



Actual Wellpath Report

Riggs Unit 2H AWP Proj: 22166'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Riggs Unit 2H
Field	Ritchie	Wellbore	Riggs Unit 2H AWB
Facility	Lynn Camp Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999600	Report Generated	7/3/2019 at 10:03:24 PM
Convergence at slot	0.03° East	Database/Source file	WA_MPL_EasternUS_Defn/Riggs_Unit_2H_AWP_Proj_22166_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	38.46	23.59	1655947.80	14239864.49	39°12'50.450"N	80°56'42.600"W
Facility Reference Pt			1655924.22	14239826.05	39°12'50.070"N	80°56'42.900"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 342 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 342 (RKB) to Mean Sea Level	1174.00ft
Vertical Reference Pt	Patterson 342 (RKB)	Patterson 342 (RKB) to Ground Level at Slot (Slot #07)	25.00ft
MD Reference Pt	Patterson 342 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	341.12°

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Facility	Lynn Camp Pad			

WELLPATH DATA (259 stations) † = interpolated/extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	162.320	0.00	0.00	0.00	0.00	1655947.80	14239864.49	39°12'50.450"N	80°56'42.600"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	162.320	25.00	0.00	0.00	0.00	1655947.80	14239864.49	39°12'50.450"N	80°56'42.600"W	0.00	0.000	0.00	0.00	0.00	
110.00	0.320	162.320	110.00	-0.24	-0.23	0.07	1655947.87	14239864.27	39°12'50.448"N	80°56'42.599"W	0.24	162.320	0.38	0.38	190.96	Gyrodata MS Gyro <17-1/2">(100'-540')
210.00	0.380	203.230	210.00	-0.76	-0.80	0.03	1655947.83	14239863.70	39°12'50.442"N	80°56'42.600"W	0.80	178.124	0.25	0.06	40.91	
310.00	0.450	201.310	310.00	-1.31	-1.47	-0.25	1655947.56	14239863.03	39°12'50.435"N	80°56'42.603"W	1.49	189.569	0.07	0.07	-1.92	
410.00	0.670	210.100	409.99	-1.99	-2.34	-0.68	1655947.12	14239862.16	39°12'50.427"N	80°56'42.609"W	2.44	196.284	0.24	0.22	8.79	
510.00	1.290	207.360	509.98	-3.15	-3.84	-1.49	1655946.31	14239860.65	39°12'50.412"N	80°56'42.619"W	4.12	201.234	0.62	0.62	-2.74	
550.00	1.510	213.710	549.96	-3.79	-4.68	-1.99	1655945.81	14239859.81	39°12'50.404"N	80°56'42.625"W	5.09	203.057	0.67	0.55	15.87	
698.00	1.780	121.390	697.92	-6.74	-7.50	-1.11	1655946.69	14239856.99	39°12'50.376"N	80°56'42.614"W	7.58	188.440	1.61	0.18	-62.38	WFT EM <12-1/4">(540')(688'-2503')
812.00	4.070	110.240	811.77	-10.65	-9.82	4.19	1655952.00	14239854.67	39°12'50.353"N	80°56'42.547"W	10.68	156.880	2.06	2.01	-9.78	
909.00	4.760	107.470	908.48	-15.21	-12.22	11.26	1655959.06	14239852.27	39°12'50.329"N	80°56'42.457"W	16.62	137.342	0.74	0.71	-2.86	
1003.00	4.250	107.980	1002.19	-19.61	-14.47	18.30	1655966.09	14239850.03	39°12'50.307"N	80°56'42.368"W	23.33	128.339	0.54	-0.54	0.54	
1098.00	4.460	107.690	1096.91	-23.92	-16.68	25.16	1655972.96	14239847.82	39°12'50.285"N	80°56'42.280"W	30.19	123.537	0.22	0.22	-0.31	
1192.00	4.070	118.530	1190.66	-28.56	-19.38	31.58	1655979.37	14239845.12	39°12'50.258"N	80°56'42.199"W	37.05	121.543	0.95	-0.41	11.53	
1287.00	4.180	128.510	1285.41	-33.96	-23.15	37.25	1655985.04	14239841.35	39°12'50.221"N	80°56'42.127"W	43.86	121.860	0.76	0.12	10.51	
1382.00	2.620	118.230	1380.24	-38.46	-26.33	41.87	1655989.66	14239838.17	39°12'50.189"N	80°56'42.068"W	49.46	122.165	1.76	-1.64	-10.82	
1476.00	0.430	63.420	1474.20	-39.99	-27.19	44.08	1655991.86	14239837.31	39°12'50.181"N	80°56'42.040"W	51.79	121.669	2.55	-2.33	-58.31	
1571.00	0.930	317.950	1569.20	-39.23	-26.46	43.88	1655991.67	14239838.05	39°12'50.188"N	80°56'42.043"W	51.24	121.088	1.18	0.53	-111.02	
1666.00	0.680	271.290	1664.19	-38.33	-25.87	42.80	1655990.59	14239838.63	39°12'50.194"N	80°56'42.056"W	50.01	121.153	0.71	-0.26	-49.12	
1760.00	0.570	225.110	1758.19	-38.34	-26.19	41.91	1655989.70	14239838.31	39°12'50.191"N	80°56'42.068"W	49.42	122.001	0.53	-0.12	-49.12	
1855.00	0.920	212.940	1853.18	-39.02	-27.16	41.16	1655988.95	14239837.34	39°12'50.181"N	80°56'42.077"W	49.32	123.421	0.40	0.37	-12.81	
1949.00	0.510	148.070	1947.17	-39.90	-28.15	40.97	1655988.76	14239836.35	39°12'50.171"N	80°56'42.080"W	49.71	124.492	0.90	-0.44	-69.01	
2044.00	1.450	86.090	2042.16	-40.62	-28.43	42.40	1655990.18	14239836.08	39°12'50.169"N	80°56'42.062"W	51.05	123.844	1.36	0.99	-65.24	
2138.00	0.820	86.240	2136.14	-41.10	-28.30	44.26	1655992.04	14239836.20	39°12'50.170"N	80°56'42.038"W	52.53	122.602	0.67	-0.67	0.16	
2233.00	0.080	352.260	2231.14	-41.21	-28.19	44.92	1655992.71	14239836.31	39°12'50.171"N	80°56'42.029"W	53.04	122.112	0.87	-0.78	-98.93	
2328.00	0.350	279.830	2326.14	-41.01	-28.08	44.63	1655992.41	14239836.43	39°12'50.172"N	80°56'42.033"W	52.73	122.176	0.35	0.28	-76.24	
2422.00	0.540	283.010	2420.13	-40.64	-27.93	43.92	1655991.70	14239836.58	39°12'50.174"N	80°56'42.042"W	52.04	122.457	0.20	0.20	3.38	
2513.00	0.720	279.330	2511.13	-40.14	-27.74	42.93	1655990.72	14239836.76	39°12'50.176"N	80°56'42.055"W	51.12	122.868	0.20	0.20	-4.04	
2658.00	0.710	282.430	2656.12	-39.24	-27.40	41.16	1655988.94	14239837.11	39°12'50.179"N	80°56'42.077"W	49.44	123.653	0.03	-0.01	2.14	WFT EM <8-3/4">(2503')(2648'-6001')
2753.00	0.620	280.850	2751.11	-38.68	-27.18	40.08	1655987.86	14239837.33	39°12'50.181"N	80°56'42.091"W	48.42	124.141	0.10	-0.09	-1.66	

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Area	Ritchie County, WV	Well	Riggs Unit 2H
Field	Ritchie	Wellbore	Riggs Unit 2H AWB
Facility	Lynn Camp Pad		

