

ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
 Field: Tyler
 Facility: Blizzard Pad

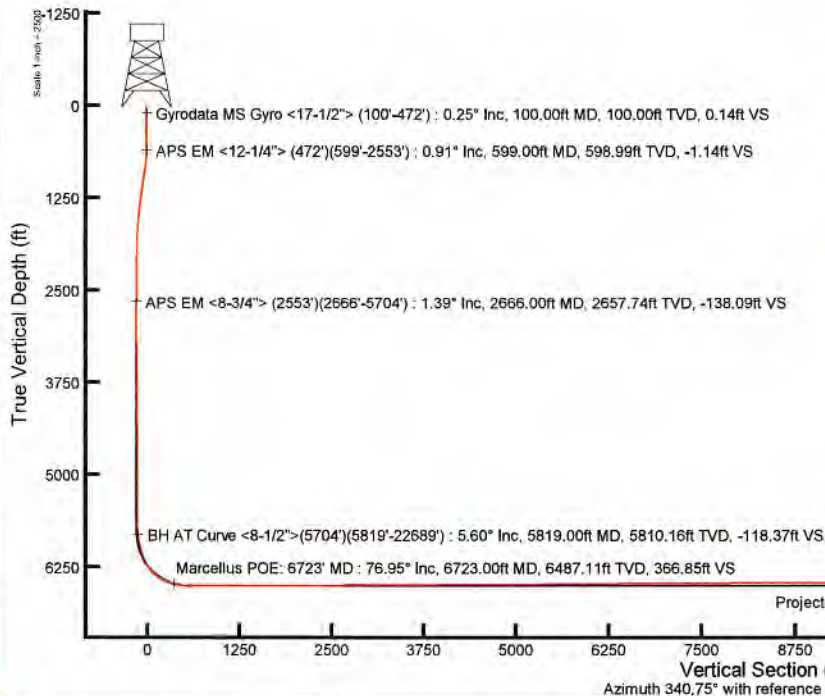
Slot: Slot #09
 Well: Richmond Unit 1H
 Wellbore: Richmond Unit 1H PWB

True vertical depth is referenced to Richmond Unit 1H PWB Rev-C.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 317 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 317 (RKB)	Scale: True distance
H&P 317 (RKB) to Mean Sea Level: 1029.5 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot #09): -1004 feet	Depths are in feet
Offset wellpath MDs are referenced to well path's default MD datum	Created by: dslawson on 2020-07-16 Database: WA_MPL_ElectrodJS.Dbt

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Blizzard Pad	1682398.190	14343430.420	39°29'54.1703"N	80°51'4.2494"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
Slot #09	205.55	174.59	1682572.710	14343635.890	39°29'56.1990"N
H&P 317 (RKB) to Ground level (At Slot: Slot #09)	25.5ft				
Mean Sea Level to Ground level (At Slot: Slot #09)	-1004ft				
H&P 317 (RKB) to Mean Sea Level	-1029.5ft				

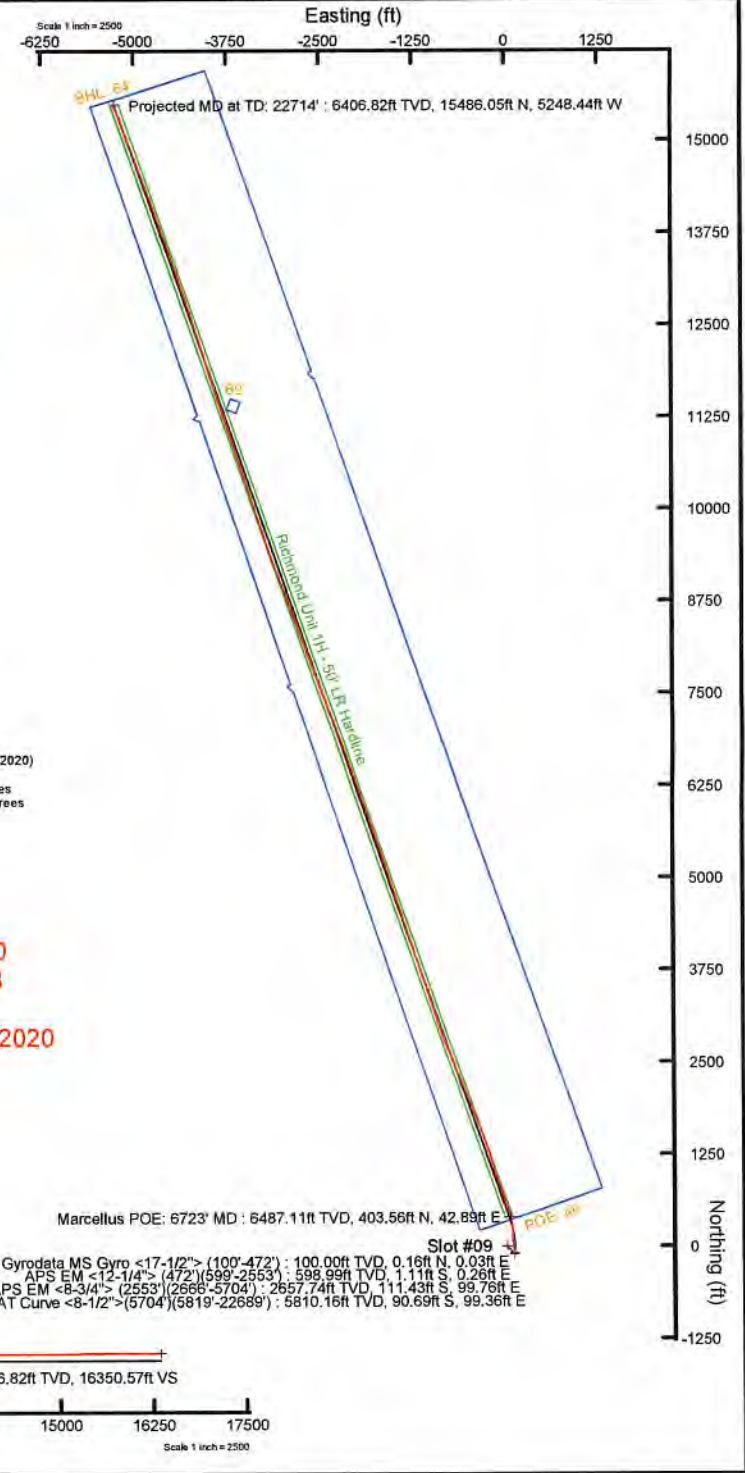
Well Profile Data							
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	2553.00	1.180	97.250	2544.77	-110.92	97.29	-136.79
Prej To Bottom	2629.00	1.180	97.250	2620.75	-111.12	98.84	-137.49
Drill Out Csg.	2729.00	1.180	97.250	2720.73	-111.38	100.88	-138.41
Hold Vertical	2788.00	0.000	0.000	2779.72	-111.45	101.49	-138.88
Curve KOP	5797.58	0.000	0.000	5789.30	-111.45	101.49	-138.88
Avoid No-Go	8172.58	30.000	0.000	6147.40	-15.50	101.49	-48.09
End of 3D Arc	8507.51	55.912	349.592	6390.74	208.75	75.96	172.03
POE	6729.30	74.217	340.750	6484.00	401.78	23.66	371.52
Landing Pt.	8904.66	90.000	340.750	6508.00	585.25	-33.43	544.67
BHL	22701.51	90.000	340.750	6508.00	15478.88	-5241.52	16341.52

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #09	Richmond Unit 1H	Richmond Unit 1H AWE	Richmond Unit 1H AWP Proj: 22714'
Slot #09	Richmond Unit 1H	Richmond Unit 1H PWB	Richmond Unit 1H PWP Rev-C.0



User specified (HDGM) Dip: 66.49° Field: 51792 nT
 Magnetic North is 7.56 degrees West of True North (at 6/23/2020)
 Grid North is 0.10 degrees East of True North
 To correct azimuth from True to Grid subtract 0.10 degrees
 To correct azimuth from Magnetic to Grid subtract 7.66 degrees

API: 47-095-02690-0000
 BHI Job #: 110437099B
 Rig: H&P 317
 Duration: 06/03/2020-07/01/2020



Marcellus POE: 6723' MD : 6487.11ft TVD, 403.56ft N, 42.89ft E
 Slot #09
 Gyrodata MS Gyro <17-1/2"> (100'-472') : 100.00ft TVD, 0.16ft N, 0.03ft E
 APS EM <12-1/4"> (472')(599'-2553') : 598.99ft TVD, 1.11ft S, 0.26ft E
 APS EM <8-3/4"> (2553')(2666'-5704') : 2657.74ft TVD, 111.43ft S, 99.78ft E
 BH AT Curve <8-1/2"> (5704')(5819'-22689') : 5810.16ft TVD, 90.69ft S, 99.36ft E



