







# Actual Wellpath Report

Copper John Unit 3H AWP Proj: 14907

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Copper John Unit 3H
Field	Tyler	Wellbore	Copper John Unit 3H AWB
Facility	Stonefly Pad		

## WELLPATH DATA (179 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)	Turn Rate Comments
0.00	0.00	225.830	0.00	0.00	0.00	0.00	1662247.11	14314062.69	39°25'04.050"N	80°55'21.730"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	225.830	24.50	0.00	0.00	0.00	1662247.11	14314062.69	39°25'04.050"N	80°55'21.730"W	0.00	0.000	0.00	0.00	0.00	
109.50	0.140	225.830	109.50	0.04	-0.07	-0.07	1662247.04	14314062.62	39°25'04.049"N	80°55'21.731"W	0.10	225.830	0.16	0.16	0.16	-157.85(Syrodata MS Gyro <17-1/2"> (100'-532')
209.50	0.290	208.900	209.50	0.26	-0.38	-0.28	1662246.83	14314062.31	39°25'04.046"N	80°55'21.734"W	0.47	216.884	0.16	0.16	0.15	-16.93
309.50	0.160	208.950	309.50	0.52	-0.72	-0.47	1662246.64	14314061.97	39°25'04.043"N	80°55'21.736"W	0.86	213.274	0.13	-0.13	0.05	
409.50	0.130	231.000	409.50	0.65	-0.92	-0.63	1662246.49	14314061.77	39°25'04.041"N	80°55'21.738"W	1.11	214.512	0.06	-0.03	22.05	
509.50	0.120	229.280	509.50	0.73	-1.06	-0.80	1662246.32	14314061.63	39°25'04.040"N	80°55'21.740"W	1.32	217.062	0.01	-0.01	-1.72	
541.50	0.230	233.440	541.50	0.76	-1.12	-0.87	1662246.24	14314061.57	39°25'04.039"N	80°55'21.741"W	1.42	218.081	0.35	0.35	13.00	
572.50	0.180	252.060	572.50	0.77	-1.17	-0.97	1662246.14	14314061.52	39°25'04.038"N	80°55'21.742"W	1.52	219.729	0.27	-0.16	60.06	Syrodata MS Gyro <12-1/4"> (632')(563'-12'12')
663.50	0.260	221.580	663.50	0.87	-1.37	-1.24	1662245.87	14314061.32	39°25'04.037"N	80°55'21.746"W	1.85	222.307	0.15	0.09	-33.49	
752.50	0.380	241.040	752.50	1.01	-1.66	-1.64	1662245.48	14314061.03	39°25'04.034"N	80°55'21.751"W	2.33	224.574	0.18	0.13	21.87	
842.50	0.460	238.200	842.49	1.14	-2.00	-2.20	1662244.91	14314060.70	39°25'04.030"N	80°55'21.758"W	2.97	227.846	0.09	0.09	-3.16	
939.50	0.540	227.920	939.49	1.39	-2.51	-2.87	1662244.24	14314060.18	39°25'04.025"N	80°55'21.767"W	3.81	228.906	0.12	0.08	-10.60	
1033.50	0.690	203.040	1033.48	1.98	-3.32	-3.42	1662243.69	14314059.37	39°25'04.017"N	80°55'21.774"W	4.77	225.849	0.32	0.16	-26.47	
1127.50	1.020	224.720	1127.47	2.76	-4.44	-4.24	1662242.88	14314058.25	39°25'04.006"N	80°55'21.784"W	6.14	223.646	0.49	0.35	23.06	
1221.50	1.030	274.110	1221.46	2.78	-4.97	-5.67	1662241.45	14314057.72	39°25'04.001"N	80°55'21.802"W	7.54	228.723	0.91	0.01	52.54	
1338.50	1.160	0.570	1338.45	1.24	-3.71	-6.70	1662240.41	14314058.98	39°25'04.013"N	80°55'21.815"W	7.66	241.010	1.28	0.11	73.90	MFT EM <12-1/4"> (1212')(1329'-2517')
1433.50	1.140	352.580	1433.43	-0.53	-1.80	-6.62	1662240.49	14314060.89	39°25'04.032"N	80°55'21.814"W	6.87	254.782	0.08	-0.01	3.81	
1528.50	1.080	345.360	1528.41	-2.33	0.09	-6.68	1662240.44	14314062.78	39°25'04.051"N	80°55'21.815"W	6.68	270.736	0.24	-0.01	-12.22	
1622.50	0.930	349.440	1622.39	-4.12	1.87	-7.02	1662239.36	14314064.56	39°25'04.069"N	80°55'21.819"W	7.27	284.915	0.16	-0.06	-7.68	
1717.50	1.020	345.510	1717.38	-5.78	3.49	-7.39	1662239.73	14314066.18	39°25'04.085"N	80°55'21.824"W	8.17	295.310	0.17	-0.16	4.29	
1811.50	1.090	345.510	1811.36	-7.36	5.05	-7.74	1662239.38	14314067.74	39°25'04.100"N	80°55'21.829"W	9.24	303.151	0.12	0.10	-4.18	
1906.50	1.080	101.780	1906.36	-8.10	5.83	-7.75	1662239.36	14314068.52	39°25'04.108"N	80°55'21.829"W	9.70	306.946	1.21	-0.82	122.39	
2000.50	1.080	159.170	2000.35	-7.11	4.96	-7.25	1662239.87	14314067.65	39°25'04.099"N	80°55'21.822"W	8.78	304.410	1.03	0.89	61.05	
2094.50	1.590	151.490	2094.32	-4.94	2.99	-6.31	1662240.81	14314065.68	39°25'04.080"N	80°55'21.810"W	6.98	295.357	0.57	0.54	-8.17	
2189.50	0.830	146.400	2189.30	-2.97	1.26	-5.30	1662241.82	14314063.95	39°25'04.062"N	80°55'21.798"W	5.45	283.363	0.81	-0.80	-5.36	
2284.50	0.160	107.260	2284.30	-2.22	0.65	-4.79	1662242.32	14314063.34	39°25'04.056"N	80°55'21.791"W	4.84	277.683	0.75	-0.71	-41.20	
2378.50	0.370	303.640	2378.30	-2.39	0.78	-4.92	1662242.20	14314063.47	39°25'04.058"N	80°55'21.793"W	4.98	278.960	0.56	0.22	-174.06	
2473.50	0.830	294.930	2473.29	-3.12	1.24	-5.80	1662241.32	14314063.93	39°25'04.062"N	80°55'21.804"W	5.93	282.028	0.49	0.48	-9.17	
2526.50	0.940	296.650	2526.29	-3.70	1.59	-6.54	1662240.58	14314064.28	39°25'04.066"N	80°55'21.813"W	6.73	283.693	0.21	0.21	3.25	