WELLPATH DATA (259 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
2847.00	0.660	293.640	2845.10	-38.06	-26.86	39.08	1655986.87	14239837.64	39°12'50.184"N	80°56'42.104"W	47.42	124.503	0.16	0.04	13.61	
2942.00	0.710	284.310	2940.10	-37.37	-26.50	38.01	1655985.80	14239838.01	39°12'50.188"N	80°56'42.117"W	46.34	124.882	0.13	0.05	-9.82	
3037.00	1.400	220.580	3035.08	-37.64	-27.23	36.68	1655984.47	14239837.27	39°12'50.181"N	80°56'42.134"W	45.69	126.590	1.32	0.73	-67.08	
3135.00	2.990	178.050	3133.01	-40.69	-30.70	35.99	1655983.78	14239833.81	39°12'50.146"N	80°56'42.143"W	47.31	130.461	2.22	1.62	-43.40	
3229.00	4.490	166.160	3226.81	-46.71	-36.72	36.96	1655984.74	14239827.79	39°12'50.087"N	80°56'42.131"W	52.10	134.818	1.79	1.60	-12.65	
3324.00	6.280	168.120	3321.39	-55.57	-45.42	38.92	1655986.70	14239819.09	39°12'50.001"N	80°56'42.106"W	59.81	139.409	1.89	1.88	2.06	
3419.00	8.210	167.410	3415.63	-67.47	-57.12	41.46	1655989.25	14239807.39	39°12'49.885"N	80°56'42.074"W	70.59	144.025	2.03	2.03	-0.75	
3513.00	9.620	162.560	3508.49	-81.99	-71.17	45.28	1655993.07	14239793.35	39°12'49.746"N	80°56'42.025"W	84.35	147.533	1.70	1.50	-5.16	
3608.00	10.750	164.190	3601.99	-98.77	-87.27	50.07	1655997.86	14239777.26	39°12'49.587"N	80°56'41.964"W	100.61	150.152	1.23	1.19	1.72	
3703.00	11.640	170.730	3695.19	-117.07	-105.25	54.03	1656001.81	14239759.29	39°12'49.409"N	80°56'41.914"W	118.31	152.825	1.63	0.94	6.88	
3798.00	12.600	168.690	3786.07	-136.79	-124.87	57.61	1656005.39	14239739.67	39°12'49.215"N	80°56'41.869"W	137.52	155.234	1.11	1.01	-2.15	
3892.00	12.960	166.360	3879.74	-157.45	-145.17	62.11	1656009.88	14239719.38	39°12'49.015"N	80°56'41.812"W	157.89	156.838	0.67	0.38	-2.48	
3987.00	11.800	166.970	3972.53	-177.73	-164.98	66.81	1656014.58	14239699.58	39°12'48.819"N	80°56'41.752"W	178.00	157.955	1.23	-1.22	0.64	
4082.00	12.080	170.580	4065.48	-197.19	-184.25	70.62	1656018.40	14239680.31	39°12'48.628"N	80°56'41.704"W	197.33	159.028	0.84	0.29	3.80	
4177.00	12.720	170.070	4158.26	-217.33	-204.36	74.06	1656021.83	14239660.21	39°12'48.430"N	80°56'41.661"W	217.37	160.081	0.88	0.67	-0.54	
4272.00	13.370	167.730	4250.81	-238.57	-225.40	78.19	1656025.96	14239639.19	39°12'48.222"N	80°56'41.608"W	238.58	160.868	0.88	0.68	-2.46	
4366.00	12.910	165.800	4342.35	-259.84	-246.20	83.08	1656030.85	14239618.39	39°12'48.016"N	80°56'41.546"W	259.84	161.353	0.68	-0.49	-2.05	
4463.00	13.960	169.290	4436.69	-282.22	-268.20	87.91	1656035.68	14239596.40	39°12'47.799"N	80°56'41.485"W	282.24	161.852	1.37	1.08	3.60	
4559.00	14.360	169.420	4529.78	-305.46	-291.28	92.25	1656040.02	14239573.33	39°12'47.570"N	80°56'41.430"W	305.54	162.427	0.42	0.42	0.14	
4653.00	14.100	168.540	4620.89	-328.35	-313.96	96.66	1656044.43	14239550.66	39°12'47.346"N	80°56'41.374"W	328.51	162.887	0.36	-0.28	-0.94	
4748.00	13.300	167.330	4713.19	-350.69	-335.96	101.36	1656049.12	14239528.66	39°12'47.129"N	80°56'41.315"W	350.92	163.211	0.89	-0.84	-1.27	
4843.00	13.550	166.900	4805.59	-372.62	-357.47	106.28	1656054.04	14239507.17	39°12'46.916"N	80°56'41.253"W	372.93	163.442	0.28	0.26	-0.45	
4937.00	12.890	163.620	4897.10	-394.06	-378.25	111.73	1656059.49	14239486.40	39°12'46.711"N	80°56'41.183"W	394.41	163.543	1.06	-0.70	-3.49	
5032.00	12.140	165.900	4989.84	-414.60	-398.11	117.15	1656064.91	14239466.55	39°12'46.514"N	80°56'41.115"W	414.99	163.602	0.95	-0.79	2.40	
5126.00	11.800	164.750	5081.80	-434.04	-416.96	122.09	1656069.84	14239447.70	39°12'46.328"N	80°56'41.052"W	434.47	163.680	0.44	-0.36	-1.22	
5221.00	12.280	169.560	5174.71	-453.73	-436.27	126.48	1656074.23	14239428.40	39°12'46.137"N	80°56'40.997"W	454.24	163.833	1.17	0.51	5.06	
5316.00	12.170	168.420	5267.56	-473.65	-456.02	130.32	1656078.07	14239408.66	39°12'45.942"N	80°56'40.948"W	474.27	164.052	0.28	-0.12	-1.20	
5410.00	12.230	167.940	5359.44	-493.37	-475.46	134.39	1656082.13	14239389.22	39°12'45.750"N	80°56'40.896"W	494.09	164.217	0.13	0.06	-0.51	
5505.00	12.600	167.590	5452.21	-513.65	-495.42	138.72	1656086.46	14239369.27	39°12'45.553"N	80°56'40.841"W	514.47	164.358	0.40	0.39	-0.37	
5569.00	10.170	163.980	5514.95	-526.23	-507.67	141.78	1656089.52	14239357.03	39°12'45.431"N	80°56'40.803"W	527.10	164.397	3.95	-3.80	-5.64	

