

ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
 Field: Ritchie
 Facility: Noland Pad

Slot: Slot #07
 Well: Western Unit 2H
 Wellbore: Western Unit 2H PWB



API: 47-085-10294-0000
 BHI Job #: 8473303
 Rig: Patterson 343
 Duration: 03/29/2017-04/02/2017



Plot reference wellpath is Western Unit 2H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Patterson 343 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to Patterson 343 (RKB)	North Reference: Grid north
Patterson 343 (RKB) to Mean Sea Level: 1168 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #07): -1143 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: delaset on 2017-04-06
	Database: WA_MPL_EasternUS_Defn

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #07	Western Unit 2H	Western Unit 2H AWB	Western Unit 2H AWP Proj: 18405'
Slot #07	Western Unit 2H	Western Unit 2H PWB	Western Unit 2H PWP Rev-A.0

Directional ONE MWD <8-3/4"> (1029')(1085'-5529') : 1.62° Inc, 1097.00ft MD, 1096.92ft TVD, 3.46ft VS

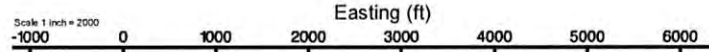
Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Noland Pad	1646547.130	14270759.740	39°17'55.974"N	80°58'41.988"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #07	-28.70	52.53	1646599.640	14270731.050
Comment	Western Unit 2H			
Patterson 343 (RKB) to Mud line (At Slot: Slot #07)				25ft
Mean Sea Level to Mud line (At Slot: Slot #07)				-1143ft
Patterson 343 (RKB) to Mean Sea Level				1168ft

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	5541.00	13.100	294.460	5492.86	233.33	-382.90	1.54
Proj. to Bottom	5625.00	13.100	294.460	5574.67	241.21	-400.23	0.00
Curve KOP	5672.50	13.100	294.460	5620.93	245.67	-410.03	0.00
End of 3D Arc	6164.62	28.537	173.352	6093.19	148.62	-448.52	7.50
POE	6628.70	68.904	157.932	6394.00	-176.64	-349.95	9.00
Landing Pt.	6804.50	90.000	157.932	6426.00	-335.90	-285.36	12.00
BHL	18400.12	90.000	157.932	6426.00	-11082.01	4071.17	0.00

BHI AT Curve <8-1/2"> (5541')(5575'-18380') : 13.10° Inc, 5541.00ft MD, 5492.86ft TVD, -360.10ft VS

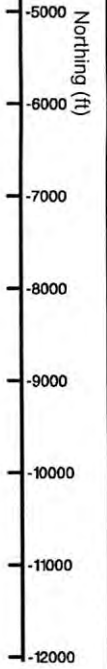
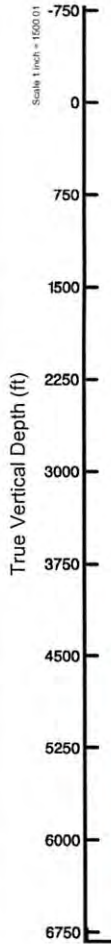
Marcellus POE: 6623' MD : 70.33° Inc, 6623.00ft MD, 6390.79ft TVD, 23.00ft VS

Projected MD at TD: 18405' : 89.38° Inc, 18405.00ft MD, 6432.38ft TVD, 11784.00ft VS



BHI AT Curve <8-1/2"> (5541')(5575'-18380') : 5492.86ft TVD, 233.33ft N, 382.90ft W
 Directional ONE MWD <8-3/4"> (1029')(1085'-5529') : 1096.92ft TVD, 2.28ft S, 3.61ft E
 Gyrodata MS Gyro <17-1/2"> (100'-1029') : 112.00ft TVD, 0.08ft N, 0.03ft E
 Slot #07
 Marcellus POE: 6623' MD : 6390.79ft TVD, 168.39ft S, 354.10ft W

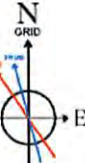
Scale 1 inch = 1600.01'



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User specified Dip: 86.56° Field: 51957 nT
 Magnetic North is 7.83 degrees West of True North (at 23/Mar/2017)
 Grid North is 0.01 degrees East of True North
 To correct azimuth from True to Grid subtract 0.01 degrees
 To correct azimuth from Magnetic to Grid subtract 7.84 degrees

Projected MD at TD: 18405' : 6432.38ft TVD, 11067.51ft S, 4065.19ft E

Vertical Section (ft)

Azimuth 157.93° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500'



Actual Wellpath Report

Western Unit 2H AWP Proj: 18405'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Western Unit 2H
Field	Ritchie	Wellbore	Western Unit 2H AWB
Facility	Noland Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Delaset
Scale	0.999600	Report Generated	06/Apr/2017 at 15:36
Convergence at slot	0.02° East	Database/Source file	WA_MPL_EasternUS_Defn/Western_Unit_2H_AWP_Proj_18405_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-28.70	52.53	1646599.64	14270731.05	39°17'55.690"N	80°58'41.320"W
Facility Reference Pt			1646547.13	14270759.74	39°17'55.974"N	80°58'41.988"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 343 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 343 (RKB) to Mean Sea Level	1168.00ft
Vertical Reference Pt	Patterson 343 (RKB)	Patterson 343 (RKB) to Mud Line at Slot (Slot #07)	25.00ft
MD Reference Pt	Patterson 343 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	157.93°

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Actual Wellpath Report

Western Unit 2H AWP Proj: 18405'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #07
Area	Ritchie County, WV		Well	Western Unit 2H
Field	Ritchie		Wellbore	Western Unit 2H AWB
Facility	Noland Pad			

