



Actual Wellpath Report

Boulder Unit 1H AWP Proj: 15970'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Doddridge Co., WV	Well	Boulder Unit 1H
Field	Doddridge	Wellbore	Boulder Unit 1H AWB
Facility	Balli Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Delaset
Scale	0.999602	Report Generated	05/Jun/2017 at 16:13
Convergence at slot	0.10° East	Database/Source file	WA_MPL_EasternUS_Defn/Boulder_Unit_1H_AWP_Proj_15970_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1.34	60.20	1684550.29	14272034.58	39°18'08.210"N	80°50'38.360"W
Facility Reference Pt			1684490.11	14272033.24	39°18'08.198"N	80°50'39.126"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Frontier 32 (RKB) to Facility Vertical Datum	32.00ft
Horizontal Reference Pt	Slot	Frontier 32 (RKB) to Mean Sea Level	1167.00ft
Vertical Reference Pt	Frontier 32 (RKB)	Frontier 32 (RKB) to Mud Line at Slot (Slot #07)	32.00ft
MD Reference Pt	Frontier 32 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	341.87°

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot #07
ANTERO RESOURCES CORPORATION	Boulder Unit 1H
Area	Well
Field	Wellbore
Facility	Bailli Pad

MD IRL	Inclination M	Azimuth M	TVD IRL	Vert Sect IRL	North IRL	East IRL	Grid East IRL	Grid North IRL	Latitude	Longitude	Closure Dist IRL	Closure Dir M	DLS F/100RI	Build Rate F/100RI	Turn Rate F/100RI	Comments
0.00H	0.000	209.650	0.00	0.00	0.00	0.00	1684550.29	14272034.58	39°18'08.210"N	80°50'38.360"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.000	209.650	32.00	0.00	0.00	0.00	1684550.29	14272034.58	39°18'08.210"N	80°50'38.360"W	0.00	0.000	0.00	0.00	0.00	
119.00	0.480	209.650	119.00	-0.24	-0.32	-0.18	1684550.11	14272034.26	39°18'08.207"N	80°50'38.362"W	0.36	209.650	0.55	-172.82	Gyrodata MS Gyro <17-1/2"> (100'-325')	
219.00	0.220	171.220	219.00	-0.72	-0.87	-0.36	1684549.93	14272033.71	39°18'08.201"N	80°50'38.365"W	0.94	202.367	0.34	-0.26	-38.43	
319.00	0.320	163.500	319.00	-1.18	-1.33	-0.25	1684550.04	14272033.25	39°18'08.197"N	80°50'38.363"W	1.35	190.644	0.11	0.10	-7.72	
344.00	0.300	151.670	344.00	-1.32	-1.45	-0.20	1684550.09	14272033.13	39°18'08.196"N	80°50'38.363"W	1.47	187.789	0.27	-0.08	-47.32	
405.00	0.320	36.820	405.00	-1.38	-1.46	-0.02	1684550.27	14272033.12	39°18'08.196"N	80°50'38.360"W	1.46	180.819	0.86	0.03	-188.29	Gyrodata MS Gyro <12-1/4"> (325')(386'-941')
465.00	0.360	28.130	464.99	-1.15	-1.16	0.17	1684550.46	14272033.42	39°18'08.199"N	80°50'38.358"W	1.17	171.711	0.11	0.07	-14.48	
526.00	0.510	79.010	525.99	-1.05	-0.94	0.53	1684550.82	14272033.64	39°18'08.201"N	80°50'38.353"W	1.07	150.687	0.65	0.25	83.41	
585.00	0.570	120.130	584.99	-1.30	-1.03	1.04	1684551.33	14272033.55	39°18'08.200"N	80°50'38.347"W	1.46	134.888	0.65	0.10	69.69	
646.00	0.870	161.910	645.99	-1.99	-1.63	1.44	1684551.73	14272032.96	39°18'08.194"N	80°50'38.342"W	2.17	138.399	0.96	0.49	68.49	
708.00	1.280	168.060	707.97	-3.15	-2.75	1.73	1684552.02	14272031.83	39°18'08.183"N	80°50'38.338"W	3.25	147.791	0.69	0.66	9.92	
768.00	1.920	187.740	767.95	-4.72	-4.40	1.74	1684552.03	14272030.18	39°18'08.166"N	80°50'38.338"W	4.73	158.479	1.39	1.07	32.80	
833.00	2.620	204.460	832.90	-6.80	-6.83	0.97	1684551.26	14272027.75	39°18'08.142"N	80°50'38.348"W	6.90	171.888	1.47	1.08	25.72	
897.00	3.340	207.740	896.81	-9.17	-9.81	-0.50	1684549.79	14272024.77	39°18'08.113"N	80°50'38.367"W	9.83	182.913	1.16	1.13	5.13	
960.00	4.130	211.600	959.68	-11.92	-13.37	-2.54	1684547.75	14272021.21	39°18'08.078"N	80°50'38.393"W	13.61	190.766	1.32	1.25	6.13	
1015.00	4.470	210.480	1014.52	-14.61	-16.91	-4.67	1684545.62	14272017.68	39°18'08.043"N	80°50'38.420"W	17.54	195.434	0.64	0.62	-2.04	Directional ONE MWD <12-1/4"> (941')(996'-2446')
1078.00	4.240	212.150	1077.34	-17.73	-20.99	-7.15	1684543.14	14272013.60	39°18'08.003"N	80°50'38.452"W	22.18	198.813	0.42	-0.37	2.65	
1141.00	3.140	205.240	1140.21	-20.47	-24.53	-9.13	1684541.17	14272010.06	39°18'07.968"N	80°50'38.477"W	26.17	200.412	1.88	-1.75	-10.97	
1204.00	2.160	203.430	1203.14	-22.61	-27.18	-10.33	1684539.96	14272007.42	39°18'07.942"N	80°50'38.492"W	29.07	200.822	1.56	-1.56	-2.87	
1267.00	1.170	185.260	1266.12	-24.09	-28.91	-10.87	1684539.43	14272005.69	39°18'07.924"N	80°50'38.499"W	30.88	200.602	1.76	-1.57	-28.84	
1330.00	0.900	165.010	1329.11	-25.17	-30.02	-10.80	1684539.50	14272004.57	39°18'07.913"N	80°50'38.498"W	31.91	199.779	0.72	-0.43	-32.14	
1393.00	0.440	108.460	1392.10	-25.81	-30.58	-10.44	1684539.85	14272004.01	39°18'07.908"N	80°50'38.494"W	32.31	198.850	1.20	-0.73	-89.76	
1456.00	0.510	106.980	1455.10	-26.12	-30.74	-9.94	1684540.35	14272003.86	39°18'07.906"N	80°50'38.487"W	32.31	197.924	0.11	0.11	-2.35	
1519.00	0.450	88.100	1518.10	-26.35	-30.81	-9.43	1684540.87	14272003.78	39°18'07.906"N	80°50'38.481"W	32.22	197.011	0.27	-0.10	-29.97	
1582.00	0.540	113.800	1581.10	-26.62	-30.92	-8.91	1684541.39	14272003.67	39°18'07.904"N	80°50'38.474"W	32.18	196.070	0.38	0.14	40.79	
1645.00	0.790	107.020	1644.09	-27.66	-31.17	-8.22	1684542.01	14272003.42	39°18'07.902"N	80°50'38.465"W	32.24	194.775	0.42	0.40	-10.76	
1708.00	0.450	172.930	1707.09	-27.56	-31.54	-7.77	1684542.52	14272003.05	39°18'07.898"N	80°50'38.460"W	32.49	193.847	1.16	-0.54	104.62	
1771.00	2.350	240.320	1770.07	-28.06	-32.43	-8.87	1684541.43	14272002.17	39°18'07.890"N	80°50'38.474"W	33.62	195.293	3.52	3.02	106.97	
1834.00	3.730	245.010	1832.98	-28.56	-33.93	-11.85	1684538.45	14272000.66	39°18'07.875"N	80°50'38.512"W	35.94	199.245	2.22	2.19	7.44	