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5600.00	8.350	159.850	5545.55	-531.22	-512.42	143.31	1656091.05	14239352.28	39°12'45.385"N	80°56'40.783"W	532.08	164.375	6.25	-5.87	-13.32	
5632.00	5.970	154.830	5577.29	-535.20	-516.10	144.81	1656092.56	14239348.60	39°12'45.348"N	80°56'40.764"W	536.04	164.326	7.68	-7.44	-15.69	
5664.00	3.460	143.670	5609.18	-537.77	-518.39	146.09	1656093.84	14239346.31	39°12'45.325"N	80°56'40.748"W	538.58	164.261	8.31	-7.84	-34.88	
5695.00	1.900	75.660	5640.16	-538.71	-519.01	147.15	1656094.89	14239345.69	39°12'45.319"N	80°56'40.735"W	539.47	164.171	10.53	-5.03	-219.39	
5727.00	3.220	6.150	5672.13	-537.93	-517.99	147.76	1656095.50	14239346.71	39°12'45.329"N	80°56'40.727"W	538.65	164.079	9.73	4.13	-217.22	
5758.00	6.340	359.760	5703.02	-535.52	-515.41	147.84	1656095.59	14239349.29	39°12'45.355"N	80°56'40.726"W	536.20	163.995	10.19	10.06	-20.65	
5790.00	10.000	359.630	5734.69	-531.21	-510.86	147.82	1656095.56	14239353.84	39°12'45.400"N	80°56'40.726"W	531.82	163.862	11.44	11.44	-0.37	
5821.00	13.610	358.790	5765.03	-525.18	-504.52	147.72	1656095.47	14239360.17	39°12'45.462"N	80°56'40.727"W	525.71	163.680	11.66	11.65	-2.71	
5853.00	16.480	359.930	5795.93	-517.30	-496.22	147.64	1656095.38	14239368.47	39°12'45.545"N	80°56'40.728"W	517.72	163.431	9.02	8.97	3.56	
5884.00	18.810	1.430	5825.47	-508.45	-486.82	147.76	1656095.50	14239377.86	39°12'45.637"N	80°56'40.727"W	508.75	163.116	7.66	7.52	4.84	
5916.00	20.810	1.350	5855.57	-498.27	-475.98	148.02	1656095.76	14239388.70	39°12'45.745"N	80°56'40.723"W	498.47	162.726	6.25	6.25	-0.25	
5948.00	22.910	0.740	5885.27	-487.07	-464.07	148.23	1656095.98	14239400.61	39°12'45.862"N	80°56'40.720"W	487.17	162.285	6.60	6.56	-1.91	
5979.00	24.720	0.010	5913.63	-475.25	-451.56	148.31	1656096.06	14239413.12	39°12'45.986"N	80°56'40.719"W	475.29	161.817	5.92	5.84	-2.35	
6011.00	26.130	359.840	5942.53	-462.25	-437.82	148.29	1656096.04	14239426.85	39°12'46.122"N	80°56'40.719"W	462.25	161.288	4.41	4.41	-0.53	
6065.00	27.350	359.440	5990.75	-439.21	-413.52	148.14	1656095.88	14239451.14	39°12'46.362"N	80°56'40.721"W	439.26	160.290	2.28	2.26	-0.74	BH AT Curve <8-1/2">(6011')(6065'-22141')
6109.00	28.820	358.360	6029.57	-419.48	-392.81	147.74	1656095.48	14239471.84	39°12'46.567"N	80°56'40.726"W	419.68	159.389	3.53	3.34	-2.45	
6156.00	32.170	357.340	6070.06	-396.64	-368.98	146.83	1656094.58	14239495.66	39°12'46.802"N	80°56'40.737"W	397.12	158.300	7.21	7.13	-2.17	
6204.00	36.300	356.260	6109.74	-370.65	-342.03	145.31	1656093.06	14239522.60	39°12'47.069"N	80°56'40.756"W	371.62	156.982	8.70	8.60	-2.25	
6251.00	40.290	354.040	6146.62	-342.39	-313.02	142.83	1656090.57	14239551.60	39°12'47.355"N	80°56'40.788"W	344.06	155.473	8.98	8.49	-4.72	
6299.00	42.670	351.590	6182.58	-311.26	-281.48	138.83	1656086.58	14239583.12	39°12'47.667"N	80°56'40.838"W	313.86	153.746	6.00	4.96	-5.10	
6346.00	45.290	350.330	6216.40	-279.11	-249.26	133.70	1656081.45	14239615.34	39°12'47.986"N	80°56'40.903"W	282.85	151.791	5.88	5.57	-2.68	
6376.00†	47.396	350.317	6237.11	-257.69	-227.86	130.05	1656077.80	14239636.72	39°12'48.197"N	80°56'40.949"W	262.36	150.285	7.02	7.02	-0.04	Middlesex: 6376' MD
6393.00	48.590	350.310	6248.48	-245.22	-215.41	127.93	1656075.68	14239649.17	39°12'48.320"N	80°56'40.976"W	250.53	149.295	7.02	7.02	-0.04	
6440.00	52.760	350.180	6278.26	-209.33	-179.59	121.77	1656069.52	14239684.98	39°12'48.674"N	80°56'41.054"W	216.98	145.862	8.87	8.87	-0.28	
6488.00	56.740	349.750	6305.96	-170.60	-141.00	114.93	1656062.69	14239723.55	39°12'49.056"N	80°56'41.141"W	181.91	140.815	8.32	8.29	-0.90	
6535.00	61.600	348.100	6330.04	-130.63	-101.41	107.17	1656054.93	14239763.13	39°12'49.447"N	80°56'41.239"W	147.54	133.418	10.77	10.34	-3.51	
6558.00†	64.104	347.435	6340.54	-110.30	-81.41	102.83	1656050.59	14239783.12	39°12'49.645"N	80°56'41.294"W	131.15	128.367	11.19	10.89	-2.89	Burkett: 6558' MD
6582.00	66.720	346.770	6350.52	-88.60	-60.14	97.96	1656045.72	14239804.38	39°12'49.855"N	80°56'41.356"W	114.94	121.546	11.19	10.90	-2.77	
6629.00	70.620	345.700	6367.61	-45.00	-17.62	87.54	1656035.31	14239846.88	39°12'50.275"N	80°56'41.488"W	89.29	101.383	8.56	8.30	-2.28	
6637.00†	71.363	345.307	6370.22	-37.46	-10.30	85.65	1656033.41	14239854.20	39°12'50.348"N	80°56'41.512"W	86.26	96.858	10.39	9.29	-4.91	Tully: 6637' MD