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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 3H
Area	Tyler County, WV	Wellbore	Copper John Unit 3H AWB
Field	Tyler		
Facility	Stonefly Pad		

WELLPATH DATA (179 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
2634.50	1.170	303.970	2634.27	-5.23	2.61	-8.24	1662238.88	14314065.30	39°25'04.076"N	80°55'21.835"W	8.64	287.546	0.25	0.21	6.78	WFT EM <8-314">(2517)/(2625-5807)
2729.50	3.060	284.650	2729.20	-6.64	2.91	-11.57	1662235.55	14314065.60	39°25'04.079"N	80°55'21.877"W	11.93	284.123	2.40	1.99	-41.39	
2823.50	4.610	282.460	2822.99	-9.27	3.49	-17.76	1662229.36	14314066.18	39°25'04.085"N	80°55'21.956"W	18.10	281.126	2.06	1.65	18.95	
2917.50	6.510	289.820	2916.55	-15.33	6.96	-26.07	1662221.05	14314069.65	39°25'04.119"N	80°55'22.062"W	26.98	284.943	2.68	2.02	18.47	
3013.50	8.810	296.620	3011.69	-24.78	12.96	-37.37	1662209.76	14314075.64	39°25'04.178"N	80°55'22.206"W	39.55	289.127	2.44	2.40	-3.33	
3108.50	11.030	291.910	3105.27	-36.07	19.61	-52.30	1662194.63	14314082.29	39°25'04.244"N	80°55'22.396"W	55.86	290.553	2.49	2.34	-4.96	
3203.50	12.470	287.860	3198.27	-48.35	26.15	-70.50	1662176.64	14314088.83	39°25'04.309"N	80°55'22.872"W	75.19	290.350	1.75	1.52	-4.26	
3297.50	12.110	286.330	3290.12	-60.33	32.03	-89.62	1662157.53	14314099.71	39°25'04.367"N	80°55'22.872"W	95.17	289.668	0.52	-0.38	-1.63	
3392.50	11.300	284.970	3383.14	-71.48	37.24	-108.18	1662138.98	14314099.91	39°25'04.419"N	80°55'23.108"W	114.41	288.996	0.90	-0.85	-1.43	
3486.50	10.740	283.800	3475.41	-81.54	41.71	-125.58	1662121.59	14314104.38	39°25'04.463"N	80°55'23.330"W	132.32	288.372	0.64	-0.60	-1.24	
3580.50	9.730	290.680	3567.92	-91.52	46.60	-141.52	1662105.65	14314109.27	39°25'04.512"N	80°55'23.533"W	148.99	288.227	1.69	-1.07	7.32	
3674.50	10.600	291.030	3660.44	-102.30	52.51	-157.02	1662090.16	14314115.18	39°25'04.570"N	80°55'23.730"W	165.57	288.491	0.93	0.93	0.37	
3769.50	11.390	289.590	3753.70	-113.93	58.78	-174.02	1662073.17	14314121.45	39°25'04.632"N	80°55'23.947"W	183.68	288.665	0.88	0.83	-1.58	
3863.50	10.640	290.160	3845.96	-125.35	64.87	-190.91	1662056.28	14314127.54	39°25'04.693"N	80°55'24.162"W	201.63	288.768	0.81	-0.80	0.66	
3957.50	10.920	286.350	3938.31	-136.14	70.37	-207.60	1662039.60	14314133.03	39°25'04.747"N	80°55'24.374"W	219.20	288.725	0.81	0.30	-4.04	
4051.50	10.010	284.290	4030.74	-145.94	74.89	-224.06	1662023.14	14314137.55	39°25'04.792"N	80°55'24.584"W	236.25	288.482	1.05	-0.97	-2.19	
4146.50	10.200	289.610	4124.27	-155.88	79.75	-239.99	1662007.22	14314142.41	39°25'04.840"N	80°55'24.787"W	252.89	288.383	1.00	0.20	5.60	
4240.50	10.890	287.970	4216.68	-166.57	85.29	-256.27	1661990.94	14314147.94	39°25'04.895"N	80°55'24.994"W	270.09	288.407	0.80	0.73	-1.74	
4335.50	11.310	285.350	4309.91	-177.40	90.52	-273.79	1661973.43	14314153.18	39°25'04.947"N	80°55'25.218"W	288.37	288.295	0.69	0.44	-2.76	
4430.50	10.370	284.410	4403.21	-187.54	95.12	-291.06	1661956.17	14314157.77	39°25'04.993"N	80°55'25.438"W	306.21	288.097	1.01	-0.99	-0.99	
4524.50	10.820	284.300	4495.61	-197.21	99.40	-307.80	1661939.44	14314162.05	39°25'05.035"N	80°55'25.651"W	323.45	287.897	0.48	0.48	-0.12	
4618.50	11.130	283.670	4587.89	-207.12	103.72	-325.17	1661922.08	14314166.37	39°25'05.078"N	80°55'25.872"W	341.31	287.692	0.35	0.33	-0.67	
4713.50	10.650	289.940	4681.18	-217.76	108.88	-342.33	1661904.92	14314171.53	39°25'05.129"N	80°55'26.091"W	359.23	287.644	1.34	-0.51	6.60	
4808.50	9.670	291.300	4774.69	-228.59	114.78	-358.02	1661889.24	14314177.42	39°25'05.187"N	80°55'26.291"W	375.96	287.775	1.06	-1.03	1.43	
4902.50	10.100	289.190	4867.29	-238.94	120.35	-373.16	1661874.11	14314183.00	39°25'05.243"N	80°55'26.483"W	392.08	287.876	0.60	0.46	-2.24	
4997.50	11.510	288.280	4960.61	-249.99	126.06	-390.02	1661857.25	14314188.70	39°25'05.299"N	80°55'26.698"W	409.89	287.912	1.49	1.48	-0.96	
5091.50	11.030	288.500	5052.79	-261.32	131.86	-407.46	1661839.62	14314194.50	39°25'05.357"N	80°55'26.920"W	428.26	287.932	0.51	-0.51	0.23	
5185.50	11.890	284.740	5144.92	-272.35	137.18	-425.35	1661821.94	14314199.81	39°25'05.409"N	80°55'27.148"W	446.92	287.875	1.21	0.91	-4.00	
5280.50	11.800	283.840	5237.90	-283.24	141.99	-444.25	1661803.05	14314204.62	39°25'05.457"N	80°55'27.389"W	466.39	287.725	0.22	-0.09	-0.95	
5375.50	11.120	284.700	5331.00	-293.77	146.64	-462.54	1661784.76	14314209.27	39°25'05.503"N	80°55'27.622"W	485.23	287.590	0.74	-0.72	0.91	



# Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 3H
Area	Tyler County, WV	Wellbore	Copper John Unit 3H AWB
Field	Tyler		
Facility	Stoneyly Pad		

WELLPATH DATA (179 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (IUS, ft)	Grid North (IUS, ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
5469.50	11.090	277.470	5423.25	-303.02	150.11	-480.27	1661767.04	14314212.74	39°25'05.538"N	80°55'27.848"W	503.18	287.357	1.48	-0.03	-7.69	
5584.50	10.700	272.560	5516.54	-310.52	151.70	-498.14	1661749.17	14314214.33	39°25'05.553"N	80°55'28.076"W	520.73	286.937	1.06	-0.41	-5.17	
5627.50	10.530	270.240	5578.46	-314.69	151.98	-509.74	1661737.58	14314214.61	39°25'05.556"N	80°55'28.223"W	531.91	286.602	0.73	-0.27	-3.68	
5659.50	11.500	259.400	5609.87	-316.19	151.41	-515.80	1661731.52	14314214.04	39°25'05.551"N	80°55'28.301"W	537.56	286.359	7.13	3.03	-33.87	
5690.50	12.370	244.840	5640.21	-316.36	149.43	-521.84	1661725.48	14314212.06	39°25'05.531"N	80°55'28.378"W	542.82	285.979	10.08	2.81	-46.97	
5722.50	13.560	234.460	5671.40	-315.01	145.79	-528.00	1661719.33	14314208.42	39°25'05.495"N	80°55'28.456"W	547.76	285.436	8.16	3.72	-32.44	
5753.50	14.770	226.020	5701.46	-312.39	140.93	-533.80	1661713.53	14314203.56	39°25'05.447"N	80°55'28.530"W	552.09	284.789	7.71	3.90	-27.23	
5785.50	15.210	215.270	5732.37	-308.29	134.67	-539.16	1661708.17	14314197.31	39°25'05.386"N	80°55'28.598"W	555.73	284.024	8.78	1.38	-33.59	
5816.50	16.510	205.050	5762.20	-302.83	127.36	-543.38	1661703.96	14314190.00	39°25'05.313"N	80°55'28.652"W	558.10	283.191	9.92	4.19	-32.97	
5847.00	17.480	198.870	5791.37	-296.16	119.10	-546.69	1661700.64	14314181.74	39°25'05.232"N	80°55'28.695"W	559.52	282.290	6.72	3.18	-20.26	BHI AT Curve <8-1/2"> (5816.5)-(5847-14817)
5939.00	21.680	190.070	5878.05	-270.60	89.28	-554.14	1661693.20	14314151.94	39°25'04.937"N	80°55'28.790"W	561.28	279.153	5.55	4.54	-9.57	
6033.00	29.560	182.650	5962.71	-234.02	48.97	-558.25	1661689.09	14314111.64	39°25'04.539"N	80°55'28.843"W	560.39	275.013	9.06	8.40	-7.89	
6126.00	38.020	179.390	6040.00	-185.63	-2.68	-559.01	1661688.33	14314080.01	39°25'04.028"N	80°55'28.850"W	559.10	269.725	9.30	9.10	-3.51	
6154.00†	39.020	178.882	6061.91	-169.13	-20.12	-558.74	1661688.60	14314042.58	39°25'03.856"N	80°55'28.850"W	559.10	267.938	3.75	3.57	-1.81	Sycamore. 6154MD / 6062TVD
