



ANTERO RESOURCES CORPORATION

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

Slot: Slot #08
 Well: Copper John Unit 2H
 Wellbore: Copper John Unit 2H PWB

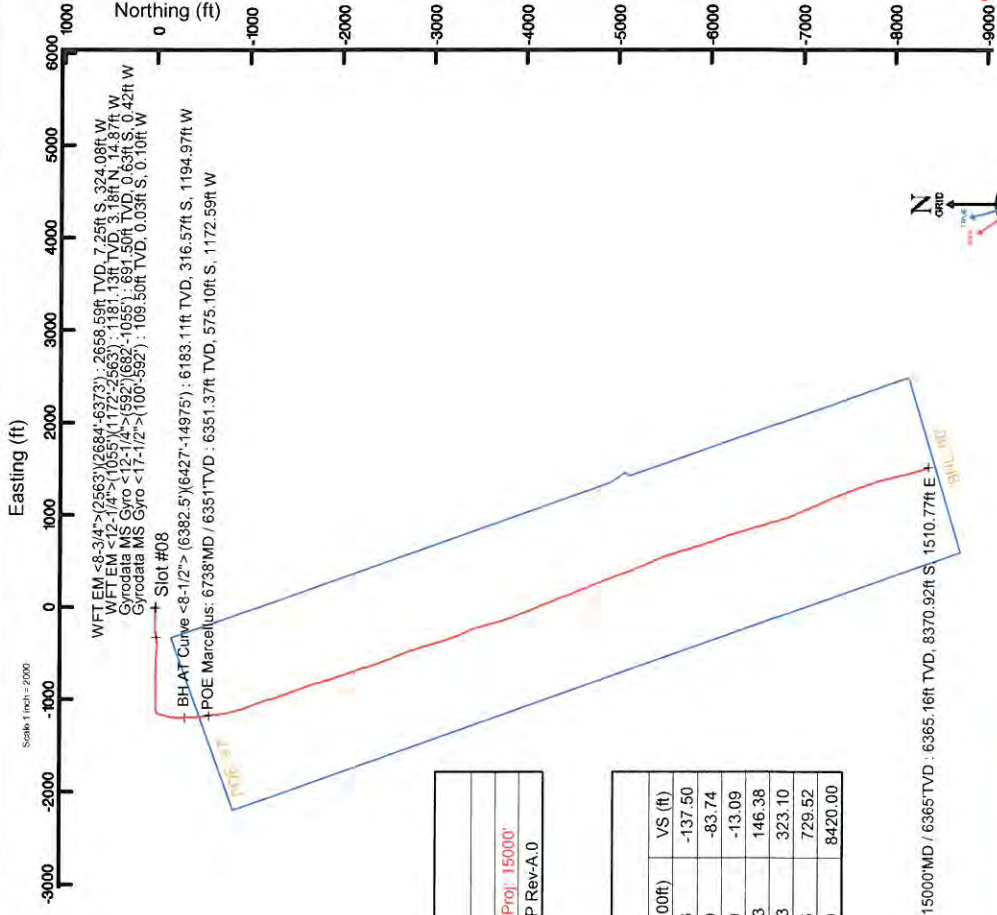


Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Stonely Pad	1662255.770	14314034.390	39°25'03.770"N	80°55'21.620"W
Slot	Local N (ft)	Local E (ft)	Latitude	Longitude
Slot #08	38.44	-11.02	39°25'04.150"N	80°55'21.760"W
Comment	Copper John Unit 2H			
Frontier 22 (RKB) to Ground level (At Slot: Slot #08)	24.5ft			
Mean Sea Level to Ground level (At Slot: Slot #08)	-982ft			
Frontier 22 (RKB) to Mean Sea Level	1006.5ft			

Plot reference wellpath is Copper John Unit 2H PWB Rev-A.0
 True vertical depths are referenced to Frontier 22 (RKB)
 Measured depths are referenced to Frontier 22 (RKB)
 Frontier 22 (RKB) to Mean Sea Level: 1006.5 feet
 Mean Sea Level to Ground level (At Slot: Slot #08): -982 feet
 Coordinates are in feet referenced to Slot

