



# ANTERO RESOURCES CORPORATION

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

Slot: Slot #06  
 Well: Western Unit 1H  
 Wellbore: Western Unit 1H PWB



API: 47-085-10293-0000  
 BHI Job #: 8435075  
 Rig: Patterson 343  
 Duration: 03/21/2017-03/26/2017

Plot reference wellpath is Western Unit 1H 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 #06): -1143 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: delaset on 2017-03-30
	Database: WA_MPL_EasternUS_Defn

Gyrodata MS Gyro <8-3/4"> (100'-5512') : 0.21" Inc, 112.00ft MD, 112.00ft TVD, 0.15ft 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 #06	-24.66	43.88	1646590.990	14270735.090
Comment	Western Unit 1H			
Patterson 343 (RKB) to Mud line (At Slot: Slot #06)	25ft			
Mean Sea Level to Mud line (At Slot: Slot #06)	-1143ft			
Patterson 343 (RKB) to Mean Sea Level	1168ft			

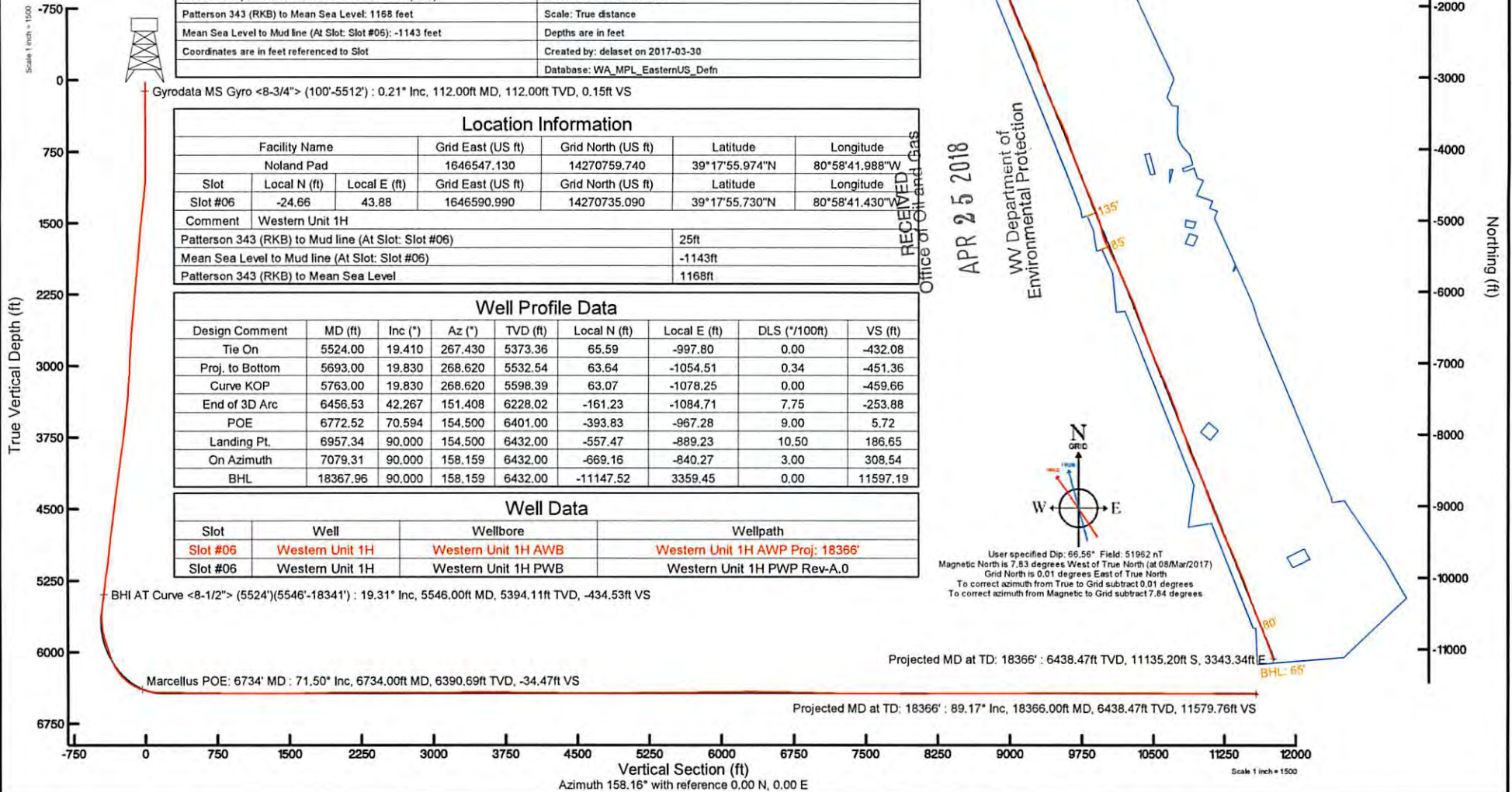
Well Profile Data							
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (*/100ft)
Tie On	5524.00	19.410	267.430	5373.36	65.59	-997.80	0.00
Proj. to Bottom	5693.00	19.830	268.620	5532.54	63.64	-1054.51	0.34
Curve KOP	5763.00	19.830	268.620	5598.39	63.07	-1078.25	0.00
End of 3D Arc	6456.53	42.267	151.408	6228.02	-161.23	-1084.71	7.75
POE	6772.52	70.594	154.500	6401.00	-393.83	-967.28	9.00
Landing Pt.	6957.34	90.000	154.500	6432.00	-557.47	-889.23	10.50
On Azimuth	7079.31	90.000	158.159	6432.00	-669.16	-840.27	3.00
BHL	18367.96	90.000	158.159	6432.00	-11147.52	3359.45	0.00

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #06	Western Unit 1H	Western Unit 1H AWP	Western Unit 1H AWP Proj: 18366'
Slot #06	Western Unit 1H	Western Unit 1H PWB	Western Unit 1H PWP Rev-A.0

BHI AT Curve <8-1/2"> (5524')(5546'-18341') : 19.31" Inc, 5546.00ft MD, 5394.11ft TVD, -434.53ft VS

Marcellus POE: 6734' MD : 71.50" Inc, 6734.00ft MD, 6390.69ft TVD, -34.47ft VS

Projected MD at TD: 18366' : 89.17" Inc, 18366.00ft MD, 6438.47ft TVD, 11579.76ft VS





# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Western Unit 1H
Field	Ritchie	Wellbore	Western Unit 1H 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	30/Mar/2017 at 16:17
Convergence at slot	0.02° East	Database/Source file	WA_MPL_EasternUS_Defn/Western_Unit_1H_AWP_Proj_18366_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-24.66	43.88	1646590.99	14270735.09	39°17'55.730"N	80°58'41.430"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 #06)	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	158.16°

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# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #06
Area	Ritchie County, WV		Well	Western Unit 1H
Field	Ritchie		Wellbore	Western Unit 1H AWB
Facility	Noland Pad			

