Gyrodata MS Gyro <8-3/4">(100'-6468')	Penny Unit 2H AWB
6477.50	6628.50	ISCWSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <8-3/4">(6486'-6619')	Penny Unit 2H AWB
6628.50	16984.00	BHI AutoTrak Curve (Short)	05 BHI AT Curve <8-1/2">(6628.5')(6673'-16984')	Penny Unit 2H AWB
16984.00	17008.00	Blind Drilling (std)	Projection to bit	Penny Unit 2H AWB



Actual Wellpath Report

Penny Unit 2H AWP Proj: 17008'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Ritchie County, WV	Well	Penny Unit 2H
Field	Ritchie	Wellbore	Penny Unit 2H AWB
Facility	Mulvay Pad		

COMMENTS
<p>Wellpath general comments API: 47-085-10299-0000 BHI Job #: 8651747 Rig: Frontier 22 Duration: 07/12/2017-07/15/2017 Gyrodota MS Gyro <8-3/4"> (100'-6468') Directional ONE MWD <8-3/4"> (6468')(6486'-6619) BHI AT Curve <8-1/2"> (6628.5')(6673'-17008') Middlesex: 6576' MD Burket: 6823' MD Tully: 6912' MD Marcellus POE: 7025' MD Projected MD at TD: 17008'</p>