Grid System: NAD27 / UTM Zone 17 North, US feet
 North Reference: Grid north
 Scale: True distance
 Depths are in feet
 Created by: micrebit on 2018-05-11
 Database: WA_MPL_EASTERNUS_Defn



WFT EM <8-3/4">(2563)(2684-6373) : 2658.59ft TVD, 7.25ft S, 324.08ft W
 WFT EM <12-1/4">(1055)(1172-2563) : 1181.13ft TVD, 8.01ft S, 137.87ft W
 Gyrodata MS Gyro <12-1/4">(592)(682-1055) : 691.50ft TVD, 0.63ft S, 0.42ft W
 Gyrodata MS Gyro <17-1/2">(100-592) : 109.50ft TVD, 0.03ft S, 0.10ft W
 Slot #08
 BH AT Curve <8-1/2">(6382.5)(6427-14975) : 6183.11ft TVD, 316.57ft S, 1194.97ft W
 POE Marcellus: 6738ft TVD, 6351ft TVD, 6351.37ft TVD, 575.10ft S, 1172.59ft W

Gyrodata MS Gyro <17-1/2">(100-592) : 0.14° Inc, 109.50ft MD, 109.50ft TVD, -0.01ft VS
 Gyrodata MS Gyro <12-1/4">(592)(682-1055) : 0.16° Inc, 691.50ft MD, 691.50ft TVD, 0.45ft VS
 WFT EM <12-1/4">(1055)(1172-2563) : 4.54° Inc, 1181.13ft MD, 1181.13ft TVD, -8.01ft VS

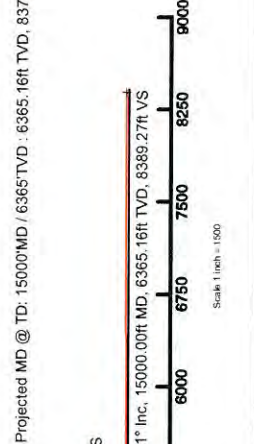
Well Data

Slot	Well	Wellbore	Wellpath
Slot #08	Copper John Unit 2H	Copper John Unit 2H AWB	Copper John Unit 2H AWP Prof: 15000'
Slot #08	Copper John Unit 2H	Copper John Unit 2H PWB	Copper John Unit 2H PWB Rev-A.0

WFT EM <8-3/4">(2563)(2684-6373) : 12.89° Inc, 2693.50ft MD, 2658.59ft TVD, -102.63ft VS

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (/100ft)	VS (ft)
Tie On	6382.50	48.380	178.700	6153.89	-283.02	-1195.82	5.96	-137.50
Proj. To Bottom	6456.50	50.890	176.840	6201.81	-339.35	-1193.61	3.89	-83.74
End of Tangent	6551.50	50.890	176.840	6261.74	-412.95	-1189.55	0.00	-13.09
POE	6740.74	70.474	171.510	6354.00	-576.14	-1172.16	10.63	146.38
Landing Pt.	6924.45	90.000	171.510	6385.00	-754.34	-1145.56	10.63	323.10
On Azimuth	7333.49	90.000	160.261	6385.00	-1150.40	-1045.97	2.75	729.52
BHL	15023.98	90.000	160.261	6385.00	-8389.01	1551.36	0.00	8420.00



BH AT Curve <8-1/2">(6382.5)(6427-14975) : 49.53° Inc, 6427.00ft MD, 6183.11ft TVD, -105.64ft VS
 POE Marcellus: 6738ft MD / 6351ft TVD : 69.07° Inc, 6738.00ft MD, 6351.37ft TVD, 145.26ft VS

Projected MD @ TD: 15000ft MD / 6365ft TVD : 89.91° Inc, 15000.00ft MD, 6365.16ft TVD, 8389.27ft VS
 Vertical Section (ft)
 Scale 1 inch = 1500
 Azimuth 160.26° with reference 0.00 N, 0.00 E

04/05/2019

User specified Dip: 66.64° Field: 51630 nT
 Magnetic North is 7.65 degrees West of True North (at 1/1/2018)
 Grid North is 0.05 degrees East of True North
 To correct azimuth from Magnetic to Grid subtract 7.70 degrees