WELLPATH DATA (241 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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
0.00	0.00	20.760	0.00	0.00	0.00	0.00	1646599.64	14270731.05	39°17'55.690"N	80°58'41.320"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	20.760	25.00	0.00	0.00	0.00	1646599.64	14270731.05	39°17'55.690"N	80°58'41.320"W	0.00	0.000	0.00	0.00	0.00	
112.00	0.110	20.760	112.00	-0.06	0.08	0.03	1646599.67	14270731.13	39°17'55.691"N	80°58'41.320"W	0.08	20.760	0.13	0.13	23.86	Gyrodata MS Gyro <17-1/2">(100'-1029')
212.00	0.260	281.640	212.00	-0.26	0.21	-0.16	1646599.48	14270731.26	39°17'55.692"N	80°58'41.322"W	0.27	323.410	0.30	0.15	-99.12	
312.00	0.220	281.820	312.00	-0.49	0.30	-0.57	1646599.07	14270731.35	39°17'55.693"N	80°58'41.327"W	0.64	297.711	0.04	-0.04	0.18	
331.00	0.290	270.480	331.00	-0.53	0.31	-0.65	1646598.99	14270731.36	39°17'55.693"N	80°58'41.328"W	0.72	295.168	0.45	0.37	-59.68	
396.00	0.320	100.430	396.00	-0.49	0.28	-0.64	1646599.00	14270731.33	39°17'55.693"N	80°58'41.328"W	0.70	293.311	0.93	0.05	-261.62	
487.00	0.530	103.440	487.00	-0.11	0.13	0.02	1646599.66	14270731.18	39°17'55.691"N	80°58'41.320"W	0.13	8.990	0.23	0.23	3.31	
577.00	0.720	103.960	576.99	0.46	-0.10	0.97	1646600.61	14270730.95	39°17'55.689"N	80°58'41.308"W	0.98	95.968	0.21	0.21	0.58	
668.00	1.060	92.780	667.98	1.15	-0.28	2.37	1646602.01	14270730.77	39°17'55.687"N	80°58'41.290"W	2.39	96.753	0.42	0.37	-12.29	
758.00	1.180	100.020	757.96	1.99	-0.48	4.11	1646603.75	14270730.57	39°17'55.685"N	80°58'41.268"W	4.14	96.686	0.21	0.13	8.04	
852.00	0.680	128.270	851.95	2.99	-1.00	5.51	1646605.14	14270730.05	39°17'55.680"N	80°58'41.250"W	5.59	100.256	0.71	-0.53	30.05	
947.00	0.390	195.390	946.95	3.74	-1.66	5.86	1646605.50	14270729.39	39°17'55.674"N	80°58'41.245"W	6.09	105.784	0.67	-0.31	70.65	
1041.00	1.080	257.400	1040.94	3.85	-2.16	4.91	1646604.55	14270728.89	39°17'55.669"N	80°58'41.258"W	5.37	113.723	1.02	0.73	65.97	
1097.00	1.620	269.860	1096.92	3.46	-2.28	3.61	1646603.24	14270728.78	39°17'55.668"N	80°58'41.274"W	4.26	122.258	1.09	0.96	22.25	Directional ONE MWD <8-3/4"> (1029')(1085'-5529')
1160.00	1.890	272.630	1159.89	2.70	-2.23	1.68	1646601.32	14270728.82	39°17'55.668"N	80°58'41.299"W	2.79	143.052	0.45	0.43	4.40	
1223.00	2.310	277.560	1222.85	1.64	-2.02	-0.62	1646599.02	14270729.04	39°17'55.670"N	80°58'41.328"W	2.11	197.070	0.73	0.67	7.83	
1287.00	2.920	280.940	1286.78	0.11	-1.54	-3.50	1646596.14	14270729.51	39°17'55.675"N	80°58'41.364"W	3.82	246.287	0.98	0.95	5.28	
1350.00	3.290	288.210	1349.69	-1.93	-0.67	-6.79	1646592.85	14270730.38	39°17'55.683"N	80°58'41.406"W	6.82	264.390	0.86	0.59	11.54	
1413.00	3.490	297.870	1412.58	-4.57	0.79	-10.20	1646589.44	14270731.84	39°17'55.698"N	80°58'41.450"W	10.23	274.451	0.96	0.32	15.33	
1476.00	3.830	300.700	1475.45	-7.71	2.76	-13.71	1646585.94	14270733.81	39°17'55.717"N	80°58'41.494"W	13.98	281.404	0.61	0.54	4.49	
1539.00	4.060	309.990	1538.31	-11.36	5.27	-17.23	1646582.42	14270736.32	39°17'55.742"N	80°58'41.539"W	18.01	287.018	1.08	0.37	14.75	
1602.00	3.910	314.280	1601.15	-15.30	8.21	-20.47	1646579.18	14270739.25	39°17'55.771"N	80°58'41.580"W	22.06	291.841	0.53	-0.24	6.81	
1665.00	4.220	316.480	1663.99	-19.42	11.39	-23.61	1646576.04	14270742.43	39°17'55.803"N	80°58'41.620"W	26.21	295.749	0.55	0.49	3.49	
1728.00	4.150	319.620	1726.83	-23.74	14.80	-26.68	1646572.97	14270745.85	39°17'55.836"N	80°58'41.659"W	30.51	299.024	0.38	-0.11	4.98	
1791.00	4.030	316.660	1789.67	-27.97	18.15	-29.68	1646569.98	14270749.19	39°17'55.869"N	80°58'41.697"W	34.79	301.450	0.39	-0.19	-4.70	
1854.00	3.710	314.770	1852.52	-31.91	21.20	-32.64	1646567.01	14270752.24	39°17'55.900"N	80°58'41.735"W	38.92	302.997	0.55	-0.51	-3.00	
1916.00	3.990	321.000	1914.38	-35.81	24.28	-35.42	1646564.23	14270755.32	39°17'55.930"N	80°58'41.771"W	42.95	304.433	0.81	0.45	10.05	
1979.00	4.380	320.200	1977.21	-40.20	27.84	-38.34	1646561.31	14270758.87	39°17'55.965"N	80°58'41.808"W	47.38	305.979	0.63	0.62	-1.27	
2042.00	3.330	319.170	2040.07	-44.23	31.07	-41.08	1646558.58	14270762.11	39°17'55.997"N	80°58'41.842"W	51.50	307.101	1.67	-1.67	-1.63	

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Western Unit 2H AWP Proj: 18405'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Western Unit 2H
Field	Ritchie	Wellbore	Western Unit 2H AWB
Facility	Noland Pad		

WELLPATH DATA (241 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
2105.00	1.380	319.850	2103.02	-46.68	33.03	-42.76	1646556.89	14270764.07	39°17'56.017"N	80°58'41.864"W	54.04	307.684	3.10	-3.10	1.08	
2168.00	0.130	135.430	2166.01	-47.34	33.56	-43.20	1646556.45	14270764.60	39°17'56.022"N	80°58'41.869"W	54.71	307.842	2.40	-1.98	278.70	
2231.00	0.810	154.980	2229.01	-46.83	33.11	-42.96	1646556.69	14270764.14	39°17'56.017"N	80°58'41.866"W	54.24	307.617	1.09	1.08	31.03	
2294.00	0.610	153.590	2292.00	-46.05	32.40	-42.63	1646557.03	14270763.44	39°17'56.010"N	80°58'41.862"W	53.55	307.241	0.32	-0.32	-2.21	
2357.00	0.380	323.110	2355.00	-45.91	32.27	-42.60	1646557.05	14270763.31	39°17'56.009"N	80°58'41.862"W	53.45	307.143	1.57	-0.37	269.08	
2420.00	0.950	331.950	2418.00	-46.64	32.90	-42.97	1646556.68	14270763.94	39°17'56.015"N	80°58'41.867"W	54.12	307.435	0.92	0.90	14.03	
2483.00	0.910	344.080	2480.99	-47.65	33.84	-43.36	1646556.30	14270764.88	39°17'56.025"N	80°58'41.871"W	55.00	307.972	0.32	-0.06	19.25	
2501.00	0.650	336.430	2498.99	-47.90	34.07	-43.44	1646556.22	14270765.11	39°17'56.027"N	80°58'41.872"W	55.21	308.110	1.55	-1.44	-42.50	
2640.00	0.640	349.270	2637.98	-49.45	35.56	-43.90	1646555.76	14270766.59	39°17'56.042"N	80°58'41.878"W	56.49	309.008	0.10	-0.01	9.24	
2703.00	0.770	10.210	2700.97	-50.15	36.32	-43.89	1646555.77	14270767.35	39°17'56.049"N	80°58'41.878"W	56.97	309.610	0.45	0.21	33.24	
2766.00	0.740	341.160	2763.97	-50.91	37.12	-43.94	1646555.71	14270768.16	39°17'56.057"N	80°58'41.879"W	57.52	310.189	0.60	-0.05	-46.11	
2829.00	0.570	330.920	2826.96	-51.63	37.78	-44.23	1646555.43	14270768.81	39°17'56.064"N	80°58'41.882"W	58.17	310.504	0.33	-0.27	-16.25	
2892.00	0.610	338.170	2889.96	-52.28	38.37	-44.50	1646555.15	14270769.40	39°17'56.069"N	80°58'41.886"W	58.76	310.763	0.13	0.06	11.51	
2955.00	0.780	352.570	2952.96	-53.03	39.10	-44.69	1646554.97	14270770.14	39°17'56.077"N	80°58'41.888"W	59.38	311.188	0.38	0.27	22.86	
3018.00	0.510	336.990	3015.95	-53.72	39.79	-44.85	1646554.81	14270770.82	39°17'56.083"N	80°58'41.890"W	59.95	311.575	0.51	-0.43	-24.73	
3081.00	0.790	333.730	3078.95	-54.44	40.43	-45.15	1646554.51	14270771.47	39°17'56.090"N	80°58'41.894"W	60.61	311.844	0.45	0.44	-5.17	
3144.00	0.580	321.960	3141.94	-55.17	41.07	-45.54	1646554.12	14270772.11	39°17'56.096"N	80°58'41.899"W	61.33	312.047	0.40	-0.33	-18.68	
3207.00	0.670	332.160	3204.94	-55.85	41.65	-45.91	1646553.75	14270772.68	39°17'56.102"N	80°58'41.904"W	61.99	312.215	0.23	0.14	16.19	
3270.00	0.740	328.950	3267.93	-56.62	42.32	-46.29	1646553.37	14270773.36	39°17'56.108"N	80°58'41.909"W	62.72	312.437	0.13	0.11	-5.10	
3334.00	0.430	336.540	3331.93	-57.26	42.90	-46.60	1646553.06	14270773.93	39°17'56.114"N	80°58'41.913"W	63.34	312.632	0.50	-0.48	11.86	
3397.00	0.650	345.320	3394.93	-57.86	43.46	-46.78	1646552.87	14270774.49	39°17'56.120"N	80°58'41.915"W	63.86	312.891	0.37	0.35	13.94	
3460.00	0.740	331.200	3457.92	-58.61	44.16	-47.07	1646552.59	14270775.20	39°17'56.127"N	80°58'41.919"W	64.55	313.175	0.31	0.14	-22.41	
3523.00	0.830	310.480	3520.92	-59.42	44.82	-47.61	1646552.05	14270775.85	39°17'56.133"N	80°58'41.926"W	65.39	313.266	0.47	0.14	-32.89	
3586.00	0.770	315.440	3583.91	-60.22	45.41	-48.26	1646551.40	14270776.45	39°17'56.139"N	80°58'41.934"W	66.27	313.261	0.15	-0.10	7.87	
3649.00	0.540	308.270	3646.91	-60.87	45.90	-48.79	1646550.87	14270776.93	39°17'56.144"N	80°58'41.940"W	66.99	313.252	0.39	-0.37	-11.38	
3712.00	0.500	295.120	3709.91	-61.33	46.20	-49.27	1646550.39	14270777.23	39°17'56.147"N	80°58'41.947"W	67.54	313.158	0.20	-0.06	-20.87	
3775.00	1.510	292.410	3772.90	-62.11	46.63	-50.29	1646549.37	14270777.66	39°17'56.151"N	80°58'41.960"W	68.58	312.841	1.60	1.60	-4.30	
3838.00	4.240	281.990	3835.81	-64.00	47.43	-53.33	1646546.33	14270778.46	39°17'56.159"N	80°58'41.998"W	71.37	311.650	4.39	4.33	-16.54	
3901.00	6.550	277.190	3898.53	-67.06	48.37	-59.18	1646540.49	14270779.40	39°17'56.168"N	80°58'42.073"W	76.43	309.260	3.73	3.67	-7.62	
3964.00	7.460	279.140	3961.06	-70.93	49.47	-66.78	1646532.89	14270780.50	39°17'56.179"N	80°58'42.169"W	83.11	306.529	1.49	1.44	3.10	