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'

Page 1 of 12



REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Delaset
Scale	0.999602	Report Generated	7/16/2020 at 12:10:55 PM
Convergence at slot	0.10° East	Database	WA_MPL_EasternUS_Defn

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	205.55	174.59	1682572.71	14343635.89	39°29'56.1990"N	80°51'2.0180"W
Facility Reference Pt			1682398.19	14343430.42	39°29'54.1703"N	80°51'4.2494"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.3013"W

WELLPATH DATUM

Calculation method	Minimum curvature	H&P 317 (RKB) to Facility Vertical Datum	1029.50ft
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level	1029.50ft
Vertical Reference Pt	H&P 317 (RKB)	H&P 317 (RKB) to Ground Level at Slot (Slot #09)	25.50ft
MD Reference Pt	H&P 317 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	340.75°



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 2 of 12



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Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 stations) † = interpolated, ‡ = extrapolated station																	
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments	
ft	°	°	ft	ft	ft	ft	[US ft]	[US ft]			ft	°	"/100ft	"/100ft	"/100ft		
0.00	0.00	9.720	0.00	0.00	0.00	0.00	1682572.71	14343635.89	39°29'56.1990"N	80°51'2.0180"W	0.00	0.000	0.00	0.00	0.00		
25.50	0.000	9.720	25.50	0.00	0.00	0.00	1682572.71	14343635.89	39°29'56.1990"N	80°51'2.0180"W	0.00	0.000	0.00	0.00	0.00		
100.00	0.250	9.720	100.00	0.14	0.16	0.03	1682572.74	14343636.05	39°29'56.2006"N	80°51'2.0176"W	0.16	9.720	0.34	0.34	0.00	Gyrodata MS Gyro <17-1/2"> (100'-472')	
200.00	0.130	236.420	200.00	0.30	0.31	-0.03	1682572.68	14343636.20	39°29'56.2021"N	80°51'2.0183"W	0.31	354.473	0.35	-0.12	-133.30		
300.00	0.100	248.130	300.00	0.27	0.22	-0.21	1682572.50	14343636.11	39°29'56.2011"N	80°51'2.0206"W	0.30	316.557	0.04	-0.03	11.71		
400.00	0.060	216.840	400.00	0.24	0.14	-0.32	1682572.39	14343636.03	39°29'56.2004"N	80°51'2.0220"W	0.35	294.178	0.06	-0.04	-31.29		
472.00	0.240	180.340	472.00	0.08	-0.04	-0.34	1682572.37	14343635.85	39°29'56.1986"N	80°51'2.0223"W	0.34	263.629	0.27	0.25	-50.69		
599.00	0.910	143.210	598.99	-1.14	-1.11	0.26	1682572.97	14343634.78	39°29'56.1880"N	80°51'2.0147"W	1.14	166.799	0.58	0.53	-29.24	APS EM <12-1/4"> (472')(599'-2553')	
780.00	6.870	131.820	779.49	-11.99	-9.49	9.20	1682581.90	14343626.41	39°29'56.1050"N	80°51'1.9008"W	13.21	135.894	3.30	3.29	-6.29		
872.00	8.130	135.770	870.71	-22.70	-17.82	17.84	1682590.54	14343618.08	39°29'56.0226"N	80°51'1.7908"W	25.21	134.973	1.48	1.37	4.29		
964.00	8.880	137.860	961.69	-35.14	-27.75	27.14	1682599.84	14343608.15	39°29'55.9243"N	80°51'1.6724"W	38.81	135.635	0.88	0.82	2.27		
1056.00	9.000	134.580	1052.58	-48.14	-38.06	37.03	1682609.72	14343597.84	39°29'55.8222"N	80°51'1.5464"W	53.10	135.789	0.57	0.13	-3.57		
1151.00	7.990	141.800	1146.54	-61.06	-48.47	46.40	1682619.10	14343587.44	39°29'55.7192"N	80°51'1.4270"W	67.10	136.246	1.54	-1.06	7.60		
1246.00	8.070	145.200	1240.61	-73.73	-59.13	54.29	1682626.98	14343576.78	39°29'55.6137"N	80°51'1.3266"W	80.28	137.443	0.51	0.08	3.58		
1341.00	6.460	146.870	1334.84	-85.34	-69.08	61.02	1682633.71	14343566.83	39°29'55.5152"N	80°51'1.2410"W	92.17	138.547	1.71	-1.69	1.76		
1435.00	5.880	146.710	1428.29	-95.14	-77.54	66.55	1682639.24	14343558.38	39°29'55.4316"N	80°51'1.1706"W	102.18	139.359	0.62	-0.62	-0.17		
1530.00	6.210	147.820	1522.77	-104.87	-85.95	71.96	1682644.64	14343549.97	39°29'55.3483"N	80°51'1.1018"W	112.10	140.064	0.37	0.35	1.17		
1625.00	5.040	148.980	1617.31	-113.97	-93.88	76.85	1682649.53	14343542.05	39°29'55.2699"N	80°51'1.0396"W	121.32	140.697	1.24	-1.23	1.22		
1720.00	3.220	146.820	1712.06	-120.64	-99.69	80.46	1682653.14	14343536.24	39°29'55.2124"N	80°51'0.9937"W	128.11	141.093	1.92	-1.92	-2.27		
1814.00	2.100	137.290	1805.95	-124.78	-103.16	83.07	1682655.75	14343532.77	39°29'55.1780"N	80°51'0.9604"W	132.45	141.158	1.28	-1.19	-10.14		
1909.00	1.270	126.870	1900.91	-127.25	-105.07	85.09	1682657.77	14343530.86	39°29'55.1591"N	80°51'0.9347"W	135.21	140.998	0.93	-0.87	-10.97		
2004.00	1.200	115.660	1995.89	-128.83	-106.14	86.83	1682659.51	14343529.80	39°29'55.1486"N	80°51'0.9125"W	137.13	140.712	0.26	-0.07	-11.80		
2099.00	1.250	116.070	2090.87	-130.27	-107.02	88.66	1682661.33	14343528.91	39°29'55.1398"N	80°51'0.8892"W	138.98	140.361	0.05	0.05	0.43		
2194.00	1.150	114.420	2185.85	-131.66	-107.87	90.46	1682663.13	14343528.06	39°29'55.1314"N	80°51'0.8663"W	140.78	140.017	0.11	-0.11	-1.74		
2289.00	1.350	137.030	2280.83	-133.35	-109.08	92.09	1682664.76	14343526.85	39°29'55.1193"N	80°51'0.8455"W	142.76	139.829	0.56	0.21	23.80		
2383.00	1.140	106.340	2374.81	-134.91	-110.16	93.74	1682666.41	14343525.78	39°29'55.1087"N	80°51'0.8245"W	144.65	139.603	0.73	-0.22	-32.65		
2478.00	1.290	101.980	2469.78	-136.01	-110.65	95.70	1682668.37	14343525.29	39°29'55.1038"N	80°51'0.7996"W	146.29	139.144	0.19	0.16	-4.59		
2553.00	1.180	97.250	2544.77	-136.79	-110.92	97.29	1682669.96	14343525.02	39°29'55.1011"N	80°51'0.7793"W	147.54	138.746	0.20	-0.15	-6.31		
2666.00	1.390	105.360	2657.74	-138.09	-111.43	99.76	1682672.43	14343524.51	39°29'55.0960"N	80°51'0.7477"W	149.56	138.162	0.25	0.19	7.18	APS EM <8-3/4"> (2553')(2666'-5704')	
2760.00	1.130	72.950	2751.72	-138.77	-111.46	101.75	1682674.42	14343524.48	39°29'55.0957"N	80°51'0.7224"W	150.92	137.808	0.79	-0.28	-34.48		