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Copper John Unit 2H
Field	Tyler	Wellbore	Copper John Unit 2H AWB
Facility	Stonefly Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	McCrerib
Scale	0.999601	Report Generated	5/11/2018 at 9:29:15 AM
Convergence at slot	0.05° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Copper_John_Unit_2H_AWP_Proj_15000_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	38.44	-11.02	1662244.75	14314072.80	39°25'04.150"N	80°55'21.760"W
Facility Reference Pt			1662255.77	14314034.38	39°25'03.770"N	80°55'21.620"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM

Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	1006.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	1006.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Ground Level at Slot (Slot #08)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	160.26°



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #08
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 2H
Area	Tyler County, WV	Wellbore	Copper John Unit 2H AWB
Field	Tyler		
Facility	Stoney Pad		

WELLPATH DATA (186 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	0.00	253.690	0.00	0.00	0.00	0.00	1662244.75	14314072.80	39°25'04.150"N	80°55'21.760"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.00	253.690	24.50	0.00	0.00	0.00	1662244.75	14314072.80	39°25'04.150"N	80°55'21.760"W	0.00	0.000	0.00	0.00	0.00	
109.50	0.14	253.690	109.50	-0.01	-0.03	-0.10	1662244.65	14314072.77	39°25'04.150"N	80°55'21.761"W	0.10	253.690	0.16	0.16	-125.07	Gyrodatta MS Gyro <17-1/2">(100'-592')
209.50	0.14	292.230	209.50	-0.10	-0.02	-0.33	1662244.42	14314072.84	39°25'04.150"N	80°55'21.764"W	0.33	267.007	0.09	0.00	38.54	
309.50	0.03	279.830	309.50	-0.19	0.03	-0.47	1662244.28	14314072.84	39°25'04.150"N	80°55'21.766"W	0.47	274.079	0.11	-0.11	-12.40	
409.50	0.13	137.620	409.50	-0.10	-0.05	-0.42	1662244.33	14314072.76	39°25'04.150"N	80°55'21.765"W	0.42	263.738	0.15	0.10	-142.21	
509.50	0.05	151.840	509.50	0.05	-0.17	-0.32	1662244.43	14314072.63	39°25'04.148"N	80°55'21.764"W	0.36	242.364	0.08	-0.08	14.22	
601.50	0.21	185.670	601.50	0.24	-0.37	-0.32	1662244.43	14314072.43	39°25'04.146"N	80°55'21.764"W	0.49	220.655	0.19	0.17	36.77	
691.50	0.16	221.280	691.50	0.45	-0.63	-0.42	1662244.33	14314072.17	39°25'04.144"N	80°55'21.765"W	0.76	213.574	0.14	-0.06	39.57	Gyrodatta MS Gyro <12-1/4">(592')(682'-1055')
782.50	0.31	269.890	782.50	0.43	-0.73	-0.75	1662244.00	14314072.08	39°25'04.143"N	80°55'21.770"W	1.04	225.864	0.26	0.16	53.42	
875.50	1.05	304.240	875.49	-0.34	-0.25	-1.70	1662243.05	14314072.56	39°25'04.148"N	80°55'21.782"W	1.72	261.757	0.87	0.80	36.94	
