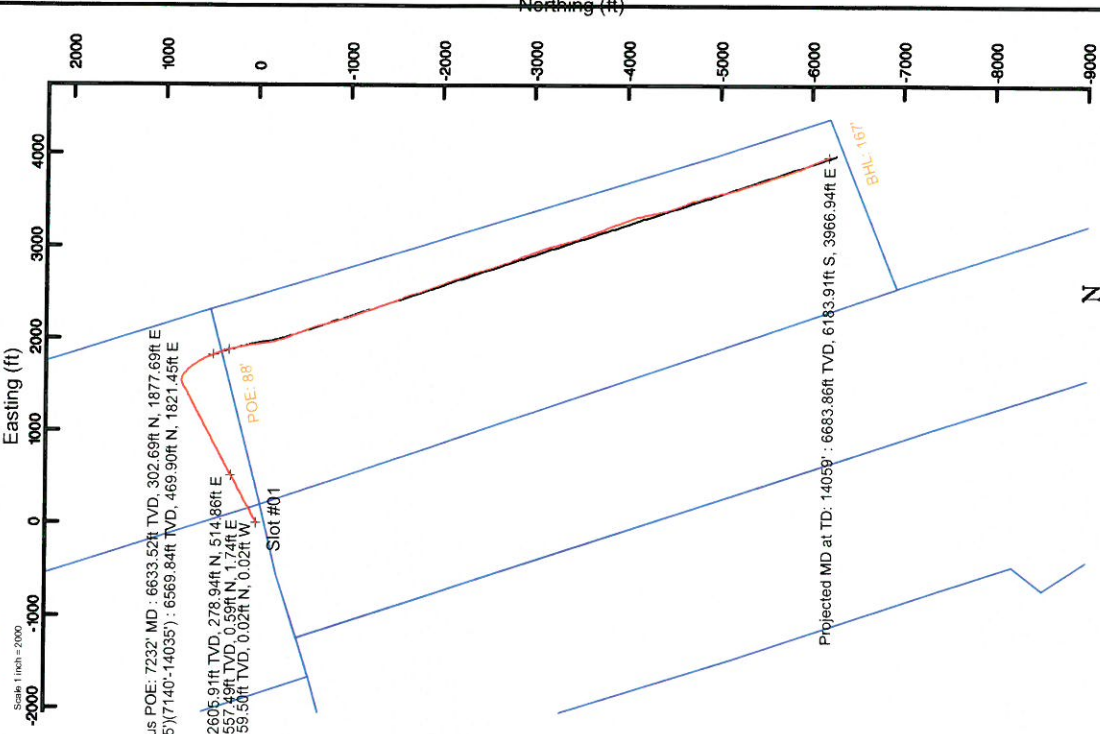




# ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV  
 Field: Ritchie  
 Facility: Hichman Pad  
 Slot: Slot #01  
 Well: Graben Unit 3H  
 Wellbore: Graben Unit\_3H\_PWB



API: 47-085-10336-0000  
 BHI Job #: 9230934  
 Rig: Frontier 22  
 Duration: 06/29/2018-07/01/2018

Gyrodatta MS Gyro <17-1/2"> (50-416') : 0.09° Inc, 59.50ft MD, 59.50ft TVD, -0.02ft VS

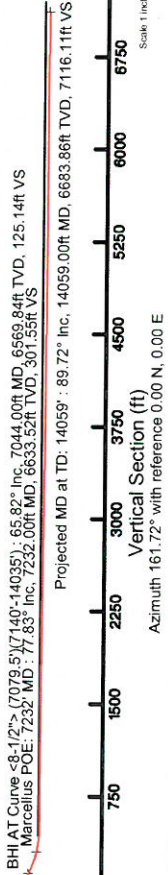
WFT EM <12-1/4"> (416)(548'-2565') : 1.05° Inc, 557.50ft MD, 557.49ft TVD, -0.02ft VS

Slot	Well	Wellbore	Wellpath
Slot #01	Graben Unit 3H	Graben Unit 3H-AWB	Graben Unit 3H-AWP Proj_14059
Slot #01	Graben Unit 3H	Graben Unit 3H-PWB	Graben Unit 3H-PWP Rev-B.0

Location Information			
Facility Name	Hichman Pad	Grid East (US ft)	Grid North (US ft)
Local N (ft)	Local E (ft)	Local N (ft)	Local E (ft)
Slot #01	0.00	1673097.617	14285267.289
Frontier 22 (RKB) to Ground level (At Slot: Slot #01)	24.5ft	39°20'19.220"N	80°53'03.890"W
Mean Sea Level to Ground level (At Slot: Slot #01)	-1250ft		
Frontier 22 (RKB) to Mean Sea Level	1274.5ft		

Well Profile Data			
Design Comment	MD (ft)	Inc (°)	VS (ft)
The On	7079.50	65.910	160.840
Proj. To Bottom	7153.50	70.360	162.440
POE	7195.92	73.707	164.699
Landing Pt.	7358.81	90.000	164.698
Shift Lateral	7589.79	90.000	171.620
On Azimuth	7920.30	90.000	161.716
BHL	14134.30	90.000	161.716

Well Profile Data			
Design Comment	MD (ft)	Inc (°)	VS (ft)
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On Azimuth	7920.30	90.000	161.716
BHL	14134.30	90.000	161.716



Vertical Section (ft)

7500  
6750  
6000  
5250  
4500  
3750  
3000  
2250  
1500  
750  
0

True Vertical Depth (ft)

7500  
6750  
6000  
5250  
4500  
3750  
3000  
2250  
1500  
750  
0

Azimuth 161.72° with reference 0.00 N, 0.00 E



# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'

Page 1 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Graben Unit 3H
Field	Ritchie	Wellbore	Graben Unit 3H AWB
Facility	Hichman Pad		

## REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	02/Aug/2018 at 11:04
Convergence at slot	0.07° East	Database/Source file	WA_MPL_EasternUS_Defn/Graben_Unit_3H_AWP_Proj_14059_.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Northing[US ft]	Latitude	Longitude	Longitude
Slot Location	0.00	0.00	14285267.29	39°20'19.220"N	80°53'03.890"W	
Facility Reference Pt			14285267.29	39°20'19.220"N	80°53'03.890"W	
Field Reference Pt			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	1274.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Ground Level at Slot (Slot #01)	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	161.72°





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'

Page 2 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Slot #01
ANTERO RESOURCES CORPORATION	Ritchie County, WV	Ritchie	Hichman Pad	Well	Graben Unit 3H
				Wellbore	Graben Unit 3H AWB