WELLPATH DATA (214 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
0.00†	0.00	173.240	0.00	0.00	0.00	0.00	1646590.99	14270735.09	39°17'55.730"N	80°58'41.430"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	173.240	25.00	0.00	0.00	0.00	1646590.99	14270735.09	39°17'55.730"N	80°58'41.430"W	0.00	0.000	0.00	0.00	0.00	
112.00	0.210	173.240	112.00	0.15	-0.16	0.02	1646591.01	14270734.93	39°17'55.728"N	80°58'41.430"W	0.16	173.240	0.24	0.24	199.13	Gyrodata MS Gyro <8-3/4"> (100'-5512')
212.00	0.160	158.370	212.00	0.47	-0.47	0.09	1646591.08	14270734.62	39°17'55.725"N	80°58'41.429"W	0.48	168.950	0.07	-0.05	-14.87	
312.00	0.170	107.450	312.00	0.70	-0.64	0.28	1646591.27	14270734.45	39°17'55.724"N	80°58'41.426"W	0.70	156.156	0.14	0.01	-50.92	
412.00	0.560	73.740	412.00	0.85	-0.55	0.90	1646591.89	14270734.54	39°17'55.725"N	80°58'41.419"W	1.05	121.653	0.43	0.39	-33.71	
512.00	0.700	69.380	511.99	0.91	-0.20	1.94	1646592.93	14270734.89	39°17'55.728"N	80°58'41.405"W	1.95	95.900	0.15	0.14	-4.36	
612.00	1.090	257.500	611.99	0.76	-0.19	1.58	1646592.57	14270734.90	39°17'55.728"N	80°58'41.410"W	1.59	96.889	1.79	0.39	-171.88	
712.00	2.150	255.710	711.94	0.36	-0.86	-1.17	1646589.82	14270734.23	39°17'55.721"N	80°58'41.445"W	1.45	233.622	1.06	1.06	-1.79	
812.00	0.950	107.730	811.93	0.65	-1.58	-2.20	1646588.80	14270733.52	39°17'55.714"N	80°58'41.458"W	2.70	234.338	3.00	-1.20	-147.98	
912.00	1.790	91.760	911.90	1.80	-1.88	0.16	1646591.15	14270733.21	39°17'55.711"N	80°58'41.428"W	1.88	175.265	0.91	0.84	-15.97	
1012.00	0.750	6.500	1011.88	1.85	-1.27	1.79	1646592.78	14270733.82	39°17'55.717"N	80°58'41.407"W	2.20	125.418	1.88	-1.04	-85.26	
1112.00	4.240	306.850	1111.77	-1.89	1.59	-1.09	1646589.90	14270736.68	39°17'55.746"N	80°58'41.444"W	1.93	325.541	3.91	3.49	-59.65	
1212.00	6.110	304.550	1211.36	-9.48	6.83	-8.44	1646582.56	14270741.92	39°17'55.798"N	80°58'41.537"W	10.86	308.995	1.88	1.87	-2.30	
1312.00	7.510	303.310	1310.65	-19.27	13.44	-18.28	1646572.72	14270748.52	39°17'55.863"N	80°58'41.663"W	22.69	306.318	1.41	1.40	-1.24	
1412.00	7.650	303.400	1409.78	-30.11	20.69	-29.30	1646561.70	14270755.77	39°17'55.935"N	80°58'41.803"W	35.87	305.229	0.14	0.14	0.09	
1512.00	7.590	306.040	1508.90	-41.17	28.24	-40.20	1646550.81	14270763.32	39°17'56.009"N	80°58'41.941"W	49.13	305.090	0.36	-0.06	2.64	
1612.00	5.840	312.300	1608.21	-51.34	35.55	-49.30	1646541.71	14270770.63	39°17'56.081"N	80°58'42.057"W	60.78	305.795	1.89	-1.75	6.26	
1712.00	5.590	314.320	1707.71	-60.37	42.38	-56.55	1646534.46	14270777.45	39°17'56.149"N	80°58'42.149"W	70.67	306.848	0.32	-0.25	2.02	
1812.00	5.340	312.530	1807.26	-69.02	48.93	-63.46	1646527.55	14270784.00	39°17'56.214"N	80°58'42.237"W	80.13	307.630	0.30	-0.25	-1.79	
1912.00	5.380	312.170	1906.82	-77.43	55.22	-70.37	1646520.65	14270790.29	39°17'56.276"N	80°58'42.325"W	89.44	308.123	0.05	0.04	-0.36	
2012.00	5.500	312.620	2006.37	-85.97	61.61	-77.37	1646513.65	14270796.68	39°17'56.339"N	80°58'42.414"W	98.90	308.532	0.13	0.12	0.45	
2112.00	5.680	313.350	2105.89	-94.79	68.25	-84.49	1646506.53	14270803.32	39°17'56.405"N	80°58'42.505"W	108.62	308.931	0.19	0.18	0.73	
2212.00	5.860	309.660	2205.39	-103.76	74.91	-92.02	1646499.01	14270809.97	39°17'56.471"N	80°58'42.600"W	118.65	309.147	0.41	0.18	-3.69	
2312.00	5.650	306.480	2304.88	-112.44	81.09	-99.91	1646491.12	14270816.15	39°17'56.532"N	80°58'42.701"W	128.68	309.065	0.38	-0.21	-3.18	
2412.00	6.010	302.290	2404.37	-120.87	86.82	-108.29	1646482.74	14270821.87	39°17'56.588"N	80°58'42.807"W	138.80	308.719	0.56	0.36	-4.19	
2512.00	6.390	298.950	2503.78	-129.43	92.31	-117.59	1646473.45	14270827.36	39°17'56.643"N	80°58'42.926"W	149.49	308.132	0.52	0.38	-3.34	
2612.00	6.420	295.340	2603.16	-137.84	97.39	-127.51	1646463.53	14270832.44	39°17'56.693"N	80°58'43.052"W	160.45	307.373	0.40	0.03	-3.61	
2712.00	7.660	276.330	2702.42	-145.09	100.52	-139.19	1646451.86	14270835.57	39°17'56.724"N	80°58'43.200"W	171.69	305.837	2.62	1.24	-19.01	
2812.00	8.900	266.150	2801.38	-150.62	100.74	-153.53	1646437.52	14270835.79	39°17'56.726"N	80°58'43.383"W	183.63	303.270	1.92	1.24	-10.18	

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# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #06
Area	Ritchie County, WV		Well	Western Unit 1H
Field	Ritchie		Wellbore	Western Unit 1H AWB
Facility	Noland Pad			