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Operator	ANTERO RESOURCES CORPORATION	Slot
Area	Doddridge Co., WV	Well
Field	Doddridge	Wellbore
Facility	Balli Pad	
		Boulder Unit 1H
		Boulder Unit 1H AWB

WELLPATH DATA (219 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 (ft)	Dist Closure (ft)	Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
1897.00	4.71	249.850	1895.81	-28.90	-35.69	-16.13	1684534.16	14271998.90	39°18'07.858"N	80°50'38.566"W	39.17	204.324	1.65	1.56	7.68		
1960.00	5.290	251.960	1958.57	-28.98	-37.48	-21.32	1684528.98	14271997.12	39°18'07.840"N	80°50'38.632"W	43.12	209.635	0.97	0.92	3.35		
2023.00	6.160	255.360	2021.25	-28.77	-39.23	-27.35	1684522.95	14271995.36	39°18'07.823"N	80°50'38.709"W	47.83	214.885	1.48	1.38	5.40		
2087.00	7.730	256.940	2084.78	-28.18	-41.07	-34.87	1684515.43	14271993.52	39°18'07.805"N	80°50'38.805"W	53.88	220.329	2.47	2.45	2.47		
2150.00	9.400	259.350	2147.08	-27.14	-42.98	-44.05	1684506.25	14271991.61	39°18'07.786"N	80°50'38.921"W	61.55	225.705	2.71	2.65	3.83		
2213.00	9.560	260.610	2209.22	-25.68	-44.79	-54.27	1684496.04	14271989.81	39°18'07.768"N	80°50'39.051"W	70.36	230.469	0.42	0.25	2.00		
2276.00	9.500	258.510	2271.35	-24.28	-46.68	-64.53	1684485.79	14271987.92	39°18'07.750"N	80°50'39.182"W	79.64	234.120	0.56	-0.10	-3.33		
2339.00	10.170	256.730	2333.42	-23.21	-48.99	-75.04	1684475.28	14271985.61	39°18'07.727"N	80°50'39.316"W	89.61	236.861	1.17	1.06	-2.83		
2402.00	11.410	254.180	2395.31	-22.48	-51.96	-86.45	1684463.98	14271982.64	39°18'07.698"N	80°50'39.461"W	100.86	238.989	2.11	1.97	-4.05		
2465.00	14.100	255.710	2456.75	-21.72	-55.56	-99.88	1684450.45	14271979.04	39°18'07.663"N	80°50'39.632"W	114.29	240.915	4.30	4.27	2.43		
2593.00	14.600	250.830	2580.76	-20.97	-64.70	-130.23	1684420.11	14271969.90	39°18'07.573"N	80°50'40.018"W	145.42	243.579	1.02	0.39	-3.81	Directional ONE MWD <-8-3/4"> (2446')(2574'-5290')	
2657.00	14.140	247.430	2642.76	-21.72	-70.35	-145.07	1684405.28	14271964.26	39°18'07.517"N	80°50'40.207"W	161.23	244.128	1.50	-0.72	-5.31		
2720.00	15.190	251.520	2703.70	-22.37	-75.92	-160.00	1684390.35	14271958.69	39°18'07.462"N	80°50'40.397"W	177.10	244.615	2.34	1.67	6.49		
2783.00	15.090	247.740	2764.52	-23.01	-81.65	-175.42	1684374.94	14271952.97	39°18'07.406"N	80°50'40.593"W	193.49	245.041	1.57	-0.16	-6.00		
2846.00	16.090	247.980	2825.20	-24.19	-88.03	-191.10	1684359.26	14271946.59	39°18'07.343"N	80°50'40.793"W	210.40	245.268	1.59	1.59	0.38		
2909.00	15.430	242.660	2885.83	-26.12	-95.15	-206.64	1684343.73	14271939.47	39°18'07.273"N	80°50'40.991"W	227.49	245.276	2.52	-1.05	-8.44		
2973.00	15.090	245.320	2947.58	-28.44	-102.54	-221.77	1684328.61	14271932.08	39°18'07.200"N	80°50'41.183"W	244.33	245.186	1.22	-0.53	4.16		
3036.00	15.260	252.990	3008.39	-29.21	-108.39	-237.15	1684313.23	14271926.24	39°18'07.143"N	80°50'41.379"W	260.75	245.438	3.20	0.27	12.17		
3099.00	16.740	263.280	3068.96	-27.25	-111.88	-254.10	1684296.29	14271922.75	39°18'07.109"N	80°50'41.595"W	277.64	246.237	5.07	2.35	16.33		
3162.00	19.660	265.750	3128.80	-22.91	-113.72	-273.68	1684276.72	14271920.90	39°18'07.091"N	80°50'41.844"W	296.37	247.436	4.79	4.63	3.92		
3225.00	22.210	264.280	3187.64	-17.81	-115.70	-296.10	1684254.31	14271918.93	39°18'07.072"N	80°50'42.129"W	317.90	248.658	4.13	4.05	-2.33		
3288.00	23.860	263.280	3245.61	-12.73	-118.37	-320.61	1684229.81	14271916.25	39°18'07.045"N	80°50'42.441"W	341.76	249.735	2.69	2.62	-1.59		
3351.00	25.230	259.160	3302.92	-8.51	-122.39	-346.45	1684203.98	14271912.24	39°18'07.006"N	80°50'42.770"W	367.43	250.543	3.48	2.17	-6.54		
3414.00	26.500	252.690	3359.62	-6.60	-129.10	-373.06	1684177.38	14271905.53	39°18'06.940"N	80°50'43.109"W	394.77	250.912	4.91	2.02	-10.27		
3478.00	28.430	252.070	3416.41	-6.34	-138.04	-401.19	1684149.26	14271896.60	39°18'06.852"N	80°50'43.467"W	424.28	251.013	3.05	3.02	-0.97		
3541.00	30.410	250.080	3471.28	-6.79	-148.09	-430.46	1684120.01	14271886.55	39°18'06.754"N	80°50'43.839"W	455.22	251.015	3.50	3.14	-3.16		
3604.00	32.440	247.680	3525.04	-8.52	-159.94	-461.08	1684089.39	14271874.70	39°18'06.637"N	80°50'44.229"W	488.03	250.869	3.78	3.22	-3.81		
3667.00	32.540	245.790	3578.18	-11.55	-173.31	-492.17	1684058.32	14271861.34	39°18'06.505"N	80°50'44.625"W	521.79	250.601	1.62	0.16	-3.00		
3730.00	32.600	243.120	3631.27	-15.93	-187.93	-522.76	1684027.74	14271846.73	39°18'06.361"N	80°50'45.014"W	555.51	250.227	2.28	0.10	-4.24		
3793.00	29.070	242.750	3685.36	-20.94	-202.61	-551.51	1683999.00	14271832.05	39°18'06.217"N	80°50'45.380"W	587.55	249.828	5.61	-5.60	-0.59		