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 3 of 12



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 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
2855.00	0.990	74.230	2846.70	-138.86	-110.96	103.43	1682676.10	14343524.97	39°29'55.1006"N	80°51'0.7009"W	151.69	137.011	0.15	-0.15	1.35	
2953.00	1.000	49.180	2944.69	-138.60	-110.17	104.90	1682677.56	14343525.76	39°29'55.1084"N	80°51'0.6822"W	152.12	136.405	0.44	0.01	-25.56	
3048.00	1.110	56.460	3039.67	-138.06	-109.12	106.29	1682678.96	14343526.81	39°29'55.1187"N	80°51'0.6644"W	152.33	135.753	0.18	0.12	7.66	
3143.00	0.790	73.260	3134.66	-137.86	-108.42	107.68	1682680.35	14343527.51	39°29'55.1256"N	80°51'0.6466"W	152.81	135.196	0.44	-0.34	17.68	
3332.00	0.640	26.550	3323.64	-137.19	-107.11	109.40	1682682.07	14343528.83	39°29'55.1386"N	80°51'0.6246"W	153.10	134.392	0.31	-0.08	-24.71	
3427.00	0.380	32.190	3418.64	-136.62	-106.36	109.81	1682682.47	14343529.57	39°29'55.1459"N	80°51'0.6194"W	152.88	134.087	0.28	-0.27	5.94	
3522.00	0.330	23.310	3513.64	-136.22	-105.85	110.08	1682682.75	14343530.09	39°29'55.1511"N	80°51'0.6159"W	152.72	133.875	0.08	-0.05	-9.35	
3617.00	0.530	9.870	3608.64	-135.64	-105.16	110.27	1682682.93	14343530.77	39°29'55.1578"N	80°51'0.6135"W	152.37	133.642	0.23	0.21	-14.15	
3712.00	0.550	2.940	3703.63	-134.83	-104.27	110.37	1682683.03	14343531.66	39°29'55.1666"N	80°51'0.6123"W	151.84	133.374	0.07	0.02	-7.29	
3807.00	0.760	14.870	3798.62	-133.89	-103.21	110.55	1682683.22	14343532.72	39°29'55.1771"N	80°51'0.6099"W	151.24	133.033	0.26	0.22	12.56	
3902.00	0.310	49.580	3893.62	-133.27	-102.43	110.91	1682683.58	14343533.50	39°29'55.1848"N	80°51'0.6053"W	150.98	132.725	0.56	-0.47	36.54	
3997.00	0.390	62.480	3988.62	-133.13	-102.12	111.39	1682684.06	14343533.81	39°29'55.1879"N	80°51'0.5991"W	151.12	132.513	0.12	0.08	13.58	
4091.00	0.470	8.080	4082.62	-132.74	-101.59	111.73	1682684.40	14343534.34	39°29'55.1931"N	80°51'0.5948"W	151.01	132.278	0.42	0.09	-57.87	
4186.00	0.830	336.610	4177.61	-131.71	-100.57	111.51	1682684.18	14343535.36	39°29'55.2032"N	80°51'0.5976"W	150.16	132.047	0.52	0.38	-33.13	
4281.00	0.980	353.380	4272.60	-130.23	-99.13	111.14	1682683.81	14343536.80	39°29'55.2174"N	80°51'0.6022"W	148.93	131.731	0.32	0.16	17.65	
4376.00	0.990	343.230	4367.58	-128.62	-97.54	110.81	1682683.48	14343538.39	39°29'55.2331"N	80°51'0.6064"W	147.63	131.355	0.18	0.01	-10.68	
4471.00	1.130	13.200	4462.57	-127.01	-95.84	110.79	1682683.46	14343540.09	39°29'55.2499"N	80°51'0.6067"W	146.49	130.862	0.59	0.15	31.55	
4566.00	1.050	347.280	4557.55	-125.35	-94.08	110.81	1682683.48	14343541.85	39°29'55.2673"N	80°51'0.6064"W	145.36	130.331	0.52	-0.08	-27.28	
4661.00	1.650	227.150	4652.54	-125.04	-94.16	109.62	1682682.29	14343541.77	39°29'55.2665"N	80°51'0.6216"W	144.51	130.662	2.48	0.63	-126.45	
4756.00	1.910	219.150	4747.49	-126.41	-96.32	107.62	1682680.28	14343539.61	39°29'55.2452"N	80°51'0.6472"W	144.43	131.829	0.38	0.27	-8.42	
4850.00	1.640	228.380	4841.45	-127.75	-98.43	105.62	1682678.29	14343537.50	39°29'55.2244"N	80°51'0.6727"W	144.37	132.981	0.42	-0.29	9.82	
4945.00	0.680	240.860	4936.43	-128.36	-99.61	104.11	1682676.78	14343536.32	39°29'55.2128"N	80°51'0.6919"W	144.09	133.732	1.04	-1.01	13.14	
5040.00	0.680	229.310	5031.42	-128.66	-100.25	103.19	1682675.86	14343535.68	39°29'55.2065"N	80°51'0.7037"W	143.87	134.170	0.14	0.00	-12.16	
5135.00	0.570	251.720	5126.41	-128.86	-100.76	102.32	1682674.99	14343535.17	39°29'55.2014"N	80°51'0.7149"W	143.60	134.561	0.28	-0.12	23.59	
5230.00	0.350	252.610	5221.41	-128.85	-101.00	101.59	1682674.26	14343534.93	39°29'55.1991"N	80°51'0.7241"W	143.25	134.832	0.23	-0.23	0.94	
5324.00	0.670	290.320	5315.41	-128.49	-100.89	100.80	1682673.47	14343535.04	39°29'55.2002"N	80°51'0.7342"W	142.62	135.026	0.48	0.34	40.12	
5419.00	0.380	290.680	5410.40	-127.93	-100.59	99.99	1682672.66	14343535.34	39°29'55.2032"N	80°51'0.7446"W	141.83	135.172	0.31	-0.31	0.38	
5514.00	0.600	340.040	5505.40	-127.23	-100.01	99.52	1682672.19	14343535.92	39°29'55.2089"N	80°51'0.7505"W	141.09	135.140	0.48	0.23	51.96	
5609.00	0.820	353.090	5600.39	-126.07	-98.87	99.27	1682671.94	14343537.06	39°29'55.2202"N	80°51'0.7537"W	140.11	134.883	0.29	0.23	13.74	
5704.00	1.040	6.760	5695.38	-124.63	-97.34	99.29	1682671.96	14343538.59	39°29'55.2353"N	80°51'0.7534"W	139.04	134.431	0.33	0.23	14.39	