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

WELLPATH DATA (259 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	
6677.00	75.090	343.390	6381.76	0.77	26.57	75.31	1656023.08	14239891.05	39°12'50.712"N	80°56'41.643"W	79.86	70.569	10.39	9.32	-4.79		
6706.00†	77.815	341.844	6388.56	28.95	53.47	66.89	1656014.66	14239917.94	39°12'50.978"N	80°56'41.750"W	85.63	51.361	10.73	9.39	-5.33	Marcellus POE: 6706' MD	
6724.00	79.510	340.900	6392.09	46.60	70.19	61.25	1656009.03	14239934.66	39°12'51.143"N	80°56'41.821"W	93.16	41.107	10.73	9.42	-5.24		
6772.00	80.850	339.470	6400.28	93.88	114.69	45.21	1655993.00	14239979.13	39°12'51.583"N	80°56'42.025"W	123.28	21.517	4.05	2.79	-2.98		
6819.00	83.710	340.410	6406.59	140.44	158.43	29.24	1655977.03	14240022.86	39°12'52.016"N	80°56'42.227"W	161.11	10.458	6.40	6.09	2.00		
6868.00	87.720	341.530	6410.25	189.30	204.61	13.31	1655961.11	14240069.02	39°12'52.472"N	80°56'42.429"W	205.04	3.723	8.50	8.18	2.29		
6915.00	90.400	342.000	6411.03	236.28	249.24	-1.39	1655946.41	14240113.64	39°12'52.913"N	80°56'42.616"W	249.25	359.681	5.79	5.70	1.00		
6963.00	90.400	341.040	6410.69	284.28	294.76	-16.60	1655931.21	14240159.14	39°12'53.364"N	80°56'42.809"W	295.23	356.776	2.00	0.00	-2.00		
7010.00	90.370	340.270	6410.37	331.28	339.11	-32.17	1655915.64	14240203.47	39°12'53.802"N	80°56'43.006"W	340.63	354.581	1.64	-0.06	-1.64		
7152.00	90.340	338.970	6409.49	473.22	472.22	-81.62	1655866.22	14240336.52	39°12'55.118"N	80°56'43.633"W	479.22	350.194	0.92	-0.02	-0.92		
7247.00	90.400	337.860	6408.88	568.11	560.55	-116.57	1655831.28	14240424.82	39°12'55.991"N	80°56'44.077"W	572.54	348.253	1.17	0.06	-1.17		
7341.00	90.000	336.920	6408.55	661.91	647.32	-152.71	1655795.16	14240511.56	39°12'56.849"N	80°56'44.535"W	665.09	346.726	1.09	-0.43	-1.00		
7436.00	90.310	335.640	6408.30	756.57	734.30	-190.92	1655756.96	14240598.50	39°12'57.709"N	80°56'45.020"W	758.71	345.426	1.39	0.33	-1.35		
7531.00	90.400	334.720	6407.71	851.06	820.52	-230.80	1655717.10	14240684.68	39°12'58.561"N	80°56'45.526"W	852.36	344.290	0.97	0.09	-0.97		
7625.00	89.690	335.630	6407.63	944.55	905.83	-270.26	1655677.65	14240769.96	39°12'59.405"N	80°56'46.027"W	945.29	343.387	1.23	-0.76	0.97		
7721.00	90.370	336.090	6407.58	1040.14	993.44	-309.52	1655638.40	14240857.53	39°13'00.271"N	80°56'46.525"W	1040.54	342.695	0.86	0.71	0.48		
7816.00	90.400	336.740	6406.94	1134.82	1080.50	-347.53	1655600.41	14240944.56	39°13'01.132"N	80°56'47.007"W	1135.01	342.170	0.68	0.03	0.68		
7910.00	90.150	339.910	6406.49	1228.70	1167.84	-382.25	1655565.71	14241031.86	39°13'01.995"N	80°56'47.448"W	1228.80	341.876	3.38	-0.27	3.37		
8005.00	90.370	342.420	6406.06	1323.69	1257.74	-412.91	1655535.06	14241121.73	39°13'02.884"N	80°56'47.837"W	1323.79	341.825	2.65	0.23	2.64		
8099.00	90.770	342.610	6405.13	1417.66	1347.40	-441.15	1655506.83	14241211.35	39°13'03.770"N	80°56'48.195"W	1417.78	341.871	0.47	0.43	0.20		
8193.00	90.890	342.570	6403.77	1511.61	1437.08	-469.28	1655478.71	14241301.00	39°13'04.657"N	80°56'48.551"W	1511.76	341.916	0.13	0.13	-0.04		
8288.00	90.680	343.050	6402.46	1606.56	1527.83	-497.35	1655450.65	14241391.71	39°13'05.554"N	80°56'48.907"W	1606.74	341.968	0.55	-0.22	0.51		
8382.00	90.620	343.370	6401.40	1700.50	1617.81	-524.50	1655423.51	14241481.66	39°13'06.443"N	80°56'49.252"W	1700.71	342.037	0.35	-0.06	0.34		
8477.00	90.650	342.930	6400.34	1795.43	1708.73	-552.04	1655395.99	14241572.54	39°13'07.342"N	80°56'49.601"W	1795.69	342.096	0.46	0.03	-0.46		
8572.00	90.710	340.990	6399.22	1890.41	1799.05	-581.45	1655366.58	14241662.82	39°13'08.235"N	80°56'49.974"W	1890.68	342.089	2.04	0.06	-2.04		
8667.00	90.620	339.640	6398.11	1985.39	1888.49	-613.45	1655334.60	14241752.22	39°13'09.119"N	80°56'50.380"W	1985.63	342.004	1.42	-0.09	-1.42		
8762.00	90.550	340.490	6397.14	2080.37	1977.79	-645.84	1655302.22	14241841.49	39°13'10.002"N	80°56'50.791"W	2080.57	341.916	0.90	-0.07	0.89		
8856.00	90.620	342.900	6396.18	2174.35	2067.02	-675.36	1655272.71	14241930.69	39°13'10.884"N	80°56'51.165"W	2174.56	341.906	2.56	0.07	2.56		
8951.00	90.650	343.660	6395.13	2269.28	2158.00	-702.69	1655245.40	14242021.63	39°13'11.783"N	80°56'51.512"W	2269.52	341.964	0.80	0.03	0.80		
9046.00	90.280	343.200	6394.36	2364.20	2249.05	-729.78	1655218.32	14242112.64	39°13'12.684"N	80°56'51.855"W	2364.49	342.023	0.62	-0.39	-0.48		

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REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (259 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
9142.00	90.710	344.930	6393.53	2460.06	2341.36	-756.13	1655191.97	14242204.91	39°13'13.596"N	80°56'52.189"W	2460.42	342.102	1.86	0.45	1.80	
9236.00	90.830	344.780	6392.27	2553.85	2432.08	-780.69	1655167.43	14242295.60	39°13'14.493"N	80°56'52.501"W	2554.31	342.204	0.20	0.13	-0.16	
9330.00	91.140	348.420	6390.65	2647.40	2523.49	-802.47	1655145.66	14242386.98	39°13'15.397"N	80°56'52.777"W	2648.01	342.359	3.89	0.33	3.87	
9426.00	90.890	347.640	6388.95	2742.68	2617.39	-822.38	1655125.76	14242480.83	39°13'16.325"N	80°56'53.029"W	2743.55	342.557	0.85	-0.26	-0.81	
9521.00	91.020	347.280	6387.37	2837.09	2710.11	-843.00	1655105.14	14242573.52	39°13'17.241"N	80°56'53.290"W	2838.20	342.721	0.40	0.14	-0.38	
9616.00	91.050	345.720	6385.65	2931.65	2802.47	-865.17	1655082.98	14242665.84	39°13'18.154"N	80°56'53.572"W	2932.98	342.844	1.64	0.03	-1.64	
9710.00	91.510	343.950	6383.55	3025.43	2893.17	-889.76	1655058.40	14242756.50	39°13'19.051"N	80°56'53.883"W	3026.90	342.905	1.95	0.49	-1.89	
9806.00	89.940	340.400	6382.34	3121.38	2984.54	-919.13	1655029.04	14242847.83	39°13'19.954"N	80°56'54.256"W	3122.86	342.883	4.04	-1.64	-3.70	
9901.00	90.120	340.860	6382.29	3216.38	3074.16	-950.64	1654997.54	14242937.42	39°13'20.840"N	80°56'54.656"W	3217.79	342.816	0.52	0.19	0.48	
9997.00	89.570	340.590	6382.55	3312.38	3164.78	-982.33	1654965.86	14243028.00	39°13'21.736"N	80°56'55.058"W	3313.73	342.756	0.64	-0.57	-0.28	
10092.00	90.800	341.560	6382.24	3407.37	3254.64	-1013.14	1654935.07	14243117.82	39°13'22.624"N	80°56'55.448"W	3408.68	342.709	1.65	1.29	1.02	
10186.00	89.320	339.170	6382.14	3501.36	3343.16	-1044.73	1654903.50	14243206.31	39°13'23.499"N	80°56'55.849"W	3502.60	342.646	2.99	-1.57	-2.54	
10281.00	90.520	341.480	6382.27	3596.34	3432.61	-1076.71	1654871.53	14243295.72	39°13'24.384"N	80°56'56.255"W	3597.51	342.585	2.74	1.26	2.43	
10376.00	90.370	340.440	6381.54	3691.33	3522.41	-1107.70	1654840.55	14243385.49	39°13'25.271"N	80°56'56.648"W	3692.47	342.543	1.11	-0.16	-1.09	
10472.00	90.310	339.850	6380.97	3787.32	3612.70	-1140.30	1654807.96	14243475.74	39°13'26.164"N	80°56'57.062"W	3788.39	342.482	0.62	-0.06	-0.61	
10567.00	90.220	338.790	6380.53	3882.27	3701.58	-1173.85	1654774.42	14243564.58	39°13'27.043"N	80°56'57.487"W	3883.25	342.405	1.12	-0.09	-1.12	
10662.00	90.030	338.140	6380.32	3977.17	3789.94	-1208.72	1654739.57	14243652.92	39°13'27.916"N	80°56'57.930"W	3978.03	342.311	0.71	-0.20	-0.68	
10756.00	90.340	338.560	6380.02	4071.06	3877.31	-1243.40	1654704.90	14243740.25	39°13'28.780"N	80°56'58.370"W	4071.81	342.220	0.56	0.33	0.45	
10851.00	90.150	337.460	6379.61	4165.91	3965.40	-1278.97	1654669.34	14243828.30	39°13'29.651"N	80°56'58.821"W	4166.55	342.124	1.18	-0.20	-1.16	
10946.00	88.950	336.420	6380.36	4260.65	4052.80	-1316.18	1654632.15	14243915.67	39°13'30.515"N	80°56'59.293"W	4261.17	342.008	1.67	-1.26	-1.09	
11041.00	90.250	337.970	6381.02	4355.42	4140.37	-1353.00	1654595.34	14244003.20	39°13'31.380"N	80°56'59.761"W	4355.83	341.903	2.13	1.37	1.63	
11136.00	90.220	339.100	6380.63	4450.33	4228.78	-1387.76	1654560.60	14244091.57	39°13'32.254"N	80°57'00.202"W	4450.67	341.832	1.19	-0.03	1.19	
11231.00	89.780	340.180	6380.63	4545.29	4317.84	-1420.82	1654527.56	14244180.60	39°13'33.135"N	80°57'00.621"W	4545.60	341.786	1.23	-0.46	1.14	
11326.00	90.030	341.290	6380.79	4640.29	4407.52	-1452.16	1654496.23	14244270.24	39°13'34.022"N	80°57'01.019"W	4640.58	341.764	1.20	0.26	1.17	
11421.00	89.320	341.160	6381.33	4735.29	4497.46	-1482.73	1654465.66	14244360.15	39°13'34.911"N	80°57'01.407"W	4735.58	341.754	0.76	-0.75	-0.14	
11515.00	90.180	344.520	6381.74	4829.23	4587.26	-1510.46	1654437.95	14244449.91	39°13'35.798"N	80°57'01.758"W	4829.54	341.775	3.69	0.91	3.57	
11610.00	90.180	346.410	6381.44	4923.95	4679.22	-1534.31	1654414.11	14244541.83	39°13'36.707"N	80°57'02.061"W	4924.35	341.846	1.99	0.00	1.99	
11704.00	90.800	347.470	6380.63	5017.46	4770.78	-1555.55	1654392.88	14244633.36	39°13'37.612"N	80°57'02.330"W	5017.98	341.941	1.31	0.66	1.13	
11799.00	90.550	346.170	6379.51	5111.98	4863.27	-1577.20	1654371.23	14244725.81	39°13'38.527"N	80°57'02.605"W	5112.63	342.032	1.39	-0.26	-1.37	
11894.00	90.250	343.220	6378.85	5206.78	4954.89	-1602.28	1654346.17	14244817.39	39°13'39.432"N	80°57'02.923"W	5207.52	342.080	3.12	-0.32	-3.11	