Actual Wellpath Report

Western Unit 2H AWP Proj: 18405'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #07
Area	Ritchie County, WV		Well	Western Unit 2H
Field	Ritchie		Wellbore	Western Unit 2H AWB
Facility	Noland Pad			

WELLPATH DATA (241 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
4028.00	7.120	286.980	4024.54	-75.59	51.28	-74.68	1646524.99	14270782.31	39°17'56.197"N	80°58'42.270"W	90.59	304.480	1.64	-0.53	12.25	
4091.00	7.120	290.780	4087.05	-80.70	53.81	-82.06	1646517.61	14270784.84	39°17'56.222"N	80°58'42.364"W	98.13	303.255	0.75	0.00	6.03	
4154.00	8.160	292.340	4149.49	-86.48	56.90	-89.85	1646509.83	14270787.92	39°17'56.253"N	80°58'42.463"W	106.35	302.344	1.68	1.65	2.48	
4217.00	10.710	297.760	4211.64	-94.09	61.32	-99.16	1646500.52	14270792.35	39°17'56.296"N	80°58'42.581"W	116.59	301.732	4.28	4.05	8.60	
4280.00	11.670	299.880	4273.44	-103.58	67.22	-109.87	1646489.82	14270798.25	39°17'56.355"N	80°58'42.717"W	128.80	301.460	1.66	1.52	3.37	
4343.00	12.640	304.910	4335.03	-114.38	74.34	-121.05	1646478.64	14270805.36	39°17'56.425"N	80°58'42.859"W	142.05	301.557	2.28	1.54	7.98	
4406.00	14.540	307.950	4396.26	-127.01	83.15	-132.94	1646466.76	14270814.17	39°17'56.512"N	80°58'43.011"W	156.80	302.026	3.22	3.02	4.83	
4469.00	16.140	308.050	4457.02	-141.45	93.41	-146.07	1646453.63	14270824.42	39°17'56.614"N	80°58'43.178"W	173.38	302.599	2.54	2.54	0.16	
4533.00	16.090	305.380	4518.50	-156.64	104.03	-160.30	1646439.40	14270835.04	39°17'56.719"N	80°58'43.359"W	191.10	302.982	1.16	-0.08	-4.17	
4595.00	15.830	302.810	4578.11	-170.80	113.59	-174.42	1646425.29	14270844.59	39°17'56.813"N	80°58'43.538"W	208.14	303.074	1.21	-0.42	-4.15	
4658.00	15.580	300.830	4638.76	-184.58	122.58	-188.90	1646410.81	14270853.58	39°17'56.902"N	80°58'43.723"W	225.19	302.979	0.94	-0.40	-3.14	
4721.00	15.610	299.660	4699.44	-197.98	131.11	-203.53	1646396.19	14270862.11	39°17'56.986"N	80°58'43.909"W	242.11	302.788	0.50	0.05	-1.86	
4784.00	15.940	298.480	4760.07	-211.31	139.43	-218.50	1646381.22	14270870.42	39°17'57.069"N	80°58'44.099"W	259.20	302.542	0.73	0.52	-1.87	
4847.00	16.100	297.980	4820.62	-224.69	147.65	-233.82	1646365.91	14270878.64	39°17'57.150"N	80°58'44.294"W	276.54	302.271	0.34	0.25	-0.79	
4911.00	14.430	298.410	4882.36	-237.64	155.61	-248.67	1646351.07	14270886.60	39°17'57.229"N	80°58'44.483"W	293.35	302.037	2.62	-2.61	0.67	
4974.00	14.300	295.070	4943.40	-249.40	162.64	-262.63	1646337.12	14270893.63	39°17'57.298"N	80°58'44.660"W	308.91	301.770	1.33	-0.21	-5.30	
5037.00	14.200	294.170	5004.46	-260.69	169.10	-276.72	1646323.03	14270900.08	39°17'57.362"N	80°58'44.839"W	324.30	301.429	0.39	-0.16	-1.43	
5100.00	13.800	298.200	5065.59	-272.05	175.82	-290.40	1646309.36	14270906.80	39°17'57.428"N	80°58'45.013"W	339.47	301.192	1.67	-0.63	6.40	
5163.00	13.430	301.520	5126.82	-283.71	183.19	-303.25	1646296.51	14270914.17	39°17'57.501"N	80°58'45.177"W	354.29	301.136	1.37	-0.59	5.27	
5226.00	14.830	305.050	5187.91	-296.37	191.65	-316.09	1646283.67	14270922.62	39°17'57.585"N	80°58'45.340"W	369.65	301.229	2.61	2.22	5.60	
5289.00	15.170	304.130	5248.76	-309.99	200.90	-329.52	1646270.26	14270931.87	39°17'57.676"N	80°58'45.511"W	385.93	301.370	0.66	0.54	-1.46	
5353.00	15.210	303.610	5310.53	-323.89	210.25	-343.44	1646256.34	14270941.22	39°17'57.769"N	80°58'45.688"W	402.69	301.474	0.22	0.06	-0.81	
5415.00	14.690	303.060	5370.43	-337.05	219.04	-356.80	1646242.98	14270950.00	39°17'57.856"N	80°58'45.858"W	418.67	301.546	0.87	-0.84	-0.89	
5478.00	13.460	298.390	5431.54	-349.26	226.88	-369.95	1646229.84	14270957.84	39°17'57.933"N	80°58'46.025"W	433.98	301.520	2.66	-1.95	-7.41	
5541.00	13.100	294.460	5492.86	-360.10	233.33	-382.90	1646216.90	14270964.28	39°17'57.997"N	80°58'46.190"W	448.39	301.357	1.54	-0.57	-6.24	BHI AT Curve <8-1/2"> (5541)(5575-18380)
5575.00	13.060	294.330	5525.97	-365.68	236.51	-389.90	1646209.89	14270967.46	39°17'58.028"N	80°58'46.279"W	456.03	301.240	0.15	-0.12	-0.38	
5638.00	12.150	293.310	5587.45	-375.55	242.06	-402.48	1646197.32	14270973.01	39°17'58.083"N	80°58'46.439"W	469.66	301.024	1.49	-1.44	-1.62	
5685.00	10.970	289.340	5633.50	-382.03	245.50	-411.24	1646188.56	14270976.45	39°17'58.117"N	80°58'46.550"W	478.95	300.836	3.03	-2.51	-8.45	
5733.00	9.750	274.820	5680.73	-386.89	247.35	-419.60	1646180.21	14270978.30	39°17'58.136"N	80°58'46.657"W	487.08	300.519	5.98	-2.54	-30.25	
5780.00	9.330	256.700	5727.09	-389.27	246.81	-427.28	1646172.53	14270977.76	39°17'58.130"N	80°58'46.754"W	493.44	300.012	6.42	-0.89	-38.55	