Actual Wellpath Report

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Page 4 of 12



REFERENCE WELLPATH IDENTIFICATION			
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Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 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
5819.00	5.600	359.440	5810.16	-118.37	-90.69	99.36	1682672.03	14343545.24	39°29'55.3011"N	80°51'0.7524"W	134.52	132.387	3.97	3.97	-6.37	BH AT Curve <8-1/2">(5704')(5819'-22689')
5914.00	12.860	358.190	5903.87	-103.88	-75.46	98.98	1682671.65	14343560.46	39°29'55.4515"N	80°51'0.7569"W	124.47	127.323	7.64	7.64	-1.32	
6008.00	15.000	352.300	5995.10	-81.98	-52.95	97.02	1682669.69	14343582.96	39°29'55.6741"N	80°51'0.7815"W	110.53	118.624	2.73	2.28	-6.27	
6103.00	18.730	345.730	6086.01	-54.72	-25.97	91.61	1682664.28	14343609.93	39°29'55.9408"N	80°51'0.8499"W	95.22	105.829	4.40	3.93	-6.92	
6198.00	25.370	349.900	6174.01	-19.39	8.89	84.27	1682656.95	14343644.77	39°29'56.2854"N	80°51'0.9428"W	84.74	83.980	7.18	6.99	4.39	
6293.00	34.520	359.330	6256.29	26.34	55.97	80.38	1682653.06	14343691.83	39°29'56.7508"N	80°51'0.9914"W	97.94	55.151	10.81	9.63	9.93	
6373.00†	42.621	357.974	6318.79	73.77	105.78	79.15	1682651.83	14343741.63	39°29'57.2432"N	80°51'1.0060"W	132.12	36.805	10.18	10.13	-1.69	Middlesex: 6373' MD
6387.00	44.400	357.780	6328.97	82.95	115.38	78.80	1682651.47	14343751.23	39°29'57.3381"N	80°51'1.0103"W	139.72	34.329	10.18	10.14	-1.39	
6482.00	53.870	354.590	6391.28	151.96	186.76	73.89	1682646.57	14343822.57	39°29'58.0436"N	80°51'1.0714"W	200.84	21.585	10.65	10.35	-3.36	
6518.00†	57.892	354.039	6411.53	180.89	216.38	70.94	1682643.62	14343852.18	39°29'58.3363"N	80°51'1.1085"W	227.71	18.151	10.69	10.62	-1.53	Burkett: 6518' MD
6529.00	58.860	353.880	6417.31	190.00	225.68	69.95	1682642.63	14343861.48	39°29'58.4283"N	80°51'1.1208"W	236.27	17.221	10.69	10.62	-1.45	
6564.00†	62.184	352.943	6434.53	219.72	255.94	66.45	1682639.14	14343891.73	39°29'58.7274"N	80°51'1.1648"W	264.43	14.555	9.78	9.50	-2.68	Tully: 6564' MD
6577.00	63.420	352.610	6440.47	231.03	267.41	65.00	1682637.68	14343903.20	39°29'58.8408"N	80°51'1.1831"W	275.20	13.661	9.78	9.51	-2.56	
6624.00	69.110	351.960	6459.38	273.17	310.03	59.22	1682631.91	14343945.80	39°29'59.2621"N	80°51'1.2560"W	315.63	10.814	12.17	12.11	-1.38	
6672.00	74.290	350.050	6474.45	318.00	355.02	52.09	1682624.77	14343990.77	39°29'59.7069"N	80°51'1.3460"W	358.82	8.346	11.43	10.79	-3.98	
6723.00†	76.954	348.511	6487.11	366.85	403.56	42.89	1682615.59	14344039.28	39°30'0.1867"N	80°51'1.4622"W	405.83	6.067	5.99	5.22	-3.02	Marcellus POE: 6723' MD
6767.00	79.260	347.210	6496.18	409.57	445.64	33.84	1682606.53	14344081.36	39°30'0.6029"N	80°51'1.5769"W	446.93	4.342	5.99	5.24	-2.96	
6862.00	85.130	342.910	6509.08	503.36	536.51	9.57	1682582.27	14344172.19	39°30'1.5014"N	80°51'1.8846"W	536.60	1.021	7.63	6.18	-4.53	
6957.00	90.890	340.430	6512.38	598.25	626.59	-20.28	1682552.44	14344262.23	39°30'2.3921"N	80°51'2.2634"W	626.92	358.146	6.60	6.06	-2.61	
7052.00	90.000	339.340	6511.64	693.23	715.79	-52.95	1682519.78	14344351.40	39°30'3.2743"N	80°51'2.6783"W	717.75	355.769	1.48	-0.94	-1.15	
7147.00	90.180	340.950	6511.49	788.22	805.14	-85.22	1682487.53	14344440.71	39°30'4.1579"N	80°51'3.0880"W	809.64	353.958	1.71	0.19	1.69	
7242.00	90.370	340.830	6511.04	883.22	894.91	-116.32	1682456.44	14344530.44	39°30'5.0456"N	80°51'3.4829"W	902.43	352.594	0.24	0.20	-0.13	
7337.00	89.050	339.850	6511.52	978.21	984.36	-148.28	1682424.49	14344619.86	39°30'5.9302"N	80°51'3.8887"W	995.47	351.434	1.73	-1.39	-1.03	
7432.00	90.980	344.210	6511.49	1073.16	1074.70	-177.58	1682395.20	14344710.16	39°30'6.8236"N	80°51'4.2606"W	1089.28	350.618	5.02	2.03	4.59	
7527.00	90.580	344.770	6510.20	1167.95	1166.24	-202.98	1682369.81	14344801.66	39°30'7.7286"N	80°51'4.5827"W	1183.77	350.127	0.72	-0.42	0.59	
7621.00	90.770	343.260	6509.09	1261.79	1256.59	-228.86	1682343.94	14344891.98	39°30'8.6221"N	80°51'4.9110"W	1277.26	349.678	1.62	0.20	-1.61	
7716.00	89.750	340.490	6508.66	1356.76	1346.87	-258.41	1682314.40	14344982.22	39°30'9.5148"N	80°51'5.2861"W	1371.43	349.139	3.11	-1.07	-2.92	
7811.00	91.420	340.620	6507.69	1451.75	1436.44	-290.03	1682282.79	14345071.76	39°30'10.4006"N	80°51'5.6876"W	1465.43	348.585	1.76	1.76	0.14	
7906.00	90.250	339.830	6506.31	1546.73	1525.83	-322.17	1682250.67	14345161.11	39°30'11.2845"N	80°51'6.0957"W	1559.47	348.077	1.49	-1.23	-0.83	
8001.00	89.600	338.380	6506.43	1641.69	1614.58	-356.05	1682216.80	14345249.82	39°30'12.1622"N	80°51'6.5261"W	1653.37	347.564	1.67	-0.68	-1.53	



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 5 of 12



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 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
8096.00	90.180	339.260	6506.61	1736.64	1703.16	-390.38	1682182.49	14345338.37	39°30'13.0382"N	80°51'6.9621"W	1747.32	347.090	1.11	0.61	0.93	
8190.00	90.150	337.530	6506.34	1830.55	1790.55	-424.99	1682147.89	14345425.72	39°30'13.9025"N	80°51'7.4018"W	1840.29	346.648	1.84	-0.03	-1.84	
8285.00	88.890	337.550	6507.14	1925.40	1878.34	-461.28	1682111.62	14345513.48	39°30'14.7708"N	80°51'7.8629"W	1934.15	346.203	1.33	-1.33	0.02	
8380.00	90.740	339.680	6507.45	2020.32	1966.79	-495.91	1682076.99	14345601.89	39°30'15.6455"N	80°51'8.3030"W	2028.35	345.848	2.97	1.95	2.24	
8475.00	90.000	337.870	6506.83	2115.26	2055.34	-530.30	1682042.62	14345690.41	39°30'16.5212"N	80°51'8.7398"W	2122.65	345.532	2.06	-0.78	-1.91	
8570.00	89.970	338.500	6506.86	2210.16	2143.54	-565.61	1682007.33	14345778.57	39°30'17.3935"N	80°51'9.1884"W	2216.90	345.218	0.66	-0.03	0.66	
8665.00	90.310	337.930	6506.63	2305.07	2231.75	-600.86	1681972.09	14345866.75	39°30'18.2659"N	80°51'9.6363"W	2311.22	344.931	0.70	0.36	-0.60	
8759.00	90.430	337.640	6506.02	2398.94	2318.77	-636.40	1681936.56	14345953.73	39°30'19.1265"N	80°51'10.0879"W	2404.52	344.653	0.33	0.13	-0.31	
8854.00	90.650	338.080	6505.12	2493.82	2406.76	-672.20	1681900.77	14346041.69	39°30'19.9968"N	80°51'10.5428"W	2498.87	344.395	0.52	0.23	0.46	
8949.00	90.280	338.800	6504.35	2588.74	2495.11	-707.11	1681865.88	14346130.00	39°30'20.8705"N	80°51'10.9863"W	2593.37	344.177	0.85	-0.39	0.76	
9044.00	90.550	338.760	6503.66	2683.68	2583.67	-741.50	1681831.51	14346218.52	39°30'21.7463"N	80°51'11.4232"W	2687.96	343.987	0.29	0.28	-0.04	
9139.00	90.580	337.850	6502.73	2778.58	2671.93	-776.61	1681796.41	14346306.75	39°30'22.6192"N	80°51'11.8693"W	2782.51	343.793	0.96	0.03	-0.96	
9234.00	90.680	339.430	6501.68	2873.51	2760.40	-811.21	1681761.82	14346395.19	39°30'23.4941"N	80°51'12.3089"W	2877.13	343.623	1.67	0.11	1.66	
9329.00	90.120	340.190	6501.02	2968.50	2849.56	-844.00	1681729.05	14346484.31	39°30'24.3758"N	80°51'12.7253"W	2971.92	343.501	0.99	-0.59	0.80	
9423.00	90.800	342.100	6500.26	3062.49	2938.51	-874.37	1681698.69	14346573.22	39°30'25.2554"N	80°51'13.1110"W	3065.84	343.429	2.16	0.72	2.03	
9518.00	90.490	341.390	6499.20	3157.46	3028.72	-904.13	1681668.94	14346663.40	39°30'26.1475"N	80°51'13.4888"W	3160.79	343.379	0.82	-0.33	-0.75	
9613.00	89.940	340.840	6498.84	3252.46	3118.60	-934.88	1681638.21	14346753.25	39°30'27.0364"N	80°51'13.8792"W	3255.72	343.313	0.82	-0.58	-0.58	
9708.00	90.000	341.470	6498.89	3347.46	3208.51	-965.56	1681607.53	14346843.12	39°30'27.9254"N	80°51'14.2689"W	3350.65	343.251	0.67	0.06	0.66	
9803.00	90.460	341.390	6498.51	3442.45	3298.56	-995.82	1681577.29	14346933.13	39°30'28.8159"N	80°51'14.6530"W	3445.60	343.201	0.49	0.48	-0.08	
9898.00	90.430	341.890	6497.77	3537.44	3388.73	-1025.74	1681547.38	14347023.26	39°30'29.7075"N	80°51'15.0329"W	3540.57	343.159	0.53	-0.03	0.53	
9993.00	90.430	341.620	6497.06	3632.42	3478.95	-1055.48	1681517.65	14347113.45	39°30'30.5997"N	80°51'15.4105"W	3635.53	343.123	0.28	0.00	-0.28	
10088.00	90.580	341.660	6496.22	3727.40	3569.11	-1085.40	1681487.74	14347203.57	39°30'31.4912"N	80°51'15.7904"W	3730.50	343.085	0.16	0.16	0.04	
10182.00	89.260	341.010	6496.35	3821.40	3658.16	-1115.49	1681457.67	14347292.59	39°30'32.3719"N	80°51'16.1723"W	3824.45	343.042	1.57	-1.40	-0.69	
10277.00	91.540	342.440	6495.69	3916.37	3748.36	-1145.27	1681427.89	14347382.75	39°30'33.2638"N	80°51'16.5505"W	3919.42	343.010	2.83	2.40	1.51	
10372.00	89.140	341.410	6495.12	4011.34	3838.66	-1174.75	1681398.43	14347473.02	39°30'34.1568"N	80°51'16.9247"W	4014.39	342.984	2.75	-2.53	-1.08	
10467.00	91.020	340.850	6494.99	4106.33	3928.55	-1205.47	1681367.72	14347562.87	39°30'35.0457"N	80°51'17.3148"W	4109.34	342.941	2.06	1.98	-0.59	
10562.00	90.430	342.030	6493.79	4201.32	4018.60	-1235.70	1681337.50	14347652.88	39°30'35.9361"N	80°51'17.6987"W	4204.30	342.908	1.39	-0.62	1.24	
10657.00	89.350	340.860	6493.97	4296.31	4108.66	-1265.93	1681307.28	14347742.91	39°30'36.8267"N	80°51'18.0825"W	4299.26	342.875	1.68	-1.14	-1.23	
10751.00	90.830	341.600	6493.82	4390.30	4197.66	-1296.18	1681277.05	14347831.87	39°30'37.7068"N	80°51'18.4666"W	4393.22	342.840	1.76	1.57	0.79	
10846.00	89.880	342.790	6493.23	4485.27	4288.10	-1325.23	1681248.01	14347922.28	39°30'38.6011"N	80°51'18.8553"W	4488.21	342.826	1.60	-1.00	1.25	