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Operator	ANTERO RESOURCES CORPORATION	Boulder Unit 1H
Area	Doddridge Co., WV	Boulder Unit 1H AWB
Field	Doddridge	
Facility	Balli Pad	

WELLPATH DATA (219 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]	DLS [ft/100ft]	Build Rate [ft/100ft]	Turn Rate [ft/100ft]	Comments	
3856.00	26.760	245.880	3741.03	-24.84	-215.42	-578.07	1683972.45	14271819.25	39°18'06.09"N	80°50'45.718"W	616.90	249.562	4.34	-3.67	4.97	
3919.00	26.740	248.590	3797.29	-27.14	-226.39	-604.21	1683946.32	14271808.28	39°18'05.983"N	80°50'46.051"W	645.23	249.480	1.94	-0.03	4.30	
3983.00	27.370	251.320	3854.29	-28.10	-236.36	-631.55	1683918.99	14271798.32	39°18'05.885"N	80°50'46.399"W	674.33	249.482	2.18	0.98	4.27	
4046.00	28.110	253.010	3910.05	-27.94	-245.33	-659.47	1683891.09	14271789.34	39°18'05.796"N	80°50'46.754"W	703.62	249.594	1.71	1.17	2.68	
4109.00	30.490	256.010	3964.99	-26.50	-253.54	-689.17	1683861.39	14271781.15	39°18'05.716"N	80°50'47.132"W	734.33	249.802	4.44	3.78	4.76	
4172.00	31.920	256.530	4018.87	-23.99	-261.28	-720.88	1683829.70	14271773.41	39°18'05.640"N	80°50'47.536"W	766.77	250.077	2.31	2.27	0.83	
4235.00	31.500	255.240	4072.47	-21.67	-269.35	-752.99	1683797.60	14271765.34	39°18'05.561"N	80°50'47.945"W	799.72	250.317	1.27	-0.67	-2.05	
4298.00	31.890	254.160	4126.07	-20.03	-278.09	-784.92	1683765.68	14271756.60	39°18'05.475"N	80°50'48.351"W	832.73	250.491	1.09	0.62	-1.71	
4362.00	31.670	253.310	4180.48	-18.94	-287.53	-817.28	1683733.34	14271747.17	39°18'05.382"N	80°50'48.763"W	866.38	250.618	0.78	-0.34	-1.33	
4425.00	30.550	252.550	4234.41	-18.33	-297.08	-848.39	1683702.24	14271737.62	39°18'05.288"N	80°50'49.159"W	898.90	250.701	1.88	-1.78	-1.21	
4488.00	32.320	249.710	4288.17	-18.78	-307.72	-879.47	1683669.17	14271726.98	39°18'05.183"N	80°50'49.554"W	931.75	250.715	3.66	2.81	-4.51	
4551.00	33.170	250.180	4341.16	-19.92	-319.41	-911.48	1683639.18	14271715.30	39°18'05.068"N	80°50'49.962"W	965.82	250.688	1.41	1.35	0.75	
4614.00	32.170	249.220	4394.19	-21.20	-331.20	-943.37	1683607.29	14271703.51	39°18'04.952"N	80°50'50.368"W	999.82	250.655	1.79	-1.59	-1.52	
4677.00	30.870	248.150	4447.89	-23.03	-343.17	-974.06	1683576.62	14271691.55	39°18'04.835"N	80°50'50.758"W	1032.74	250.592	2.25	-2.06	-1.70	
4740.00	30.920	247.360	4501.96	-25.35	-355.41	-1004.00	1683546.69	14271679.31	39°18'04.714"N	80°50'51.139"W	1065.05	250.506	0.65	0.08	-1.25	
4803.00	31.520	248.860	4555.83	-27.49	-367.58	-1034.30	1683516.41	14271667.14	39°18'04.594"N	80°50'51.525"W	1097.87	250.435	1.56	0.95	2.38	
4866.00	31.310	251.720	4609.60	-28.39	-378.66	-1065.20	1683485.51	14271656.08	39°18'04.485"N	80°50'51.918"W	1130.50	250.431	2.39	-0.33	4.54	
4930.00	30.980	250.970	4664.38	-28.70	-389.24	-1096.56	1683454.16	14271645.49	39°18'04.381"N	80°50'52.318"W	1163.60	250.457	0.80	-0.52	-1.17	
4993.00	30.000	250.050	4718.66	-29.45	-399.90	-1126.70	1683424.04	14271634.84	39°18'04.276"N	80°50'52.701"W	1195.56	250.458	1.72	-1.56	-1.46	
5056.00	28.990	248.320	4773.50	-30.90	-410.92	-1155.69	1683395.06	14271623.83	39°18'04.168"N	80°50'53.070"W	1226.57	250.427	2.10	-1.60	-2.75	
5120.00	25.260	247.010	4830.45	-33.01	-421.99	-1182.68	1683368.08	14271612.76	39°18'04.059"N	80°50'53.414"W	1255.71	250.363	5.90	-5.83	-2.05	
5182.00	25.430	253.400	4886.49	-33.78	-430.96	-1207.62	1683343.15	14271603.80	39°18'03.971"N	80°50'53.731"W	1282.22	250.360	4.42	0.27	10.31	
5246.00	27.280	254.990	4943.84	-32.61	-438.68	-1234.96	1683315.92	14271596.07	39°18'03.895"N	80°50'54.079"W	1310.56	250.444	3.09	2.89	2.48	
5309.00	25.620	255.220	5000.24	-31.03	-445.90	-1262.08	1683288.72	14271588.86	39°18'03.824"N	80°50'54.424"W	1338.53	250.542	2.64	-2.63	0.37	
5376.00	25.340	254.830	5006.56	-30.87	-446.67	-1264.99	1683285.81	14271588.08	39°18'03.816"N	80°50'54.461"W	1341.53	250.552	4.66	-4.00	-5.57	BHAT Curve <-1/2"> (5309')(5316'-15945')
5411.00	27.110	250.340	5091.79	-30.40	-459.28	-1305.00	1683245.81	14271575.48	39°18'03.693"N	80°50'54.970"W	1383.46	250.611	2.80	1.86	-4.73	
5505.00	31.500	250.900	5173.74	-31.38	-474.53	-1348.39	1683202.43	14271560.24	39°18'03.543"N	80°50'55.523"W	1429.46	250.612	4.68	4.67	0.60	
5600.00	30.280	253.490	5255.27	-31.13	-489.46	-1394.81	1683156.03	14271545.32	39°18'03.396"N	80°50'56.114"W	1478.20	250.663	1.90	-1.28	2.73	
5695.00	30.200	252.400	5337.34	-30.23	-503.49	-1440.55	1683110.31	14271531.29	39°18'03.258"N	80°50'56.696"W	1526.00	250.735	0.58	-0.08	-1.15	
5789.00	31.660	251.730	5417.97	-30.07	-518.37	-1486.52	1683064.37	14271516.42	39°18'03.111"N	80°50'57.281"W	1574.31	250.776	1.60	1.55	-0.71	