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Actual Wellpath Report

Western Unit 2H AWP Proj: 18405'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #07
Area	Ritchie County, WV		Well	Western Unit 2H
Field	Ritchie		Wellbore	Western Unit 2H AWB
Facility	Noland Pad			

WELLPATH DATA (241 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 ("/100ft)	Build Rate ("/100ft)	Turn Rate ("/100ft)	Comments
5827.00	9.210	239.230	5773.48	-389.28	244.01	-434.22	1646165.60	14270974.96	39°17'58.103"N	80°58'46.843"W	498.08	299.334	5.97	-0.26	-37.17	
5874.00	9.460	217.930	5819.87	-386.78	239.04	-439.83	1646159.99	14270969.99	39°17'58.054"N	80°58'46.914"W	500.59	298.523	7.33	0.53	-45.32	
5921.00	10.500	192.840	5866.18	-381.34	231.81	-443.15	1646156.66	14270962.77	39°17'57.982"N	80°58'46.956"W	500.12	297.614	9.43	2.21	-53.38	
5968.00	13.140	184.770	5912.19	-373.06	222.31	-444.55	1646155.27	14270953.27	39°17'57.888"N	80°58'46.974"W	497.04	296.569	6.61	5.62	-17.17	
6015.00	16.830	188.020	5957.58	-362.40	210.25	-445.94	1646153.87	14270941.21	39°17'57.769"N	80°58'46.992"W	493.02	295.242	8.05	7.85	6.91	
6062.00	21.130	188.020	6002.01	-349.18	195.11	-448.08	1646151.74	14270926.08	39°17'57.619"N	80°58'47.019"W	488.71	293.530	9.15	9.15	0.00	
6110.00	25.320	184.340	6046.12	-332.49	176.30	-450.06	1646149.76	14270907.28	39°17'57.434"N	80°58'47.044"W	483.36	291.392	9.23	8.73	-7.67	
6157.00	29.220	180.180	6087.89	-312.86	154.80	-450.86	1646148.96	14270885.79	39°17'57.221"N	80°58'47.055"W	476.69	288.949	9.23	8.30	-8.85	
6204.00	30.850	177.380	6128.58	-290.88	131.29	-450.34	1646149.48	14270862.28	39°17'56.989"N	80°58'47.048"W	469.09	286.253	4.57	3.47	-5.96	
6251.00	35.010	173.360	6168.02	-266.50	105.84	-448.23	1646151.59	14270836.85	39°17'56.737"N	80°58'47.021"W	460.56	283.286	9.99	8.85	-8.55	
6299.00	39.740	169.310	6206.16	-238.17	77.07	-443.79	1646156.03	14270808.09	39°17'56.453"N	80°58'46.965"W	450.43	279.851	11.10	9.85	-8.44	
6344.00	44.630	165.710	6239.50	-208.38	47.59	-437.22	1646162.60	14270778.62	39°17'56.161"N	80°58'46.881"W	439.80	276.212	12.12	10.87	-8.00	
6357.00†	45.748	164.903	6248.66	-199.24	38.67	-434.88	1646164.94	14270769.71	39°17'56.073"N	80°58'46.852"W	436.59	275.082	9.66	8.60	-6.21	Middlesex: 6357' MD
6393.00	48.870	162.820	6273.07	-172.92	13.26	-427.51	1646172.30	14270744.31	39°17'55.822"N	80°58'46.758"W	427.72	271.777	9.66	8.67	-5.79	
6440.00	52.850	160.010	6302.74	-136.55	-21.27	-415.87	1646183.93	14270709.79	39°17'55.481"N	80°58'46.610"W	416.42	267.072	9.65	8.47	-5.98	
6487.00	56.730	158.070	6329.83	-98.17	-57.11	-402.13	1646197.67	14270673.96	39°17'55.126"N	80°58'46.435"W	406.16	261.916	8.92	8.26	-4.13	
6519.00†	59.559	156.872	6346.72	-70.99	-82.22	-391.71	1646208.09	14270648.87	39°17'54.878"N	80°58'46.303"W	400.24	258.146	9.39	8.84	-3.74	Burket: 6519' MD
6533.00	60.800	156.370	6353.68	-58.85	-93.36	-386.89	1646212.91	14270637.72	39°17'54.768"N	80°58'46.242"W	398.00	256.433	9.39	8.86	-3.59	
6580.00	65.890	156.110	6374.76	-16.87	-131.79	-369.97	1646229.82	14270599.31	39°17'54.388"N	80°58'46.026"W	392.74	250.392	10.84	10.83	-0.55	
6585.00†	66.406	156.216	6376.78	-12.30	-135.98	-368.12	1646231.67	14270595.13	39°17'54.347"N	80°58'46.003"W	392.43	249.727	10.51	10.33	2.13	Tully: 6585' MD
6623.00†	70.333	157.000	6390.79	23.00	-168.39	-354.10	1646245.68	14270562.72	39°17'54.026"N	80°58'45.825"W	392.10	244.567	10.51	10.33	2.06	Marcellus POE: 6623' MD
6628.00	70.850	157.100	6392.45	27.72	-172.74	-352.26	1646247.52	14270558.38	39°17'53.984"N	80°58'45.801"W	392.34	243.879	10.51	10.34	2.00	
6675.00	75.320	158.730	6406.12	72.67	-214.39	-335.37	1646264.41	14270516.74	39°17'53.572"N	80°58'45.587"W	398.04	237.410	10.07	9.51	3.47	
6720.00	80.010	159.900	6415.73	116.61	-255.51	-319.85	1646279.92	14270475.64	39°17'53.165"N	80°58'45.389"W	409.38	231.381	10.73	10.42	2.60	
6769.00	84.760	161.350	6422.22	165.11	-301.31	-303.75	1646296.02	14270429.86	39°17'52.713"N	80°58'45.185"W	427.85	225.230	10.13	9.69	2.96	
6815.00	91.080	163.320	6423.89	210.91	-345.09	-289.81	1646309.95	14270386.10	39°17'52.280"N	80°58'45.007"W	450.64	220.023	14.39	13.74	4.28	
6864.00	90.800	161.360	6423.09	259.76	-391.77	-274.94	1646324.81	14270339.43	39°17'51.818"N	80°58'44.818"W	478.62	215.061	4.04	-0.57	-4.00	
6958.00	89.510	156.620	6422.83	353.72	-479.50	-241.25	1646358.49	14270251.74	39°17'50.951"N	80°58'44.390"W	536.77	206.708	5.23	-1.37	-5.04	
7052.00	89.480	155.980	6423.66	447.67	-565.57	-203.47	1646396.25	14270165.71	39°17'50.101"N	80°58'43.910"W	601.05	199.787	0.68	-0.03	-0.68	
7147.00	89.600	155.930	6424.42	542.61	-652.32	-164.76	1646434.94	14270078.99	39°17'49.243"N	80°58'43.418"W	672.81	194.175	0.14	0.13	-0.05	