6173.00	39.700	178.550	6076.60	-157.69	-32.17	-555.47	1661688.87	14314030.54	39°25'03.737"N	80°55'28.846"W	558.40	266.704	3.75	3.58	-1.75	
6220.00	39.810	177.870	6112.73	-129.09	-62.21	-557.53	1661689.81	14314000.51	39°25'03.440"N	80°55'28.835"W	560.99	263.633	0.95	0.23	-1.45	
6266.00	41.420	175.050	6147.65	-100.33	-92.03	-555.67	1661691.67	14313970.64	39°25'03.144"N	80°55'28.811"W	563.25	260.590	5.31	3.50	-6.13	
6313.00	45.180	173.720	6181.85	-69.06	-124.16	-552.51	1661694.83	14313938.58	39°25'02.828"N	80°55'28.811"W	566.28	257.335	8.23	8.00	-2.83	
6360.00	49.150	172.280	6213.80	-35.44	-158.36	-548.29	1661699.04	14313904.40	39°25'02.489"N	80°55'28.718"W	570.70	253.890	8.74	8.45	-3.08	
6363.00†	49.410	172.196	6215.76	-33.22	-160.61	-547.99	1661699.35	14313902.15	39°25'02.467"N	80°55'28.714"W	571.04	253.665	8.94	8.69	-2.79	Middlesex: 6363MD / 6216TVD
6407.00	53.240	171.040	6243.25	0.47	-194.59	-542.97	1661704.36	14313868.18	39°25'02.131"N	80°55'28.650"W	576.78	250.284	8.94	8.70	-2.63	
6454.00	59.570	170.540	6295.15	77.60	-271.78	-536.77	1661710.76	14313830.30	39°25'01.757"N	80°55'28.569"W	584.77	246.574	7.31	7.00	-2.60	
6501.00	61.446	170.953	6309.92	103.28	-297.55	-525.58	1661721.75	14313765.26	39°25'01.114"N	80°55'28.483"W	595.42	242.842	6.60	6.47	1.53	
6548.00†	62.510	171.180	6317.91	118.02	-312.38	-523.25	1661724.08	14313750.44	39°25'00.967"N	80°55'28.400"W	603.96	240.484	6.37	6.25	1.38	Burket: 6531MD / 6310TVD
6591.00†	65.272	172.500	6336.83	155.85	-350.59	-517.77	1661729.55	14313712.24	39°25'00.589"N	80°55'28.331"W	609.40	239.163	6.37	6.26	1.34	
6595.00	65.530	172.620	6338.89	159.41	-354.20	-517.30	1661730.02	14313708.63	39°25'00.554"N	80°55'28.325"W	626.94	235.897	6.99	6.42	3.07	Tully: 6591MD / 6337TVD
6642.00	68.450	172.150	6358.86	201.71	-397.07	-511.57	1661735.75	14313665.78	39°25'00.130"N	80°55'28.252"W	647.59	232.182	6.28	6.21	-1.00	
6647.00†	69.028	172.076	6358.88	206.27	-401.69	-510.93	1661736.39	14313661.16	39°25'00.084"N	80°55'28.244"W	649.92	231.826	11.60	11.52	-1.48	POE Marcellus: 6647MD / 6357TVD
6688.00	73.750	171.490	6371.76	244.34	-440.13	-505.37	1661741.94	14313622.73	39°24'59.704"N	80°55'28.174"W	670.16	228.947	11.60	11.52	-1.43	



# Actual Wellpath Report

Copper John Unit 3H AWP Proj: 14907  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Copper John Unit 3H
Field	Tyler	Wellbore	Copper John Unit 3H AWB
Facility	Stonefly Pad		