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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Balli Pad
Slot	Slot #07
Well	Boulder Unit 1H
Wellbore	Boulder Unit 1H AWB

WELLPATH DATA (219 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 (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
5884.00	31.720	251.990	5498.81	-30.08	-533.91	-1533.94	1683016.96	14271500.89	39°18'02.959"N	80°50'57.884"W	1624.20	250.809	0.16	0.06	0.27	
5979.00	31.810	251.310	5579.58	-30.27	-549.65	-1581.41	1682969.51	14271485.15	39°18'02.804"N	80°50'58.488"W	1674.21	250.834	0.39	0.09	-0.72	
6073.00	31.890	249.930	5659.51	-31.35	-566.06	-1628.07	1682922.87	14271468.74	39°18'02.642"N	80°50'59.082"W	1723.67	250.828	0.78	-0.13	-1.47	
6120.00	31.600	249.850	5699.52	-32.20	-574.54	-1651.22	1682899.73	14271460.27	39°18'02.559"N	80°50'59.377"W	1748.32	250.815	0.21	-0.19	-0.17	
6167.00	31.720	251.220	5739.53	-32.78	-582.76	-1674.48	1682876.48	14271452.05	39°18'02.478"N	80°50'59.673"W	1772.99	250.811	1.55	0.26	2.91	
6214.00	31.680	251.710	5779.52	-32.95	-590.61	-1697.90	1682853.07	14271444.20	39°18'02.401"N	80°50'59.971"W	1797.69	250.820	0.55	-0.09	1.04	
6262.00	31.580	251.290	5820.39	-33.11	-598.60	-1721.77	1682829.21	14271436.22	39°18'02.322"N	80°51'00.275"W	1822.86	250.829	0.50	-0.21	-0.87	
6309.00	31.640	251.420	5860.41	-33.33	-606.48	-1745.11	1682805.88	14271428.35	39°18'02.245"N	80°51'00.572"W	1847.49	250.836	0.19	0.13	0.28	
6357.00	31.650	253.140	5901.28	-33.15	-614.14	-1769.10	1682781.90	14271420.68	39°18'02.170"N	80°51'00.877"W	1872.66	250.856	1.88	0.02	3.58	
6404.00	30.440	264.460	5941.58	-30.28	-618.87	-1792.77	1682758.24	14271415.96	39°18'02.123"N	80°51'01.178"W	1896.58	250.955	12.67	-2.57	24.09	
6452.00	29.130	273.910	5983.26	-23.24	-619.25	-1816.54	1682734.47	14271415.58	39°18'02.120"N	80°51'01.481"W	1919.19	251.176	10.14	-2.73	19.69	
6499.00	28.750	278.470	6024.40	-13.89	-616.80	-1839.14	1682711.89	14271418.02	39°18'02.144"N	80°51'01.768"W	1939.81	251.460	4.76	-0.81	9.70	
6546.00	31.160	279.200	6065.11	-3.24	-613.19	-1862.32	1682688.71	14271421.63	39°18'02.180"N	80°51'02.063"W	1960.68	251.775	5.19	5.13	1.55	
6593.00	32.780	282.380	6104.99	8.80	-608.52	-1886.76	1682664.29	14271426.30	39°18'02.227"N	80°51'02.374"W	1982.46	252.124	4.97	3.45	6.77	
6641.00	33.570	289.600	6145.18	23.52	-601.28	-1911.96	1682639.09	14271433.54	39°18'02.299"N	80°51'02.694"W	2004.28	252.543	8.39	1.65	15.04	
6688.00	35.180	295.400	6183.98	40.81	-591.11	-1936.44	1682614.82	14271443.71	39°18'02.400"N	80°51'03.006"W	2024.65	253.025	7.76	3.43	12.34	
6735.00	38.290	301.040	6221.65	61.16	-577.79	-1961.16	1682589.91	14271457.02	39°18'02.532"N	80°51'03.320"W	2044.51	253.584	9.76	6.62	12.00	
6782.00	39.150	305.610	6258.33	84.15	-561.64	-1985.71	1682565.38	14271473.17	39°18'02.692"N	80°51'03.632"W	2063.61	254.207	6.35	1.83	9.72	
6811.00	40.450	309.400	6280.61	99.47	-550.33	-2000.42	1682550.67	14271484.47	39°18'02.804"N	80°51'03.819"W	2074.74	254.618	9.49	4.48	13.07	
6860.00	42.270	314.240	6317.40	127.49	-528.74	-2024.52	1682526.58	14271506.05	39°18'03.018"N	80°51'04.125"W	2092.43	255.363	7.51	3.71	9.88	
6907.00	46.800	315.210	6350.89	156.82	-505.54	-2047.93	1682503.18	14271529.24	39°18'03.247"N	80°51'04.422"W	2109.40	256.133	9.75	9.64	2.06	
6955.00	51.270	316.240	6382.36	189.35	-479.59	-2073.21	1682477.91	14271555.18	39°18'03.504"N	80°51'04.743"W	2127.96	256.975	9.45	9.31	2.15	
6987.00†	53.323	317.522	6401.93	212.30	-461.11	-2090.51	1682460.61	14271573.66	39°18'03.687"N	80°51'04.963"W	2140.76	257.561	7.16	6.42	4.01	Middlesex: 6987 MD
7002.00	54.290	318.100	6410.78	223.35	-452.14	-2098.64	1682452.49	14271582.62	39°18'03.776"N	80°51'05.066"W	2146.80	257.842	7.16	6.45	3.85	
7051.00	57.700	322.480	6438.19	261.12	-420.89	-2124.56	1682426.58	14271613.86	39°18'04.085"N	80°51'05.395"W	2165.85	258.794	10.16	6.96	8.94	
7098.00	59.900	326.010	6462.54	299.42	-388.26	-2148.03	1682403.12	14271646.47	39°18'04.408"N	80°51'05.693"W	2182.84	259.754	7.95	4.68	7.51	
7146.00	60.000	327.770	6486.58	339.56	-353.46	-2170.72	1682380.43	14271681.26	39°18'04.753"N	80°51'05.981"W	2199.31	260.752	3.18	0.21	3.67	
7193.00	62.430	331.360	6509.22	379.80	-317.95	-2191.57	1682359.60	14271716.76	39°18'05.104"N	80°51'06.245"W	2214.51	261.745	8.46	5.17	7.64	
7228.00†	64.934	334.205	6524.74	410.77	-290.05	-2205.91	1682345.26	14271744.64	39°18'05.380"N	80°51'06.427"W	2224.90	262.509	10.21	7.15	8.13	Burket: 7228 MD
7242.00	65.950	335.310	6530.55	423.40	-278.54	-2211.34	1682339.84	14271756.15	39°18'05.494"N	80°51'06.496"W	2228.81	262.821	10.21	7.26	7.89	