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Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #07
Area	Ritchie County, WV		Well	Western Unit 2H
Field	Ritchie		Wellbore	Western Unit 2H AWB
Facility	Noland Pad			

WELLPATH DATA (241 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
7241.00	89.600	155.750	6425.08	636.55	-738.08	-126.29	1646473.40	14269993.26	39°17'48.395"N	80°58'42.929"W	748.81	189.710	0.19	0.00	-0.19	
7335.00	89.540	154.890	6425.79	730.45	-823.49	-87.04	1646512.63	14269907.89	39°17'47.551"N	80°58'42.430"W	828.08	186.034	0.92	-0.06	-0.91	
7429.00	89.630	155.500	6426.47	824.34	-908.82	-47.61	1646552.05	14269822.60	39°17'46.708"N	80°58'41.928"W	910.07	182.999	0.66	0.10	0.65	
7524.00	89.970	155.970	6426.80	919.27	-995.43	-8.57	1646591.08	14269736.02	39°17'45.852"N	80°58'41.432"W	995.46	180.493	0.61	0.36	0.49	
7618.00	89.850	155.350	6426.95	1013.19	-1081.07	30.17	1646629.80	14269650.41	39°17'45.005"N	80°58'40.940"W	1081.49	178.401	0.67	-0.13	-0.66	
7712.00	89.940	155.970	6427.12	1107.12	-1166.71	68.92	1646668.53	14269564.80	39°17'44.158"N	80°58'40.447"W	1168.75	176.620	0.67	0.10	0.66	
7807.00	90.000	158.870	6427.17	1202.10	-1254.42	105.39	1646704.99	14269477.13	39°17'43.291"N	80°58'39.983"W	1258.84	175.198	3.05	0.06	3.05	
7901.00	90.180	161.850	6427.02	1296.01	-1342.94	136.98	1646736.57	14269388.65	39°17'42.416"N	80°58'39.582"W	1349.91	174.176	3.18	0.19	3.17	
7995.00	90.250	160.720	6426.67	1389.85	-1431.97	167.14	1646766.71	14269299.65	39°17'41.536"N	80°58'39.198"W	1441.69	173.343	1.20	0.07	-1.20	
8089.00	90.250	162.100	6426.26	1483.67	-1521.06	197.11	1646796.67	14269210.60	39°17'40.656"N	80°58'38.818"W	1533.78	172.617	1.47	0.00	1.47	
8183.00	90.280	165.070	6425.82	1577.20	-1611.22	223.67	1646823.22	14269120.48	39°17'39.765"N	80°58'38.480"W	1626.67	172.097	3.16	0.03	3.16	
8278.00	90.740	161.120	6424.98	1671.79	-1702.09	251.28	1646850.82	14269029.64	39°17'38.866"N	80°58'38.129"W	1720.54	171.602	4.19	0.48	-4.16	
8372.00	90.220	158.860	6424.19	1765.72	-1790.41	283.45	1646882.97	14268941.36	39°17'37.993"N	80°58'37.720"W	1812.71	171.004	2.47	-0.55	-2.40	
8466.00	90.740	155.310	6423.40	1859.69	-1876.98	320.04	1646919.55	14268854.83	39°17'37.138"N	80°58'37.255"W	1904.07	170.324	3.82	0.55	-3.78	
8560.00	90.650	148.530	6422.26	1953.11	-1959.86	364.26	1646963.75	14268771.98	39°17'36.318"N	80°58'36.693"W	1993.42	169.471	7.21	-0.10	-7.21	
8654.00	90.520	148.280	6421.30	2045.81	-2039.92	413.50	1647012.98	14268691.95	39°17'35.527"N	80°58'36.067"W	2081.41	168.541	0.30	-0.14	-0.27	
8747.00	90.830	155.320	6420.20	2138.22	-2121.82	457.42	1647056.87	14268610.08	39°17'34.717"N	80°58'35.509"W	2170.57	167.834	7.58	0.33	7.57	
8842.00	90.800	159.910	6418.85	2233.18	-2209.63	493.58	1647093.03	14268522.31	39°17'33.849"N	80°58'35.049"W	2264.09	167.408	4.83	-0.03	4.83	
8936.00	90.370	157.550	6417.89	2327.16	-2297.22	527.68	1647127.11	14268434.76	39°17'32.984"N	80°58'34.615"W	2357.04	167.063	2.55	-0.46	-2.51	
9030.00	90.220	158.730	6417.41	2421.16	-2384.46	562.68	1647162.09	14268347.55	39°17'32.121"N	80°58'34.171"W	2449.95	166.722	1.27	-0.16	1.26	
9124.00	90.250	161.420	6417.02	2515.08	-2472.82	594.71	1647194.11	14268259.22	39°17'31.248"N	80°58'33.764"W	2543.33	166.477	2.86	0.03	2.86	
9218.00	90.120	163.750	6416.72	2608.76	-2562.50	622.84	1647222.23	14268169.58	39°17'30.361"N	80°58'33.406"W	2637.11	166.339	2.48	-0.14	2.48	
9312.00	90.250	165.040	6416.41	2702.16	-2653.04	648.13	1647247.51	14268079.08	39°17'29.467"N	80°58'33.085"W	2731.06	166.272	1.38	0.14	1.37	
9407.00	90.120	162.110	6416.11	2796.69	-2744.15	674.99	1647274.35	14267988.00	39°17'28.566"N	80°58'32.743"W	2825.95	166.181	3.09	-0.14	-3.08	
9501.00	90.220	158.050	6415.83	2890.61	-2832.51	707.00	1647306.36	14267899.68	39°17'27.693"N	80°58'32.336"W	2919.41	165.985	4.32	0.11	-4.32	
9595.00	90.150	156.040	6415.53	2984.59	-2919.06	743.66	1647343.00	14267813.16	39°17'26.837"N	80°58'31.871"W	3012.30	165.707	2.14	-0.07	-2.14	
9690.00	90.180	155.100	6415.25	3079.51	-3005.55	782.95	1647382.28	14267726.71	39°17'25.982"N	80°58'31.371"W	3105.86	165.399	0.99	0.03	-0.99	
9784.00	90.150	159.060	6414.98	3173.48	-3092.11	819.55	1647418.86	14267640.18	39°17'25.126"N	80°58'30.906"W	3198.88	165.155	4.21	-0.03	4.21	
9878.00	90.090	155.860	6414.78	3267.46	-3178.92	855.58	1647454.88	14267553.41	39°17'24.268"N	80°58'30.448"W	3292.04	164.936	3.40	-0.06	-3.40	
9972.00	89.850	156.550	6414.83	3361.42	-3264.93	893.51	1647492.79	14267467.43	39°17'23.418"N	80°58'29.966"W	3384.98	164.695	0.78	-0.26	0.73	

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Western Unit 2H AWP Proj: 18405'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #07
Operator	ANTERO RESOURCES CORPORATION	Well	Western Unit 2H
Area	Ritchie County, WV	Wellbore	Western Unit 2H AWB
Field	Ritchie		
Facility	Noland Pad		