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 6 of 12



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 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
10941.00	90.060	340.830	6493.28	4580.24	4378.35	-1354.88	1681218.37	14348012.49	39°30'39.4936"N	80°51'19.2118"W	4583.19	342.805	2.07	0.19	-2.06	
11036.00	90.610	341.950	6492.73	4675.24	4468.38	-1385.20	1681188.07	14348102.48	39°30'40.3838"N	80°51'19.5968"W	4678.16	342.777	1.31	0.58	1.18	
11131.00	90.370	341.730	6491.92	4770.21	4558.64	-1414.80	1681158.47	14348192.71	39°30'41.2764"N	80°51'19.9727"W	4773.15	342.758	0.34	-0.25	-0.23	
11225.00	90.430	341.610	6491.26	4864.20	4647.87	-1444.37	1681128.92	14348281.90	39°30'42.1588"N	80°51'20.3480"W	4867.13	342.737	0.14	0.06	-0.13	
11320.00	90.550	341.710	6490.45	4959.18	4738.04	-1474.26	1681099.04	14348372.04	39°30'43.0504"N	80°51'20.7276"W	4962.11	342.716	0.16	0.13	0.11	
11415.00	90.060	341.210	6489.94	5054.18	4828.11	-1504.46	1681068.85	14348462.07	39°30'43.9411"N	80°51'21.1111"W	5057.08	342.693	0.74	-0.52	-0.53	
11510.00	90.710	341.610	6489.30	5149.17	4918.15	-1534.75	1681038.58	14348552.08	39°30'44.8315"N	80°51'21.4957"W	5152.06	342.669	0.80	0.68	0.42	
11605.00	90.620	341.740	6488.20	5244.15	5008.33	-1564.61	1681008.72	14348642.22	39°30'45.7232"N	80°51'21.8749"W	5247.04	342.651	0.17	-0.09	0.14	
11700.00	90.430	342.010	6487.33	5339.12	5098.61	-1594.17	1680979.18	14348732.46	39°30'46.6159"N	80°51'22.2501"W	5342.02	342.637	0.35	-0.20	0.28	
11795.00	90.520	342.070	6486.54	5434.10	5188.98	-1623.46	1680949.90	14348822.79	39°30'47.5095"N	80°51'22.6221"W	5437.01	342.627	0.11	0.09	0.06	
11889.00	90.370	341.980	6485.81	5528.07	5278.39	-1652.47	1680920.90	14348912.17	39°30'48.3936"N	80°51'22.9903"W	5531.01	342.617	0.19	-0.16	-0.10	
11984.00	90.520	341.940	6485.08	5623.05	5368.72	-1681.89	1680891.50	14349002.46	39°30'49.2868"N	80°51'23.3639"W	5626.00	342.606	0.16	0.16	-0.04	
12079.00	90.920	341.960	6483.88	5718.02	5459.03	-1711.32	1680862.08	14349092.74	39°30'50.1799"N	80°51'23.7376"W	5720.98	342.595	0.42	0.42	0.02	
12174.00	90.400	341.980	6482.79	5812.99	5549.36	-1740.72	1680832.69	14349183.03	39°30'51.0731"N	80°51'24.1109"W	5815.97	342.584	0.55	-0.55	0.02	
12268.00	90.220	341.680	6482.28	5906.97	5638.67	-1770.03	1680803.39	14349272.31	39°30'51.9563"N	80°51'24.4831"W	5909.96	342.572	0.37	-0.19	-0.32	
12363.00	90.550	340.870	6481.64	6001.97	5728.64	-1800.53	1680772.90	14349362.24	39°30'52.8460"N	80°51'24.8704"W	6004.93	342.552	0.92	0.35	-0.85	
12458.00	90.620	338.640	6480.67	6096.94	5817.76	-1833.40	1680740.04	14349451.33	39°30'53.7273"N	80°51'25.2880"W	6099.81	342.508	2.35	0.07	-2.35	
12553.00	89.970	339.030	6480.18	6191.89	5906.35	-1867.70	1680705.76	14349539.88	39°30'54.6034"N	80°51'25.7238"W	6194.62	342.452	0.80	-0.68	0.41	
12648.00	90.680	340.070	6479.64	6286.86	5995.36	-1900.89	1680672.58	14349628.85	39°30'55.4836"N	80°51'26.1455"W	6289.49	342.408	1.33	0.75	1.09	
12743.00	90.280	339.530	6478.85	6381.84	6084.52	-1933.69	1680639.79	14349717.97	39°30'56.3653"N	80°51'26.5623"W	6384.39	342.369	0.71	-0.42	-0.57	
12838.00	90.180	339.890	6478.47	6476.83	6173.62	-1966.63	1680606.86	14349807.04	39°30'57.2464"N	80°51'26.9808"W	6479.29	342.330	0.39	-0.11	0.38	
12933.00	90.430	339.990	6477.96	6571.82	6262.85	-1999.22	1680574.29	14349896.24	39°30'58.1289"N	80°51'27.3948"W	6574.21	342.296	0.28	0.26	0.11	
13028.00	90.400	339.940	6477.27	6666.80	6352.10	-2031.76	1680541.76	14349985.45	39°30'59.0115"N	80°51'27.8082"W	6669.13	342.263	0.06	-0.03	-0.05	
13122.00	91.140	339.840	6476.01	6760.79	6440.36	-2064.08	1680509.45	14350073.68	39°30'59.8843"N	80°51'28.2188"W	6763.04	342.230	0.79	0.79	-0.11	
13217.00	89.380	339.310	6475.58	6855.76	6529.39	-2097.23	1680476.32	14350162.67	39°31'0.7646"N	80°51'28.6400"W	6857.94	342.193	1.93	-1.85	-0.56	
13312.00	90.120	339.460	6475.99	6950.73	6618.30	-2130.68	1680442.88	14350251.54	39°31'1.6439"N	80°51'29.0650"W	6952.82	342.155	0.79	0.78	0.16	
13407.00	90.490	339.400	6475.49	7045.70	6707.24	-2164.06	1680409.52	14350340.45	39°31'2.5235"N	80°51'29.4891"W	7047.71	342.118	0.39	0.39	-0.06	
13502.00	90.550	340.510	6474.62	7140.69	6796.48	-2196.62	1680376.97	14350429.66	39°31'3.4060"N	80°51'29.9028"W	7142.64	342.089	1.17	0.06	1.17	
13597.00	90.310	339.590	6473.91	7235.68	6885.78	-2229.03	1680344.57	14350518.92	39°31'4.2890"N	80°51'30.3146"W	7237.58	342.062	1.00	-0.25	-0.97	
13691.00	90.580	340.100	6473.18	7329.66	6974.02	-2261.42	1680312.20	14350607.12	39°31'5.1616"N	80°51'30.7261"W	7331.51	342.034	0.61	0.29	0.54	