## WELLPATH DATA (189 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†	0.000	304.980	0.00	0.00	0.00	0.00	1673097.62	14285267.29	39°20'19.220"N	80°53'03.890"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	304.980	24.50	0.00	0.00	0.00	1673097.62	14285267.29	39°20'19.220"N	80°53'03.890"W	0.00	0.000	0.00	0.00	0.00	
59.50	0.090	304.980	59.50	-0.02	0.02	-0.02	1673097.59	14285267.30	39°20'19.220"N	80°53'03.890"W	0.03	304.980	0.26	0.26	-157.20	Cyrodota MS Gyro <17-1/2"> (50'-416')
84.50	0.100	2.130	84.50	-0.06	0.05	-0.04	1673097.58	14285267.34	39°20'19.220"N	80°53'03.890"W	0.06	322.249	0.37	0.04	0.04	228.60
109.50	0.030	149.270	109.50	-0.07	0.06	-0.03	1673097.58	14285267.35	39°20'19.221"N	80°53'03.890"W	0.07	332.631	0.51	-0.28	588.56	
134.50	0.050	275.450	134.50	-0.07	0.06	-0.04	1673097.58	14285267.35	39°20'19.221"N	80°53'03.891"W	0.07	325.729	0.29	0.08	504.72	
159.50	0.030	84.350	159.50	-0.07	0.06	-0.05	1673097.57	14285267.35	39°20'19.221"N	80°53'03.891"W	0.08	323.760	0.32	-0.08	675.60	
184.50	0.140	102.140	184.50	-0.06	0.06	-0.01	1673097.61	14285267.35	39°20'19.221"N	80°53'03.891"W	0.06	350.788	0.45	0.44	71.16	
209.50	0.090	95.350	209.50	-0.03	0.05	0.04	1673097.66	14285267.34	39°20'19.220"N	80°53'03.889"W	0.06	39.971	0.21	-0.20	-27.16	
234.50	0.190	51.470	234.50	-0.04	0.07	0.09	1673097.71	14285267.36	39°20'19.221"N	80°53'03.889"W	0.12	52.014	0.56	0.40	-175.52	
259.50	0.040	169.330	259.50	-0.05	0.09	0.13	1673097.74	14285267.38	39°20'19.221"N	80°53'03.888"W	0.15	54.741	0.85	-0.60	471.44	
284.50	0.040	102.430	284.50	-0.03	0.08	0.14	1673097.75	14285267.37	39°20'19.221"N	80°53'03.888"W	0.16	59.981	0.18	0.00	-267.60	
309.50	0.170	94.470	309.50	-0.01	0.07	0.18	1673097.80	14285267.36	39°20'19.221"N	80°53'03.888"W	0.20	67.849	0.52	0.52	-31.84	
334.50	0.180	137.670	334.50	0.04	0.04	0.25	1673097.86	14285267.33	39°20'19.220"N	80°53'03.887"W	0.25	80.254	0.52	0.04	172.80	
359.50	0.140	96.420	359.50	0.09	0.01	0.30	1673097.92	14285267.30	39°20'19.220"N	80°53'03.886"W	0.30	88.162	0.48	-0.16	-165.00	
384.50	0.210	109.840	384.50	0.13	-0.01	0.38	1673097.99	14285267.28	39°20'19.220"N	80°53'03.885"W	0.38	91.414	0.32	0.28	53.68	
409.50	0.150	96.210	409.50	0.17	-0.03	0.45	1673098.07	14285267.26	39°20'19.220"N	80°53'03.884"W	0.45	93.596	0.29	-0.24	-54.52	
425.50	0.220	104.600	425.50	0.19	-0.04	0.50	1673098.12	14285267.25	39°20'19.220"N	80°53'03.884"W	0.50	94.373	0.47	0.44	52.44	
557.50	1.050	55.000	557.49	-0.02	0.59	1.74	1673099.35	14285267.88	39°20'19.226"N	80°53'03.868"W	1.84	71.203	0.70	0.63	-37.58	WFT EM <12-1/4"> (416')(548':2565')
648.50	3.210	67.760	648.42	-0.43	2.03	4.78	1673102.39	14285269.32	39°20'19.240"N	80°53'03.829"W	5.19	66.944	2.42	2.37	14.02	
738.50	5.680	67.580	738.14	-0.93	4.69	11.23	1673108.84	14285271.97	39°20'19.266"N	80°53'03.747"W	12.17	67.346	2.74	2.74	-0.20	
828.50	7.930	61.410	827.51	-2.36	9.36	20.80	1673118.41	14285276.64	39°20'19.312"N	80°53'03.625"W	22.81	65.778	2.63	2.50	-6.86	
923.50	10.260	58.470	921.31	-5.47	16.92	33.77	1673131.37	14285284.20	39°20'19.387"N	80°53'03.460"W	37.77	63.387	2.50	2.45	-3.09	
1018.50	12.490	56.640	1014.43	-10.09	26.99	49.56	1673147.16	14285294.27	39°20'19.486"N	80°53'03.259"W	56.43	61.425	2.38	2.35	-1.93	
1112.50	14.450	58.790	1105.84	-15.36	38.66	68.08	1673165.67	14285305.93	39°20'19.601"N	80°53'03.023"W	78.29	60.410	2.15	2.09	2.29	
1207.50	16.900	63.590	1197.31	-19.96	50.95	90.59	1673188.17	14285318.22	39°20'19.722"N	80°53'02.736"W	103.94	60.647	2.92	2.58	5.05	
1301.50	18.300	66.060	1286.91	-23.35	63.01	116.32	1673213.89	14285330.28	39°20'19.841"N	80°53'02.409"W	132.29	61.554	1.69	1.49	2.63	
1396.50	18.370	61.240	1377.09	-27.54	76.27	143.08	1673240.64	14285343.53	39°20'19.972"N	80°53'02.068"W	162.13	61.939	1.60	0.07	-5.07	
1490.50	19.790	59.070	1465.92	-33.72	91.58	169.71	1673267.26	14285358.83	39°20'20.123"N	80°53'01.729"W	192.84	61.649	1.69	1.51	-2.31	
1584.50	19.570	58.390	1554.43	-40.84	108.01	196.77	1673294.31	14285375.25	39°20'20.285"N	80°53'01.384"W	224.46	61.238	0.34	-0.23	-0.72	





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'

Page 3 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Graben Unit 3H
Field	Ritchie	Wellbore	Graben Unit 3H AWB
Facility	Hichman Pad		