970.50	1.91	299.810	970.46	-2.25	1.03	-3.80	1662240.96	14314073.83	39°25'04.160"N	80°55'21.808"W	3.93	285.175	0.91	0.91	-4.66	
1064.50	2.90	287.440	1064.38	-4.88	2.52	-7.43	1662237.33	14314075.32	39°25'04.175"N	80°55'21.855"W	7.84	288.756	1.18	1.05	-13.16	
1181.50	4.54	267.140	1181.13	-8.01	3.18	-14.87	1662229.88	14314075.98	39°25'04.182"N	80°55'21.949"W	15.21	282.058	1.78	1.40	-17.35	WFT EM <12-1/4">(1055')(1172'-2563')
1274.50	5.65	266.100	1273.76	-10.33	2.68	-23.12	1662211.04	14314074.91	39°25'04.171"N	80°55'22.055"W	23.27	276.618	1.20	1.19	-1.12	
1369.50	7.19	267.550	1368.16	-13.38	2.11	-33.72	1662211.64	14314074.91	39°25'04.171"N	80°55'22.190"W	33.79	273.580	1.63	1.62	1.53	
1464.50	8.14	269.320	1462.31	-17.34	1.78	-46.39	1662198.38	14314074.58	39°25'04.168"N	80°55'22.351"W	46.42	272.193	1.03	1.00	1.86	
1558.50	9.08	269.340	1555.25	-21.94	1.61	-60.46	1662184.32	14314074.41	39°25'04.166"N	80°55'22.530"W	60.48	271.527	1.00	1.00	0.02	
1652.50	10.82	270.260	1647.83	-27.38	1.57	-76.70	1662168.08	14314074.37	39°25'04.166"N	80°55'22.737"W	76.72	271.170	1.86	1.85	0.98	
1747.50	12.19	271.520	1740.92	-34.07	1.87	-95.65	1662149.15	14314074.67	39°25'04.169"N	80°55'22.979"W	95.66	271.122	1.47	1.44	1.33	
1841.50	12.33	269.260	1832.78	-40.93	2.01	-115.60	1662129.20	14314074.81	39°25'04.171"N	80°55'23.233"W	115.62	270.994	0.53	0.15	-2.40	
1936.50	12.48	269.170	1925.56	-47.56	1.73	-136.01	1662108.80	14314074.53	39°25'04.168"N	80°55'23.493"W	136.02	270.727	0.16	0.16	-0.09	
2030.50	14.75	270.680	2016.92	-55.01	1.70	-158.13	1662086.68	14314074.50	39°25'04.168"N	80°55'23.775"W	158.14	270.616	2.44	2.41	1.50	
2125.50	15.95	271.590	2108.52	-63.96	2.19	-183.27	1662061.55	14314074.99	39°25'04.173"N	80°55'24.095"W	183.29	270.683	1.29	1.26	1.06	
2219.50	14.92	270.370	2199.13	-72.82	2.62	-208.29	1662036.55	14314075.42	39°25'04.178"N	80°55'24.414"W	208.30	270.721	1.15	-1.10	-1.30	
2314.50	14.30	268.000	2291.06	-80.60	2.29	-232.24	1662012.60	14314075.09	39°25'04.175"N	80°55'24.719"W	232.25	270.565	0.91	-0.65	-2.49	
2408.50	15.04	266.290	2382.00	-87.50	1.10	-256.01	1661988.84	14314073.90	39°25'04.163"N	80°55'25.022"W	256.02	270.246	0.91	0.79	-1.82	
2502.50	14.29	264.650	2472.93	-93.75	-0.77	-279.74	1661965.13	14314072.03	39°25'04.145"N	80°55'25.324"W	279.74	269.842	0.91	-0.80	-1.74	
2572.50	13.75	261.820	2540.85	-97.57	-2.76	-296.57	1661948.30	14314070.04	39°25'04.125"N	80°55'25.539"W	296.59	269.466	1.25	-0.77	-4.04	
2693.50	12.89	259.560	2658.59	-102.63	-7.25	-324.08	1661920.80	14314065.55	39°25'04.081"N	80°55'25.889"W	324.16	268.718	0.83	-0.71	-1.87	WFT EM <8-3/4">(2563')(2684'-6373')