WELLPATH DATA (214 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
2912.00	10.290	263.660	2899.98	-155.40	99.23	-170.13	1646420.93	14270834.28	39°17'56.711"N	80°58'43.594"W	196.95	300.254	1.45	1.39	-2.49	
3012.00	11.540	263.590	2998.17	-160.45	97.13	-188.95	1646402.12	14270832.18	39°17'56.690"N	80°58'43.833"W	212.45	297.205	1.25	1.25	-0.07	
3112.00	12.340	263.050	3096.00	-165.85	94.72	-209.49	1646381.58	14270829.77	39°17'56.667"N	80°58'44.095"W	229.91	294.329	0.81	0.80	-0.54	
3212.00	13.710	262.740	3193.43	-171.58	91.93	-231.86	1646359.23	14270826.98	39°17'56.639"N	80°58'44.379"W	249.42	291.627	1.37	1.37	-0.31	
3312.00	14.890	263.300	3290.33	-177.92	88.93	-256.37	1646334.72	14270823.98	39°17'56.610"N	80°58'44.691"W	271.36	289.131	1.19	1.18	0.56	
3412.00	16.100	266.290	3386.69	-185.59	86.53	-282.97	1646308.13	14270821.59	39°17'56.586"N	80°58'45.029"W	295.91	287.004	1.45	1.21	2.99	
3512.00	17.030	267.170	3482.54	-194.68	84.91	-311.43	1646279.68	14270819.97	39°17'56.570"N	80°58'45.391"W	322.80	285.251	0.96	0.93	0.88	
3612.00	18.690	266.280	3577.72	-204.43	83.15	-342.05	1646249.08	14270818.21	39°17'56.553"N	80°58'45.781"W	352.01	283.663	1.68	1.66	-0.89	
3712.00	20.450	265.810	3671.94	-214.71	80.84	-375.47	1646215.68	14270815.89	39°17'56.530"N	80°58'46.206"W	384.07	282.150	1.77	1.76	-0.47	
3812.00	20.640	267.610	3765.58	-225.88	78.82	-410.50	1646180.66	14270813.88	39°17'56.510"N	80°58'46.651"W	418.00	280.870	0.66	0.19	1.80	
3912.00	20.000	273.350	3859.36	-239.03	79.09	-445.18	1646145.99	14270814.15	39°17'56.513"N	80°58'47.093"W	452.15	280.074	2.09	-0.64	5.74	
4012.00	18.890	272.280	3953.66	-252.92	80.73	-478.43	1646112.75	14270815.79	39°17'56.529"N	80°58'47.516"W	485.19	279.578	1.17	-1.11	-1.07	
4112.00	19.140	268.030	4048.21	-265.11	80.81	-510.99	1646080.20	14270815.87	39°17'56.530"N	80°58'47.930"W	517.34	278.987	1.41	0.25	-4.25	
4212.00	20.900	268.790	4142.16	-276.97	79.87	-545.21	1646046.00	14270814.93	39°17'56.521"N	80°58'48.365"W	551.03	278.334	1.78	1.76	0.76	
4312.00	21.370	269.140	4235.43	-289.77	79.22	-581.26	1646009.96	14270814.28	39°17'56.514"N	80°58'48.824"W	586.64	277.761	0.49	0.47	0.35	
4412.00	20.300	270.240	4328.89	-302.82	79.02	-616.83	1645974.41	14270814.08	39°17'56.512"N	80°58'49.276"W	621.87	277.300	1.14	-1.07	1.10	
4512.00	19.110	268.570	4423.04	-315.05	78.68	-650.54	1645940.71	14270813.74	39°17'56.509"N	80°58'49.705"W	655.28	276.897	1.32	-1.19	-1.67	
4612.00	19.150	267.720	4517.51	-326.25	77.62	-683.29	1645907.97	14270812.68	39°17'56.499"N	80°58'50.121"W	687.69	276.481	0.28	0.04	-0.85	
4712.00	19.650	267.810	4611.84	-337.39	76.33	-716.48	1645874.79	14270811.39	39°17'56.486"N	80°58'50.544"W	720.54	276.081	0.50	0.50	0.09	
4812.00	21.340	269.460	4705.50	-349.66	75.51	-751.48	1645839.81	14270810.57	39°17'56.478"N	80°58'50.989"W	755.27	275.738	1.79	1.69	1.65	
4912.00	20.230	268.300	4798.99	-362.22	74.83	-786.96	1645804.35	14270809.89	39°17'56.471"N	80°58'51.440"W	790.51	275.432	1.18	-1.11	-1.16	
5012.00	18.890	265.580	4893.22	-373.02	73.07	-820.38	1645770.94	14270808.13	39°17'56.454"N	80°58'51.865"W	823.63	275.090	1.62	-1.34	-2.72	
5112.00	19.630	264.000	4987.63	-382.45	70.07	-853.23	1645738.10	14270805.13	39°17'56.424"N	80°58'52.283"W	856.10	274.695	0.91	0.74	-1.58	
5212.00	21.570	268.070	5081.23	-393.30	67.69	-888.31	1645703.04	14270802.75	39°17'56.401"N	80°58'52.729"W	890.89	274.358	2.41	1.94	4.07	
5312.00	21.130	270.060	5174.37	-406.28	67.09	-924.71	1645666.66	14270802.15	39°17'56.395"N	80°58'53.192"W	927.14	274.150	0.85	-0.44	1.99	
5412.00	20.150	268.900	5267.95	-419.10	66.78	-959.95	1645631.42	14270801.84	39°17'56.392"N	80°58'53.641"W	962.27	273.979	1.06	-0.98	-1.16	
5512.00	19.450	267.630	5362.04	-430.75	65.76	-993.81	1645597.58	14270800.82	39°17'56.382"N	80°58'54.071"W	995.98	273.786	0.82	-0.70	-1.27	
5524.00	19.410	267.430	5373.36	-432.08	65.59	-997.80	1645593.59	14270800.65	39°17'56.380"N	80°58'54.122"W	999.95	273.761	0.65	-0.33	-1.67	
5546.00	19.310	268.130	5394.11	-434.53	65.31	-1005.08	1645586.31	14270800.37	39°17'56.378"N	80°58'54.215"W	1007.20	273.718	1.15	-0.45	3.18	BHI AT Curve <8-1/2"> (5524')(5546'-18341')
5640.00	19.330	268.320	5482.82	-445.20	64.34	-1036.17	1645555.24	14270799.41	39°17'56.368"N	80°58'54.610"W	1038.16	273.553	0.07	0.02	0.20	

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Western Unit 1H AWP Proj: 18366'

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Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Western Unit 1H
Field	Ritchie	Wellbore	Western Unit 1H AWB
Facility	Noland Pad		