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Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Riggs Unit 2H
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Facility	Lynn Camp Pad		

WELLPATH DATA (259 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
11988.00	90.150	341.250	6378.52	5300.76	5044.40	-1630.96	1654317.50	14244906.87	39°13'40.317"N	80°57'03.286"W	5301.51	342.083	2.10	-0.11	-2.10	
12083.00	89.940	339.030	6378.45	5395.74	5133.75	-1663.23	1654285.24	14244996.18	39°13'41.201"N	80°57'03.696"W	5396.45	342.049	2.35	-0.22	-2.34	
12178.00	89.750	337.820	6378.71	5490.63	5222.09	-1698.16	1654250.32	14245084.48	39°13'42.074"N	80°57'04.139"W	5491.26	341.986	1.29	-0.20	-1.27	
12273.00	89.940	339.300	6378.96	5585.54	5310.51	-1732.88	1654215.61	14245172.87	39°13'42.948"N	80°57'04.580"W	5586.09	341.928	1.57	0.20	1.56	
12368.00	89.910	340.040	6379.09	5680.51	5399.59	-1765.89	1654182.62	14245261.92	39°13'43.829"N	80°57'04.999"W	5681.02	341.890	0.78	-0.03	0.78	
12462.00	90.030	338.730	6379.14	5774.46	5487.57	-1798.98	1654149.54	14245349.86	39°13'44.698"N	80°57'05.419"W	5774.93	341.849	1.40	0.13	-1.39	
12557.00	90.220	336.650	6378.93	5869.28	5575.46	-1835.05	1654113.49	14245437.71	39°13'45.567"N	80°57'05.876"W	5869.68	341.782	2.20	0.20	-2.19	
12652.00	90.030	334.910	6378.72	5963.87	5662.09	-1874.02	1654074.54	14245524.31	39°13'46.424"N	80°57'06.371"W	5964.16	341.687	1.84	-0.20	-1.83	
12746.00	89.540	334.690	6379.07	6057.30	5747.14	-1914.04	1654034.53	14245609.33	39°13'47.265"N	80°57'06.879"W	6057.49	341.580	0.57	-0.52	-0.23	
12840.00	89.510	337.140	6379.85	6150.90	5832.95	-1952.40	1653996.19	14245695.10	39°13'48.113"N	80°57'07.366"W	6154.03	341.494	2.61	-0.03	2.61	
12934.00	89.510	339.190	6380.66	6244.76	5920.20	-1987.36	1653961.25	14245782.31	39°13'48.975"N	80°57'07.809"W	6244.86	341.444	2.18	0.00	2.18	
13028.00	89.540	340.050	6381.44	6338.73	6008.31	-2020.09	1653928.53	14245870.39	39°13'49.846"N	80°57'08.225"W	6338.81	341.417	0.92	0.03	0.91	
13123.00	89.540	340.290	6382.20	6433.71	6097.67	-2052.31	1653896.31	14245959.72	39°13'50.730"N	80°57'08.634"W	6433.79	341.398	0.25	0.00	0.25	
13217.00	89.350	342.020	6383.11	6527.70	6186.63	-2082.68	1653865.96	14246048.64	39°13'51.609"N	80°57'09.019"W	6527.78	341.395	1.85	-0.20	1.84	
13312.00	89.320	342.070	6384.21	6622.69	6277.00	-2111.96	1653836.69	14246138.97	39°13'52.503"N	80°57'09.390"W	6622.77	341.404	0.06	-0.03	0.05	
13406.00	89.140	343.160	6385.48	6716.64	6366.69	-2140.04	1653808.62	14246228.63	39°13'53.389"N	80°57'09.747"W	6716.74	341.421	1.18	-0.19	1.16	
13501.00	89.380	345.140	6386.70	6811.50	6458.07	-2165.99	1653782.69	14246319.97	39°13'54.293"N	80°57'10.076"W	6811.62	341.459	2.10	0.25	2.08	
13595.00	89.260	347.470	6387.82	6905.10	6549.38	-2188.24	1653760.44	14246411.25	39°13'55.195"N	80°57'10.358"W	6905.27	341.525	2.48	-0.13	2.48	
13690.00	89.230	346.600	6389.07	6999.59	6641.95	-2209.55	1653739.14	14246503.78	39°13'56.110"N	80°57'10.628"W	6999.83	341.599	0.92	-0.03	-0.92	
13784.00	89.320	345.740	6390.26	7093.21	6733.22	-2232.02	1653716.68	14246595.01	39°13'57.012"N	80°57'10.913"W	7093.53	341.660	0.92	0.10	-0.91	
13878.00	89.350	344.160	6391.35	7186.99	6823.98	-2256.42	1653692.29	14246685.74	39°13'57.910"N	80°57'11.223"W	7187.36	341.703	1.68	0.03	-1.68	
13973.00	89.480	344.310	6392.32	7281.85	6915.41	-2282.23	1653666.49	14246777.12	39°13'58.813"N	80°57'11.550"W	7282.27	341.736	0.21	0.14	0.16	
14067.00	89.420	343.310	6393.22	7375.74	7005.67	-2308.44	1653640.29	14246867.35	39°13'59.706"N	80°57'11.882"W	7376.20	341.762	1.07	-0.06	-1.06	
14161.00	89.420	341.130	6394.18	7469.71	7095.17	-2337.14	1653611.60	14246956.82	39°14'00.590"N	80°57'12.247"W	7470.19	341.768	2.32	0.00	-2.32	
14256.00	90.460	340.550	6394.27	7564.71	7184.91	-2368.32	1653580.43	14247046.52	39°14'01.478"N	80°57'12.642"W	7565.17	341.757	1.25	1.09	-0.61	
14350.00	89.320	338.060	6394.46	7658.65	7272.84	-2401.54	1653547.23	14247134.41	39°14'02.347"N	80°57'13.064"W	7659.08	341.726	2.91	-1.21	-2.65	
14445.00	89.850	336.470	6395.14	7753.43	7360.45	-2438.25	1653510.53	14247221.99	39°14'03.213"N	80°57'13.530"W	7753.79	341.672	1.76	0.56	-1.67	
14540.00	89.780	335.880	6395.45	7848.08	7447.35	-2476.62	1653472.18	14247308.85	39°14'04.072"N	80°57'14.017"W	7848.36	341.605	0.63	-0.07	-0.62	
14635.00	89.660	336.690	6395.91	7942.74	7534.33	-2514.83	1653433.98	14247395.80	39°14'04.932"N	80°57'14.502"W	7942.95	341.542	0.86	-0.13	0.85	
14730.00	91.230	342.320	6395.18	8037.65	7623.27	-2548.08	1653400.75	14247484.71	39°14'05.811"N	80°57'14.924"W	8037.85	341.518	6.15	1.65	5.93	