## WELLPATH DATA (179 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
6735.00	78.510	171.540	6383.02	289.09	-485.25	-498.64	1661748.67	14313577.63	39°24'59.258"N	80°55'28.089"W	695.78	225.780	10.13	10.13	0.11	
6782.00	83.370	172.070	6390.42	334.56	-531.18	-492.03	1661755.28	14313531.73	39°24'58.804"N	80°55'28.005"W	724.05	222.809	10.40	10.34	1.13	
6845.00	90.460	173.100	6393.81	396.00	-593.52	-483.92	1661763.39	14313469.41	39°24'58.188"N	80°55'27.902"W	765.80	219.192	11.37	11.25	1.63	
6876.00	90.120	171.720	6393.65	426.31	-624.25	-479.82	1661767.48	14313438.69	39°24'57.884"N	80°55'27.850"W	787.35	217.547	4.58	-1.10	-4.45	
6970.00	90.430	167.080	6393.20	519.11	-716.62	-462.54	1661784.76	14313346.36	39°24'56.971"N	80°55'27.631"W	852.93	212.840	4.95	0.33	-4.94	
7063.00	90.220	164.270	6392.67	611.69	-806.71	-439.53	1661807.76	14313256.30	39°24'56.081"N	80°55'27.339"W	918.68	208.583	3.03	-0.23	-3.02	
7156.00	90.340	162.330	6392.21	706.56	-897.70	-412.23	1661835.05	14313165.35	39°24'55.181"N	80°55'26.992"W	987.83	204.865	2.05	0.13	-2.04	
7251.00	90.120	158.180	6391.83	799.54	-985.21	-380.82	1661866.48	14313077.87	39°24'54.316"N	80°55'26.593"W	1086.25	201.133	4.47	-0.24	-4.46	
7345.00	90.250	156.590	6391.53	893.41	-1071.98	-344.68	1661902.58	14312991.14	39°24'53.458"N	80°55'26.133"W	1126.03	197.824	1.70	0.14	-1.69	
7439.00	90.310	157.230	6391.07	987.24	-1158.45	-307.81	1661939.43	14312904.70	39°24'52.603"N	80°55'25.665"W	1198.65	194.880	0.68	0.06	0.68	
7533.00	90.250	158.070	6390.61	1081.14	-1245.39	-272.07	1661975.16	14312817.80	39°24'51.743"N	80°55'25.210"W	1274.76	192.323	0.90	-0.06	0.89	
7627.00	90.340	155.770	6390.13	1174.96	-1331.86	-235.22	1662011.99	14312731.37	39°24'50.889"N	80°55'24.742"W	1352.47	190.016	2.45	0.10	-2.45	
7721.00	90.120	155.760	6389.75	1268.66	-1417.57	-196.63	1662050.56	14312645.69	39°24'50.041"N	80°55'24.251"W	1431.14	187.897	0.24	-0.23	-0.02	
7815.00	90.120	158.620	6389.55	1362.51	-1504.21	-160.18	1662087.00	14312559.09	39°24'49.185"N	80°55'23.787"W	1512.71	186.079	3.05	0.00	3.05	
7909.00	90.090	161.240	6389.38	1456.50	-1592.49	-127.93	1662119.24	14312470.84	39°24'48.312"N	80°55'23.377"W	1597.62	184.593	2.79	-0.03	2.79	
8003.00	90.180	161.540	6389.16	1550.49	-1681.57	-97.93	1662149.22	14312381.79	39°24'47.431"N	80°55'22.996"W	1684.42	183.333	0.33	0.10	0.32	
8097.00	90.150	162.900	6388.89	1644.43	-1771.08	-69.23	1662177.91	14312292.32	39°24'46.546"N	80°55'22.631"W	1772.43	182.238	1.45	-0.03	1.45	
8191.00	90.060	165.580	6388.64	1738.26	-1861.34	-42.97	1662204.16	14312202.10	39°24'45.654"N	80°55'22.298"W	1861.83	181.323	1.87	0.00	1.87	
8285.00	90.060	165.580	6388.47	1831.93	-1952.18	-18.83	1662228.29	14312111.29	39°24'44.756"N	80°55'21.991"W	1952.27	180.553	0.98	-0.10	0.98	
8379.00	90.890	164.570	6387.69	1925.60	-2043.01	5.37	1662252.49	14312020.50	39°24'43.858"N	80°55'21.684"W	2043.01	179.849	1.39	0.88	-1.07	
8473.00	90.340	159.610	6386.68	2019.52	-2132.43	34.22	1662281.33	14311931.11	39°24'42.974"N	80°55'21.317"W	2132.71	179.081	5.25	-0.58	-5.21	
8566.00	90.120	161.350	6386.16	2206.51	-2308.22	97.99	1662313.67	14311843.96	39°24'42.112"N	80°55'20.906"W	2220.62	178.282	0.28	-0.27	-0.06	
8754.00	90.400	163.860	6385.73	2300.43	-2397.91	126.09	1662343.06	14311755.40	39°24'41.236"N	80°55'20.507"W	2310.30	177.569	1.85	0.03	1.85	
8849.00	90.150	164.290	6385.28	2395.22	-2489.26	152.15	1662369.21	14311665.74	39°24'40.349"N	80°55'20.150"W	2401.22	176.990	2.69	0.30	2.67	
8944.00	90.120	165.170	6385.05	2489.94	-2580.91	177.17	1662424.22	14311574.43	39°24'39.446"N	80°55'19.819"W	2493.91	176.502	0.52	-0.26	0.45	
9039.00	90.220	166.170	6384.77	2584.53	-2672.95	200.69	1662447.72	14311482.82	39°24'38.540"N	80°55'19.501"W	2586.98	176.073	0.93	-0.03	0.93	
9134.00	90.400	164.580	6384.26	2679.15	-2764.87	224.67	1662471.70	14311390.81	39°24'37.630"N	80°55'19.202"W	2680.47	175.706	1.06	0.11	1.05	
9229.00	90.620	159.150	6383.41	2774.08	-2855.11	254.23	1662501.24	14311298.93	39°24'36.722"N	80°55'18.898"W	2773.98	175.354	1.68	0.19	-1.67	
9323.00	90.090	161.070	6382.83	2868.07	-2943.50	286.21	1662533.21	14311208.73	39°24'35.829"N	80°55'18.522"W	2866.41	174.912	5.72	0.23	-5.72	
								14311120.37	39°24'34.955"N	80°55'18.116"W	2957.38	174.446	2.12	-0.56	2.04	



# Actual Wellpath Report

Copper John Unit 3H AWP Proj: 14907

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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	Stonely Pad
Slot	Slot #09
Well	Copper John Unit 3H
Wellbore	Copper John Unit 3H AWB