## WELLPATH DATA (214 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
5699.00	18.990	268.390	5538.55	-451.88	63.79	-1055.52	1645535.89	14270798.85	39°17'56.363"N	80°58'54.856"W	1057.45	273.458	0.58	-0.58	0.12	
5735.00	17.710	267.140	5572.72	-455.69	63.35	-1066.85	1645524.57	14270798.41	39°17'56.358"N	80°58'55.000"W	1068.73	273.398	3.72	-3.56	-3.47	
5782.00	13.790	252.000	5617.97	-458.39	61.26	-1079.33	1645512.10	14270796.32	39°17'56.338"N	80°58'55.159"W	1081.06	273.248	12.02	-8.34	-32.21	
5829.00	13.800	235.640	5663.63	-457.55	56.36	-1089.28	1645502.14	14270791.43	39°17'56.289"N	80°58'55.286"W	1090.74	272.962	8.27	0.02	-34.81	
5876.00	16.050	228.750	5709.04	-454.17	48.91	-1098.80	1645492.63	14270783.98	39°17'56.216"N	80°58'55.407"W	1099.89	272.549	6.09	4.79	-14.66	
5923.00	19.030	225.900	5753.85	-449.11	39.29	-1109.19	1645482.25	14270774.37	39°17'56.121"N	80°58'55.539"W	1109.88	272.029	6.60	6.34	-6.06	
5970.00	21.650	220.820	5797.92	-442.22	27.40	-1120.36	1645471.08	14270762.48	39°17'56.003"N	80°58'55.681"W	1120.70	271.401	6.72	5.57	-10.81	
6017.00	23.150	210.980	5841.39	-432.65	12.91	-1130.79	1645460.66	14270747.99	39°17'55.860"N	80°58'55.814"W	1130.86	270.654	8.58	3.19	-20.94	
6064.00	23.050	198.590	5884.65	-420.06	-3.74	-1138.48	1645452.96	14270731.35	39°17'55.695"N	80°58'55.912"W	1138.49	269.812	10.33	-0.21	-26.36	
6112.00	21.560	185.380	5929.08	-405.05	-21.44	-1142.31	1645449.14	14270713.66	39°17'55.521"N	80°58'55.960"W	1142.51	268.925	10.87	-3.10	-27.52	
6159.00	18.720	169.610	5973.24	-389.97	-37.47	-1141.76	1645449.69	14270697.63	39°17'55.362"N	80°58'55.953"W	1142.37	268.120	12.98	-6.04	-33.55	
6205.00	17.240	155.660	6017.01	-375.92	-50.95	-1137.61	1645453.83	14270684.16	39°17'55.229"N	80°58'55.901"W	1138.75	267.436	9.87	-3.22	-30.33	
6252.00	18.870	155.930	6061.69	-361.36	-64.24	-1131.64	1645459.80	14270670.88	39°17'55.098"N	80°58'55.825"W	1133.46	266.751	3.47	3.47	0.57	
6301.00	24.170	158.820	6107.26	-343.40	-80.84	-1124.78	1645466.66	14270654.28	39°17'54.933"N	80°58'55.738"W	1127.68	265.889	11.03	10.82	5.90	
6348.00	28.840	158.780	6149.31	-322.43	-100.39	-1117.20	1645474.24	14270634.74	39°17'54.740"N	80°58'55.641"W	1121.70	264.865	9.94	9.94	-0.09	
6395.00	33.850	158.130	6189.44	-297.99	-123.12	-1108.21	1645483.22	14270612.02	39°17'54.516"N	80°58'55.527"W	1115.03	263.661	10.68	10.66	-1.38	
6439.00	37.170	157.700	6225.25	-272.44	-146.79	-1098.60	1645492.83	14270588.35	39°17'54.281"N	80°58'55.405"W	1108.37	262.389	7.57	7.55	-0.98	
6469.00†	41.212	156.802	6248.50	-253.49	-164.27	-1091.27	1645500.16	14270570.89	39°17'54.109"N	80°58'55.312"W	1103.56	261.439	13.61	13.47	-2.99	Middlesex: 6469' MD
6489.00	43.910	156.280	6263.23	-239.97	-176.68	-1085.88	1645505.55	14270558.48	39°17'53.986"N	80°58'55.243"W	1100.16	260.759	13.61	13.49	-2.61	
6536.00	49.490	154.690	6295.45	-205.82	-207.78	-1071.68	1645519.75	14270527.40	39°17'53.679"N	80°58'55.062"W	1091.63	259.028	12.12	11.87	-3.38	
6583.00	54.980	153.010	6324.22	-168.78	-241.10	-1055.29	1645536.12	14270494.08	39°17'53.349"N	80°58'54.854"W	1082.48	257.130	12.02	11.68	-3.57	
6630.00	61.030	152.030	6349.12	-129.14	-276.45	-1036.90	1645554.51	14270458.76	39°17'53.000"N	80°58'54.620"W	1073.11	255.072	12.99	12.87	-2.09	
6633.00†	61.342	152.043	6350.56	-126.52	-278.77	-1035.66	1645555.74	14270456.43	39°17'52.977"N	80°58'54.605"W	1072.52	254.935	10.41	10.40	0.44	Burket: 6633' MD
6677.00	65.920	152.230	6370.10	-87.33	-313.61	-1017.24	1645574.15	14270421.61	39°17'52.633"N	80°58'54.370"W	1064.49	252.866	10.41	10.40	0.42	
6692.00†	67.452	152.325	6376.03	-73.63	-325.80	-1010.84	1645580.56	14270409.42	39°17'52.512"N	80°58'54.289"W	1062.04	252.135	10.23	10.21	0.63	fully: 6692' MD
6724.00	70.720	152.520	6387.46	-43.89	-352.30	-997.00	1645594.39	14270382.94	39°17'52.250"N	80°58'54.113"W	1057.41	250.539	10.23	10.21	0.61	
6734.00†	71.500	152.801	6390.69	-34.47	-360.70	-992.66	1645598.73	14270374.53	39°17'52.167"N	80°58'54.058"W	1056.16	250.030	8.24	7.80	2.81	Marcellus POE: 6734' MD
6771.00	74.390	153.820	6401.54	0.77	-392.30	-976.77	1645614.61	14270342.95	39°17'51.855"N	80°58'53.856"W	1052.61	248.118	8.24	7.81	2.75	
6818.00	79.070	155.080	6412.33	46.41	-433.56	-957.05	1645634.32	14270301.70	39°17'51.447"N	80°58'53.605"W	1050.68	245.629	10.29	9.96	2.68	
6866.00	84.730	156.450	6419.09	93.87	-476.88	-937.56	1645653.81	14270258.40	39°17'51.019"N	80°58'53.357"W	1051.87	243.040	12.13	11.79	2.85	

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# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #06
Area	Ritchie County, WV		Well	Western Unit 1H
Field	Ritchie		Wellbore	Western Unit 1H AWB
Facility	Noland Pad			