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Actual Wellpath Report

Riggs Unit 2H AWP Proj: 22166'

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REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (259 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
14826.00	89.690	339.470	6394.41	8133.64	7713.97	-2579.49	1653369.35	14247575.37	39°14'06.708"N	80°57'15.323"W	8133.83	341.510	3.37	-1.60	-2.97	
14921.00	89.420	338.310	6395.14	8228.56	7802.59	-2613.71	1653335.15	14247663.95	39°14'07.584"N	80°57'15.757"W	8228.72	341.480	1.25	-0.28	-1.22	
15016.00	89.600	338.060	6395.96	8323.43	7890.79	-2649.01	1653299.86	14247752.11	39°14'08.456"N	80°57'16.205"W	8323.56	341.443	0.32	0.19	-0.26	
15111.00	89.540	338.650	6396.67	8418.32	7979.08	-2684.05	1653264.83	14247840.37	39°14'09.329"N	80°57'16.650"W	8418.43	341.408	0.62	-0.06	0.62	
15207.00	89.630	338.490	6397.36	8514.22	8068.44	-2719.12	1653229.77	14247929.70	39°14'10.212"N	80°57'17.095"W	8514.31	341.376	0.19	0.09	-0.17	
15302.00	89.380	339.860	6398.18	8609.16	8157.23	-2752.89	1653196.02	14248018.45	39°14'11.090"N	80°57'17.523"W	8609.23	341.352	1.47	-0.26	1.44	
15397.00	90.060	340.760	6398.65	8704.15	8246.68	-2784.90	1653164.02	14248107.86	39°14'11.974"N	80°57'17.930"W	8704.21	341.340	1.19	0.72	0.95	
15492.00	89.450	341.060	6399.06	8799.15	8336.45	-2815.97	1653132.96	14248197.59	39°14'12.861"N	80°57'18.324"W	8799.21	341.336	0.72	-0.64	0.32	
15586.00	89.970	340.850	6399.53	8893.14	8425.30	-2846.64	1653102.30	14248286.41	39°14'13.740"N	80°57'18.713"W	8893.21	341.332	0.60	0.55	-0.22	
15679.00	89.540	340.650	6399.93	8986.14	8513.10	-2877.30	1653071.65	14248374.18	39°14'14.608"N	80°57'19.102"W	8986.20	341.325	0.51	-0.46	-0.22	
15775.00	89.350	341.560	6400.86	9082.14	8603.92	-2908.39	1653040.58	14248464.96	39°14'15.506"N	80°57'19.497"W	9082.19	341.323	0.97	-0.20	0.95	
15870.00	90.310	343.670	6401.14	9177.10	8694.58	-2936.77	1653012.21	14248555.58	39°14'16.402"N	80°57'19.857"W	9177.16	341.337	2.44	1.01	2.22	
15964.00	89.660	344.180	6401.16	9270.98	8784.90	-2962.80	1652986.19	14248645.87	39°14'17.295"N	80°57'20.187"W	9271.07	341.363	0.88	-0.69	0.54	
16059.00	89.630	345.090	6401.75	9365.80	8876.50	-2987.97	1652961.03	14248737.43	39°14'18.200"N	80°57'20.507"W	9365.91	341.396	0.96	-0.03	0.96	
16153.00	89.750	347.620	6402.26	9459.40	8967.84	-3010.15	1652938.87	14248828.73	39°14'19.103"N	80°57'20.788"W	9459.55	341.445	2.69	0.13	2.69	
16248.00	89.080	346.000	6403.23	9553.92	9060.33	-3031.82	1652917.20	14248921.18	39°14'20.017"N	80°57'21.063"W	9554.13	341.498	1.85	-0.71	-1.71	
16343.00	90.030	349.010	6403.97	9648.32	9153.06	-3052.37	1652896.66	14249013.88	39°14'20.934"N	80°57'21.323"W	9648.60	341.557	3.32	1.00	3.17	
16438.00	90.030	351.420	6403.92	9742.12	9246.67	-3068.51	1652880.52	14249107.45	39°14'21.859"N	80°57'21.528"W	9742.52	341.642	2.54	0.00	2.54	
16533.00	89.630	350.180	6404.20	9835.76	9340.45	-3083.70	1652865.34	14249201.19	39°14'22.786"N	80°57'21.720"W	9836.32	341.730	1.37	-0.42	-1.31	
16627.00	90.090	348.090	6404.43	9928.84	9432.76	-3101.42	1652847.63	14249293.46	39°14'23.698"N	80°57'21.945"W	9929.54	341.800	2.28	0.49	-2.22	
16723.00	89.420	342.610	6404.84	10024.54	9525.60	-3125.69	1652823.37	14249386.27	39°14'24.616"N	80°57'22.253"W	10025.32	341.833	5.75	-0.70	-5.71	
16817.00	89.690	338.560	6405.57	10118.51	9614.23	-3156.93	1652792.14	14249474.87	39°14'25.492"N	80°57'22.649"W	10119.27	341.822	4.32	0.29	-4.31	
16912.00	89.450	335.700	6406.29	10213.27	9701.75	-3193.85	1652755.24	14249562.35	39°14'26.358"N	80°57'23.118"W	10213.95	341.778	3.02	-0.25	-3.01	
17006.00	89.380	336.350	6407.25	10306.89	9787.64	-3232.04	1652717.06	14249648.20	39°14'27.207"N	80°57'23.603"W	10307.47	341.726	0.70	-0.07	0.69	
17101.00	89.660	336.170	6408.04	10401.55	9874.60	-3270.28	1652678.83	14249735.12	39°14'28.066"N	80°57'24.088"W	10402.04	341.676	0.35	0.29	-0.19	
17195.00	89.510	335.100	6408.72	10495.11	9960.22	-3309.06	1652640.07	14249820.71	39°14'28.913"N	80°57'24.581"W	10495.52	341.622	1.15	-0.16	-1.14	
17290.00	89.690	334.060	6409.39	10589.49	10046.02	-3349.84	1652599.31	14249906.48	39°14'29.761"N	80°57'25.099"W	10589.80	341.559	1.11	0.19	-1.09	
17384.00	90.000	336.490	6409.64	10683.00	10131.40	-3389.15	1652560.01	14249991.82	39°14'30.605"N	80°57'25.598"W	10683.24	341.504	2.61	0.33	2.59	
17479.00	89.050	337.180	6410.43	10777.73	10218.73	-3426.52	1652522.66	14250079.12	39°14'31.468"N	80°57'26.072"W	10777.92	341.463	1.24	-1.00	0.73	
17574.00	89.230	339.780	6411.85	10872.61	10307.09	-3461.36	1652487.83	14250167.45	39°14'32.342"N	80°57'26.514"W	10872.77	341.437	2.74	0.19	2.74	