## WELLPATH DATA (189 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
1678.50	18.900	59.660	1643.19	-47.65	123.95	223.32	1673320.84	142855391.19	39°20'20.442"N	80°53'01.046"W	255.41	60.968	0.84	-0.71	1.35	
1772.50	19.290	64.080	1732.02	-52.89	138.43	250.42	1673347.94	142854056.66	39°20'20.585"N	80°53'00.701"W	286.13	61.067	1.59	0.41	4.70	
1867.50	18.120	64.270	1822.00	-56.89	151.70	277.84	1673375.35	142854189.33	39°20'20.716"N	80°53'00.351"W	316.56	61.366	1.23	-1.23	0.20	
1961.50	17.180	61.230	1911.58	-61.32	164.73	303.18	1673400.68	142854319.95	39°20'20.844"N	80°53'00.029"W	345.04	61.484	1.40	-1.00	-3.23	
2055.50	17.940	60.160	2001.19	-66.75	178.61	327.91	1673425.39	142854458.83	39°20'20.981"N	80°52'59.714"W	373.40	61.423	0.88	0.81	-1.14	
2150.50	19.420	61.930	2091.19	-72.36	193.33	354.54	1673452.01	14285460.54	39°20'21.126"N	80°52'59.374"W	403.82	61.397	1.67	1.56	1.86	
2244.50	20.590	64.760	2179.52	-77.02	207.73	383.28	1673480.74	14285474.93	39°20'21.268"N	80°52'58.008"W	435.95	61.543	1.62	1.24	3.01	
2339.50	20.530	65.170	2268.47	-80.95	221.85	413.51	1673510.96	14285489.05	39°20'21.407"N	80°52'58.623"W	469.26	61.787	0.16	-0.06	0.43	
2433.50	19.000	62.280	2356.93	-85.34	235.89	442.01	1673539.45	14285503.08	39°20'21.546"N	80°52'57.774"W	501.02	61.913	1.93	-1.63	-3.07	
2527.50	17.860	58.870	2446.11	-91.06	250.46	467.90	1673565.33	14285517.65	39°20'21.689"N	80°52'57.931"W	530.72	61.841	1.67	-1.21	-3.63	
2574.50	18.020	57.900	2490.82	-94.39	258.05	480.23	1673577.65	14285525.23	39°20'21.764"N	80°52'57.774"W	545.17	61.749	0.72	0.34	-2.06	
2696.50	20.710	59.770	2605.91	-103.37	278.94	514.86	1673612.27	14285546.12	39°20'21.970"N	80°52'57.333"W	585.56	61.552	2.26	2.20	1.53	WFT EM -8-3/4'> (2565')(2687'-7070')
2791.50	20.420	58.800	2694.86	-110.55	295.98	543.55	1673640.95	14285563.15	39°20'22.138"N	80°52'56.967"W	618.91	61.430	0.47	-0.31	-1.02	
2885.50	20.190	61.270	2783.02	-117.16	312.27	571.80	1673669.19	14285579.44	39°20'22.299"N	80°52'56.607"W	651.51	61.360	0.94	-0.24	2.63	
2980.50	19.870	60.900	2872.27	-123.17	328.01	600.28	1673697.66	14285595.16	39°20'22.454"N	80°52'56.245"W	684.05	61.347	0.36	-0.34	-0.39	
3074.50	20.190	63.910	2960.59	-128.37	342.91	628.81	1673726.17	14285610.06	39°20'22.601"N	80°52'55.881"W	716.23	61.395	1.15	0.34	3.20	
3169.50	19.710	63.940	3049.89	-132.77	357.16	657.92	1673755.28	14285624.30	39°20'22.742"N	80°52'55.510"W	748.61	61.505	0.51	-0.51	0.03	
3263.50	19.430	62.740	3138.46	-137.35	371.28	686.06	1673783.40	14285638.42	39°20'22.881"N	80°52'55.152"W	780.08	61.579	0.52	-0.30	-1.28	
3357.50	19.120	62.080	3227.19	-142.37	385.65	713.56	1673810.89	14285652.78	39°20'23.023"N	80°52'54.802"W	811.11	61.611	0.40	-0.33	-0.70	
3457.50	18.560	62.060	3321.83	-147.78	400.78	742.09	1673839.41	14285667.90	39°20'23.172"N	80°52'54.438"W	843.40	61.628	0.56	-0.56	-0.02	
3552.50	18.110	61.860	3412.01	-152.85	414.82	768.47	1673865.78	14285681.95	39°20'23.310"N	80°52'54.102"W	873.28	61.640	0.48	-0.47	-0.21	
3646.50	17.380	61.230	3501.53	-157.91	428.47	793.66	1673890.96	14285695.59	39°20'23.445"N	80°52'53.782"W	901.93	61.637	0.80	-0.78	-0.67	
3741.50	16.950	60.830	3592.30	-163.11	442.05	818.19	1673915.48	14285709.16	39°20'23.579"N	80°52'53.469"W	929.97	61.619	0.47	-0.45	-0.42	
3836.50	17.280	61.860	3683.10	-168.14	455.45	842.72	1673940.00	14285722.56	39°20'23.711"N	80°52'53.157"W	957.92	61.611	0.47	0.35	1.08	
3930.50	17.930	63.550	3772.69	-172.59	468.48	867.99	1673965.26	14285735.58	39°20'23.839"N	80°52'52.835"W	986.35	61.643	0.88	0.69	1.80	
4024.50	18.580	63.540	3861.96	-176.77	481.60	894.35	1673991.61	14285748.70	39°20'23.969"N	80°52'52.499"W	1015.78	61.698	0.69	0.69	-0.01	
4119.50	17.990	62.360	3952.17	-181.31	495.15	920.90	1674018.14	14285762.24	39°20'24.102"N	80°52'52.161"W	1045.57	61.734	0.73	-0.62	-1.24	
4213.50	17.090	61.350	4041.79	-186.16	508.51	945.88	1674043.12	14285775.59	39°20'24.234"N	80°52'51.843"W	1073.90	61.737	1.01	-0.96	-1.07	
4308.50	18.130	61.160	4132.34	-191.38	522.33	971.08	1674068.30	14285789.41	39°20'24.370"N	80°52'51.522"W	1102.64	61.725	1.10	1.09	-0.20	
4402.50	19.280	61.700	4221.37	-196.76	536.74	997.55	1674094.77	14285803.82	39°20'24.512"N	80°52'51.185"W	1132.78	61.717	1.24	1.22	0.57	





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'

Page 4 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Graben Unit 3H
Field	Ritchie	Wellbore	Graben Unit 3H AWB
Facility	Hichman Pad		