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Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Balli Pad
Slot #07	Slot #07
Boulder Unit 1H	Boulder Unit 1H
Boulder Unit 1H AWP	Boulder Unit 1H AWP

WELLPATH DATA (219 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]	°	[ft/100ft]	[ft/100ft]	[°/100ft]	
7289.00	69.740	338.800	6548.28	466.76	-238.46	-2228.29	1682322.90	14271796.22	39°18'05.890"N	80°51'06.711"W	2241.01	263.892	10.60	8.06	7.43	
7303.00†	70.734	339.214	6553.01	479.92	-226.16	-2233.01	1682318.18	14271808.51	39°18'06.012"N	80°51'06.770"W	2244.43	264.217	7.62	7.10	2.96	Tully, 7303' MD
7336.00	73.080	340.170	6563.26	511.27	-196.74	-2243.89	1682307.30	14271837.92	39°18'06.303"N	80°51'06.908"W	2252.50	264.989	7.62	7.11	2.90	
7383.00	75.860	340.400	6575.84	556.53	-154.12	-2259.16	1682292.03	14271880.53	39°18'06.724"N	80°51'07.102"W	2264.41	266.097	5.93	5.91	0.49	
7423.00†	76.983	341.030	6585.24	595.40	-117.42	-2272.00	1682279.19	14271917.21	39°18'07.087"N	80°51'07.264"W	2275.04	267.042	3.20	2.81	1.57	Marcellus POE: 7423' MD
7430.00	77.180	341.140	6586.80	602.22	-110.96	-2274.22	1682276.98	14271923.66	39°18'07.151"N	80°51'07.292"W	2276.92	267.207	3.20	2.81	1.57	
7477.00	79.670	341.600	6596.23	648.26	-67.33	-2288.92	1682262.28	14271967.27	39°18'07.582"N	80°51'07.478"W	2289.91	268.315	5.38	5.30	0.98	
7524.00	82.630	342.330	6603.46	694.70	-23.18	-2303.30	1682247.91	14272011.41	39°18'08.019"N	80°51'07.660"W	2303.42	269.423	6.48	6.30	1.55	
7571.00	86.310	343.040	6607.99	741.47	21.47	-2317.22	1682234.00	14272056.04	39°18'08.461"N	80°51'07.836"W	2317.32	270.531	7.97	7.83	1.51	
7620.00	89.910	343.920	6609.60	790.41	68.42	-2331.14	1682220.08	14272102.97	39°18'08.925"N	80°51'08.013"W	2332.14	271.681	7.56	7.35	1.80	
7714.00	90.030	342.140	6609.65	894.39	158.32	-2358.58	1682192.66	14272192.84	39°18'09.814"N	80°51'08.360"W	2363.88	273.840	1.90	0.13	-1.89	
7809.00	90.460	338.210	6609.25	979.33	247.67	-2390.79	1682160.46	14272282.15	39°18'10.698"N	80°51'08.768"W	2403.58	275.914	4.16	0.45	-4.14	
7904.00	90.340	334.390	6608.58	1073.86	334.64	-2428.97	1682122.30	14272369.09	39°18'11.558"N	80°51'09.251"W	2451.91	277.844	4.02	-0.13	-4.02	
7988.00	90.250	337.160	6608.10	1167.32	420.35	-2467.53	1682083.75	14272454.77	39°18'12.406"N	80°51'09.740"W	2503.08	279.668	2.95	-0.10	2.95	
8093.00	90.340	339.290	6607.61	1262.12	508.57	-2502.77	1682048.52	14272542.95	39°18'13.278"N	80°51'10.187"W	2553.92	281.486	2.24	0.09	2.24	
8188.00	90.400	339.850	6607.00	1357.04	597.59	-2535.93	1682015.37	14272631.93	39°18'14.158"N	80°51'10.607"W	2605.39	283.260	0.59	0.06	0.59	
8283.00	90.400	343.240	6606.33	1452.02	687.69	-2566.00	1681985.32	14272722.00	39°18'15.049"N	80°51'10.987"W	2656.55	285.003	3.57	0.00	3.57	
8377.00	90.370	346.590	6605.70	1545.87	778.44	-2590.46	1681960.87	14272812.71	39°18'15.947"N	80°51'11.297"W	2704.89	286.726	3.56	-0.03	3.56	
8473.00	90.060	349.020	6605.34	1641.35	872.26	-2610.74	1681940.60	14272906.49	39°18'16.874"N	80°51'11.553"W	2752.60	288.475	2.55	-0.32	2.53	
8567.00	89.850	348.270	6605.42	1734.69	964.42	-2629.24	1681922.10	14272998.62	39°18'17.786"N	80°51'11.786"W	2800.54	290.143	0.83	-0.22	-0.80	
8663.00	89.480	345.940	6605.98	1830.28	1057.99	-2650.66	1681900.69	14273092.15	39°18'18.711"N	80°51'12.057"W	2854.01	291.759	2.46	-0.39	-2.43	
8757.00	89.940	342.550	6606.45	1924.19	1148.45	-2676.18	1681875.18	14273182.57	39°18'19.605"N	80°51'12.380"W	2912.20	293.226	3.64	0.49	-3.61	
8852.00	89.780	342.060	6606.68	2019.19	1238.95	-2705.06	1681846.31	14273273.04	39°18'20.500"N	80°51'12.745"W	2975.29	294.608	0.54	-0.17	-0.52	
8946.00	89.880	344.330	6606.96	2113.15	1328.93	-2732.23	1681819.15	14273362.98	39°18'21.390"N	80°51'13.089"W	3038.28	295.938	2.42	0.11	2.41	
9041.00	89.850	343.960	6607.19	2208.08	1420.32	-2758.19	1681793.20	14273454.33	39°18'22.293"N	80°51'13.417"W	3102.40	297.246	0.39	-0.03	-0.39	
9136.00	89.850	342.520	6607.44	2303.05	1511.28	-2785.58	1681765.82	14273545.25	39°18'23.193"N	80°51'13.764"W	3169.14	298.481	1.52	0.00	-1.52	
9230.00	89.880	337.140	6607.66	2396.95	1599.48	-2817.98	1681733.44	14273633.42	39°18'24.065"N	80°51'14.174"W	3240.27	299.579	5.72	0.03	-5.72	
9325.00	89.720	334.490	6607.99	2491.41	1686.13	-2856.90	1681699.53	14273720.04	39°18'24.922"N	80°51'14.667"W	3317.37	300.549	2.79	-0.17	-2.79	
9419.00	89.780	335.290	6608.40	2584.72	1771.25	-2896.79	1681654.66	14273805.12	39°18'25.764"N	80°51'15.173"W	3395.39	301.444	0.85	0.06	0.85	
9514.00	89.720	335.470	6608.81	2679.11	1857.61	-2936.36	1681615.10	14273891.45	39°18'26.618"N	80°51'15.675"W	3474.61	302.318	0.20	-0.06	0.19	