WELLPATH DATA (241 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (°/100ft)	Comments
10067.00	89.940	156.490	6415.01	3456.39	-3352.06	931.36	1647530.62	14267380.33	39°17'22.557"N	80°58'29.485"W	3479.05	164.472	0.11	0.09	-0.06	
10161.00	90.150	159.820	6414.93	3550.38	-3439.30	966.33	1647565.58	14267293.13	39°17'21.694"N	80°58'29.040"W	3572.48	164.306	3.55	0.22	3.54	
10255.00	90.030	166.680	6414.79	3643.92	-3529.26	993.40	1647592.65	14267203.21	39°17'20.805"N	80°58'28.696"W	3666.40	164.279	7.30	-0.13	7.30	
10350.00	90.180	167.480	6414.61	3737.71	-3621.85	1014.65	1647613.88	14267110.65	39°17'19.890"N	80°58'28.427"W	3761.29	164.350	0.86	0.16	0.84	
10444.00	90.710	158.290	6413.88	3831.25	-3711.59	1042.28	1647641.50	14267020.95	39°17'19.003"N	80°58'28.075"W	3855.16	164.314	9.79	0.56	-9.78	
10538.00	89.940	155.790	6413.35	3925.23	-3798.14	1078.94	1647678.15	14266934.44	39°17'18.148"N	80°58'27.609"W	3948.41	164.142	2.78	-0.82	-2.66	
10632.00	90.000	156.270	6413.40	4019.18	-3884.03	1117.13	1647716.32	14266848.58	39°17'17.298"N	80°58'27.124"W	4041.49	163.954	0.51	0.06	0.51	
10726.00	90.150	152.660	6413.27	4112.99	-3968.83	1157.64	1647756.82	14266763.81	39°17'16.460"N	80°58'26.609"W	4134.22	163.739	3.84	0.16	-3.84	
10821.00	89.630	154.250	6413.46	4207.70	-4053.81	1200.10	1647799.26	14266678.86	39°17'15.620"N	80°58'26.069"W	4227.72	163.509	1.76	-0.55	1.67	
10915.00	89.880	154.600	6413.86	4301.52	-4138.60	1240.68	1647839.82	14266594.11	39°17'14.782"N	80°58'25.554"W	4320.57	163.312	0.46	0.27	0.37	
11009.00	90.030	154.350	6413.93	4395.35	-4223.43	1281.18	1647880.31	14266509.32	39°17'13.943"N	80°58'25.039"W	4413.48	163.125	0.31	0.16	-0.27	
11103.00	90.000	154.980	6413.91	4489.20	-4308.39	1321.40	1647920.51	14266424.39	39°17'13.104"N	80°58'24.528"W	4506.47	162.949	0.67	-0.03	0.67	
11198.00	89.970	157.240	6413.93	4584.14	-4395.24	1359.88	1647958.97	14266337.57	39°17'12.245"N	80°58'24.039"W	4600.81	162.808	2.38	-0.03	2.38	
11292.00	90.030	158.030	6413.93	4678.14	-4482.17	1395.64	1647994.72	14266250.68	39°17'11.386"N	80°58'23.584"W	4694.43	162.705	0.84	0.06	0.84	
11386.00	91.200	160.260	6412.92	4772.11	-4570.00	1429.10	1648028.17	14266162.89	39°17'10.518"N	80°58'23.159"W	4788.24	162.635	2.68	1.24	2.37	
11480.00	90.980	155.170	6411.13	4866.06	-4656.94	1464.73	1648063.78	14266075.99	39°17'09.658"N	80°58'22.706"W	4881.85	162.540	5.42	-0.23	-5.41	
11574.00	91.050	157.060	6409.47	4959.99	-4742.87	1502.78	1648101.82	14265990.09	39°17'08.809"N	80°58'22.222"W	4975.25	162.419	2.01	0.07	2.01	
11668.00	90.860	157.930	6407.90	5053.97	-4829.70	1538.76	1648137.78	14265903.29	39°17'07.951"N	80°58'21.765"W	5068.90	162.328	0.95	-0.20	0.93	
11763.00	90.860	157.270	6406.48	5148.96	-4917.52	1574.96	1648173.96	14265815.51	39°17'07.082"N	80°58'21.305"W	5163.57	162.241	0.69	0.00	-0.69	
11857.00	89.140	156.640	6406.48	5242.94	-5004.01	1611.75	1648210.74	14265729.05	39°17'06.227"N	80°58'20.838"W	5257.17	162.147	1.95	-1.83	-0.67	
11951.00	89.350	158.310	6407.71	5336.93	-5090.83	1647.76	1648246.73	14265642.26	39°17'05.369"N	80°58'20.380"W	5350.86	162.065	1.79	0.22	1.78	
12045.00	89.230	161.490	6408.88	5430.85	-5179.09	1680.05	1648279.02	14265554.04	39°17'04.497"N	80°58'19.970"W	5444.77	162.027	3.39	-0.13	3.38	
12139.00	89.570	161.160	6409.86	5524.68	-5268.13	1710.15	1648309.10	14265465.03	39°17'03.617"N	80°58'19.587"W	5538.76	162.015	0.50	0.36	-0.35	
12234.00	89.320	156.890	6410.78	5619.64	-5356.81	1744.15	1648343.09	14265376.39	39°17'02.740"N	80°58'19.155"W	5633.61	161.965	4.50	-0.26	-4.49	
12328.00	89.450	156.860	6411.79	5713.62	-5443.26	1781.06	1648379.99	14265289.98	39°17'01.866"N	80°58'18.686"W	5727.24	161.882	0.14	0.14	-0.03	
12423.00	89.320	160.820	6412.81	5808.58	-5531.83	1815.35	1648414.26	14265201.45	39°17'01.010"N	80°58'18.250"W	5822.08	161.832	4.17	-0.14	4.17	
12517.00	89.920	160.660	6414.26	5902.46	-5620.56	1846.35	1648444.25	14265112.75	39°17'00.133"N	80°58'17.857"W	5916.05	161.815	0.46	-0.43	-0.17	
12611.00	89.260	157.060	6415.75	5996.42	-5708.20	1880.24	1648479.12	14265025.14	39°16'59.267"N	80°58'17.426"W	6009.30	161.769	3.85	0.36	-3.83	
12705.00	89.230	155.130	6416.99	6090.36	-5794.13	1918.33	1648517.19	14264939.25	39°16'58.417"N	80°58'16.942"W	6103.43	161.681	2.05	-0.03	-2.05	
12799.00	89.170	155.150	6418.30	6184.24	-5879.41	1957.84	1648556.69	14264854.00	39°16'57.574"N	80°58'16.440"W	6196.82	161.582	0.07	-0.08	0.02	

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #07
Operator	ANTERO RESOURCES CORPORATION	Well	Western Unit 2H
Area	Ritchie County, WV	Wellbore	Western Unit 2H AWB
Field	Ritchie		
Facility	Noland Pad		