WELLPATH DATA (214 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
6913.00	89.660	157.550	6421.39	140.78	-520.08	-919.22	1645672.14	14270215.22	39°17'50.592"N	80°58'53.124"W	1056.15	240.500	10.75	10.49	2.34	
6960.00	89.970	156.200	6421.54	187.77	-563.30	-900.76	1645690.59	14270172.02	39°17'50.164"N	80°58'52.889"W	1062.39	237.980	2.95	0.66	-2.87	
7054.00	89.260	155.070	6422.17	281.68	-648.92	-861.99	1645729.35	14270086.43	39°17'49.318"N	80°58'52.396"W	1078.94	233.027	1.42	-0.76	-1.20	
7149.00	89.320	156.410	6423.35	376.58	-735.53	-822.96	1645768.36	14269999.86	39°17'48.462"N	80°58'51.900"W	1103.75	228.211	1.41	0.06	1.41	
7243.00	89.230	157.540	6424.54	470.55	-822.03	-786.19	1645805.11	14269913.39	39°17'47.607"N	80°58'51.433"W	1137.47	223.724	1.21	-0.10	1.20	
7337.00	89.260	159.220	6425.78	564.54	-909.40	-751.56	1645839.73	14269826.05	39°17'46.743"N	80°58'50.993"W	1179.77	219.572	1.79	0.03	1.79	
7431.00	89.020	158.250	6427.19	658.52	-996.99	-717.48	1645873.80	14269738.50	39°17'45.878"N	80°58'50.559"W	1228.32	215.740	1.06	-0.26	-1.03	
7526.00	89.720	156.240	6428.24	753.50	-1084.59	-680.73	1645910.53	14269650.94	39°17'45.012"N	80°58'50.092"W	1280.52	212.114	2.24	0.74	-2.12	
7620.00	89.600	156.590	6428.79	847.45	-1170.74	-643.13	1645948.12	14269564.83	39°17'44.160"N	80°58'49.614"W	1335.75	208.782	0.39	-0.13	0.37	
7714.00	89.630	156.370	6429.42	941.41	-1256.92	-605.61	1645985.62	14269478.67	39°17'43.308"N	80°58'49.137"W	1395.22	205.726	0.24	0.03	-0.23	
7809.00	90.000	157.740	6429.73	1036.39	-1344.40	-568.58	1646022.64	14269391.23	39°17'42.444"N	80°58'48.666"W	1459.69	202.925	1.49	0.39	1.44	
7903.00	90.120	157.420	6429.63	1130.39	-1431.30	-532.73	1646058.48	14269304.37	39°17'41.585"N	80°58'48.210"W	1527.23	200.415	0.36	0.13	-0.34	
7997.00	90.060	157.630	6429.49	1224.38	-1518.16	-496.79	1646094.40	14269217.54	39°17'40.726"N	80°58'47.754"W	1597.38	198.120	0.23	-0.06	0.22	
8091.00	90.220	158.930	6429.26	1318.38	-1605.48	-462.01	1646129.17	14269130.25	39°17'39.863"N	80°58'47.311"W	1670.64	196.054	1.39	0.17	1.38	
8185.00	89.970	158.350	6429.10	1412.37	-1693.03	-427.77	1646163.39	14269042.74	39°17'38.998"N	80°58'46.876"W	1746.23	194.180	0.67	-0.27	-0.62	
8280.00	90.060	160.750	6429.07	1507.34	-1782.03	-394.58	1646196.57	14268953.77	39°17'38.118"N	80°58'46.454"W	1825.19	192.485	2.53	0.09	2.53	
8374.00	90.430	162.240	6428.67	1601.18	-1871.17	-364.75	1646226.39	14268864.67	39°17'37.237"N	80°58'46.075"W	1906.39	191.030	1.63	0.39	1.59	
8468.00	90.950	161.290	6427.54	1694.98	-1960.44	-335.34	1646255.79	14268775.44	39°17'36.354"N	80°58'45.701"W	1988.91	189.707	1.15	0.55	-1.01	
8562.00	91.790	158.070	6425.29	1788.91	-2048.55	-302.71	1646288.40	14268687.36	39°17'35.483"N	80°58'45.287"W	2070.80	188.406	3.54	0.89	-3.43	
8656.00	90.370	156.650	6423.52	1882.88	-2135.29	-266.53	1646324.56	14268600.66	39°17'34.626"N	80°58'44.827"W	2151.86	187.115	2.14	-1.51	-1.51	
8749.00	90.460	160.380	6422.85	1975.86	-2221.81	-232.48	1646358.61	14268514.17	39°17'33.771"N	80°58'44.394"W	2233.94	185.973	4.01	0.10	4.01	
8844.00	90.400	153.150	6422.13	2070.76	-2309.04	-195.03	1646396.04	14268426.97	39°17'32.909"N	80°58'43.918"W	2317.27	184.828	7.61	-0.06	-7.61	
8938.00	90.120	149.050	6421.71	2164.03	-2391.32	-149.61	1646441.44	14268344.73	39°17'32.095"N	80°58'43.340"W	2396.00	183.580	4.37	-0.30	-4.36	
9032.00	89.910	151.490	6421.68	2257.13	-2472.94	-102.99	1646488.04	14268263.14	39°17'31.288"N	80°58'42.748"W	2475.08	182.385	2.61	-0.22	2.60	
9126.00	89.880	157.060	6421.85	2350.88	-2557.59	-62.21	1646528.81	14268178.53	39°17'30.452"N	80°58'42.229"W	2558.35	181.393	5.93	-0.03	5.93	
9220.00	90.150	155.610	6421.83	2444.83	-2643.68	-24.48	1646566.52	14268092.47	39°17'29.601"N	80°58'41.750"W	2643.80	180.531	1.57	0.29	-1.54	
9314.00	89.380	160.050	6422.22	2538.80	-2730.71	10.98	1646601.97	14268005.48	39°17'28.740"N	80°58'41.299"W	2730.73	179.770	4.79	-0.82	4.72	
9409.00	89.880	165.670	6422.83	2633.44	-2821.45	38.97	1646629.94	14267914.77	39°17'27.843"N	80°58'40.943"W	2821.72	179.209	5.94	0.53	5.92	
9503.00	90.280	161.920	6422.70	2726.97	-2911.70	65.20	1646656.16	14267824.56	39°17'26.951"N	80°58'40.610"W	2912.43	178.717	4.01	0.43	-3.99	
9597.00	90.090	161.390	6422.39	2820.80	-3000.92	94.78	1646685.73	14267735.37	39°17'26.069"N	80°58'40.234"W	3002.42	178.191	0.60	-0.20	-0.56	

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# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Western Unit 1H
Field	Ritchie	Wellbore	Western Unit 1H AWB
Facility	Noland Pad		