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Boulder Unit 1H	
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WELLPATH DATA (219 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert.Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (°/100ft)	Comments
9609.00	89.690	341.260	6609.30	2773.89	1945.88	-2971.37	1681580.10	14273979.68	39°18'27.491"N	80°51'16.118"W	3551.83	303.220	6.09	-0.03	6.09	
9703.00	89.570	347.540	6609.91	2867.75	2036.37	-2996.64	1681554.85	14274070.14	39°18'28.386"N	80°51'16.438"W	3623.07	304.198	6.68	-0.13	6.68	
9797.00	89.600	351.610	6610.59	2960.88	2128.80	-3013.64	1681537.85	14274162.53	39°18'29.300"N	80°51'16.652"W	3689.69	305.237	4.33	0.03	4.33	
9893.00	89.910	352.400	6611.00	3055.38	2223.86	-3027.00	1681524.50	14274257.55	39°18'30.240"N	80°51'16.820"W	3756.10	306.304	0.88	0.32	0.82	
9987.00	90.090	347.590	6611.00	3148.41	2316.41	-3043.32	1681508.18	14274350.06	39°18'31.155"N	80°51'17.028"W	3824.60	307.276	5.12	0.19	-5.12	
10082.00	89.630	342.120	6611.24	3243.24	2408.07	-3068.13	1681483.38	14274441.69	39°18'32.061"N	80°51'17.340"W	3900.29	308.127	5.78	-0.48	-5.76	
10178.00	89.350	337.170	6612.09	3339.13	2498.04	-3101.51	1681450.02	14274531.63	39°18'32.951"N	80°51'17.763"W	3982.41	308.849	5.16	-0.29	-5.16	
10272.00	89.420	332.260	6613.10	3432.37	2583.01	-3141.65	1681409.90	14274616.55	39°18'33.791"N	80°51'18.272"W	4067.17	309.426	5.22	0.07	-5.22	
10368.00	89.970	334.470	6613.61	3527.30	2668.81	-3184.68	1681366.88	14274702.33	39°18'34.640"N	80°51'18.817"W	4155.09	309.964	2.37	0.57	2.30	
10463.00	89.820	339.210	6613.79	3621.91	2756.13	-3222.03	1681329.54	14274789.61	39°18'35.504"N	80°51'19.291"W	4240.02	310.544	4.99	-0.16	4.99	
10558.00	89.750	340.260	6614.14	3716.84	2845.25	-3254.94	1681296.65	14274878.69	39°18'36.385"N	80°51'19.708"W	4323.20	311.158	1.11	-0.07	1.11	
10654.00	89.780	340.670	6614.54	3812.81	2935.72	-3287.04	1681264.57	14274969.13	39°18'37.280"N	80°51'20.114"W	4409.16	311.769	0.43	0.03	0.43	
10748.00	89.850	342.100	6614.84	3906.81	3024.80	-3317.04	1681234.57	14275058.17	39°18'38.161"N	80°51'20.494"W	4489.12	312.362	1.52	0.07	1.52	
10844.00	89.720	341.110	6615.20	4002.80	3115.90	-3347.34	1681204.29	14275149.23	39°18'39.061"N	80°51'20.878"W	4573.12	312.949	1.04	-0.14	-1.03	
10939.00	89.780	341.040	6615.61	4097.79	3205.76	-3378.15	1681173.49	14275239.06	39°18'39.950"N	80°51'21.268"W	4657.12	313.500	0.10	0.06	-0.07	
11034.00	89.690	340.290	6616.05	4192.77	3295.40	-3409.60	1681142.05	14275328.66	39°18'40.837"N	80°51'21.666"W	4741.84	314.024	0.80	-0.09	-0.79	
11129.00	89.690	339.490	6616.57	4287.71	3384.61	-3442.26	1681109.40	14275417.83	39°18'41.719"N	80°51'22.080"W	4827.50	314.516	0.84	0.00	-0.84	
11224.00	89.660	342.580	6617.11	4382.69	3474.44	-3473.13	1681078.55	14275507.63	39°18'42.607"N	80°51'22.471"W	4912.67	315.011	3.25	-0.03	3.25	
11319.00	89.910	343.680	6617.46	4477.66	3565.35	-3500.70	1681050.99	14275598.50	39°18'43.506"N	80°51'22.820"W	4996.66	315.524	1.19	0.26	1.16	
11414.00	89.570	343.220	6617.89	4572.63	3656.41	-3527.76	1681023.94	14275689.53	39°18'44.406"N	80°51'23.162"W	5080.79	316.026	0.60	-0.36	-0.48	
11508.00	89.690	342.540	6618.50	4666.61	3746.24	-3555.43	1680996.28	14275779.32	39°18'45.295"N	80°51'23.512"W	5164.83	316.497	0.73	0.13	-0.72	
11603.00	89.820	344.230	6618.91	4761.57	3837.27	-3582.60	1680969.13	14275870.32	39°18'46.195"N	80°51'23.856"W	5249.73	316.966	1.78	0.14	1.78	
11698.00	90.030	346.170	6619.03	4856.41	3929.11	-3606.86	1680944.87	14275962.12	39°18'47.103"N	80°51'24.163"W	5333.61	317.449	2.05	0.22	2.04	
11793.00	90.000	348.940	6619.01	4950.93	4021.87	-3627.33	1680924.41	14276054.85	39°18'48.020"N	80°51'24.422"W	5416.00	317.953	2.92	-0.03	2.92	
11888.00	89.970	348.080	6619.03	5045.29	4114.97	-3646.26	1680905.49	14276147.90	39°18'48.941"N	80°51'24.660"W	5498.01	318.456	0.91	-0.03	-0.91	
11982.00	90.430	344.580	6618.70	5138.99	4206.29	-3668.47	1680883.29	14276239.16	39°18'49.844"N	80°51'24.941"W	5581.27	318.907	3.76	0.49	-3.72	
12077.00	90.000	340.900	6618.35	5233.96	4297.00	-3696.65	1680855.12	14276329.86	39°18'50.740"N	80°51'25.298"W	5668.28	319.295	3.90	-0.45	-3.87	
12172.00	90.220	335.460	6618.16	5328.73	4381.16	-3731.95	1680819.83	14276417.98	39°18'51.612"N	80°51'25.745"W	5758.21	319.601	5.73	0.23	-5.73	
12266.00	89.540	338.390	6618.36	5422.37	4471.63	-3768.78	1680793.01	14276504.42	39°18'52.468"N	80°51'26.212"W	5848.01	319.875	3.20	-0.72	3.12	
12361.00	90.220	337.060	6618.56	5517.12	4559.53	-3804.79	1680747.02	14276592.29	39°18'53.337"N	80°51'26.669"W	5938.50	320.156	1.57	0.72	-1.40	