WELLPATH DATA (241 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 (ft)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
12893.00	89.170	155.640	6419.66	6278.14	-5964.87	1996.97	1648595.81	14264768.58	39°16'56.729"N	80°58'15.942"W	6290.27	161.490	0.52	0.00	0.00	0.52
12988.00	89.290	156.980	6420.94	6373.09	-6051.85	2035.14	1648633.96	14264681.63	39°16'55.870"N	80°58'15.457"W	6384.88	161.413	1.42	0.13	1.41	1.41
13082.00	89.140	158.300	6422.23	6467.07	-6138.77	2070.89	1648669.70	14264594.74	39°16'55.010"N	80°58'15.003"W	6478.67	161.388	1.41	-0.16	1.40	1.40
13176.00	90.030	160.340	6422.91	6561.04	-6226.71	2104.09	1648702.88	14264506.84	39°16'54.141"N	80°58'14.581"W	6572.60	161.329	2.37	0.95	2.17	2.17
13270.00	89.910	161.040	6422.96	6654.93	-6315.42	2135.17	1648733.95	14264418.17	39°16'53.264"N	80°58'14.186"W	6666.60	161.320	0.76	-0.13	0.74	0.74
13365.00	90.060	156.030	6422.98	6749.89	-6403.80	2169.92	1648768.69	14264329.82	39°16'52.391"N	80°58'13.745"W	6761.45	161.281	5.28	0.16	-5.27	-5.27
13459.00	90.220	151.350	6422.75	6843.61	-6488.04	2211.58	1648810.33	14264245.62	39°16'51.588"N	80°58'13.215"W	6854.62	161.177	4.98	0.17	-4.98	-4.98
13553.00	90.180	153.060	6422.42	6937.14	-6571.19	2255.41	1648854.14	14264162.50	39°16'50.796"N	80°58'12.858"W	6947.48	161.056	1.82	-0.04	1.82	1.82
13647.00	90.180	158.160	6422.13	7031.03	-6656.78	2294.21	1648896.53	14264076.95	39°16'49.890"N	80°58'12.165"W	7041.03	160.994	5.43	0.00	5.43	5.43
13741.00	90.180	159.290	6421.83	7125.02	-6744.37	2328.32	1648927.02	14263989.39	39°16'49.024"N	80°58'11.732"W	7134.95	160.954	1.20	0.00	1.20	1.20
13835.00	90.180	158.130	6421.54	7219.01	-6831.95	2362.45	1648961.14	14263901.85	39°16'48.158"N	80°58'11.298"W	7228.88	160.925	1.23	0.00	-1.23	-1.23
13930.00	90.340	158.110	6421.11	7314.00	-6920.11	2397.85	1648996.53	14263813.73	39°16'47.287"N	80°58'10.848"W	7323.77	160.889	0.17	0.17	-0.02	-0.02
14024.00	89.780	158.820	6421.01	7408.00	-7007.54	2432.35	1649031.02	14263726.32	39°16'46.422"N	80°58'10.410"W	7417.68	160.858	0.96	-0.60	0.76	0.76
14118.00	89.820	158.780	6421.34	7501.99	-7095.18	2466.35	1649064.99	14263638.72	39°16'45.556"N	80°58'09.978"W	7511.62	160.832	0.06	0.04	-0.04	-0.04
14213.00	89.880	159.490	6421.59	7596.97	-7183.95	2500.18	1649098.82	14263549.99	39°16'44.679"N	80°58'09.548"W	7606.58	160.811	0.75	0.06	0.75	0.75
14307.00	89.820	161.200	6421.83	7690.88	-7272.47	2531.80	1649130.42	14263461.50	39°16'43.804"N	80°58'09.147"W	7700.57	160.805	1.82	-0.06	1.82	1.82
14401.00	89.880	160.700	6422.08	7784.75	-7361.32	2562.48	1649161.09	14263372.69	39°16'42.925"N	80°58'08.757"W	7794.57	160.807	0.54	0.06	-0.53	-0.53
14496.00	89.850	158.760	6422.30	7879.70	-7450.43	2595.39	1649193.99	14263283.61	39°16'42.044"N	80°58'08.339"W	7889.55	160.794	2.04	-0.03	-2.04	-2.04
14590.00	89.880	157.120	6422.52	7973.69	-7537.55	2630.69	1649229.27	14263196.53	39°16'41.183"N	80°58'07.890"W	7983.43	160.760	1.74	0.03	-1.74	-1.74
14683.00	89.820	159.600	6422.77	8066.68	-7623.99	2664.99	1649263.55	14263110.13	39°16'40.329"N	80°58'07.454"W	8076.34	160.733	2.67	-0.06	2.67	2.67
14778.00	90.030	157.210	6422.89	8161.67	-7712.31	2699.95	1649298.50	14263021.84	39°16'39.456"N	80°58'07.010"W	8171.26	160.706	2.53	0.22	-2.52	-2.52
14872.00	90.000	153.250	6422.87	8255.55	-7797.65	2739.32	1649337.86	14262936.54	39°16'38.612"N	80°58'06.510"W	8264.82	160.644	4.21	-0.03	-4.21	-4.21
14965.89	90.090	151.240	6422.79	8348.97	-7880.73	2783.04	1649381.57	14262853.49	39°16'37.791"N	80°58'05.954"W	8357.71	160.550	2.14	0.10	-2.14	-2.14
15061.00	90.000	152.470	6422.72	8443.55	-7964.59	2827.91	1649426.41	14262769.66	39°16'36.962"N	80°58'05.386"W	8451.73	160.452	1.30	-0.09	1.29	1.29
15155.00	90.030	156.100	6422.69	8537.34	-8049.27	2868.69	1649467.17	14262686.02	39°16'36.125"N	80°58'04.864"W	8545.18	160.384	3.86	0.03	3.86	3.86
15249.00	90.000	160.410	6422.67	8631.32	-8136.56	2903.50	1649501.98	14262597.76	39°16'35.262"N	80°58'04.424"W	8639.09	160.361	4.59	-0.03	4.59	4.59
15343.00	89.970	162.220	6422.69	8725.15	-8225.60	2933.62	1649532.08	14262508.75	39°16'34.382"N	80°58'04.041"W	8733.08	160.371	1.93	-0.03	1.93	1.93
15437.00	89.940	160.960	6422.77	8818.96	-8314.79	2963.30	1649561.75	14262419.60	39°16'33.500"N	80°58'03.664"W	8827.05	160.384	1.34	-0.03	-1.34	-1.34
15532.00	90.280	159.390	6422.58	8913.88	-8404.16	2995.52	1649593.96	14262330.27	39°16'32.617"N	80°58'03.255"W	8922.05	160.382	1.69	0.36	-1.65	-1.65
15626.00	90.310	161.800	6422.10	9007.77	-8492.81	3026.75	1649625.17	14262241.66	39°16'31.740"N	80°58'02.858"W	9016.04	160.384	2.56	0.03	2.56	2.56

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #07
Area	Ritchie County, WV		Well	Western Unit 2H
Field	Ritchie		Wellbore	Western Unit 2H AWB
Facility	Noland Pad			