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 7 of 12



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 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
13786.00	90.310	339.770	6472.44	7424.65	7063.25	-2294.01	1680279.62	14350696.32	39°31'6.0440"N	80°51'31.1402"W	7426.44	342.007	0.45	-0.28	-0.35	
13881.00	90.090	339.100	6472.11	7519.63	7152.20	-2327.38	1680246.26	14350785.23	39°31'6.9236"N	80°51'31.5642"W	7521.34	341.975	0.74	-0.23	-0.71	
13976.00	90.340	339.550	6471.75	7614.60	7241.08	-2360.92	1680212.73	14350874.07	39°31'7.8026"N	80°51'31.9904"W	7616.24	341.942	0.54	0.26	0.47	
14071.00	90.180	338.770	6471.32	7709.56	7329.86	-2394.72	1680178.95	14350962.82	39°31'8.6806"N	80°51'32.4199"W	7711.13	341.907	0.84	-0.17	-0.82	
14166.00	90.310	339.820	6470.92	7804.52	7418.72	-2428.31	1680145.38	14351051.65	39°31'9.5594"N	80°51'32.8467"W	7806.03	341.876	1.11	0.14	1.11	
14261.00	90.280	339.620	6470.43	7899.51	7507.83	-2461.23	1680112.46	14351140.72	39°31'10.4406"N	80°51'33.2651"W	7900.96	341.850	0.21	-0.03	-0.21	
14355.00	90.280	339.720	6469.97	7993.49	7595.98	-2493.89	1680079.82	14351228.83	39°31'11.3122"N	80°51'33.6800"W	7994.89	341.824	0.11	0.00	0.11	
14450.00	90.370	339.710	6469.43	8088.47	7685.08	-2526.83	1680046.90	14351317.90	39°31'12.1934"N	80°51'34.0985"W	8089.83	341.799	0.10	0.09	-0.01	
14545.00	90.220	339.660	6468.94	8183.45	7774.17	-2559.81	1680013.93	14351406.95	39°31'13.0744"N	80°51'34.5176"W	8184.76	341.775	0.17	-0.16	-0.05	
14640.00	89.850	339.690	6468.88	8278.44	7863.26	-2592.81	1679980.94	14351498.00	39°31'13.9554"N	80°51'34.9369"W	8279.70	341.751	0.39	-0.39	0.03	
14735.00	90.520	340.290	6468.58	8373.43	7952.52	-2625.31	1679948.45	14351585.23	39°31'14.8381"N	80°51'35.3499"W	8374.65	341.731	0.95	0.71	0.63	
14829.00	90.250	339.530	6467.94	8467.42	8040.80	-2657.60	1679916.17	14351673.47	39°31'15.7111"N	80°51'35.7602"W	8468.61	341.711	0.86	-0.29	-0.81	
14924.00	90.370	339.890	6467.43	8562.40	8129.90	-2690.54	1679883.24	14351762.54	39°31'16.5922"N	80°51'36.1788"W	8563.55	341.688	0.40	0.13	0.38	
15019.00	90.490	339.720	6466.72	8657.38	8219.06	-2723.34	1679850.46	14351851.66	39°31'17.4739"N	80°51'36.5955"W	8658.49	341.668	0.22	0.13	-0.18	
15114.00	90.180	339.130	6466.16	8752.35	8308.00	-2756.72	1679817.09	14351940.56	39°31'18.3534"N	80°51'37.0198"W	8753.42	341.643	0.70	-0.33	-0.62	
15208.00	90.430	339.380	6465.66	8846.32	8395.90	-2790.02	1679783.81	14352028.43	39°31'19.2227"N	80°51'37.4429"W	8847.34	341.618	0.38	0.27	0.27	
15303.00	90.220	339.760	6465.12	8941.30	8484.92	-2823.18	1679750.66	14352117.42	39°31'20.1030"N	80°51'37.8643"W	8942.27	341.596	0.46	-0.22	0.40	
15398.00	90.460	339.980	6464.56	9036.29	8574.12	-2855.87	1679717.98	14352206.58	39°31'20.9851"N	80°51'38.2797"W	9037.23	341.578	0.34	0.25	0.23	
15493.00	90.120	339.460	6464.08	9131.27	8663.23	-2888.80	1679685.07	14352295.65	39°31'21.8663"N	80°51'38.6982"W	9132.18	341.559	0.65	-0.36	-0.55	
15588.00	90.000	339.340	6463.98	9226.24	8752.15	-2922.22	1679651.65	14352384.54	39°31'22.7457"N	80°51'39.1229"W	9227.11	341.537	0.18	-0.13	-0.13	
15683.00	90.400	339.380	6463.65	9321.21	8841.06	-2955.71	1679618.18	14352473.41	39°31'23.6248"N	80°51'39.5485"W	9322.04	341.514	0.42	0.42	0.04	
15777.00	90.180	339.060	6463.17	9415.18	8928.94	-2989.06	1679584.85	14352561.26	39°31'24.4939"N	80°51'39.9723"W	9415.97	341.491	0.41	-0.23	-0.34	
15872.00	90.370	339.570	6462.72	9510.15	9017.81	-3022.62	1679551.30	14352650.10	39°31'25.3728"N	80°51'40.3988"W	9510.90	341.470	0.57	0.20	0.54	
15967.00	90.550	339.810	6461.95	9605.13	9106.91	-3055.59	1679518.34	14352739.15	39°31'26.2538"N	80°51'40.8178"W	9605.85	341.452	0.32	0.19	0.25	
16062.00	90.150	339.430	6461.37	9700.11	9195.96	-3088.67	1679485.27	14352828.17	39°31'27.1345"N	80°51'41.2383"W	9700.80	341.434	0.58	-0.42	-0.40	
16157.00	90.430	339.890	6460.89	9795.09	9285.03	-3121.69	1679452.27	14352917.21	39°31'28.0153"N	80°51'41.6579"W	9795.75	341.417	0.57	0.29	0.48	
16252.00	90.680	339.320	6459.97	9890.07	9374.07	-3154.80	1679419.17	14353006.21	39°31'28.8958"N	80°51'42.0786"W	9890.70	341.400	0.66	0.26	-0.60	
16346.00	89.970	341.210	6459.44	9984.06	9462.54	-3186.54	1679387.45	14353094.65	39°31'29.7707"N	80°51'42.4819"W	9984.68	341.389	2.15	-0.76	2.01	
16441.00	90.550	341.690	6459.01	10079.05	9552.61	-3216.76	1679357.24	14353184.68	39°31'30.6613"N	80°51'42.8658"W	10079.67	341.389	0.79	0.61	0.51	
16536.00	90.520	341.700	6458.12	10174.03	9642.80	-3246.59	1679327.41	14353274.83	39°31'31.5531"N	80°51'43.2448"W	10174.67	341.392	0.03	-0.03	0.01	