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #08
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 2H
Area	Tyler County, WV	Wellbore	Copper John Unit 2H AWB
Field	Tyler		
Facility	Stonefly Pad		

WELLPATH DATA (186 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
2787.50	15.960	262.290	2749.82	-107.02	-10.89	-347.20	1661897.89	14314061.92	39°25'04.045"N	80°55'26.184"W	347.37	268.204	3.34	3.27	2.90	
2882.50	18.200	266.630	2840.43	-113.92	-13.51	-374.96	1661869.94	14314059.29	39°25'04.020"N	80°55'26.538"W	375.20	267.936	2.71	2.36	4.57	
2976.50	17.680	269.930	2929.86	-122.87	-14.39	-403.89	1661841.02	14314058.41	39°25'04.011"N	80°55'26.906"W	404.15	267.959	1.21	-0.55	3.51	
3072.50	17.820	269.720	3021.29	-132.67	-14.48	-433.16	1661811.77	14314058.32	39°25'04.010"N	80°55'27.279"W	433.40	268.085	0.16	0.15	-0.22	
3167.50	17.760	272.360	3111.75	-142.96	-13.96	-462.17	1661782.77	14314058.85	39°25'04.016"N	80°55'27.649"W	462.38	268.270	0.85	-0.06	2.78	
3261.50	15.730	277.470	3201.78	-154.18	-11.71	-489.13	1661755.82	14314061.10	39°25'04.038"N	80°55'27.993"W	489.27	268.628	2.67	-2.16	5.44	
3356.50	15.070	277.100	3293.35	-165.65	-8.51	-514.16	1661730.80	14314064.30	39°25'04.070"N	80°55'28.311"W	514.23	269.052	0.70	-0.69	-0.39	
3450.50	14.410	275.000	3384.26	-176.06	-5.98	-537.93	1661707.03	14314066.82	39°25'04.095"N	80°55'28.614"W	537.97	269.363	0.90	-0.70	-2.23	
3544.50	13.920	275.180	3475.40	-185.72	-3.94	-560.85	1661684.81	14314068.86	39°25'04.116"N	80°55'28.906"W	560.86	269.597	0.52	-0.52	0.19	
3639.50	15.100	272.880	3567.37	-195.29	-2.29	-584.59	1661660.40	14314070.82	39°25'04.132"N	80°55'29.209"W	584.59	269.776	1.38	1.24	-2.42	
3733.50	15.050	270.770	3658.14	-204.28	-1.51	-609.02	1661635.98	14314071.30	39°25'04.140"N	80°55'29.520"W	609.02	269.858	0.59	-0.05	-2.24	
3828.50	14.650	270.360	3749.96	-212.73	-1.27	-633.36	1661611.64	14314071.64	39°25'04.143"N	80°55'29.830"W	633.37	269.885	0.44	-0.42	-0.43	
3922.50	14.430	268.890	3840.95	-220.55	-1.42	-656.96	1661588.05	14314071.38	39°25'04.141"N	80°55'30.131"W	656.96	269.876	0.46	-0.23	-1.56	
4017.50	13.960	267.780	3933.05	-227.79	-2.09	-680.25	1661564.78	14314070.71	39°25'04.135"N	80°55'30.428"W	680.25	269.824	0.57	-0.49	-1.17	
4111.50	15.070	265.820	4024.05	-234.48	-3.42	-703.77	1661541.27	14314069.38	39°25'04.122"N	80°55'30.727"W	703.77	269.721	1.29	1.18	-2.09	
4206.50	15.050	264.590	4115.79	-240.84	-5.48	-728.36	1661516.68	14314067.32	39°25'04.102"N	80°55'31.041"W	728.38	269.569	0.34	-0.02	-1.29	
4301.50	14.110	269.390	4207.73	-247.69	-6.77	-752.22	1661492.83	14314066.03	39°25'04.089"N	80°55'31.345"W	752.25	269.484	1.61	-0.99	5.05	
4395.50	14.110	270.000	4298.90	-255.32	-6.89	-775.14	1661469.93	14314065.91	39°25'04.088"N	80°55'31.637"W	775.17	269.490	0.16	0.00	0.65	
4490.50	13.940	273.620	4391.07	-263.76	-6.17	-798.14	1661446.94	14314066.63	39°25'04.096"N	80°55'31.930"W	798.16	269.557	0.94	-0.18	3.81	
4585.50	13.890	271.630	4483.32	-272.40	-5.13	-820.79	1661424.29	14314067.68	39°25'04.106"N	80°55'32.218"W	820.81	269.642	0.57	-0.26	-2.09	
4679.50	15.130	271.400	4574.36	-280.88	-4.51	-844.18	1661400.91	14314068.29	39°25'04.112"N	80°55'32.516"W	844.19	269.694	1.53	1.53	-0.24	
4774.50	15.290	272.110	4666.03	-290.01	-3.75	-869.09	1661376.01	14314069.06	39°25'04.120"N	80°55'32.834"W	869.10	269.753	0.26	0.17	0.75	
4869.50	15.200	270.950	4757.69	-298.89	-3.28	-894.06	1661351.05	14314069.63	39°25'04.125"N	80°55'33.152"W	894.07	269.790	0.58	-0.09	-2.17	
4963.50	14.820	269.650	4848.48	-307.05	-3.34	-918.41	1661326.72	14314069.46	39°25'04.125"N	80°55'33.462"W	918.41	269.792	0.42	-0.40	-0.43	
5058.50	14.700	268.890	4940.35	-314.94	-3.65	-942.61	1661302.52	14314069.16	39°25'04.122"N	80°55'33.770"W	942.61	269.778	0.24	-0.13	-0.80	
5152.50	15.000	268.660	5031.21	-322.59	-4.16	-966.69	1661278.45	14314068.84	39°25'04.117"N	80°55'34.077"W	966.70	269.753	0.33	0.32	-0.24	
5246.50	15.230	267.380	5121.95	-330.06	-5.01	-991.19	1661253.96	14314067.79	39°25'04.109"N	80°55'34.390"W	991.20	269.710	0.43	0.24	-1.36	
5341.50	16.120	270.180	5213.42	-338.23	-5.54	-1016.84	1661228.32	14314067.26	39°25'04.104"N	80°55'34.716"W	1016.86	269.688	1.23	0.94	2.95	
5435.50	15.560	274.470	5303.85	-347.84	-4.52	-1042.46	1661202.71	14314068.29	39°25'04.114"N	80°55'35.043"W	1042.47	269.752	1.38	-0.60	4.56	
5530.50	14.100	273.480	5395.69	-357.63	-2.82	-1066.72	1661178.47	14314069.98	39°25'04.131"N	80°55'35.352"W	1066.72	269.848	1.56	-1.54	-1.04	