## WELLPATH DATA (189 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
4496.50	18.680	60.780	4310.26	-202.32	551.45	1024.35	1674121.56	14285818.52	39°20'24.657"N	80°52'50.843"W	1163.36	61.705	0.71	-0.64	-0.98	
4591.50	18.450	63.570	4400.32	-207.34	565.57	1051.09	1674148.29	14285832.63	39°20'24.796"N	80°52'50.503"W	1193.59	61.716	0.97	-0.24	2.94	
4685.50	17.880	62.960	4489.64	-211.64	578.75	1077.27	1674174.45	14285845.80	39°20'24.926"N	80°52'50.170"W	1222.89	61.754	0.64	-0.61	-0.65	
4780.50	18.440	63.180	4579.91	-216.10	592.16	1103.66	1674200.84	14285859.21	39°20'25.058"N	80°52'49.833"W	1252.49	61.785	0.59	0.59	0.23	
4874.50	19.280	62.290	4668.86	-220.85	606.08	1130.67	1674227.84	14285873.13	39°20'25.196"N	80°52'49.489"W	1282.87	61.807	0.94	0.89	-0.95	
4968.50	19.140	61.780	4757.62	-226.05	620.58	1157.99	1674255.14	14285887.62	39°20'25.339"N	80°52'49.141"W	1313.80	61.812	0.23	-0.15	-0.54	
5062.50	19.660	61.710	4846.29	-231.46	635.36	1185.49	1674282.63	14285902.40	39°20'25.484"N	80°52'48.791"W	1345.02	61.811	0.55	0.55	-0.07	
5157.50	19.220	60.820	4935.87	-237.19	650.56	1213.22	1674310.35	14285917.59	39°20'25.634"N	80°52'48.438"W	1376.63	61.798	0.66	-0.46	-0.94	
5251.50	19.270	62.660	5024.62	-242.56	665.23	1240.50	1674337.62	14285932.25	39°20'25.779"N	80°52'48.090"W	1407.61	61.797	0.65	0.05	1.96	
5346.50	19.300	61.830	5114.29	-247.73	679.84	1268.27	1674365.38	14285946.86	39°20'25.923"N	80°52'47.737"W	1438.99	61.807	0.29	0.03	-0.87	
5440.50	19.040	64.880	5203.08	-252.22	693.68	1295.85	1674392.94	14285960.69	39°20'26.059"N	80°52'47.386"W	1469.83	61.839	1.10	-0.28	3.24	
5534.50	19.110	64.500	5291.92	-255.98	706.82	1323.62	1674420.70	14285973.82	39°20'26.189"N	80°52'47.032"W	1500.52	61.898	0.15	0.07	-0.40	
5628.50	18.790	62.630	5380.82	-260.31	720.40	1350.95	1674448.02	14285987.40	39°20'26.323"N	80°52'46.684"W	1531.03	61.931	0.73	-0.34	-1.99	
5722.50	18.600	61.990	5469.86	-265.23	734.40	1377.63	1674474.69	14286001.40	39°20'26.461"N	80°52'46.344"W	1561.15	61.938	0.30	-0.20	-0.68	
5817.50	18.590	60.610	5559.90	-270.71	748.95	1404.20	1674501.25	14286015.94	39°20'26.604"N	80°52'46.006"W	1591.44	61.926	0.46	-0.01	-1.45	
5911.50	17.440	60.090	5649.29	-276.44	763.33	1429.46	1674526.51	14286030.31	39°20'26.746"N	80°52'45.664"W	1620.50	61.898	1.24	-1.22	-0.55	
6006.50	18.330	59.260	5739.70	-282.53	778.06	1454.64	1674551.68	14286045.04	39°20'26.891"N	80°52'45.363"W	1649.66	61.859	0.97	0.94	-0.87	
6101.50	18.490	59.730	5829.84	-288.88	793.29	1480.49	1674577.52	14286060.26	39°20'27.041"N	80°52'45.034"W	1679.63	61.816	0.23	0.17	0.49	
6196.50	18.070	65.460	5920.05	-293.62	807.00	1506.91	1674603.92	14286073.97	39°20'27.177"N	80°52'44.697"W	1709.39	61.829	1.94	-0.44	6.03	
6227.50	18.110	72.230	5949.52	-294.10	810.47	1515.87	1674612.88	14286077.43	39°20'27.211"N	80°52'44.353"W	1718.93	61.869	6.78	0.13	21.84	
6259.50	18.170	79.310	5979.94	-293.40	812.91	1525.51	1674622.52	14286079.88	39°20'27.235"N	80°52'44.060"W	1728.59	61.948	6.89	0.19	22.13	
6290.50	18.980	87.860	6009.33	-291.36	814.00	1535.30	1674632.30	14286080.96	39°20'27.245"N	80°52'44.336"W	1737.74	62.068	9.16	2.61	27.58	
6321.50	20.130	96.500	6038.55	-287.72	813.58	1545.64	1674642.64	14286080.55	39°20'27.241"N	80°52'44.204"W	1746.69	62.239	10.03	3.71	27.87	
6353.50	22.130	104.180	6068.40	-282.17	811.48	1556.96	1674653.95	14286078.45	39°20'27.220"N	80°52'44.060"W	1755.74	62.472	10.66	6.25	24.00	
6384.50	24.240	108.910	6096.90	-275.19	807.99	1568.64	1674665.63	14286074.95	39°20'27.186"N	80°52'43.912"W	1764.51	62.748	9.07	6.81	15.26	
6416.50	25.720	112.650	6125.90	-266.67	803.19	1581.27	1674678.25	14286070.15	39°20'27.138"N	80°52'43.751"W	1773.56	63.072	6.76	4.62	11.69	
6448.50	26.360	117.020	6154.66	-257.07	797.28	1594.00	1674690.98	14286064.25	39°20'27.079"N	80°52'43.589"W	1782.28	63.427	6.32	2.00	13.66	
6479.50	26.260	122.900	6182.45	-246.84	790.43	1605.90	1674702.87	14286057.40	39°20'27.012"N	80°52'43.438"W	1789.88	63.793	8.41	-0.32	18.97	
6511.50	26.890	128.520	6211.07	-235.26	782.08	1617.50	1674714.47	14286049.05	39°20'26.929"N	80°52'43.290"W	1796.65	64.196	8.10	1.97	17.56	
6542.50	27.800	132.280	6238.61	-223.10	772.85	1628.34	1674725.30	14286039.83	39°20'26.837"N	80°52'43.152"W	1802.44	64.610	6.30	2.94	12.13	





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'

Page 5 of 10



REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #01
Operator	ANTERO RESOURCES CORPORATION	Well	Graben Unit 3H
Area	Ritchie County, WV	Wellbore	Graben Unit 3H AWB
Field	Ritchie		
Facility	Hichman Pad		