WELLPATH DATA (214 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
9692.00	90.830	161.460	6421.63	2915.64	-3090.97	125.04	1646715.98	14267645.36	39°17'25.179"N	80°58'39.849"W	3093.50	177.683	0.78	0.78	0.07	
9786.00	91.020	158.770	6420.11	3009.56	-3179.35	157.01	1646747.93	14267557.02	39°17'24.306"N	80°58'39.443"W	3183.22	177.173	2.87	0.20	-2.86	
9880.00	90.460	155.670	6418.90	3103.53	-3266.00	193.40	1646784.31	14267470.41	39°17'23.449"N	80°58'38.980"W	3271.72	176.611	3.35	-0.60	-3.30	
9974.00	89.970	155.220	6418.55	3197.42	-3351.50	232.46	1646823.35	14267384.94	39°17'22.604"N	80°58'38.484"W	3359.55	176.032	0.71	-0.52	-0.48	
10069.00	90.280	154.700	6418.34	3292.28	-3437.57	272.67	1646863.55	14267298.91	39°17'21.753"N	80°58'37.973"W	3448.36	175.465	0.64	0.33	-0.55	
10163.00	90.280	153.250	6417.88	3386.02	-3522.03	313.91	1646904.77	14267214.47	39°17'20.918"N	80°58'37.448"W	3535.99	174.907	1.54	0.00	-1.54	
10257.00	90.180	154.180	6417.50	3479.74	-3606.31	355.53	1646946.38	14267130.23	39°17'20.085"N	80°58'36.919"W	3623.79	174.370	1.00	-0.11	0.99	
10352.00	90.150	156.970	6417.23	3574.63	-3692.80	394.81	1646985.64	14267043.78	39°17'19.230"N	80°58'36.420"W	3713.84	173.897	2.94	-0.03	2.94	
10446.00	89.630	159.690	6417.41	3668.62	-3780.15	429.52	1647020.34	14266956.46	39°17'18.367"N	80°58'35.979"W	3804.47	173.518	2.95	-0.55	2.89	
10540.00	89.510	160.980	6418.12	3762.55	-3868.66	461.15	1647051.96	14266867.98	39°17'17.492"N	80°58'35.577"W	3896.05	173.202	1.38	-0.13	1.37	
10634.00	89.630	162.520	6418.82	3856.36	-3957.93	490.59	1647081.38	14266778.75	39°17'16.610"N	80°58'35.203"W	3988.21	172.934	1.64	0.13	1.64	
10728.00	89.570	162.820	6419.48	3950.06	-4047.66	518.59	1647109.37	14266689.06	39°17'15.723"N	80°58'34.847"W	4080.74	172.699	0.33	-0.06	0.32	
10823.00	89.660	160.400	6420.12	4044.88	-4137.80	548.55	1647139.32	14266598.96	39°17'14.832"N	80°58'34.466"W	4174.00	172.448	2.55	0.09	-2.55	
10917.00	89.170	158.690	6421.08	4138.85	-4225.86	581.40	1647172.16	14266510.93	39°17'13.961"N	80°58'34.049"W	4265.67	172.166	1.89	-0.52	-1.82	
11011.00	89.110	158.190	6422.49	4232.83	-4313.27	615.94	1647206.68	14266423.55	39°17'13.097"N	80°58'33.610"W	4357.03	171.873	0.54	-0.06	-0.53	
11105.00	89.200	157.410	6423.87	4326.82	-4400.30	651.45	1647242.18	14266336.56	39°17'12.237"N	80°58'33.158"W	4448.26	171.579	0.84	0.10	-0.83	
11200.00	89.140	155.200	6425.25	4421.76	-4487.27	689.62	1647280.34	14266249.62	39°17'11.377"N	80°58'32.673"W	4539.96	171.263	2.33	-0.06	-2.33	
11294.00	89.970	155.130	6425.98	4515.62	-4572.58	729.10	1647319.80	14266164.35	39°17'10.534"N	80°58'32.171"W	4630.34	170.940	0.89	0.88	-0.07	
11388.00	89.940	155.510	6426.05	4609.51	-4657.99	768.35	1647359.03	14266078.97	39°17'09.690"N	80°58'31.673"W	4720.94	170.633	0.41	-0.03	0.40	
11482.00	89.970	158.760	6426.13	4703.48	-4744.59	804.87	1647395.54	14265992.40	39°17'08.834"N	80°58'31.208"W	4812.38	170.372	3.46	0.03	3.46	
11576.00	90.280	156.840	6425.92	4797.47	-4831.62	840.39	1647431.04	14265905.41	39°17'07.973"N	80°58'30.757"W	4904.16	170.133	2.07	0.33	-2.04	
11670.00	90.310	158.870	6425.44	4891.47	-4918.68	875.82	1647466.46	14265818.39	39°17'07.113"N	80°58'30.307"W	4996.05	169.904	2.16	0.03	2.16	
11765.00	90.400	163.640	6424.85	4986.30	-5008.61	906.34	1647496.96	14265728.49	39°17'06.224"N	80°58'29.919"W	5089.96	169.743	5.02	0.09	5.02	
11859.00	90.400	166.980	6424.19	5079.55	-5099.53	930.17	1647520.79	14265637.61	39°17'05.325"N	80°58'29.616"W	5183.66	169.663	3.55	0.00	3.55	
11953.00	91.390	166.590	6422.72	5172.48	-5191.02	951.66	1647542.27	14265546.15	39°17'04.421"N	80°58'29.343"W	5277.54	169.611	1.13	1.05	-0.41	
12047.00	91.050	159.280	6420.72	5266.07	-5280.80	979.22	1647569.81	14265456.41	39°17'03.533"N	80°58'28.993"W	5370.82	169.495	7.78	-0.36	-7.78	
12141.00	90.120	154.340	6419.76	5360.00	-5367.18	1016.22	1647606.80	14265370.07	39°17'02.680"N	80°58'28.523"W	5462.53	169.279	5.35	-0.99	-5.26	
12236.00	90.150	153.730	6419.54	5454.76	-5452.59	1057.81	1647648.38	14265284.69	39°17'01.835"N	80°58'27.994"W	5554.25	169.021	0.64	0.03	-0.64	
12330.00	90.150	153.130	6419.29	5548.44	-5536.66	1099.86	1647690.41	14265200.66	39°17'01.004"N	80°58'27.460"W	5644.85	168.764	0.64	0.00	-0.64	
12425.00	90.250	153.760	6418.96	5643.11	-5621.64	1142.33	1647732.86	14265115.71	39°17'00.164"N	80°58'26.920"W	5736.52	168.514	0.67	0.11	0.66	

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# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #06
Area	Ritchie County, WV		Well	Western Unit 1H
Field	Ritchie		Wellbore	Western Unit 1H AWB
Facility	Noland Pad			