WELLPATH DATA (179 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
9417.00	90.340	160.570	6382.48	2962.07	-3032.28	317.09	1662564.08	14311031.63	39°24'34.078"N	80°55'17.723"W	3048.81	174.030	0.59	0.27	-0.53	
9512.00	90.400	157.180	6381.86	3057.02	-3120.88	351.32	1662598.29	14310943.06	39°24'33.202"N	80°55'17.288"W	3140.59	173.577	3.57	0.06	-3.57	
9607.00	90.150	155.460	6381.41	3151.79	-3207.88	389.47	1662636.43	14310856.10	39°24'32.342"N	80°55'16.803"W	3231.43	173.078	1.83	-0.26	-1.81	
9702.00	90.120	157.470	6381.18	3248.56	-3294.97	427.41	1662674.35	14310769.04	39°24'31.480"N	80°55'16.321"W	3322.57	172.609	2.12	-0.03	2.12	
9797.00	90.030	157.950	6381.06	3341.46	-3382.87	463.44	1662710.37	14310681.18	39°24'30.611"N	80°55'15.963"W	3414.47	172.199	0.51	-0.09	0.51	
9892.00	89.720	158.560	6381.27	3436.40	-3471.11	498.63	1662745.55	14310592.97	39°24'29.739"N	80°55'15.415"W	3506.74	171.825	0.72	-0.33	0.64	
9988.00	89.660	155.280	6381.79	3532.22	-3559.41	536.26	1662783.16	14310504.71	39°24'28.866"N	80°55'14.937"W	3599.58	171.432	3.42	-0.06	-3.42	
10083.00	90.370	156.580	6381.76	3626.93	-3646.15	575.01	1662821.89	14310418.00	39°24'28.008"N	80°55'14.444"W	3691.21	171.038	1.56	0.75	1.37	
10178.00	90.550	159.550	6381.00	3721.85	-3734.26	610.49	1662857.36	14310329.93	39°24'27.177"N	80°55'13.993"W	3783.83	170.715	3.13	0.19	3.13	
10272.00	90.180	159.500	6380.40	3815.83	-3822.32	643.37	1662890.23	14310241.91	39°24'26.267"N	80°55'13.575"W	3876.09	170.446	0.40	-0.39	-0.09	
10368.00	90.280	160.540	6380.01	3911.83	-3912.54	676.17	1662923.01	14310151.72	39°24'25.376"N	80°55'12.786"W	3970.54	170.195	1.09	0.10	1.08	
10463.00	90.180	163.530	6379.63	4006.78	-4002.90	705.47	1662956.30	14310061.40	39°24'24.481"N	80°55'12.455"W	4064.59	170.005	3.15	-0.11	3.15	
10558.00	90.460	164.580	6379.10	4101.57	-4094.24	731.57	1662978.39	14309970.10	39°24'23.578"N	80°55'12.123"W	4159.08	169.869	1.14	0.29	1.11	
10653.00	90.950	163.450	6377.93	4196.37	-4185.56	757.73	1663004.54	14309878.81	39°24'22.675"N	80°55'11.763"W	4253.59	169.739	1.30	0.52	-1.19	
10747.00	90.740	161.520	6376.56	4290.29	-4275.18	786.01	1663032.81	14309789.22	39°24'21.789"N	80°55'11.365"W	4346.84	169.582	2.07	-0.22	-2.05	
10843.00	90.650	160.420	6375.38	4386.27	-4365.93	817.31	1663064.10	14309698.51	39°24'20.892"N	80°55'11.066"W	4441.77	169.397	1.15	-0.09	-1.15	
10937.00	90.650	160.520	6374.32	4480.27	-4454.52	848.73	1663095.51	14309609.96	39°24'20.016"N	80°55'10.966"W	4534.65	169.213	0.11	0.00	0.11	
11031.00	90.710	160.910	6373.20	4574.26	-4543.24	879.77	1663126.54	14309521.28	39°24'19.139"N	80°55'10.572"W	4627.63	169.041	0.42	0.06	0.41	
11126.00	90.770	162.240	6371.97	4669.23	-4633.36	909.80	1663156.55	14309431.19	39°24'18.248"N	80°55'10.190"W	4721.83	168.891	1.40	0.06	1.40	
11220.00	90.800	163.320	6370.69	4763.13	-4723.13	937.62	1663184.36	14309341.45	39°24'17.361"N	80°55'09.837"W	4815.30	168.772	1.15	0.03	1.15	
11315.00	90.710	160.790	6369.43	4858.07	-4813.50	966.89	1663213.61	14309251.13	39°24'16.467"N	80°55'09.465"W	4909.64	168.642	2.66	-0.09	-2.66	
11409.00	90.580	161.950	6368.38	4952.05	-4902.56	996.91	1663243.63	14309162.10	39°24'15.587"N	80°55'09.084"W	5002.90	168.506	1.24	-0.14	1.23	
11504.00	90.800	161.530	6367.23	5047.01	-4992.77	1026.68	1663273.38	14309071.92	39°24'14.695"N	80°55'08.705"W	5097.24	168.380	0.50	0.23	-0.44	
11599.00	89.940	160.830	6366.62	5142.00	-5082.69	1057.32	1663304.01	14308982.04	39°24'13.806"N	80°55'08.316"W	5191.50	168.249	1.17	-0.91	-0.74	
11694.00	90.030	160.590	6366.64	5236.99	-5172.36	1088.71	1663335.38	14308892.41	39°24'12.920"N	80°55'07.917"W	5285.69	168.114	0.27	0.03	-0.25	
11788.00	90.030	159.110	6366.59	5330.99	-5260.60	1121.09	1663367.75	14308804.20	39°24'12.047"N	80°55'07.506"W	5378.73	167.970	1.57	0.00	-1.57	
11882.00	89.660	159.020	6366.85	5424.97	-5348.40	1154.67	1663401.33	14308716.44	39°24'11.179"N	80°55'07.079"W	5471.62	167.817	0.41	-0.39	-0.10	
11977.00	89.970	159.610	6367.15	5519.95	-5437.27	1188.23	1663434.87	14308627.60	39°24'10.300"N	80°55'06.652"W	5565.59	167.673	0.70	0.33	0.62	
12071.00	89.910	159.760	6367.25	5613.94	-5525.42	1220.87	1663467.49	14308539.49	39°24'09.429"N	80°55'06.238"W	5658.69	167.540	0.17	-0.06	0.16	
12166.00	90.120	156.830	6367.23	5708.87	-5613.68	1256.00	1663502.61	14308451.27	39°24'08.556"N	80°55'05.791"W	5752.47	167.388	3.09	0.22	-3.08	