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 8 of 12



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 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
16631.00	90.370	341.410	6457.38	10269.02	9732.91	-3276.65	1679297.37	14353364.91	39°31'32.4442"N	80°51'43.6266"W	10269.67	341.394	0.34	-0.16	-0.31	
16726.00	90.520	341.530	6456.64	10364.01	9822.99	-3306.84	1679267.19	14353454.95	39°31'33.3349"N	80°51'44.0101"W	10364.66	341.395	0.20	0.16	0.13	
16821.00	90.490	341.190	6455.81	10459.00	9913.00	-3337.20	1679236.84	14353544.92	39°31'34.2250"N	80°51'44.3958"W	10459.66	341.394	0.36	-0.03	-0.36	
16916.00	90.740	341.310	6454.79	10553.99	10002.95	-3367.74	1679206.32	14353634.84	39°31'35.1145"N	80°51'44.7837"W	10554.65	341.393	0.29	0.26	0.13	
17010.00	90.860	341.460	6453.47	10647.97	10092.03	-3397.74	1679176.33	14353723.88	39°31'35.9953"N	80°51'45.1649"W	10648.64	341.393	0.20	0.13	0.16	
17105.00	90.830	342.130	6452.07	10742.95	10182.26	-3427.42	1679146.66	14353814.08	39°31'36.8875"N	80°51'45.5418"W	10743.63	341.396	0.71	-0.03	0.71	
17200.00	90.520	341.580	6450.95	10837.92	10272.53	-3457.00	1679117.09	14353904.31	39°31'37.7801"N	80°51'45.9176"W	10838.62	341.400	0.66	-0.33	-0.58	
17295.00	90.890	341.890	6449.79	10932.90	10362.74	-3486.77	1679087.33	14353994.48	39°31'38.6721"N	80°51'46.2958"W	10933.61	341.403	0.51	0.39	0.33	
17390.00	90.950	341.780	6448.28	11027.87	10452.99	-3516.38	1679057.73	14354084.70	39°31'39.5646"N	80°51'46.6720"W	11028.60	341.407	0.13	0.06	-0.12	
17485.00	91.230	341.170	6446.45	11122.85	10543.05	-3546.56	1679027.57	14354174.72	39°31'40.4551"N	80°51'47.0553"W	11123.58	341.408	0.71	0.29	-0.64	
17580.00	90.580	341.140	6444.95	11217.83	10632.95	-3577.24	1678996.90	14354264.58	39°31'41.3440"N	80°51'47.4451"W	11218.57	341.406	0.68	-0.68	-0.03	
17674.00	90.890	341.470	6443.75	11311.82	10721.98	-3607.37	1678966.78	14354353.58	39°31'42.2244"N	80°51'47.8279"W	11312.56	341.405	0.48	0.33	0.35	
17769.00	90.400	341.540	6442.68	11406.80	10812.07	-3637.51	1678936.66	14354443.63	39°31'43.1152"N	80°51'48.2107"W	11407.55	341.406	0.52	-0.52	0.07	
17864.00	90.740	341.320	6441.73	11501.79	10902.12	-3667.76	1678906.42	14354533.64	39°31'44.0057"N	80°51'48.5951"W	11502.55	341.406	0.43	0.36	-0.23	
18054.00	90.550	341.420	6439.59	11691.77	11082.15	-3728.45	1678845.75	14354713.61	39°31'45.7859"N	80°51'49.3661"W	11692.53	341.405	0.11	-0.10	0.05	
18149.00	90.950	342.020	6438.35	11786.75	11172.35	-3758.25	1678815.97	14354803.77	39°31'46.6778"N	80°51'49.7446"W	11787.52	341.408	0.76	0.42	0.63	
18243.00	90.620	341.280	6437.06	11880.73	11261.56	-3787.84	1678786.39	14354892.94	39°31'47.5599"N	80°51'50.1206"W	11881.51	341.410	0.86	-0.35	-0.79	
18338.00	90.950	341.750	6435.76	11975.71	11351.65	-3817.95	1678756.28	14354983.00	39°31'48.4508"N	80°51'50.5032"W	11976.50	341.410	0.60	0.35	0.49	
18433.00	90.610	341.970	6434.47	12070.68	11441.92	-3847.53	1678726.72	14355073.23	39°31'49.3434"N	80°51'50.8789"W	12071.49	341.414	0.43	-0.36	0.23	
18527.00	90.710	341.650	6433.38	12164.66	11531.21	-3876.87	1678697.39	14355162.49	39°31'50.2264"N	80°51'51.2516"W	12165.48	341.417	0.36	0.11	-0.34	
18622.00	90.710	341.490	6432.21	12259.64	11621.33	-3906.90	1678667.37	14355252.57	39°31'51.1175"N	80°51'51.6332"W	12260.48	341.418	0.17	0.00	-0.17	
18717.00	91.290	342.300	6430.55	12354.61	11711.61	-3936.42	1678637.87	14355342.82	39°31'52.0102"N	80°51'52.0082"W	12355.46	341.422	1.05	0.61	0.85	
18812.00	90.550	341.430	6429.02	12449.58	11801.88	-3965.98	1678608.31	14355433.05	39°31'52.9028"N	80°51'52.3837"W	12450.44	341.425	1.20	-0.78	-0.92	
18907.00	90.250	345.160	6428.36	12544.46	11892.85	-3993.29	1678581.02	14355523.99	39°31'53.8023"N	80°51'52.7304"W	12545.37	341.439	3.94	-0.32	3.93	
19002.00	90.620	343.920	6427.64	12639.25	11984.41	-4018.61	1678555.71	14355615.51	39°31'54.7076"N	80°51'53.0519"W	12640.23	341.463	1.36	0.39	-1.31	
19097.00	90.280	341.780	6426.89	12734.18	12075.18	-4046.62	1678527.71	14355706.24	39°31'55.6051"N	80°51'53.4076"W	12735.19	341.473	2.28	-0.36	-2.25	
19192.00	90.460	341.830	6426.28	12829.16	12165.43	-4076.28	1678498.06	14355796.45	39°31'56.4975"N	80°51'53.7845"W	12830.19	341.475	0.20	0.19	0.05	
19286.00	90.370	341.710	6425.60	12923.14	12254.71	-4105.69	1678468.66	14355885.70	39°31'57.3803"N	80°51'54.1580"W	12924.18	341.478	0.16	-0.10	-0.13	
19381.00	90.490	341.890	6424.89	13018.12	12344.95	-4135.36	1678439.01	14355975.91	39°31'58.2726"N	80°51'54.5350"W	13019.18	341.480	0.23	0.13	0.19	
19476.00	90.340	341.840	6424.20	13113.10	12435.23	-4164.93	1678409.45	14356066.15	39°31'59.1653"N	80°51'54.9106"W	13114.18	341.483	0.17	-0.16	-0.05	