WELLPATH DATA (189 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	VertSect (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
6574.50	30.170	135.430	6266.60	-209.39	1762.10	1639.50	1674736.46	14288029.08	39°20'26.731"N	80°52'43.010"W	1807.97	65.069	8.81	7.41	9.84	
6605.50	33.230	136.710	6282.98	-194.70	1750.36	1650.80	1674747.75	14288617.35	39°20'26.615"N	80°52'42.867"W	1813.33	65.556	10.11	9.87	4.13	
6637.50	35.880	137.470	6319.33	-178.21	1737.07	1663.15	1674760.10	14288600.06	39°20'26.483"N	80°52'42.710"W	1819.16	66.098	8.39	8.28	2.38	
6668.50	37.870	140.260	6344.13	-161.06	1723.05	1675.38	1674772.32	14288590.05	39°20'26.345"N	80°52'42.555"W	1824.74	66.656	8.39	6.42	9.00	
6700.50	39.560	142.170	6369.10	-142.32	1707.45	1687.91	1674784.85	14288597.46	39°20'26.190"N	80°52'42.395"W	1830.17	67.260	6.47	5.28	5.97	
6731.50	40.530	143.970	6392.83	-123.42	1691.51	1699.89	1674796.82	14288595.52	39°20'26.033"N	80°52'42.243"W	1835.16	67.864	4.87	3.13	5.81	
6763.50	43.170	145.320	6416.66	-103.01	1674.09	1712.23	1674809.17	14288592.11	39°20'25.860"N	80°52'42.086"W	1840.15	68.511	8.72	8.25	4.22	
6794.50	46.180	146.300	6438.71	-82.05	1656.06	1724.48	1674821.40	14288588.77	39°20'25.682"N	80°52'41.931"W	1845.06	69.171	9.96	9.71	3.16	
6826.50	49.280	147.930	6460.23	-59.14	1636.18	1737.32	1674834.24	142885903.21	39°20'25.485"N	80°52'41.768"W	1850.14	69.888	10.39	9.69	5.09	
6857.50	52.210	148.900	6479.84	-35.78	1615.73	1749.89	1674846.81	142885882.77	39°20'25.283"N	80°52'41.608"W	1855.06	70.615	9.76	9.45	3.13	
6889.50	55.790	149.900	6498.65	-10.50	1593.45	1763.06	1674859.97	142885860.50	39°20'25.063"N	80°52'41.441"W	1860.26	71.397	11.47	11.19	3.12	
6921.50	59.400	151.140	6515.79	16.00	1569.93	1776.35	1674873.28	142885836.99	39°20'24.830"N	80°52'41.272"W	1865.54	72.212	11.75	11.28	3.88	
6952.50	62.410	152.990	6530.87	42.70	1546.00	1789.03	1674885.93	142885813.07	39°20'24.593"N	80°52'41.111"W	1870.50	73.028	11.02	9.71	5.97	
6984.50	64.510	155.340	6545.17	71.11	1520.13	1801.27	1674898.17	142885787.21	39°20'24.337"N	80°52'40.956"W	1874.86	73.894	11.43	6.56	10.47	
7015.50	65.870	158.330	6558.18	99.16	1494.16	1812.11	1674909.00	142885761.25	39°20'24.081"N	80°52'40.818"W	1878.28	74.746	7.29	4.39	6.42	
7044.00†	65.816	159.577	6569.84	125.14	1489.90	1821.45	1674918.34	142885734.00	39°20'23.841"N	80°52'40.700"W	1881.09	75.534	4.00	-0.19	4.37	BHI AT Curve <8-1/2"> (7079.5')(7140-14035')
7047.50	65.810	159.730	6571.27	128.33	1466.90	1822.56	1674919.45	142885734.00	39°20'23.811"N	80°52'40.686"W	1881.42	75.631	4.00	-0.17	4.38	
7079.50	65.910	160.840	6584.36	157.52	1439.41	1832.41	1674929.29	142885706.53	39°20'23.539"N	80°52'40.561"W	1884.36	76.515	3.18	0.31	3.47	
7127.00†	68.399	161.268	6602.80	201.29	1398.01	1846.62	1674943.50	142885665.14	39°20'23.130"N	80°52'40.381"W	1889.03	77.837	5.30	5.24	0.90	Burkett: 7044' MD
7140.00	69.080	161.380	6607.52	213.40	1386.54	1850.50	1674947.38	142885653.87	39°20'23.016"N	80°52'40.331"W	1890.44	78.202	5.30	5.24	0.88	Tully: 7127' MD
7158.00	70.840	161.300	6613.68	230.31	1370.52	1855.91	1674952.79	142885637.66	39°20'22.858"N	80°52'40.263"W	1892.54	78.710	9.79	9.78	-0.44	
7205.00	75.500	162.220	6627.29	275.28	1327.80	1869.98	1674966.85	142885594.96	39°20'22.436"N	80°52'40.084"W	1898.50	80.057	10.09	9.91	1.96	
7232.00†	77.833	163.649	6633.52	301.55	1302.69	1877.69	1674974.56	142885569.85	39°20'22.187"N	80°52'39.987"W	1901.93	80.843	10.06	8.64	5.29	Marcellus POE: 7232' MD
7251.00	79.480	164.640	6637.25	320.16	1284.77	1882.78	1674979.64	142885551.94	39°20'22.010"N	80°52'39.922"W	1904.19	81.399	10.06	8.67	5.21	
7298.00	83.460	166.970	6644.22	366.51	1239.72	1894.17	1674991.03	142885506.91	39°20'21.565"N	80°52'39.778"W	1909.28	82.787	9.78	8.47	4.96	
7347.00	84.760	168.100	6649.25	415.00	1192.13	1904.69	1675001.54	142885459.34	39°20'21.094"N	80°52'39.645"W	1914.36	84.240	3.51	2.65	2.31	
7394.00	88.220	169.080	6652.13	481.56	1146.15	1913.97	1675010.82	142885413.38	39°20'20.640"N	80°52'39.528"W	1919.54	85.633	7.65	7.36	2.09	
7442.00	89.540	170.210	6653.07	509.09	98.94	1922.59	1675019.44	142885366.19	39°20'20.173"N	80°52'39.419"W	1925.14	87.054	3.62	2.75	2.35	
7537.00	89.290	173.050	6654.04	602.66	4.97	1936.42	1675033.26	142885272.26	39°20'19.244"N	80°52'39.244"W	1936.43	88.853	3.00	-0.26	2.99	
7632.00	90.150	170.880	6654.50	696.14	-89.09	1949.70	1675046.53	142885178.23	39°20'18.314"N	80°52'39.077"W	1951.73	92.616	2.46	0.91	-2.28	





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'

Page 6 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #01
ANTERO RESOURCES CORPORATION	Well	Graben Unit 3H
Area	Wellbore	Graben Unit 3H AWB
Field		
Facility		