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #08
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 2H
Area	Tyler County, WV	Wellbore	Copper John Unit 2H AWB
Field	Tyler		
Facility	Stoneyly Pad		

WELLPATH DATA (186 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
5625.50	13.290	268.600	5487.99	-365.63	-2.39	-1089.18	1661156.01	14314070.42	39°25'04.135"N	80°55'35.638"W	1089.19	269.875	1.48	-0.85	-5.14	
5720.50	13.600	262.680	5580.39	-371.47	-4.07	-1111.18	1661134.02	14314068.73	39°25'04.119"N	80°55'35.918"W	1111.19	269.790	1.48	0.33	-6.23	
5751.50	14.230	253.780	5610.48	-372.49	-5.60	-1118.45	1661126.75	14314067.20	39°25'04.104"N	80°55'36.014"W	1118.47	269.713	7.19	2.03	-28.71	
5783.50	14.820	242.800	5641.47	-372.20	-8.57	-1125.87	1661119.33	14314064.23	39°25'04.075"N	80°55'36.106"W	1125.90	269.564	8.79	1.84	-34.31	
5814.50	15.030	230.870	5671.43	-370.35	-12.92	-1132.52	1661112.69	14314059.88	39°25'04.032"N	80°55'36.190"W	1132.59	269.346	9.92	0.68	-38.48	
5846.50	15.700	219.550	5702.29	-366.76	-18.88	-1138.49	1661106.72	14314053.93	39°25'03.973"N	80°55'36.267"W	1138.65	269.050	9.59	2.09	-35.38	
5877.50	17.400	207.720	5732.01	-361.83	-25.99	-1143.72	1661101.49	14314046.83	39°25'03.903"N	80°55'36.333"W	1144.01	268.698	7.87	5.48	-19.84	
5909.50	19.010	207.720	5762.41	-355.44	-34.60	-1148.78	1661096.44	14314038.22	39°25'03.818"N	80°55'36.398"W	1149.30	268.275	7.48	5.03	-17.75	
5940.50	20.750	202.830	5791.56	-347.98	-44.13	-1153.26	1661091.96	14314028.69	39°25'03.723"N	80°55'36.455"W	1154.10	267.809	7.76	5.61	-15.77	
5972.50	21.730	201.200	5821.39	-339.33	-54.88	-1157.60	1661087.62	14314017.95	39°25'03.617"N	80°55'36.510"W	1158.90	267.286	3.58	3.06	-5.09	
6003.50	22.940	199.510	5850.06	-330.32	-65.92	-1161.69	1661083.53	14314008.91	39°25'03.508"N	80°55'36.563"W	1163.56	266.752	4.42	3.90	-5.45	
6035.50	25.020	197.660	5879.30	-320.11	-78.25	-1165.83	1661079.39	14313994.58	39°25'03.386"N	80°55'36.615"W	1168.45	266.160	6.91	6.50	-5.78	
6066.50	27.770	196.660	5907.06	-309.09	-91.42	-1169.89	1661075.34	14313981.42	39°25'03.256"N	80°55'36.667"W	1173.45	265.532	8.99	8.87	-3.23	
6098.50	30.090	195.950	5935.07	-286.57	-106.27	-1174.23	1661071.00	14313966.57	39°25'03.109"N	80°55'36.723"W	1179.03	264.829	7.33	7.25	-2.22	