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Actual Wellpath Report

Riggs Unit 2H AWP Proj: 22166'

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REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (259 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
17670.00	89.320	341.540	6413.07	10968.59	10397.66	-3493.15	1652456.05	14250257.98	39°14'33.237"N	80°57'26.918"W	10968.75	341.430	1.84	0.09	1.83	
17765.00	89.380	340.390	6414.15	11063.58	10487.46	-3524.13	1652425.09	14250347.74	39°14'34.125"N	80°57'27.311"W	11063.74	341.426	1.21	0.06	-1.21	
17861.00	89.200	339.110	6415.34	11159.55	10577.52	-3557.36	1652391.87	14250437.76	39°14'35.015"N	80°57'27.733"W	11159.69	341.412	1.35	-0.19	-1.33	
17955.00	89.290	339.920	6416.57	11253.50	10665.57	-3590.25	1652358.99	14250525.78	39°14'35.886"N	80°57'28.150"W	11253.63	341.396	0.87	0.10	0.86	
18049.00	89.320	342.440	6417.72	11347.49	10754.53	-3620.57	1652328.69	14250614.70	39°14'36.765"N	80°57'28.535"W	11347.62	341.394	2.68	0.03	2.68	
18144.00	89.290	344.700	6418.87	11442.39	10845.64	-3647.44	1652301.83	14250705.77	39°14'37.666"N	80°57'28.876"W	11442.54	341.412	2.38	-0.03	2.38	
18239.00	89.290	345.110	6420.05	11537.17	10937.35	-3672.17	1652277.10	14250797.45	39°14'38.572"N	80°57'29.190"W	11537.35	341.441	0.43	0.00	0.43	
18335.00	89.450	346.270	6421.10	11632.86	11030.37	-3695.90	1652253.39	14250890.43	39°14'39.492"N	80°57'29.491"W	11633.08	341.476	1.22	0.17	1.21	
18431.00	89.290	342.980	6422.16	11728.66	11122.91	-3721.35	1652227.95	14250982.94	39°14'40.407"N	80°57'29.814"W	11728.92	341.502	3.43	-0.17	-3.43	
18526.00	89.510	345.900	6423.15	11823.49	11214.41	-3746.83	1652202.48	14251074.40	39°14'41.311"N	80°57'30.137"W	11823.78	341.525	3.08	0.23	3.07	
18620.00	89.720	346.330	6423.78	11917.13	11305.67	-3769.38	1652179.93	14251165.62	39°14'42.213"N	80°57'30.424"W	11917.48	341.561	0.51	0.22	0.46	
18715.00	89.540	345.710	6424.40	12011.78	11397.85	-3792.33	1652156.99	14251257.76	39°14'43.124"N	80°57'30.715"W	12012.19	341.596	0.68	-0.19	-0.65	
18810.00	89.540	345.400	6425.16	12106.49	11489.84	-3816.03	1652133.30	14251349.72	39°14'44.034"N	80°57'31.015"W	12106.96	341.628	0.33	0.00	-0.33	
18905.00	89.570	342.260	6425.90	12201.37	11581.07	-3842.48	1652106.86	14251440.91	39°14'44.935"N	80°57'31.351"W	12201.88	341.645	3.31	0.03	-3.31	
19000.00	89.320	338.170	6426.82	12296.33	11670.44	-3874.63	1652074.73	14251530.25	39°14'45.819"N	80°57'31.759"W	12296.83	341.634	4.31	-0.26	-4.31	
19095.00	89.630	336.230	6427.69	12391.10	11758.01	-3911.44	1652037.93	14251617.78	39°14'46.685"N	80°57'32.227"W	12391.54	341.600	2.07	0.33	-2.04	
19189.00	89.850	337.550	6428.12	12484.84	11844.46	-3948.34	1652001.05	14251704.20	39°14'47.539"N	80°57'32.695"W	12485.22	341.564	1.42	0.23	1.40	
19284.00	89.780	339.260	6428.42	12579.73	11932.79	-3983.30	1651966.10	14251792.49	39°14'48.412"N	80°57'33.139"W	12580.07	341.540	1.80	-0.07	1.80	
19379.00	89.850	340.920	6428.73	12674.71	12022.11	-4015.65	1651933.77	14251881.77	39°14'49.295"N	80°57'33.550"W	12675.04	341.530	1.75	0.07	1.75	
19475.00	89.910	343.260	6428.93	12770.69	12113.45	-4045.17	1651904.26	14251973.08	39°14'50.198"N	80°57'33.924"W	12771.02	341.534	2.44	0.06	2.44	
19569.00	89.820	344.740	6429.15	12864.57	12203.81	-4071.08	1651878.36	14252063.40	39°14'51.091"N	80°57'34.253"W	12864.93	341.552	1.58	-0.10	1.57	
19666.00	89.850	342.500	6429.43	12961.47	12296.86	-4098.43	1651851.02	14252156.42	39°14'52.011"N	80°57'34.600"W	12961.87	341.567	2.31	0.03	-2.31	
19761.00	90.180	339.530	6429.41	13056.46	12386.68	-4129.33	1651820.13	14252246.20	39°14'52.899"N	80°57'34.993"W	13056.85	341.563	3.15	0.35	-3.13	
19857.00	90.090	337.200	6429.18	13152.34	12475.92	-4164.73	1651784.75	14252335.40	39°14'53.781"N	80°57'35.442"W	13152.70	341.540	2.43	-0.09	-2.43	
19952.00	89.720	335.320	6429.34	13247.00	12562.87	-4202.97	1651746.52	14252422.32	39°14'54.641"N	80°57'35.928"W	13247.29	341.502	2.02	-0.39	-1.98	
20048.00	89.690	332.900	6429.83	13342.27	12649.23	-4244.88	1651704.62	14252508.64	39°14'55.495"N	80°57'36.460"W	13342.49	341.449	2.52	-0.03	-2.52	
20145.00	89.630	331.430	6430.41	13438.08	12735.00	-4290.17	1651659.35	14252594.38	39°14'56.343"N	80°57'37.035"W	13438.22	341.382	1.52	-0.06	-1.52	
20240.00	89.910	334.200	6430.79	13532.08	12819.50	-4333.57	1651615.97	14252678.84	39°14'57.178"N	80°57'37.586"W	13532.16	341.322	2.93	0.29	2.92	
20337.00	89.380	334.560	6431.39	13628.40	12906.96	-4375.51	1651574.05	14252766.27	39°14'58.043"N	80°57'38.119"W	13628.45	341.273	0.66	-0.55	0.37	
20434.00	88.980	335.670	6432.78	13724.86	12994.94	-4416.33	1651533.25	14252854.22	39°14'58.912"N	80°57'38.637"W	13724.89	341.230	1.22	-0.41	1.14	