# Actual Wellpath Report

Copper John Unit 3H AWP Proj: 14907

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 3H
Area	Tyler County, WV	Wellbore	Copper John Unit 3H AWB
Field	Tyler		
Facility	Stonerly Pad		

WELLPATH DATA (179 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude (°)	Longitude (ft)	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
12261.00	90.710	159.750	6366.54	5803.80	-5701.93	1291.13	1663537.73	143038363.05	39°24'07.684"N	80°55'05.345"W	5846.28	167.241	3.14	0.62	3.07	
12355.00	90.060	161.830	6365.91	5897.79	-5790.69	1322.06	1663568.64	14308274.33	39°24'06.806"N	80°55'04.952"W	5939.69	167.139	2.32	-0.69	2.21	
12450.00	90.030	160.240	6365.83	5992.78	-5880.53	1352.93	1663599.50	14308184.53	39°24'05.918"N	80°55'04.559"W	6034.15	167.043	1.67	-0.03	-1.67	
12545.00	89.940	158.570	6365.86	6087.76	-5969.45	1386.35	1663632.91	14308095.64	39°24'05.039"N	80°55'04.135"W	6128.32	166.925	1.76	-0.09	-1.76	
12641.00	89.720	156.170	6366.14	6183.63	-6058.05	1423.28	1663669.83	14308007.07	39°24'04.163"N	80°55'03.665"W	6223.00	166.779	2.51	-0.23	-2.50	
12735.00	89.910	159.680	6366.45	6277.53	-6145.15	1458.60	1663705.13	14307920.01	39°24'03.302"N	80°55'03.216"W	6315.88	166.647	3.74	0.20	3.73	
12829.00	90.030	162.150	6366.50	6371.52	-6233.97	1498.34	1663735.85	14307831.22	39°24'02.423"N	80°55'02.826"W	6409.41	166.564	2.63	0.13	2.63	
12924.00	89.880	161.310	6366.57	6466.49	-6324.18	1519.12	1663765.62	14307741.04	39°24'01.532"N	80°55'02.448"W	6504.08	166.493	0.90	-0.16	-0.88	
13019.00	89.690	160.450	6366.93	6561.48	-6413.94	1550.24	1663796.73	14307651.32	39°24'00.644"N	80°55'02.052"W	6598.63	166.412	0.93	-0.20	-0.91	
13113.00	89.630	161.570	6367.48	6655.47	-6502.82	1609.77	1663827.30	14307562.48	39°23'59.765"N	80°55'01.664"W	6692.21	166.337	1.19	-0.06	1.19	
13208.00	89.690	162.950	6368.05	6750.41	-6593.30	1659.82	1663858.24	14307472.03	39°23'58.871"N	80°55'01.296"W	6786.97	166.280	1.45	0.06	1.45	
13302.00	89.660	162.140	6368.58	6844.34	-6682.97	1637.96	1663884.44	14307382.40	39°23'57.984"N	80°55'00.938"W	6880.77	166.229	0.86	-0.03	-0.86	
13397.00	89.690	159.940	6369.12	6939.33	-6772.81	1668.83	1663915.27	14307292.60	39°23'57.096"N	80°55'00.546"W	6975.38	166.158	2.32	0.03	-2.32	
13492.00	89.780	164.030	6369.56	7034.27	-6863.13	1698.20	1663944.63	14307202.31	39°23'56.203"N	80°55'00.173"W	7070.11	166.102	4.31	0.09	4.31	
13587.00	89.880	167.570	6369.84	7128.82	-6955.22	1721.50	1663967.92	14307110.27	39°23'55.293"N	80°54'59.877"W	7165.10	166.098	3.73	0.11	3.73	
13682.00	90.090	164.940	6369.87	7223.30	-7047.49	1744.07	1663990.49	14307018.03	39°23'54.381"N	80°54'59.591"W	7260.09	166.100	2.78	0.22	-2.77	
13778.00	89.910	157.860	6369.87	7319.22	-7138.41	1774.67	1664021.07	14306927.14	39°23'53.482"N	80°54'59.202"W	7355.71	166.039	7.38	-0.19	-7.37	
13872.00	89.690	155.900	6370.20	7413.05	-7224.86	1811.58	1664057.97	14306840.73	39°23'52.627"N	80°54'58.733"W	7448.52	165.924	2.10	-0.23	-2.08	
13967.00	89.820	157.590	6370.60	7507.86	-7312.14	1849.09	1664095.46	14306753.49	39°23'51.764"N	80°54'58.256"W	7542.31	165.809	1.78	0.14	1.78	
14061.00	89.780	157.860	6370.93	7601.76	-7399.12	1884.72	1664131.07	14306666.54	39°23'50.904"N	80°54'57.803"W	7635.39	165.709	0.29	-0.04	0.29	
14156.00	89.970	158.580	6371.14	7696.70	-7487.34	1919.97	1664166.31	14306578.36	39°23'50.032"N	80°54'57.355"W	7729.59	165.618	0.78	0.20	0.76	
14249.00	90.090	159.910	6371.09	7789.68	-7574.30	1952.92	1664199.25	14306491.43	39°23'49.172"N	80°54'56.936"W	7822.02	165.542	1.44	0.13	1.43	
14344.00	90.490	161.690	6370.61	7884.67	-7664.01	1984.16	1664230.48	14306401.75	39°23'48.285"N	80°54'56.540"W	7916.69	165.485	1.92	0.42	1.87	
14433.00	90.180	161.760	6370.05	7979.64	-7754.22	2013.95	1664260.26	14306311.58	39°23'47.393"N	80°54'56.161"W	8011.49	165.441	0.33	-0.33	0.07	
14533.00	90.030	161.270	6369.88	8073.62	-7843.37	2043.75	1664290.05	14306222.47	39°23'46.512"N	80°54'55.783"W	8105.27	165.395	0.55	-0.16	-0.52	
14628.00	89.850	158.280	6369.88	8168.60	-7932.50	2076.59	1664322.87	14306133.37	39°23'45.631"N	80°54'55.365"W	8199.81	165.330	3.15	-0.19	-3.15	
14723.00	89.910	157.220	6370.18	8263.50	-8020.43	2112.56	1664358.83	14306045.48	39°23'44.761"N	80°54'54.908"W	8293.98	165.244	1.12	0.06	-1.12	
14817.00	89.850	158.520	6370.38	8357.42	-8107.50	2147.97	1664394.23	14305958.44	39°23'43.900"N	80°54'54.456"W	8387.21	165.161	1.38	-0.06	1.38	
14907.00	89.850	158.520	6370.61	8447.37	-8191.25	2180.93	1664427.17	14305874.73	39°23'43.072"N	80°54'54.039"W	8476.62	165.091	0.00	0.00	0.00	Projected MD @ TD: 14907MD / 6371TVD