6129.50	32.030	195.120	5961.62	-283.51	-121.68	-1178.51	1661066.72	14313951.17	39°25'02.957"N	80°55'36.778"W	1184.77	264.105	6.41	6.26	-2.68	
6161.50	33.620	194.030	5988.51	-269.18	-138.47	-1182.87	1661062.36	14313934.39	39°25'02.791"N	80°55'36.833"W	1190.95	263.323	5.30	4.97	-3.41	
6192.50	35.850	192.050	6013.99	-254.33	-155.68	-1186.85	1661058.38	14313917.19	39°25'02.621"N	80°55'36.884"W	1197.01	262.527	8.06	7.19	-6.39	
6224.50	38.060	189.100	6039.56	-237.72	-174.59	-1190.36	1661054.87	14313898.29	39°25'02.434"N	80°55'36.929"W	1203.10	261.656	8.85	6.91	-9.22	
6245.00†	39.454	187.094	6055.55	-226.37	-187.29	-1192.17	1661053.06	14313885.59	39°25'02.309"N	80°55'36.952"W	1206.79	261.072	9.15	6.80	-9.79	Sycamore: 6245MD / 6056TVD
6256.50	40.250	186.020	6064.38	-219.77	-194.61	-1193.01	1661052.22	14313878.27	39°25'02.236"N	80°55'36.963"W	1208.78	260.735	9.15	6.92	-9.34	
6287.50	42.400	183.980	6087.66	-201.18	-215.00	-1194.78	1661050.45	14313857.89	39°25'02.035"N	80°55'36.986"W	1213.97	259.799	8.18	6.94	-6.58	
6319.50	45.190	181.380	6110.75	-180.70	-237.12	-1195.81	1661049.43	14313835.78	39°25'01.816"N	80°55'36.999"W	1219.09	258.784	10.37	8.72	-8.12	
6350.50	48.380	178.700	6153.89	-137.50	-283.02	-1195.82	1661049.41	14313813.50	39°25'01.596"N	80°55'37.000"W	1223.89	257.763	5.92	5.06	-4.26	
6382.50	49.530	178.370	6183.11	-105.64	-316.57	-1194.97	1661050.27	14313789.90	39°25'01.363"N	80°55'37.000"W	1228.86	256.685	5.96	5.06	-4.25	
6427.00	51.980	177.310	6212.84	-70.94	-352.94	-1193.59	1661051.64	14313756.36	39°25'01.031"N	80°55'36.989"W	1236.19	255.162	2.64	2.58	-0.74	BH AT Curve <-8-1/2"> (6382.5)/(6427-14975)
6474.00	51.980	177.310	6212.84	-70.94	-352.94	-1193.59	1661051.64	14313720.01	39°25'00.672"N	80°55'36.972"W	1244.68	253.527	5.50	5.21	-2.26	
6477.00†	51.981	177.285	6214.69	-68.68	-355.30	-1193.48	1661051.76	14313717.65	39°25'00.648"N	80°55'36.971"W	1245.24	253.422	0.67	0.02	-0.85	Middlesex @ 6477MD / 6215TVD
6520.00	51.990	176.920	6241.17	-36.25	-389.13	-1191.76	1661053.47	14313683.82	39°25'00.314"N	80°55'36.949"W	1253.69	251.917	0.67	0.02	-0.85	
6567.00	53.360	175.920	6269.67	-0.36	-426.43	-1189.43	1661055.80	14313648.54	39°24'59.945"N	80°55'36.920"W	1263.56	250.276	3.37	2.91	-2.13	
6614.00	58.190	174.210	6296.10	37.20	-465.14	-1186.07	1661059.16	14313607.85	39°24'59.563"N	80°55'36.877"W	1274.01	248.587	10.71	10.28	-3.64	