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Boulder Unit 1H AWP Proj: 15970'

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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Balli Pad
Slot #07	Slot #07
Boulder Unit 1H	Boulder Unit 1H
Boulder Unit 1H AWB	Boulder Unit 1H AWB

WELLPATH DATA (219 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 (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
12455.00	89.480	335.070	6618.81	5610.63	4645.45	-3842.93	1680708.90	14276678.17	39°18'54.187"N	80°51'27.152"W	6028.95	320.401	2.26	-0.79	-2.12	
12550.00	89.570	335.840	6619.59	5705.03	4731.86	-3882.39	1680669.45	14276764.55	39°18'55.041"N	80°51'27.652"W	6120.74	320.632	0.82	0.09	0.81	
12645.00	89.290	340.130	6620.54	5799.79	4819.91	-3917.99	1680633.87	14276852.56	39°18'55.912"N	80°51'28.104"W	6211.45	320.893	4.53	-0.29	4.52	
12739.00	91.380	345.240	6619.99	5893.74	4909.61	-3945.96	1680605.91	14276942.23	39°18'56.799"N	80°51'28.458"W	6298.80	321.210	5.87	2.22	5.44	
12834.00	90.490	340.530	6618.44	5888.69	5000.36	-3973.90	1680577.98	14277032.94	39°18'57.697"N	80°51'28.811"W	6387.14	321.525	5.04	-0.94	-4.96	
12930.00	91.020	339.660	6617.17	6084.63	5090.62	-4006.58	1680545.31	14277123.16	39°18'58.589"N	80°51'29.225"W	6478.20	321.795	1.06	0.55	-0.91	
13025.00	91.420	348.870	6615.15	6179.42	5181.94	-4032.31	1680519.59	14277214.45	39°18'59.492"N	80°51'29.551"W	6565.98	322.112	9.70	0.42	9.69	
13120.00	91.020	348.570	6613.12	6273.72	5275.08	-4050.89	1680501.02	14277307.55	39°19'00.413"N	80°51'29.785"W	6651.03	322.478	0.53	-0.42	-0.32	
13215.00	89.970	338.790	6612.30	6368.56	5366.14	-4077.55	1680474.37	14277398.57	39°19'01.313"N	80°51'30.123"W	6739.58	322.770	10.35	-1.11	-10.29	
13309.00	89.750	338.680	6612.53	6462.41	5453.74	-4111.64	1680440.29	14277486.14	39°19'02.180"N	80°51'30.555"W	6830.00	322.987	0.26	-0.23	-0.12	
13405.00	90.180	339.410	6612.59	6558.30	5543.39	-4145.98	1680405.97	14277575.75	39°19'03.066"N	80°51'30.990"W	6922.30	323.207	0.88	0.45	0.76	
13500.00	91.020	340.210	6611.59	6653.23	5632.55	-4178.76	1680373.20	14277664.87	39°19'03.948"N	80°51'31.405"W	7013.39	323.428	1.22	0.88	0.84	
13595.00	90.400	341.970	6610.42	6748.21	5722.41	-4209.55	1680342.43	14277754.70	39°19'04.837"N	80°51'31.795"W	7103.96	323.661	1.96	-0.65	1.85	
13689.00	90.430	346.460	6609.74	6842.10	5812.84	-4235.11	1680316.87	14277845.09	39°19'05.731"N	80°51'32.119"W	7192.03	323.924	4.78	0.03	4.78	
13784.00	90.400	349.780	6609.05	6936.52	5905.79	-4254.66	1680297.33	14277938.01	39°19'06.650"N	80°51'32.366"W	7278.77	324.230	3.49	-0.03	3.49	
13879.00	90.150	342.980	6608.59	7031.17	5998.06	-4277.02	1680274.98	14278030.24	39°19'07.562"N	80°51'32.648"W	7366.79	324.509	7.16	-0.26	-7.16	
13974.00	89.850	339.680	6608.59	7126.15	6088.05	-4307.43	1680244.58	14278120.19	39°19'08.452"N	80°51'33.033"W	7457.77	324.720	3.49	-0.32	-3.47	
14069.00	89.850	342.590	6608.84	7221.14	6177.93	-4338.14	1680213.88	14278210.05	39°19'09.341"N	80°51'33.422"W	7548.93	324.923	3.06	0.00	3.06	
14164.00	90.030	347.290	6608.94	7315.97	6269.65	-4362.82	1680189.22	14278301.72	39°19'10.248"N	80°51'33.734"W	7638.24	325.167	4.95	0.19	4.95	
14258.00	89.940	348.190	6608.96	7409.48	6361.50	-4382.78	1680169.26	14278393.54	39°19'11.156"N	80°51'33.987"W	7725.12	325.435	0.96	-0.10	0.96	
14353.00	90.000	345.830	6609.01	7504.09	6454.06	-4404.13	1680147.92	14278486.06	39°19'12.071"N	80°51'34.256"W	7813.53	325.691	2.49	0.06	-2.48	
14447.00	89.880	344.250	6609.11	7597.94	6544.87	-4428.40	1680123.66	14278576.84	39°19'12.969"N	80°51'34.563"W	7902.28	325.917	1.69	-0.13	-1.68	
14543.00	89.940	343.360	6609.26	7693.89	6637.06	-4455.17	1680096.90	14278668.99	39°19'13.881"N	80°51'34.902"W	7993.70	326.128	0.93	0.06	-0.93	
14638.00	89.880	337.330	6609.41	7788.81	6726.49	-4487.11	1680064.97	14278758.38	39°19'14.765"N	80°51'35.307"W	8085.78	326.294	6.35	-0.06	-6.35	
14733.00	89.780	338.040	6609.69	7883.56	6814.37	-4523.18	1680028.92	14278846.23	39°19'15.634"N	80°51'35.764"W	8178.93	326.425	0.75	-0.11	0.75	
14828.00	89.910	340.930	6609.95	7978.46	6903.34	-4556.47	1679995.64	14278935.16	39°19'16.514"N	80°51'36.186"W	8271.49	326.574	3.05	0.14	3.04	
14922.00	89.820	341.710	6610.17	8072.46	6992.39	-4586.58	1679965.55	14279024.17	39°19'17.395"N	80°51'36.567"W	8362.42	326.738	0.84	-0.10	0.83	
15017.00	89.850	338.700	6610.45	8167.41	7081.76	-4618.75	1679933.39	14279113.51	39°19'18.278"N	80°51'36.975"W	8454.83	326.887	3.17	0.03	-3.17	
15112.00	89.910	336.980	6610.65	8262.17	7169.74	-4654.58	1679897.57	14279201.45	39°19'19.149"N	80°51'37.429"W	8548.11	327.008	1.81	0.06	-1.81	
15207.00	89.780	337.270	6610.90	8356.84	7257.27	-4691.51	1679860.66	14279288.95	39°19'20.014"N	80°51'37.897"W	8641.65	327.119	0.33	-0.14	0.31	