## WELLPATH DATA (189 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
7727.00	91.080	166.870	6653.48	790.37	-182.28	1968.02	1675064.85	14285035.08	39°20'17.393"N	80°52'38.845"W	1976.45	95.292	4.33	0.98	-4.22	
7822.00	91.350	161.670	6651.47	885.23	-273.67	1993.76	1675090.58	14284993.73	39°20'16.489"N	80°52'38.519"W	2012.46	97.816	5.48	0.28	-5.47	
7916.00	89.480	158.840	6650.78	979.18	-362.13	2025.52	1675122.32	14284905.30	39°20'15.614"N	80°52'38.117"W	2057.63	100.136	3.61	-1.99	-3.01	
8011.00	89.420	159.610	6651.70	1074.08	-450.95	2059.21	1675156.00	14284816.52	39°20'14.736"N	80°52'37.689"W	2108.01	102.352	0.81	-0.06	0.81	
8107.00	89.970	159.760	6652.21	1170.02	-540.97	2092.54	1675189.32	14284726.53	39°20'13.846"N	80°52'37.267"W	2161.34	104.495	0.59	0.57	0.16	
8202.00	89.750	161.680	6652.44	1265.00	-630.64	2123.90	1675220.67	14284636.90	39°20'12.959"N	80°52'36.869"W	2215.55	106.538	2.03	-0.23	2.02	
8297.00	89.120	164.490	6652.55	1359.97	-721.52	2151.54	1675248.30	14284546.06	39°20'12.061"N	80°52'36.519"W	2269.30	108.539	2.98	0.39	2.96	
8392.00	89.720	164.240	6652.68	1454.86	-813.01	2177.15	1675273.89	14284454.61	39°20'11.156"N	80°52'36.195"W	2323.99	110.477	0.50	-0.42	-0.26	
8487.00	89.780	163.220	6653.10	1549.80	-904.20	2203.76	1675300.49	14284363.45	39°20'10.284"N	80°52'35.858"W	2382.05	112.308	1.08	0.06	-1.07	
8581.00	89.450	160.750	6653.73	1643.79	-993.56	2232.83	1675329.55	14284274.10	39°20'09.371"N	80°52'35.489"W	2443.92	113.989	2.65	-0.35	-2.63	
8676.00	89.450	160.270	6654.64	1738.77	-1083.14	2264.52	1675361.23	14284184.59	39°20'08.485"N	80°52'35.087"W	2510.23	115.962	0.51	0.00	-0.51	
8771.00	89.420	161.770	6655.58	1833.75	-1172.96	2296.42	1675392.12	14284094.80	39°20'07.597"N	80°52'34.696"W	2577.75	117.067	1.58	-0.03	1.58	
8867.00	89.380	161.210	6656.58	1929.75	-1263.99	2325.89	1675422.58	14284003.80	39°20'06.697"N	80°52'34.310"W	2647.16	118.522	0.58	-0.04	-0.58	
8962.00	89.380	161.020	6657.61	2024.74	-1353.87	2356.64	1675453.31	14283913.96	39°20'05.808"N	80°52'33.920"W	2717.85	119.877	0.20	0.00	-0.20	
9055.00	89.600	158.820	6658.44	2117.68	-1441.21	2388.57	1675485.23	14283826.66	39°20'04.944"N	80°52'33.515"W	2789.68	121.106	2.38	0.24	-2.37	
9150.00	89.420	158.960	6659.25	2212.56	-1529.83	2422.78	1675519.43	14283738.07	39°20'04.068"N	80°52'33.081"W	2865.35	122.270	0.24	-0.19	0.15	
9245.00	89.420	160.500	6660.21	2307.50	-1618.94	2455.69	1675552.32	14283649.00	39°20'03.187"N	80°52'32.664"W	2941.32	123.395	1.62	0.00	1.62	
9339.00	89.350	161.040	6661.22	2401.48	-1707.69	2486.65	1675583.27	14283560.28	39°20'02.309"N	80°52'32.271"W	3016.56	124.479	0.58	-0.07	0.57	
9432.00	89.420	161.000	6662.22	2494.46	-1795.63	2516.89	1675613.50	14283472.38	39°20'01.440"N	80°52'31.888"W	3091.77	125.505	0.09	0.08	-0.04	
9527.00	89.420	161.760	6663.18	2589.46	-1885.65	2547.22	1675643.82	14283382.39	39°20'00.549"N	80°52'31.504"W	3169.23	126.512	0.80	0.00	0.80	
9622.00	89.480	159.720	6664.09	2684.43	-1975.33	2578.56	1675675.14	14283292.75	39°19'59.663"N	80°52'31.106"W	3248.21	127.454	2.15	0.06	-2.15	
9717.00	89.420	160.850	6665.00	2779.40	-2064.75	2610.60	1675707.17	14283203.36	39°19'58.778"N	80°52'30.700"W	3328.43	128.341	1.19	-0.06	1.19	
9812.00	89.540	162.430	6665.87	2874.39	-2154.91	2640.52	1675737.08	14283113.24	39°19'57.887"N	80°52'30.321"W	3408.23	129.218	1.67	0.13	1.66	
9906.00	89.350	160.190	6666.78	2968.38	-2243.94	2670.64	1675767.19	14283024.25	39°19'57.007"N	80°52'29.939"W	3488.21	130.038	2.39	-0.20	-2.38	
10002.00	89.450	162.380	6667.78	3064.36	-2334.86	2701.44	1675797.98	14282933.37	39°19'56.108"N	80°52'29.549"W	3570.62	130.837	2.28	0.10	2.28	
10096.00	89.570	163.430	6668.59	3158.34	-2424.70	2729.07	1675825.60	14282843.56	39°19'55.219"N	80°52'29.199"W	3650.62	131.620	1.12	0.13	1.12	
10192.00	89.510	163.360	6669.36	3254.30	-2516.69	2756.51	1675853.02	14282751.61	39°19'54.310"N	80°52'28.851"W	3732.57	132.396	0.10	-0.06	-0.07	
10286.00	89.510	161.400	6670.16	3348.28	-2606.27	2784.96	1675881.46	14282662.06	39°19'53.424"N	80°52'28.491"W	3814.27	133.102	2.09	0.00	-2.09	
10379.00	89.510	160.120	6670.96	3441.26	-2694.00	2815.60	1675912.08	14282574.29	39°19'52.556"N	80°52'28.102"W	3896.88	133.736	1.38	0.00	-1.38	
10474.00	89.380	158.700	6671.88	3536.18	-2783.00	2849.01	1675943.48	14282486.40	39°19'51.676"N	80°52'27.679"W	3982.71	134.329	1.50	-0.14	-1.49	