WELLPATH DATA (241 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
15720.00	90.180	163.800	6421.70	9101.42	-8582.60	3054.54	1649652.96	14262151.90	39°16'30.853"N	80°58'02.505"W	9109.95	160.409	2.13	-0.14	2.13	
15814.00	90.310	164.610	6421.30	9194.86	-8673.05	3080.13	1649678.53	14262061.49	39°16'29.959"N	80°58'02.180"W	9203.75	160.448	0.87	0.14	0.86	
15908.00	90.340	159.500	6420.76	9288.58	-8762.44	3109.08	1649707.47	14261972.13	39°16'29.075"N	80°58'01.812"W	9297.68	160.464	5.44	0.03	-5.44	
16002.00	90.180	156.780	6420.34	9382.57	-8849.68	3144.08	1649742.45	14261884.93	39°16'28.213"N	80°58'01.368"W	9391.59	160.441	2.90	-0.17	-2.89	
16096.00	90.250	157.690	6419.98	9476.56	-8936.35	3180.45	1649778.81	14261798.29	39°16'27.356"N	80°58'00.906"W	9485.44	160.409	0.97	0.07	0.97	
16190.00	90.280	157.670	6419.55	9570.56	-9023.31	3216.15	1649814.50	14261711.37	39°16'26.496"N	80°58'00.452"W	9579.34	160.383	0.04	0.03	-0.02	
16284.00	90.250	157.110	6419.11	9664.56	-9110.08	3252.29	1649850.62	14261624.63	39°16'25.639"N	80°57'59.993"W	9673.21	160.354	0.60	-0.03	-0.60	
16378.00	89.910	155.480	6418.98	9758.52	-9196.15	3290.08	1649888.39	14261538.60	39°16'24.788"N	80°57'59.513"W	9766.97	160.314	1.77	-0.36	-1.73	
16473.00	89.750	160.250	6419.27	9853.49	-9284.12	3325.86	1649924.16	14261450.66	39°16'23.918"N	80°57'59.058"W	9861.86	160.291	5.02	-0.17	5.02	
16568.00	89.690	160.890	6419.73	9948.38	-9373.71	3357.46	1649955.75	14261361.11	39°16'23.033"N	80°57'58.657"W	9956.86	160.294	0.68	-0.06	0.67	
16663.00	89.850	159.890	6420.11	10043.30	-9463.20	3389.35	1649987.62	14261271.66	39°16'22.148"N	80°57'58.252"W	10051.85	160.294	1.07	0.17	-1.05	
16758.00	89.780	157.420	6420.42	10138.28	-9551.67	3423.92	1650022.19	14261183.22	39°16'21.273"N	80°57'57.813"W	10146.81	160.279	2.60	-0.07	-2.60	
16853.00	89.660	156.820	6420.88	10233.27	-9639.20	3460.86	1650059.11	14261095.73	39°16'20.408"N	80°57'57.344"W	10241.66	160.250	0.64	-0.13	-0.63	
16947.00	89.660	154.660	6421.44	10327.19	-9724.89	3499.48	1650097.71	14261010.07	39°16'19.561"N	80°57'56.853"W	10335.37	160.209	2.30	0.00	-2.30	
17041.00	89.690	152.660	6421.97	10420.93	-9809.12	3541.18	1650139.40	14260925.87	39°16'18.728"N	80°57'56.323"W	10428.75	160.150	2.13	0.03	-2.13	
17136.00	89.850	151.630	6422.35	10515.44	-9893.11	3585.57	1650183.77	14260841.91	39°16'17.898"N	80°57'55.759"W	10522.83	160.078	1.10	0.17	-1.08	
17231.00	89.780	157.520	6422.66	10610.23	-9978.88	3626.34	1650224.52	14260756.19	39°16'17.050"N	80°57'55.241"W	10617.36	160.029	6.20	-0.07	6.20	
17326.00	89.850	159.920	6422.97	10705.22	-10067.39	3660.81	1650258.98	14260667.71	39°16'16.175"N	80°57'54.803"W	10712.33	160.017	2.53	0.07	2.53	
17421.00	89.630	159.510	6423.40	10800.17	-10156.50	3693.75	1650291.90	14260578.63	39°16'15.294"N	80°57'54.385"W	10807.32	160.015	0.49	-0.23	-0.43	
17516.00	89.540	158.970	6424.09	10895.14	-10245.33	3727.42	1650325.56	14260489.84	39°16'14.416"N	80°57'53.957"W	10902.31	160.008	0.58	-0.09	-0.57	
17611.00	89.450	158.470	6424.92	10990.13	-10333.85	3761.89	1650360.02	14260401.36	39°16'13.541"N	80°57'53.519"W	10997.28	159.997	0.53	-0.09	-0.53	
17706.00	89.480	157.430	6425.81	11085.12	-10421.89	3797.56	1650395.67	14260313.35	39°16'12.671"N	80°57'53.066"W	11092.22	159.979	1.10	0.03	-1.09	
17800.00	89.290	156.770	6426.82	11179.11	-10508.48	3834.13	1650432.23	14260226.79	39°16'11.815"N	80°57'52.602"W	11186.09	159.955	0.73	-0.20	-0.70	
17895.00	89.540	156.420	6427.79	11274.08	-10595.66	3871.87	1650469.95	14260139.65	39°16'10.953"N	80°57'52.122"W	11280.93	159.927	0.45	0.26	-0.37	
17990.00	89.510	156.990	6428.58	11369.05	-10682.91	3909.43	1650507.50	14260052.43	39°16'10.091"N	80°57'51.645"W	11375.77	159.900	0.60	-0.03	0.60	
18085.00	89.540	157.940	6429.37	11464.05	-10770.65	3945.84	1650543.90	14259964.73	39°16'09.223"N	80°57'51.182"W	11470.69	159.880	1.00	0.03	1.00	
18179.00	89.510	157.360	6430.15	11558.04	-10857.59	3981.59	1650579.62	14259877.83	39°16'08.364"N	80°57'50.728"W	11564.61	159.862	0.62	-0.03	-0.62	
18273.00	89.480	157.460	6430.97	11652.03	-10944.37	4017.69	1650615.72	14259791.08	39°16'07.506"N	80°57'50.270"W	11658.52	159.842	0.11	-0.03	0.11	
18368.00	89.320	159.960	6431.97	11747.01	-11032.88	4052.18	1650650.19	14259702.61	39°16'06.631"N	80°57'49.832"W	11753.49	159.833	2.64	-0.17	2.63	
18380.00	89.380	159.300	6432.10	11759.01	-11044.13	4056.36	1650654.37	14259691.36	39°16'06.520"N	80°57'49.779"W	11765.49	159.832	5.52	0.50	-5.50	

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Actual Wellpath Report

Western Unit 2H AWP Proj: 18405'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Western Unit 2H
Field	Ritchie	Wellbore	Western Unit 2H AWB
Facility	Noland Pad		

WELLPATH DATA (241 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
18405.00	89.380	159.300	6432.38	11784.00	-11067.51	4065.19	1650663.20	14259667.99	39°16'06.289"N	80°57'49.666"W	11790.49	159.831	0.00	0.00	0.00	Projected MD at TD: 18405'

HOLE & CASING SECTIONS - Ref Wellbore: Western Unit 2H AWB Ref Wellpath: Western Unit 2H AWP Proj: 18405'									
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	25.00	65.00	40.00	25.00	65.00	0.00	0.00	0.02	0.01
17.5in Open Hole	65.00	367.00	302.00	65.00	367.00	0.02	0.01	0.30	-0.73
13.375in Casing Surface	25.00	367.00	342.00	25.00	367.00	0.00	0.00	0.30	-0.73
12.25in Open Hole	367.00	2573.00	2206.00	367.00	2570.98	0.30	-0.73	34.83	-43.72
9.625in Casing Intermediate	25.00	2573.00	2548.00	25.00	2570.98	0.00	0.00	34.83	-43.72
8.75in Open Hole	2573.00	5625.00	3052.00	2570.98	5574.75	34.83	-43.72	240.97	-399.95
8.5in Open Hole	5625.00	18405.00	12780.00	5574.75	6432.38	240.97	-399.95	-11067.51	4065.19
5.5in Casing Production	25.00	18405.00	18380.00	25.00	6432.38	0.00	0.00	-11067.51	4065.19

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Western Unit 2H AWP Proj: 18405'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Western Unit 2H
Field	Ritchie	Wellbore	Western Unit 2H AWB
Facility	Noland Pad		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Western Unit 2H POE Rev-2	6394.00	-176.64	-349.95	1646249.83	14270554.48	39°17'53.945"N	80°58'45.772"W	point
Western Unit 2H BHL Rev-2	6426.00	-11082.01	4071.17	1650669.18	14259653.50	39°16'06.145"N	80°57'49.590"W	point
Western Unit 2H LP Rev-1	6426.00	-335.90	-285.38	1646314.37	14270395.28	39°17'52.371"N	80°58'44.951"W	point
Western Unit 2H 25' L/R Hard Line	6512.00	-5656.88	1871.79	1648470.67	14265076.44	39°16'59.774"N	80°58'17.533"W	rectangle

WELLPATH COMPOSITION - Ref Wellbore: Western Unit 2H AWB Ref Wellpath: Western Unit 2H AWP Proj: 18405'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	
25.00	1041.00	Gyrodata standard - Continuous gyro	01 Gyrodata Cont. Gyro <17-1/2"> (100'-1029')	Western Unit 2H AWB	
1041.00	5541.00	ISCWSA MWD, Rev. 4 (Standard)	02 Directional ONE MWD <8-3/4"> (1029')(1085'-5529')	Western Unit 2H AWB	
5541.00	18380.00	BHI AutoTrak Curve (Short)	03 BHI AT Curve <8-1/2"> (5541')(5575'-18380')	Western Unit 2H AWB	
18380.00	18405.00	Blind Drilling (std)	Projection to bit	Western Unit 2H AWB	

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Actual Wellpath Report

Western Unit 2H AWP Proj: 18405'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Western Unit 2H
Field	Ritchie	Wellbore	Western Unit 2H AWB
Facility	Noland Pad		

COMMENTS
Wellpath general comments API: 47-085-10294-0000 BHI Job #: 8473303 Rig: Patterson 343 Duration: 03/29/2017-04/02/2017 Gyrodata MS Gyro <17-1/2">(100'-1029') Directional ONE MWD <8-3/4"> (1029')(1085'-5529') BHI AT Curve <8-1/2"> (5541')(5575'-18380') Middlesex: 6357' MD Burket: 6519' MD Tully: 6585' MD Marcellus POE: 6623' MD Projected MD at TD: 18405'

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