HOLE & CASING SECTIONS - Ref Wellbore: Copper John Unit 3H AWB Ref Wellpath: Copper John Unit 3H AWP Proj: 14907									
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	24.50	104.50	80.00	24.50	104.50	0.00	0.00	-0.06	-0.07
13.375in Casing Surface	24.50	585.90	561.40	24.50	585.90	0.00	0.00	-1.18	-1.01
9.625in Casing Intermediate	24.50	2610.20	2585.70	24.50	2609.97	0.00	0.00	2.34	-7.84

TARGETS				
Name	TVD (ft)	North (ft)	East (ft)	Interval (ft)
Copper John Unit 3H POE Rev-3	6362.00	-392.97	-525.16	1661722.17
				14313669.88
				39°25'00.170"N
				80°55'28.426"W
				point



**TARGETS**

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Copper John Unit 3H BHL Rev-3	6394.00	-8190.81	2182.60	1664428.84	14305875.17	39°23'43.077"N	80°54'54.018"W	point
Copper John Unit 3H LP Rev-3	6394.00	-572.28	-497.20	1661750.11	14313490.64	39°24'58.398"N	80°55'28.071"W	point

**WELLPATH COMPOSITION - Ref Wellbore: Copper John Unit 3H AWB Ref Wellpath: Copper John Unit 3H AWP Proj: 14907'**

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	541.50	Gyrodata standard - Drop gyro or Multi-shot	01_Gyrodata MS Gyro <17-1/2">(100'-532')	Copper John Unit 3H AWB
541.50	1221.50	Gyrodata standard - Drop gyro or Multi-shot	02_Gyrodata MS Gyro <12-1/4">(532')(563'-1212')	Copper John Unit 3H AWB
1221.50	2526.50	SCWSA MWD, Rev 4 (Standard)	03_WFT EM <12-1/4">(1212')(1329'-2517')	Copper John Unit 3H AWB
2526.50	5816.50	SCWSA MWD, Rev 4 (Standard)	04_WFT EM <8-3/4">(2517')(2625'-5807')	Copper John Unit 3H AWB
5816.50	14817.00	BHI AutoTrak Curve (Short)	05_BHI AT Curve <8-1/2">(5816.5')(5847'-14817')	Copper John Unit 3H AWB
14817.00	14907.00	Blind Drilling (std)	Projection to bit	Copper John Unit 3H AWB



# Actual Wellpath Report

Copper John Unit 3H AWP Proj: 14907

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Copper John Unit 3H
Field	Tyler	Wellbore	Copper John Unit 3H AWB
Facility	Stonefly Pad		

COMMENTS
<p><b>Wellpath general comments</b>                      API: 47-095-02406-0000                      BH Job #: 8962226                      Rig: Frontier 22                      Duration: 01/12/18 - 01/16/18                      Gyrodata MS Gyro &lt;17-1/2"&gt;(100'-532')                      Gyrodata MS Gyro &lt;12-1/4"&gt;(532')(563'-1212')                      WFT EM &lt;12-1/4"&gt;(1212')(1329-2517)                      WFT EM &lt;8-3/4"&gt;(2517)(2625-5807)                      BHI AT Curve &lt;8-1/2"&gt; (5816.5')(5847'-14817')                      Sycamore: 6154'MD / 6062'TVD                      Middlesex: 6363'MD / 6216'TVD                      Burket: 6531'MD / 6310'TVD                      Tully: 6591'MD / 6337'TVD                      POE Marcellus: 6647'MD / 6357'TVD                      Projected MD @ TD: 14907'MD / 6371'TVD</p>

04/05/2019