WELLPATH DATA (214 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
12519.00	90.280	158.200	6418.52	5737.02	-5707.47	1180.58	1647771.10	14265029.91	39°16'59.316"N	80°58'26.434"W	5828.29	168.313	4.72	0.03	4.72	
12613.00	91.110	158.370	6417.38	5831.01	-5794.80	1215.36	1647805.86	14264942.62	39°16'58.453"N	80°58'25.992"W	5920.87	168.155	0.90	0.88	0.18	
12707.00	90.460	156.470	6416.09	5924.99	-5881.58	1251.45	1647841.93	14264855.88	39°16'57.595"N	80°58'25.533"W	6013.24	167.988	2.14	-0.69	-2.02	
12801.00	90.680	155.210	6415.16	6018.91	-5967.34	1289.92	1647880.39	14264770.15	39°16'56.747"N	80°58'25.044"W	6105.16	167.802	1.36	0.23	-1.34	
12895.00	90.490	153.920	6414.20	6112.72	-6052.22	1330.28	1647920.74	14264685.30	39°16'55.908"N	80°58'24.531"W	6196.69	167.603	1.39	-0.20	-1.37	
12990.00	90.460	156.050	6413.41	6207.56	-6138.30	1370.45	1647960.89	14264599.26	39°16'55.057"N	80°58'24.021"W	6289.43	167.414	2.24	-0.03	2.24	
13084.00	89.850	160.230	6413.16	6301.54	-6225.52	1405.44	1647995.87	14264512.07	39°16'54.195"N	80°58'23.576"W	6382.19	167.278	4.49	-0.65	4.45	
13178.00	89.750	159.870	6413.49	6395.49	-6313.88	1437.52	1648027.93	14264423.75	39°16'53.322"N	80°58'23.168"W	6475.46	167.174	0.40	-0.11	-0.38	
13273.00	89.910	159.780	6413.77	6490.45	-6403.05	1470.28	1648060.68	14264334.61	39°16'52.440"N	80°58'22.752"W	6569.69	167.068	0.19	0.17	-0.09	
13367.00	88.400	159.660	6415.15	6584.40	-6491.21	1502.86	1648093.24	14264246.49	39°16'51.569"N	80°58'22.338"W	6662.91	166.964	1.61	-1.61	-0.13	
13461.00	88.710	159.110	6417.52	6678.35	-6579.16	1535.94	1648126.32	14264158.57	39°16'50.699"N	80°58'21.918"W	6756.07	166.859	0.67	0.33	-0.59	
13555.00	88.740	158.950	6419.62	6772.31	-6666.92	1569.58	1648159.93	14264070.85	39°16'49.832"N	80°58'21.490"W	6849.19	166.752	0.17	0.03	-0.17	
13649.00	88.770	158.680	6421.66	6866.29	-6754.54	1603.54	1648193.88	14263983.26	39°16'48.966"N	80°58'21.059"W	6942.28	166.645	0.29	0.03	-0.29	
13743.00	88.830	158.100	6423.63	6960.26	-6841.92	1638.15	1648228.48	14263895.92	39°16'48.102"N	80°58'20.619"W	7035.29	166.535	0.62	0.06	-0.62	
13837.00	88.770	157.750	6425.60	7054.24	-6929.01	1673.47	1648263.79	14263808.87	39°16'47.241"N	80°58'20.170"W	7128.23	166.422	0.38	-0.06	-0.37	
13932.00	88.550	156.400	6427.82	7149.20	-7016.48	1710.46	1648300.76	14263721.43	39°16'46.376"N	80°58'19.700"W	7221.95	166.300	1.44	-0.23	-1.42	
14026.00	89.510	156.310	6429.41	7243.14	-7102.57	1748.16	1648338.44	14263635.37	39°16'45.525"N	80°58'19.221"W	7314.55	166.173	1.03	1.02	-0.10	
14120.00	89.450	156.640	6430.26	7337.09	-7188.76	1785.67	1648375.95	14263549.22	39°16'44.673"N	80°58'18.744"W	7407.22	166.050	0.36	-0.06	0.35	
14215.00	89.540	157.230	6431.10	7432.07	-7276.16	1822.89	1648413.15	14263461.86	39°16'43.809"N	80°58'18.271"W	7501.03	165.935	0.63	0.09	0.62	
14309.00	90.000	156.550	6431.48	7526.04	-7362.61	1859.79	1648450.03	14263375.44	39°16'42.955"N	80°58'17.803"W	7593.87	165.824	0.87	0.49	-0.72	
14404.00	89.570	158.510	6431.83	7621.03	-7450.40	1896.09	1648486.32	14263287.69	39°16'42.087"N	80°58'17.341"W	7687.88	165.722	2.11	-0.45	2.06	
14498.00	89.660	159.760	6432.46	7715.01	-7538.23	1929.57	1648519.79	14263199.89	39°16'41.219"N	80°58'16.916"W	7781.27	165.642	1.33	0.10	1.33	
14592.00	89.540	158.200	6433.12	7809.00	-7625.97	1963.29	1648553.49	14263112.19	39°16'40.352"N	80°58'16.488"W	7874.63	165.563	1.66	-0.13	-1.66	
14685.00	89.660	161.500	6433.77	7901.94	-7713.26	1995.32	1648585.51	14263024.93	39°16'39.489"N	80°58'16.081"W	7967.16	165.496	3.55	0.13	3.55	
14780.00	90.220	163.670	6433.87	7996.65	-7803.90	2023.75	1648613.93	14262934.33	39°16'38.593"N	80°58'15.719"W	8062.04	165.462	2.36	0.59	2.28	
14874.00	90.090	159.580	6433.62	8090.46	-7893.09	2053.37	1648643.54	14262845.17	39°16'37.711"N	80°58'15.343"W	8155.81	165.418	4.35	-0.14	-4.35	
14968.00	90.370	157.840	6433.24	8184.45	-7980.67	2087.50	1648677.65	14262757.63	39°16'36.845"N	80°58'14.909"W	8249.17	165.342	1.87	0.30	-1.85	
15063.00	90.460	161.530	6432.55	8279.40	-8069.74	2120.48	1648710.62	14262668.59	39°16'35.965"N	80°58'14.490"W	8343.69	165.277	3.89	0.09	3.88	
15157.00	90.250	161.400	6431.97	8373.24	-8158.86	2150.36	1648740.48	14262579.50	39°16'35.084"N	80°58'14.111"W	8437.48	165.235	0.26	-0.22	-0.14	
15251.00	90.400	159.420	6431.43	8467.16	-8247.42	2181.87	1648771.99	14262490.99	39°16'34.209"N	80°58'13.711"W	8531.15	165.182	2.11	0.16	-2.11	





# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #06
Area	Ritchie County, WV		Well	Western Unit 1H
Field	Ritchie		Wellbore	Western Unit 1H AWB
Facility	Noland Pad			

WELLPATH DATA (214 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
15345.00	90.370	156.090	6430.80	8561.14	-8334.41	2217.45	1648807.55	14262404.03	39°16'33.349"N	80°58'13.258"W	8624.35	165.101	3.54	-0.03	-3.54	
15439.00	90.090	154.640	6430.42	8655.03	-8419.85	2256.63	1648846.72	14262318.63	39°16'32.504"N	80°58'12.761"W	8717.01	164.997	1.57	-0.30	-1.54	
15534.00	90.310	154.130	6430.09	8749.82	-8505.51	2297.70	1648887.77	14262233.00	39°16'31.657"N	80°58'12.239"W	8810.40	164.883	0.58	0.23	-0.54	
15628.00	90.030	155.810	6429.81	8843.67	-8590.68	2337.47	1648927.52	14262147.86	39°16'30.815"N	80°58'11.733"W	8903.01	164.779	1.81	-0.30	1.79	
15722.00	90.060	158.040	6429.74	8937.65	-8677.15	2374.31	1648964.35	14262061.42	39°16'29.961"N	80°58'11.265"W	8996.13	164.697	2.37	0.03	2.37	
15817.00	90.490	163.940	6429.28	9032.49	-8766.93	2405.24	1648995.27	14261971.68	39°16'29.073"N	80°58'10.872"W	9090.89	164.658	6.23	0.45	6.21	
15911.00	90.370	161.260	6428.58	9126.19	-8856.62	2433.35	1649023.36	14261882.03	39°16'28.187"N	80°58'10.515"W	9184.82	164.637	2.85	-0.13	-2.85	
16006.00	90.150	158.210	6428.15	9221.14	-8945.73	2466.25	1649056.25	14261792.96	39°16'27.306"N	80°58'10.097"W	9279.46	164.587	3.22	-0.23	-3.21	
16101.00	90.090	158.070	6427.95	9316.14	-9033.90	2501.62	1649091.61	14261704.82	39°16'26.434"N	80°58'09.648"W	9373.87	164.522	0.16	-0.06	-0.15	
16196.00	90.120	158.450	6427.77	9411.14	-9122.14	2536.81	1649126.78	14261616.62	39°16'25.562"N	80°58'09.201"W	9468.31	164.459	0.40	0.03	0.40	
16286.00	90.250	157.320	6427.48	9501.14	-9205.52	2570.69	1649160.65	14261533.27	39°16'24.738"N	80°58'08.770"W	9557.72	164.397	1.26	0.14	-1.26	
16380.00	90.220	157.540	6427.10	9595.13	-9292.32	2606.77	1649196.71	14261446.51	39°16'23.880"N	80°58'08.312"W	9651.03	164.330	0.24	-0.03	0.23	
16475.00	90.250	156.100	6426.71	9690.10	-9379.64	2644.16	1649234.09	14261359.22	39°16'23.016"N	80°58'07.837"W	9745.22	164.257	1.52	0.03	-1.52	
16570.00	90.220	154.350	6426.32	9784.97	-9465.90	2683.97	1649273.88	14261273.00	39°16'22.164"N	80°58'07.331"W	9839.05	164.170	1.84	-0.03	-1.84	
16665.00	90.340	155.470	6425.85	9879.82	-9551.93	2724.25	1649314.15	14261187.00	39°16'21.313"N	80°58'06.819"W	9932.82	164.082	1.19	0.13	1.18	
16760.00	89.970	155.150	6425.60	9974.70	-9638.24	2763.94	1649353.81	14261100.72	39°16'20.460"N	80°58'06.315"W	10026.72	163.999	0.51	-0.39	-0.34	
16855.00	89.850	157.610	6425.75	10069.65	-9725.28	2802.00	1649391.86	14261013.72	39°16'19.600"N	80°58'05.832"W	10120.88	163.928	2.59	-0.13	2.59	
16949.00	89.820	158.790	6426.02	10163.64	-9812.55	2836.90	1649426.75	14260926.48	39°16'18.737"N	80°58'05.388"W	10214.41	163.875	1.26	-0.03	1.26	
17043.00	89.720	157.140	6426.39	10257.64	-9899.68	2872.17	1649462.00	14260839.38	39°16'17.876"N	80°58'04.940"W	10307.91	163.821	1.76	-0.11	-1.76	
17138.00	89.910	157.120	6426.70	10352.62	-9987.22	2909.09	1649498.91	14260751.89	39°16'17.010"N	80°58'04.471"W	10402.27	163.760	0.20	0.20	-0.02	
17233.00	89.510	157.960	6427.18	10447.62	-10075.01	2945.38	1649535.19	14260664.13	39°16'16.143"N	80°58'04.010"W	10496.72	163.704	0.98	-0.42	0.88	
17328.00	89.570	161.520	6427.95	10542.56	-10164.11	2978.27	1649568.07	14260575.06	39°16'15.262"N	80°58'03.592"W	10591.47	163.668	3.75	0.06	3.75	
17423.00	89.630	162.140	6428.61	10637.36	-10254.37	3007.90	1649597.68	14260484.84	39°16'14.370"N	80°58'03.216"W	10686.42	163.652	0.66	0.06	0.65	
17518.00	89.480	160.740	6429.35	10732.20	-10344.43	3038.13	1649627.90	14260394.82	39°16'13.479"N	80°58'02.832"W	10781.35	163.633	1.48	-0.16	-1.47	
17613.00	89.450	157.640	6430.23	10827.17	-10433.22	3071.88	1649661.63	14260306.07	39°16'12.602"N	80°58'02.403"W	10876.05	163.594	3.26	-0.03	-3.26	
17708.00	89.540	156.660	6431.07	10922.15	-10520.76	3108.77	1649698.51	14260218.56	39°16'11.736"N	80°58'01.935"W	10970.45	163.538	1.04	0.09	-1.03	
17802.00	89.290	159.040	6432.03	11016.14	-10607.81	3144.20	1649733.93	14260131.55	39°16'10.876"N	80°58'01.484"W	11063.98	163.490	2.55	-0.27	2.53	
17897.00	89.350	159.060	6433.16	11111.12	-10696.52	3178.17	1649767.88	14260042.87	39°16'09.999"N	80°58'01.053"W	11158.69	163.452	0.07	0.06	0.02	
17992.00	89.450	157.190	6434.15	11206.11	-10784.67	3213.56	1649803.26	14259954.75	39°16'09.128"N	80°58'00.603"W	11253.27	163.407	1.97	0.11	-1.97	
18087.00	89.420	158.760	6435.09	11301.10	-10872.73	3249.18	1649838.87	14259866.73	39°16'08.257"N	80°58'00.151"W	11347.84	163.362	1.65	-0.03	1.65	