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'

Page 7 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Well	Wellbore	Slot #01	Graben Unit 3H	Graben Unit 3H AWB
ANTERO RESOURCES CORPORATION	Ritchie County, WV	Ritchie	Hichman Pad						

## WELLPATH DATA (189 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 (ft/100ft)	Comments
10570.00	89.170	158.750	6673.09	3632.04	-2872.45	2883.84	1675980.30	14282395.99	39°19'50.792"N	80°52'27.237"W	4070.32	134.887	0.22	-0.22	0.05	
10665.00	90.180	160.200	6673.63	3726.96	-2961.41	2917.15	1676013.59	14282307.06	39°19'49.912"N	80°52'26.815"W	4156.89	135.431	1.86	1.06	1.53	
10759.00	89.660	159.460	6673.78	3820.91	-3049.65	2949.56	1676045.99	14282218.86	39°19'49.039"N	80°52'26.404"W	4242.67	135.956	0.96	-0.55	-0.79	
10853.00	89.420	161.720	6674.52	3914.88	-3138.30	2980.79	1676077.22	14282130.25	39°19'48.163"N	80°52'26.008"W	4328.28	136.474	2.42	-0.26	2.40	
10947.00	89.720	165.810	6675.22	4008.80	-3228.53	3007.07	1676103.48	14282040.05	39°19'47.271"N	80°52'25.675"W	4412.01	137.034	4.36	0.32	4.35	
11041.00	90.060	165.800	6675.40	4102.56	-3319.66	3030.12	1676126.52	14281948.96	39°19'46.370"N	80°52'25.384"W	4494.63	137.611	0.36	0.36	-0.01	
11136.00	90.460	162.810	6674.97	4197.45	-3411.10	3055.81	1676152.21	14281857.55	39°19'45.485"N	80°52'24.058"W	4579.70	138.145	3.18	0.42	-3.15	
11232.00	89.850	157.450	6674.71	4293.38	-3501.35	3088.43	1676184.81	14281767.34	39°19'44.573"N	80°52'24.645"W	4668.82	138.586	5.62	-0.64	-5.58	
11327.00	89.780	158.940	6675.02	4388.20	-3589.56	3123.72	1676220.08	14281679.17	39°19'43.701"N	80°52'24.197"W	4758.42	138.969	1.57	-0.07	1.57	
11422.00	89.720	158.810	6675.43	4483.12	-3678.46	3157.18	1676253.53	14281590.30	39°19'42.822"N	80°52'23.773"W	4847.57	139.361	0.92	-0.06	0.92	
11517.00	89.820	158.500	6675.81	4578.02	-3767.24	3190.98	1676287.32	14281501.56	39°19'41.944"N	80°52'23.344"W	4937.05	139.734	1.38	0.11	-1.38	
11612.00	89.850	158.730	6676.09	4672.88	-3855.70	3225.62	1676321.95	14281413.13	39°19'41.069"N	80°52'22.905"W	5027.04	140.085	0.24	0.03	0.24	
11707.00	89.630	159.160	6676.52	4767.76	-3944.36	3259.75	1676356.06	14281324.51	39°19'40.192"N	80°52'22.473"W	5117.03	140.429	0.51	-0.23	0.45	
11802.00	89.020	161.950	6677.84	4862.73	-4033.92	3291.37	1676387.67	14281234.98	39°19'39.306"N	80°52'22.072"W	5206.31	140.788	3.01	-0.64	2.94	
11897.00	89.510	165.040	6678.86	4957.66	-4124.99	3318.36	1676414.65	14281143.95	39°19'38.406"N	80°52'21.730"W	5294.06	141.185	3.29	0.52	3.25	
11992.00	89.970	167.650	6679.29	5052.34	-4217.30	3340.78	1676437.06	14281051.68	39°19'37.493"N	80°52'21.446"W	5380.19	141.615	2.79	0.48	2.75	
12088.00	90.430	169.230	6679.95	5147.68	-4311.35	3360.02	1676456.29	14280957.67	39°19'36.564"N	80°52'21.203"W	5466.03	142.069	1.71	0.48	1.65	
12183.00	91.450	166.880	6677.39	5242.08	-4404.27	3379.68	1676475.94	14280864.79	39°19'35.645"N	80°52'20.955"W	5551.56	142.499	2.70	1.07	-2.47	
12278.00	89.820	159.140	6676.34	5336.98	-4495.04	3407.41	1676503.67	14280774.05	39°19'34.747"N	80°52'20.603"W	5640.56	142.836	8.33	-1.72	-8.15	
12373.00	89.780	158.550	6676.67	5431.85	-4583.64	3441.70	1676537.94	14280685.48	39°19'33.871"N	80°52'20.169"W	5731.93	143.098	0.62	-0.04	-0.62	
12468.00	89.420	160.460	6677.33	5526.78	-4672.82	3474.96	1676567.18	14280596.54	39°19'32.991"N	80°52'19.747"W	5823.12	143.362	2.05	-0.38	2.01	
12563.00	90.030	163.060	6677.79	5621.77	-4762.84	3504.69	1676600.90	14280506.36	39°19'32.099"N	80°52'19.370"W	5913.33	143.653	2.81	0.64	2.74	
12658.00	90.000	163.400	6677.77	5716.73	-4853.80	3532.10	1676628.30	14280415.44	39°19'31.200"N	80°52'19.023"W	6002.92	143.957	0.36	-0.03	0.36	
12753.00	89.970	166.230	6677.79	5811.59	-4945.47	3556.98	1676653.17	14280323.80	39°19'30.293"N	80°52'18.708"W	6091.78	144.275	2.98	-0.03	2.98	
12848.00	89.880	166.210	6677.91	5906.29	-5037.74	3579.61	1676675.79	14280231.57	39°19'29.381"N	80°52'18.422"W	6180.00	144.604	0.10	-0.09	-0.02	
12943.00	90.000	166.750	6678.01	6000.96	-5130.10	3601.82	1676697.99	14280139.24	39°19'28.468"N	80°52'18.141"W	6268.26	144.928	0.58	0.13	0.57	
13038.00	90.860	163.450	6677.30	6095.78	-5221.89	3626.24	1676722.41	14280047.49	39°19'27.560"N	80°52'17.832"W	6357.50	145.223	3.59	0.91	-3.47	
13132.00	89.200	160.040	6677.25	6189.77	-5311.15	3655.68	1676751.83	14279956.27	39°19'26.678"N	80°52'17.459"W	6447.66	145.460	4.03	-1.77	-3.63	
13227.00	90.090	161.640	6677.84	6284.75	-5400.88	3686.86	1676783.00	14279868.57	39°19'25.790"N	80°52'17.064"W	6539.30	145.681	1.93	0.94	1.68	
13321.00	90.090	163.100	6677.69	6378.74	-5490.46	3715.33	1676811.46	14279779.03	39°19'24.905"N	80°52'16.703"W	6629.39	145.914	1.55	0.00	1.55	