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Boulder Unit 1H AWP Proj: 15970'
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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Balli Pad
Slot	Slot #07
Well	Boulder Unit 1H
Wellbore	Boulder Unit 1H AWB

WELLPATH DATA (219 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 F/100ft	Build Rate F/100ft	Turn Rate F/100ft	Comments
15302.00	89.880	338.540	6611.18	8451.61	7345.29	-4727.24	1679824.94	14279376.93	39°19'20.885"N	80°51'38.350"W	8734.99	327.236	1.34	0.11	1.34	
15396.00	89.850	338.550	6611.41	8545.45	7432.78	-4761.62	1679790.57	14279464.38	39°19'21.750"N	80°51'38.786"W	8827.18	327.355	0.03	-0.03	0.01	
15491.00	89.660	341.310	6611.81	8640.39	7522.00	-4794.22	1679757.99	14279553.57	39°19'22.632"N	80°51'39.199"W	8919.92	327.488	2.91	-0.20	2.91	
15586.00	90.180	343.000	6611.94	8735.38	7612.42	-4823.33	1679728.89	14279643.96	39°19'23.526"N	80°51'39.568"W	9011.85	327.641	1.86	0.55	1.78	
15681.00	90.280	341.960	6611.56	8830.38	7703.01	-4851.93	1679700.30	14279734.51	39°19'24.422"N	80°51'39.930"W	9103.72	327.794	1.10	0.11	-1.09	
15776.00	90.310	341.980	6611.07	8925.37	7793.35	-4881.33	1679670.91	14279824.81	39°19'25.316"N	80°51'40.302"W	9195.85	327.939	0.04	0.03	0.02	
15871.00	90.220	344.000	6610.63	9020.35	7884.19	-4909.12	1679643.13	14279915.61	39°19'26.214"N	80°51'40.654"W	9287.62	328.091	2.13	-0.09	2.13	
15945.00	90.150	346.530	6610.40	9094.21	7955.75	-4927.94	1679624.32	14279987.15	39°19'26.921"N	80°51'40.892"W	9356.34	328.225	3.42	-0.09	3.42	
15970.00	90.150	346.530	6610.33	9119.13	7980.06	-4933.76	1679618.50	14280011.45	39°19'27.162"N	80°51'40.966"W	9382.08	328.273	0.00	0.00	0.00	Projected MD at ID: 15970'

HOLE & CASING SECTIONS - Ref Wellbore: Boulder Unit 1H AWB												Ref Wellpath: Boulder Unit 1H AWP Proj: 15970'											
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]	Start N/S [ft]	End N/S [ft]	Start E/W [ft]	End E/W [ft]	Boulder Unit 1H AWB		Boulder Unit 1H AWP Proj: 15970'							
														Start MD [ft]	End MD [ft]	Start MD [ft]	End MD [ft]						
20in Conductor	32.00	72.00	40.00	32.00	72.00	0.00	0.00	0.00	0.00	72.00	0.00	0.00	-0.07	0.00	0.00	0.00	-0.04						
17.5in Open Hole	72.00	386.00	314.00	72.00	386.00	-0.07	-0.07	-0.04	-0.04	386.00	-0.07	-0.04	-1.51	-0.04	-0.04	-0.08	-0.08						
13.375in Casing Surface	32.00	386.00	354.00	32.00	386.00	0.00	0.00	0.00	0.00	386.00	0.00	0.00	-1.51	0.00	0.00	-0.08	-0.08						
12.25in Open Hole	386.00	2542.50	2156.50	386.00	2531.86	-1.51	-1.51	-0.08	-0.08	2531.86	-1.51	-0.08	-60.75	-0.08	-0.08	-118.22	-118.22						
9.625in Casing Intermediate	32.00	2542.50	2510.50	32.00	2531.86	0.00	0.00	0.00	0.00	2531.86	0.00	0.00	-60.75	0.00	0.00	-118.22	-118.22						
8.75in Open Hole	2542.50	5392.00	2849.50	2531.86	5074.85	-60.75	-60.75	-118.22	-118.22	5074.85	-60.75	-118.22	-456.44	-118.22	-118.22	-1296.87	-1296.87						
8.5in Open Hole	5392.00	15970.00	10578.00	5074.85	6610.33	-456.44	-456.44	-1296.87	-1296.87	6610.33	-456.44	-1296.87	7980.06	-1296.87	-1296.87	-4933.76	-4933.76						
5.5in Casing Production	32.00	15970.00	15938.00	32.00	6610.33	0.00	0.00	0.00	0.00	6610.33	0.00	0.00	7980.06	0.00	0.00	-4933.76	-4933.76						

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Doddridge Co., WV	Well	Boulder Unit 1H
Field	Doddridge	Wellbore	Boulder Unit 1H AWB
Facility	Balli Pad		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Boulder Unit 1H POE - Rev-2	6577.00	-186.09	-2246.98	1682304.21	14271848.56	39°18'06.408"N	80°51'06.947"W	point
Boulder Unit 1H BHL - Rev-1	6601.00	7985.97	-4922.32	1679629.94	14280017.36	39°19'27.220"N	80°51'40.820"W	point
Boulder Unit 1H LP - Rev-1	6601.00	-11.37	-2304.18	1682247.03	14272023.22	39°18'08.136"N	80°51'07.671"W	point

WELLPATH COMPOSITION - Ref Wellbore: Boulder Unit 1H AWB				Ref Wellpath: Boulder Unit 1H AWP Proj: 15970'	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	
32.00	344.00	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(100'-325')	Boulder Unit 1H AWB	
344.00	960.00	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4">(325')(386'-941')	Boulder Unit 1H AWB	
960.00	2465.00	ISCWSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <12-1/4">(941')(996'-2446')	Boulder Unit 1H AWB	
2465.00	5309.00	ISCWSA MWD, Rev. 4 (Standard)	04 Directional ONE MWD <8-3/4">(2446')(2574'-5290')	Boulder Unit 1H AWB	
5309.00	15945.00	BHI AutoTrak Curve (Short)	05 BHI AT Curve <8-1/2">(5309')(5316'-15945')	Boulder Unit 1H AWB	
15945.00	15970.00	Blind Drilling (std)	Projection to bit	Boulder Unit 1H AWB	

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Boulder Unit 1H AWP Proj: 15970'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Doddridge Co., WV	Well	Boulder Unit 1H
Field	Doddridge	Wellbore	Boulder Unit 1H AWB
Facility	Balli Pad		

COMMENTS
<p>Wellpath general comments API: 47-017-06798-0000 BHI Job #: 8565009 Rig: Frontier 32 Duration: 05/26/2017-05/31/2017 Gyrodata MS Gyro <17-1/2"> (100'-325') Gyrodata MS Gyro <12-1/4"> (325')(386'-941') Directional ONE MWD <12-1/4"> (941')(996'-2446') Directional ONE MWD <8-3/4"> (2446')(2574'-5290') BHI AT Curve <8-1/2"> (5309')(5316'-15945') Middlesex: 6987' MD Burket: 7228' MD Tully: 7303' MD Marcellus POE: 7423' MD Projected MD at TD: 15970'</p>

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