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 9 of 12



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 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
19571.00	90.370	341.840	6423.61	13208.08	12525.50	-4194.54	1678379.85	14356156.38	39°32'0.0579"N	80°51'55.2868"W	13209.17	341.485	0.03	0.03	0.00	
19667.00	90.310	341.810	6423.04	13304.07	12616.71	-4224.48	1678349.92	14356247.55	39°32'0.9598"N	80°51'55.6672"W	13305.17	341.488	0.07	-0.06	-0.03	
19761.00	90.370	341.840	6422.48	13398.05	12706.02	-4253.80	1678320.61	14356336.82	39°32'1.8429"N	80°51'56.0397"W	13399.17	341.490	0.07	0.06	0.03	
19856.00	90.120	341.710	6422.08	13493.03	12796.25	-4283.51	1678290.91	14356427.02	39°32'2.7351"N	80°51'56.4172"W	13494.16	341.492	0.30	-0.26	-0.14	
19951.00	90.460	341.760	6421.59	13588.02	12886.46	-4313.28	1678261.15	14356517.20	39°32'3.6272"N	80°51'56.7955"W	13589.16	341.494	0.36	0.36	0.05	
20046.00	90.370	341.460	6420.91	13683.00	12976.61	-4343.25	1678231.19	14356607.31	39°32'4.5185"N	80°51'57.1763"W	13684.16	341.495	0.33	-0.09	-0.32	
20140.00	90.340	342.050	6420.32	13776.99	13065.88	-4372.68	1678201.78	14356696.54	39°32'5.4013"N	80°51'57.5502"W	13778.15	341.496	0.63	-0.03	0.63	
20235.00	90.370	341.830	6419.74	13871.96	13156.20	-4402.13	1678172.34	14356786.82	39°32'6.2943"N	80°51'57.9244"W	13873.15	341.499	0.23	0.03	-0.23	
20330.00	90.150	341.660	6419.30	13966.95	13246.41	-4431.89	1678142.59	14356877.01	39°32'7.1864"N	80°51'58.3025"W	13968.15	341.501	0.29	-0.23	-0.18	
20425.00	90.340	341.670	6418.90	14061.93	13336.59	-4461.78	1678112.72	14356967.15	39°32'8.0781"N	80°51'58.6822"W	14063.15	341.502	0.20	0.20	0.01	
20520.00	90.120	341.700	6418.52	14156.92	13426.78	-4491.63	1678082.88	14357057.30	39°32'8.9699"N	80°51'59.0615"W	14158.15	341.503	0.23	-0.23	0.03	
20615.00	90.370	339.800	6418.11	14251.92	13516.46	-4522.95	1678051.57	14357146.95	39°32'9.8567"N	80°51'59.4595"W	14253.13	341.498	2.02	0.26	-2.00	
20710.00	90.310	339.600	6417.55	14346.90	13605.56	-4555.91	1678018.63	14357236.01	39°32'10.7378"N	80°51'59.8785"W	14348.08	341.487	0.22	-0.06	-0.21	
20805.00	90.090	339.890	6417.22	14441.88	13694.68	-4588.79	1677985.75	14357325.10	39°32'11.6191"N	80°52'0.2966"W	14443.04	341.475	0.38	-0.23	0.31	
20899.00	90.370	339.510	6416.84	14535.87	13782.84	-4621.41	1677953.15	14357413.22	39°32'12.4909"N	80°52'0.7111"W	14536.99	341.464	0.50	0.30	-0.40	
20994.00	90.180	340.360	6416.38	14630.85	13872.08	-4654.00	1677920.57	14357502.42	39°32'13.3733"N	80°52'1.1255"W	14631.96	341.454	0.92	-0.20	0.89	
21089.00	90.430	339.840	6415.88	14725.85	13961.40	-4686.33	1677888.25	14357591.71	39°32'14.2566"N	80°52'1.5365"W	14726.93	341.445	0.61	0.26	-0.55	
21184.00	90.310	339.690	6415.26	14820.83	14050.54	-4719.19	1677855.41	14357680.81	39°32'15.1380"N	80°52'1.9542"W	14821.89	341.434	0.20	-0.13	-0.16	
21279.00	90.490	339.540	6414.60	14915.81	14139.59	-4752.28	1677822.33	14357769.82	39°32'16.0186"N	80°52'2.3749"W	14916.84	341.423	0.25	0.19	-0.16	
21374.00	90.370	339.910	6413.89	15010.79	14228.70	-4785.20	1677789.42	14357858.90	39°32'16.8998"N	80°52'2.7934"W	15011.79	341.412	0.41	-0.13	0.39	
21469.00	90.430	340.100	6413.22	15105.78	14317.97	-4817.68	1677756.95	14357948.13	39°32'17.7825"N	80°52'3.2063"W	15106.76	341.403	0.21	0.06	0.20	
21563.00	90.340	339.750	6412.59	15199.77	14406.25	-4849.95	1677724.70	14358036.38	39°32'18.6556"N	80°52'3.6164"W	15200.73	341.394	0.38	-0.10	-0.37	
21658.00	90.310	339.830	6412.05	15294.75	14495.40	-4882.77	1677691.90	14358125.50	39°32'19.5371"N	80°52'4.0337"W	15295.69	341.384	0.09	-0.03	0.08	
21753.00	90.370	339.990	6411.49	15389.74	14584.62	-4915.40	1677659.28	14358214.68	39°32'20.4194"N	80°52'4.4485"W	15390.66	341.375	0.18	0.06	0.17	
21848.00	90.180	339.580	6411.03	15484.73	14673.77	-4948.22	1677626.47	14358303.79	39°32'21.3009"N	80°52'4.8658"W	15485.62	341.365	0.48	-0.20	-0.43	
21943.00	90.280	340.000	6410.65	15579.71	14762.92	-4981.04	1677593.66	14358392.90	39°32'22.1825"N	80°52'5.2830"W	15580.58	341.355	0.45	0.11	0.44	
22038.00	90.310	339.880	6410.16	15674.70	14852.15	-5013.63	1677561.09	14358482.10	39°32'23.0649"N	80°52'5.6973"W	15675.55	341.347	0.13	0.03	-0.13	
22133.00	90.310	339.760	6409.65	15769.69	14941.32	-5046.40	1677528.33	14358571.24	39°32'23.9466"N	80°52'6.1139"W	15770.52	341.338	0.13	0.00	-0.13	
22227.00	90.280	339.730	6409.16	15863.67	15029.51	-5078.94	1677495.80	14358659.39	39°32'24.8187"N	80°52'6.5276"W	15864.48	341.328	0.05	-0.03	-0.03	
22322.00	90.340	339.850	6408.65	15958.66	15118.66	-5111.76	1677462.99	14358748.50	39°32'25.7003"N	80°52'6.9449"W	15959.45	341.319	0.14	0.06	0.13	



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 10 of 12



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

WELLPATH DATA (245 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
22417.00	90.180	339.330	6408.22	16053.64	15207.69	-5144.89	1677429.88	14358837.50	39°32'26.5807"N	80°52'7.3661"W	16054.40	341.309	0.57	-0.17	-0.55	
22512.00	90.060	339.120	6408.02	16148.60	15296.52	-5178.59	1677396.20	14358926.29	39°32'27.4590"N	80°52'7.7945"W	16149.34	341.297	0.25	-0.13	-0.22	
22607.00	90.490	340.030	6407.56	16243.58	15385.54	-5211.74	1677363.06	14359015.28	39°32'28.3394"N	80°52'8.2161"W	16244.29	341.287	1.06	0.45	0.96	
22689.00	90.340	339.880	6406.97	16325.57	15462.57	-5239.84	1677334.96	14359092.28	39°32'29.1011"N	80°52'8.5734"W	16326.27	341.280	0.26	-0.18	-0.18	
22714.00‡	90.340	339.880	6406.82	16350.57	15486.05	-5248.44	1677326.37	14359115.74	39°32'29.3332"N	80°52'8.6827"W	16351.26	341.278	0.00	0.00	0.00	Projected MD at TD: 22714'

HOLE & CASING SECTIONS - Ref Wellbore: Richmond Unit 1H AWB Ref Wellpath: Richmond Unit 1H AWP Proj: 22714'									
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	25.50	105.50	80.00	25.50	105.50	0.00	0.00	0.18	0.03
17.5in Open Hole	105.50	532.00	426.50	105.50	532.00	0.18	0.03	-0.41	-0.21
13.375in Casing Surface	25.50	532.00	506.50	25.50	532.00	0.00	0.00	-0.41	-0.21
12.25in Open Hole	532.00	2629.00	2097.00	532.00	2620.75	-0.41	-0.21	-111.21	98.92
9.625in Casing Intermediate	25.50	2609.00	2583.50	25.50	2600.75	0.00	0.00	-111.12	98.47
8.75in Open Hole	2629.00	5771.00	3142.00	2620.75	5762.32	-111.21	98.92	-94.57	99.37
8.5in Open Hole	5771.00	22714.00	16943.00	5762.32	6406.82	-94.57	99.37	15486.05	-5248.44
5.5in Casing Production	25.50	22714.00	22688.50	25.50	6406.82	0.00	0.00	15486.05	-5248.44



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'
Page 11 of 12



REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Richmond Unit 1H POE Rev-3	6484.00	401.78	23.66	1682596.36	14344037.51	39°30'0.1695"N	80°51'1.7076"W	point
Richmond Unit 1H BHL Rev-3	6508.00	15478.88	-5241.52	1677333.29	14359108.58	39°32'29.2623"N	80°52'8.5944"W	point
Richmond Unit 1H LP Rev-3	6508.00	565.25	-33.43	1682539.30	14344200.92	39°30'1.7861"N	80°51'2.4324"W	point
Richmond Unit 1H - 50' LIR Hardline	6600.00	7940.33	-2608.93	1679964.82	14351573.04	39°31'14.7174"N	80°51'35.1411"W	rectangle
2D Rectangle 15972.2 x 100.								

WELLPATH COMPOSITION - Ref Wellbore: Richmond Unit 1H AWB Ref Wellpath: Richmond Unit 1H AWP Proj: 22714'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
25.50	472.00	Gyrodata 2015 - GC+WR+CAS	01 Gyrodata MS Gyro <17-1/2"> (100'-472')	Richmond Unit 1H AWB	6/2/2020
472.00	2553.00	BH NaviTrak (2019) (Axial)	02 APS EM <12-1/4"> (472')(599'-2553')	Richmond Unit 1H AWB	6/2/2020
2553.00	5704.00	BH NaviTrak (2019) (Axial)	03 APS EM <8-3/4"> (2553')(2666'-5704')	Richmond Unit 1H AWB	6/28/2020
5704.00	22714.00	BH AutoTrak Curve (2019) (Short spacing)	04 BH AT Curve <8-1/2">(5704')(5819'-22689')	Richmond Unit 1H AWB	6/29/2020



Actual Wellpath Report

Richmond Unit 1H AWP Proj: 22714'

Page 12 of 12



REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Richmond Unit 1H
Field	Tyler	API	47-095-02690-0000
Facility	Blizzard Pad	Wellbore	Richmond Unit 1H AWB
Slot	Slot #09		

COMMENTS

Wellpath general comments

API: 47-095-02690-0000

BHI Job #: 110437099B

Rig: H&P 317

Duration: 06/03/2020-07/01/2020

Gyrodatta MS Gyro <17-1/2"> (100'-472')

APS EM <12-1/4"> (472')(599'-2553')

APS EM <8-3/4"> (2553')(2666'-5704')

BH AT Curve <8-1/2">(5704')(5819'-22689')

Middlesex: 6373' MD

Burkett: 6518' MD

Tully: 6564' MD

Marcellus POE: 6723' MD

Projected MD at TD: 22714'