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'

Page 8 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Slot #01
ANTERO RESOURCES CORPORATION	Ritchie County, WV	Ritchie	Hichman Pad	Well	Graben Unit 3H
				Wellbore	Graben Unit 3H AWB

## WELLPATH DATA (189 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 [ft/100ft]	Comments
13416.00	89.450	160.630	6678.07	6473.73	-5580.73	3744.90	1676841.01	14279638.79	39°19'24.012"N	80°52'16.329"W	6720.78	146.137	2.69	-0.67	-2.60	
13511.00	89.540	162.030	6678.91	6568.72	-5670.73	3775.30	1676871.41	14279598.83	39°19'23.122"N	80°52'15.943"W	6812.50	146.346	1.48	0.09	1.47	
13606.00	89.450	161.410	6679.75	6663.72	-5760.93	3805.10	1676901.19	14279508.67	39°19'22.230"N	80°52'15.566"W	6904.14	146.555	0.66	-0.09	-0.65	
13701.00	89.690	159.940	6680.46	6758.70	-5850.57	3836.54	1676932.62	14279419.06	39°19'21.344"N	80°52'15.167"W	6996.30	146.745	1.57	0.25	-1.55	
13795.00	89.600	158.110	6681.04	6852.59	-5938.34	3870.18	1676966.25	14279331.33	39°19'20.476"N	80°52'14.741"W	7088.17	146.907	1.95	-0.10	-1.95	
13890.00	89.450	157.150	6681.83	6947.34	-6026.19	3906.34	1677002.39	14279243.52	39°19'19.607"N	80°52'14.282"W	7181.58	147.048	1.02	-0.16	-1.01	
13985.00	88.950	159.360	6683.16	7042.15	-6114.41	3941.53	1677037.57	14279155.33	39°19'18.735"N	80°52'13.836"W	7274.73	147.193	2.38	-0.53	2.33	
14035.00	89.720	160.200	6683.74	7092.12	-6161.33	3958.81	1677054.84	14279108.43	39°19'18.271"N	80°52'13.617"W	7323.53	147.278	2.28	1.54	1.68	
14059.00	89.720	160.200	6683.86	7116.11	-6183.91	3966.94	1677062.96	14279085.86	39°19'18.047"N	80°52'13.514"W	7346.92	147.320	0.00	0.00	0.00	Projected MD at TD: 14059'

## HOLE & CASING SECTIONS - Ref Wellbore: Graben Unit 3H AWB Ref Wellpath: Graben Unit 3H AWP Proj: 14059'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	End N/S [ft]	Start E/W [ft]	End E/W [ft]	End E/W [ft]
20in Conductor	24.50	104.50	80.00	24.50	104.50	0.00	0.00	0.00	0.00	-0.03
17.5in Open Hole	104.50	452.10	347.60	104.50	452.10	0.07	0.07	-0.03	-0.03	0.63
13.375in Casing Surface	24.50	452.10	427.60	24.50	452.10	0.00	0.00	0.00	0.00	0.63
12.25in Open Hole	452.10	2615.60	2163.50	452.10	2529.81	-0.03	-0.03	0.63	264.90	491.30
9.625in Casing Intermediate	24.50	2615.60	2591.10	24.50	2529.81	0.00	0.00	0.00	0.00	264.90
8.75in Open Hole	2615.60	7153.50	4537.90	2529.81	6612.19	264.90	264.90	491.30	491.30	1854.55
8.5in Open Hole	7153.50	14059.00	6905.50	6612.19	6683.86	374.54	-6183.91	1854.55	-6183.91	3966.94
5.5in Casing Production	24.50	14059.00	14034.50	24.50	6683.86	0.00	0.00	0.00	0.00	3966.94





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059  
Page 9 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #01
ANTERO RESOURCES CORPORATION	Well	Graben Unit 3H
Area	Wellbore	Graben Unit 3H AWB
Field		
Facility		

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Graben Unit 3H POE Rev-2	6625.00	335.55	1865.43	1674962.30	14285602.70	39°20'22.512"N	80°52'40.142"W	point
Graben Unit 3H BHL Rev-3	6648.00	-6251.37	4028.93	1677124.93	14279018.43	39°19'17.380"N	80°52'12.727"W	point
Graben Unit 3H LP Rev-1	6648.00	180.54	1907.84	1675004.69	14285447.76	39°20'20.980"N	80°52'39.605"W	point
Graben Unit 3H BHL Rev-4	6648.00	-6266.86	3980.85	1677076.87	14279002.94	39°19'17.227"N	80°52'13.339"W	point

## WELLPATH COMPOSITION - Ref Wellbore: Graben Unit 3H AWB Ref Wellpath: Graben Unit 3H AWP Proj: 14059

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	425.50	Gyrodata relative depth - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(50'-416')	Graben Unit 3H AWB
425.50	2574.50	ISWISA MWD, Rev. 4 (Standard)	02 WFT EM <12-1/4">(416')(548'-2565')	Graben Unit 3H AWB
2574.50	7079.50	ISWISA MWD, Rev. 4 (Standard)	03 WFT EM <8-3/4">(2565')(2687'-7070')	Graben Unit 3H AWB
7079.50	14035.00	BHI Auto Trak Curve (Short)	04 AT Curve <8-1/2">(7079.50')(140'-14035')	Graben Unit 3H AWB
14035.00	14059.00	Blind Drilling (std)	Projection to bit	Graben Unit 3H AWB





# Actual Wellpath Report

Graben Unit 3H AWP Proj: 14059'  
Page 10 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Well	Wellbore	Slot #01
ANTERO RESOURCES CORPORATION	Ritchie County, WV	Ritchie	Hichman Pad	Well	Wellbore		Graben Unit 3H
							Graben Unit 3H AWB

## COMMENTS

Wellpath general comments  
 API: 47-085-10336-0000  
 BHI Job #: 9230934  
 Rig: Frontier 22  
 Duration: 06/29/2018-07/01/2018  
 Gyrodatta MS Gyro <17-1/2"> (50'-416')  
 WFT EM <12-1/4"> (416')(548'-2565)  
 WFT EM <8-3/4"> (2565')(2687'-7070')  
 BHI AT Curve <8-1/2"> (7079.5')(7140'-14035')  
 Burkett: 7044' MD  
 Tully: 7127' MD  
 Marcellus POE: 7232' MD  
 Projected MD at TD: 14059'