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Riggs Unit 2H AWP Proj: 22166'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Riggs Unit 2H
Field	Ritchie	Wellbore	Riggs Unit 2H AWB
Facility	Lynn Camp Pad		

WELLPATH DATA (259 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
20530.00	90.060	339.550	6433.58	13820.66	13083.69	-4452.88	1651496.71	14252942.92	39°14'59.790"N	80°57'39.101"W	13820.67	341.205	4.20	1.13	4.04	
20626.00	89.720	343.340	6433.77	13916.64	13174.68	-4483.43	1651466.18	14253033.88	39°15'00.689"N	80°57'39.489"W	13916.65	341.206	3.96	-0.35	3.95	
20722.00	90.030	347.570	6433.98	14012.34	13267.58	-4507.53	1651442.08	14253126.74	39°15'01.607"N	80°57'39.795"W	14012.37	341.235	4.42	0.32	4.41	
20817.00	90.150	347.930	6433.83	14106.71	13360.42	-4527.69	1651421.93	14253219.54	39°15'02.525"N	80°57'40.051"W	14106.76	341.279	0.40	0.13	0.38	
20914.00	90.060	346.760	6433.65	14203.13	13455.06	-4548.94	1651400.69	14253314.15	39°15'03.461"N	80°57'40.320"W	14203.22	341.320	1.21	-0.09	-1.21	
21011.00	89.570	345.700	6433.96	14299.74	13549.27	-4572.03	1651377.61	14253408.32	39°15'04.392"N	80°57'40.613"W	14299.86	341.354	1.20	-0.51	-1.09	
21108.00	89.570	345.650	6434.69	14396.44	13643.25	-4596.02	1651353.62	14253502.26	39°15'05.321"N	80°57'40.918"W	14396.59	341.383	0.05	0.00	-0.05	
21203.00	89.510	345.720	6435.45	14491.13	13735.30	-4619.51	1651330.15	14253594.27	39°15'06.231"N	80°57'41.216"W	14491.32	341.411	0.10	-0.06	0.07	
21298.00	89.630	344.310	6436.17	14585.91	13827.06	-4644.08	1651305.59	14253686.00	39°15'07.138"N	80°57'41.528"W	14586.13	341.434	1.49	0.13	-1.48	
21394.00	89.480	342.380	6436.91	14681.83	13919.03	-4671.59	1651278.09	14253777.93	39°15'08.047"N	80°57'41.877"W	14682.07	341.447	2.02	-0.16	-2.01	
21489.00	89.570	341.190	6437.70	14776.81	14009.26	-4701.28	1651248.41	14253868.13	39°15'08.939"N	80°57'42.254"W	14777.06	341.449	1.26	0.09	-1.25	
21584.00	89.540	339.620	6438.44	14871.80	14098.75	-4733.14	1651216.56	14253957.58	39°15'09.824"N	80°57'42.658"W	14872.04	341.442	1.65	-0.03	-1.65	
21679.00	89.510	338.190	6439.22	14966.72	14187.38	-4767.33	1651182.39	14254046.18	39°15'10.700"N	80°57'43.093"W	14966.94	341.426	1.51	-0.03	-1.51	
21773.00	89.540	338.100	6440.00	15060.59	14274.62	-4802.32	1651147.41	14254133.38	39°15'11.562"N	80°57'43.537"W	15060.78	341.406	0.10	0.03	-0.10	
21868.00	89.570	337.770	6440.74	15155.45	14362.66	-4838.01	1651111.74	14254221.39	39°15'12.432"N	80°57'43.990"W	15155.61	341.384	0.35	0.03	-0.35	
21964.00	89.570	337.930	6441.46	15251.29	14451.58	-4874.20	1651075.56	14254310.26	39°15'13.311"N	80°57'44.450"W	15251.42	341.362	0.17	0.00	0.17	
22060.00	89.480	337.190	6442.26	15347.10	14540.30	-4910.84	1651038.93	14254398.96	39°15'14.188"N	80°57'44.915"W	15347.21	341.338	0.78	-0.09	-0.77	
22141.00	89.510	337.140	6442.97	15427.90	14614.95	-4942.28	1651007.51	14254473.57	39°15'14.926"N	80°57'45.314"W	15427.99	341.316	0.07	0.04	-0.06	
22166.00	89.510	337.140	6443.19	15452.84	14637.99	-4951.99	1650997.80	14254496.60	39°15'15.154"N	80°57'45.438"W	15452.92	341.309	0.00	0.00	0.00	Projected MD at TD: 22166'

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

HOLE & CASING SECTIONS - Ref Wellbore: Riggs Unit 2H AWB Ref Wellpath: Riggs Unit 2H AWP Proj: 22166'									
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	105.00	80.00	25.00	105.00	0.00	0.00	-0.20	0.06
17.5in Open Hole	105.00	583.00	478.00	105.00	582.95	-0.20	0.06	-5.39	-2.32
13.375in Casing Surface	25.00	583.00	558.00	25.00	582.95	0.00	0.00	-5.39	-2.32
12.25in Open Hole	583.00	2548.80	1965.80	582.95	2546.93	-5.39	-2.32	-27.67	42.49
9.625in Casing Intermediate	25.00	2548.80	2523.80	25.00	2546.93	0.00	0.00	-27.67	42.49
8.75in Open Hole	2548.80	6085.00	3536.20	2546.93	6008.46	-27.67	42.49	-404.23	148.01
8.5in Open Hole	6085.00	22166.00	16081.00	6008.46	6443.19	-404.23	148.01	14637.99	-4951.99
5.5in Casing Production	25.00	22166.00	22141.00	25.00	6443.19	0.00	0.00	14637.99	-4951.99

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Riggs Unit 2H - POE - Rev-2	6387.00	23.52	61.22	1656009.00	14239888.00	39°12'50.682"N	80°56'41.822"W	point
Riggs Unit 2H - BHL - Rev-2	6411.00	14642.64	-4938.81	1651010.98	14254501.25	39°15'15.200"N	80°57'45.270"W	point
Riggs Unit 2H - LP - Rev-2	6411.00	178.78	8.12	1655955.92	14240043.20	39°12'52.217"N	80°56'42.495"W	point

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WELLPATH COMPOSITION - Ref Wellbore: Riggs Unit 2H AWB Ref Wellpath: Riggs Unit 2H AWP Proj: 22166'				
Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	550.00	Gyrodatta standard - Drop gyro or Multi-shot	01 Gyrodatta MS Gyro <17-1/2">(100'-540')	Riggs Unit 2H AWB
550.00	2513.00	OWSG MWD rev2 + HRGM	02 WFT EM <12-1/4">(540')(688'-2503')	Riggs Unit 2H AWB
2513.00	6011.00	OWSG MWD rev2 + HRGM	03 WFT EM <8-3/4">(2503')(2648'-6001')	Riggs Unit 2H AWB
6011.00	22141.00	BHI AutoTrak Curve (Short)	04 BH AT Curve <8-1/2">(6011')(6065'-22141')	Riggs Unit 2H AWB
22141.00	22166.00	Blind Drilling (std)	Projection to bit	Riggs Unit 2H AWB

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COMMENTS
<p>Wellpath general comments API: 47-085-10385-0000 BHI Job #: 109836825 Rig: Patterson 342 Duration: 06/22/2019-06/27/2019 Gyrodata MS Gyro <17-1/2">(100'-540') WFT EM <12-1/4">(540')(688'-2503') WFT EM <8-3/4">(2503')(2648'-6001') BH AT Curve <8-1/2">(6011')(6065'-22141') Middlesex: 6376' MD Burkett: 6558' MD Tully: 6637' MD Marcellus POE: 6706' MD Projected MD at TD: 22166'</p>

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