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# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Western Unit 1H
Field	Ritchie	Wellbore	Western Unit 1H AWB
Facility	Noland Pad		

## WELLPATH DATA (214 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
18181.00	89.320	163.500	6436.12	11394.95	-10961.65	3279.57	1649869.25	14259777.85	39°16'07.378"N	80°57'59.765"W	11441.74	163.344	5.04	-0.11	5.04	
18275.00	89.320	159.240	6437.24	11488.77	-11050.70	3309.59	1649899.25	14259688.83	39°16'06.498"N	80°57'59.384"W	11535.65	163.327	4.53	0.00	-4.53	
18341.00	89.170	157.660	6438.11	11554.76	-11112.08	3333.83	1649923.48	14259627.48	39°16'05.891"N	80°57'59.076"W	11601.41	163.300	2.40	-0.23	-2.39	
18366.00	89.170	157.660	6438.47	11579.76	-11135.20	3343.34	1649932.98	14259604.37	39°16'05.663"N	80°57'58.955"W	11626.29	163.288	0.00	0.00	0.00	Projected MD at TD: 18366'

## HOLE & CASING SECTIONS - Ref Wellbore: Western Unit 1H AWB Ref Wellpath: Western Unit 1H AWP Proj: 18366'

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	-0.03	0.00
17.5in Open Hole	65.00	410.70	345.70	65.00	410.70	-0.03	0.00	-0.56	0.88
13.375in Casing Surface	25.00	410.70	385.70	25.00	410.70	0.00	0.00	-0.56	0.88
12.25in Open Hole	410.70	2494.00	2083.30	410.70	2485.89	-0.56	0.88	91.33	-115.85
9.625in Casing Intermediate	25.00	2494.00	2469.00	25.00	2485.89	0.00	0.00	91.33	-115.85
8.75in Open Hole	2494.00	5693.00	3199.00	2485.89	5532.88	91.33	-115.85	63.84	-1053.57
8.5in Open Hole	5693.00	18366.00	12673.00	5532.88	6438.47	63.84	-1053.57	-11135.20	3343.34
5.5in Casing Production	25.00	18366.00	18341.00	25.00	6438.47	0.00	0.00	-11135.20	3343.34

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# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Western Unit 1H
Field	Ritchie	Wellbore	Western Unit 1H 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 1H POE Rev-2	6401.00	-393.83	-967.28	1645624.10	14270341.42	39°17'51.840"N	80°58'53.735"W	point
Western Unit 1H BHL Rev-2	6432.00	-11147.52	3359.45	1649949.09	14259592.05	39°16'05.541"N	80°57'58.750"W	point
Western Unit 1H LP Rev-1	6432.00	-557.47	-889.23	1645702.12	14270177.85	39°17'50.222"N	80°58'52.743"W	point

WELLPATH COMPOSITION - Ref Wellbore: Western Unit 1H AWB Ref Wellpath: Western Unit 1H AWP Proj: 18366'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	5524.00	Gyrodata standard - Drop gyro or Multi-shot	03 Gyrodata MS Gyro <8-3/4"> (100'-5512')	Western Unit 1H AWB
5524.00	18341.00	BHI AutoTrak Curve (Short)	04 BHI AT Curve <8-1/2"> (5524')(5546'-18341')	Western Unit 1H AWB
18341.00	18366.00	Blind Drilling (std)	Projection to bit	Western Unit 1H AWB

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# Actual Wellpath Report

Western Unit 1H AWP Proj: 18366'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Western Unit 1H
Field	Ritchie	Wellbore	Western Unit 1H AWB
Facility	Noland Pad		

COMMENTS
Wellpath general comments API: 47-085-10293-0000 BHI Job #: 8435075 Rig: Patterson 343 Duration: 03/21/2017-03/26/2017 Gyrodata MS Gyro <8-3/4"> (100'-5512') BHI AT Curve <8-1/2"> (5524')(5546'-18341') Middlesex: 6469' MD Burket: 6633' MD Tully: 6692' MD Marcellus POE: 6734' MD Projected MD at TD: 18366'

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