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #08
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 2H
Area	Tyler County, WV	Wellbore	Copper John Unit 2H AWB
Field	Tyler		
Facility	Stonefly Pad		

WELLPATH DATA (186 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
6629.00†	59.476	173.918	6303.86	49.67	-477.90	-1184.74	1661060.49	14313595.09	39°24'59.436"N	80°55'36.861"W	1277.50	248.032	8.73	8.57	-1.95	Burket: 6629MD / 6304'TVD
6661.00†	62.220	173.320	6319.45	76.86	-505.67	-1181.63	1661063.59	14313567.33	39°24'59.162"N	80°55'36.821"W	1285.29	246.832	8.73	8.58	-1.87	
6685.00†	64.195	172.817	6330.26	97.75	-526.94	-1179.05	1661066.18	14313546.08	39°24'58.952"N	80°55'36.789"W	1291.44	245.919	8.44	8.23	-2.10	Tully: 6685MD / 6330'TVD
6708.00†	66.090	172.350	6339.93	118.13	-547.63	-1176.35	1661068.87	14313525.39	39°24'58.747"N	80°55'36.754"W	1297.58	245.036	8.44	8.24	-2.03	
6738.00†	69.071	172.066	6351.37	145.26	-575.10	-1172.59	1661072.63	14313497.93	39°24'58.476"N	80°55'36.707"W	1306.03	243.874	9.97	9.94	-0.95	POE Marcellus: 6738MD / 6351'TVD
6755.00	70.760	171.910	6357.21	160.89	-590.91	-1170.37	1661074.85	14313482.13	39°24'58.319"N	80°55'36.679"W	1311.08	243.211	9.97	9.94	-0.92	
6801.00	76.340	172.080	6370.23	204.07	-634.58	-1164.23	1661080.99	14313438.47	39°24'57.888"N	80°55'36.601"W	1325.94	241.407	12.14	12.13	0.37	
6848.00	82.480	171.950	6378.86	249.28	-680.31	-1157.81	1661087.41	14313392.75	39°24'57.436"N	80°55'36.520"W	1342.89	239.562	13.07	13.06	-0.28	
6895.00	88.740	171.210	6382.46	295.21	-726.65	-1150.95	1661094.26	14313346.45	39°24'56.978"N	80°55'36.433"W	1361.14	237.734	13.41	13.32	-1.57	
6988.00	90.030	167.720	6383.46	386.99	-818.06	-1133.95	1661111.26	14313255.07	39°24'56.074"N	80°55'36.217"W	1398.24	234.192	4.00	4.00	1.38	-3.75
7082.00	89.880	161.760	6383.53	480.66	-908.70	-1109.22	1661135.98	14313164.46	39°24'55.178"N	80°55'35.903"W	1433.92	230.675	6.34	-0.16	-6.34	
7176.00	89.850	159.150	6383.81	574.65	-997.28	-1077.78	1661167.41	14313075.92	39°24'54.302"N	80°55'35.503"W	1468.39	227.222	2.78	-0.11	-2.78	
7269.00	89.880	159.430	6384.09	667.64	-1084.27	-1044.89	1661200.28	14312988.97	39°24'53.442"N	80°55'35.085"W	1505.80	223.940	0.32	0.11	0.30	
7363.00	89.850	162.070	6384.31	761.63	-1172.99	-1013.86	1661231.30	14312900.28	39°24'52.565"N	80°55'34.890"W	1550.42	220.838	2.74	-0.03	2.74	
7456.00	89.260	162.800	6385.03	854.56	-1261.63	-985.74	1661259.40	14312811.67	39°24'51.689"N	80°55'34.333"W	1601.07	218.001	1.06	-0.63	0.85	
7550.00	89.850	161.590	6385.76	948.50	-1351.13	-957.00	1661288.13	14312722.22	39°24'50.804"N	80°55'33.968"W	1655.72	215.310	1.43	0.63	-1.29	
7644.00	89.690	159.060	6386.14	1042.49	-1439.63	-925.36	1661319.77	14312633.75	39°24'49.929"N	80°55'33.566"W	1711.38	212.732	2.70	-0.17	-2.69	
7738.00	89.820	164.460	6387.34	1136.48	-1527.59	-892.20	1661352.91	14312545.83	39°24'49.059"N	80°55'33.144"W	1769.05	210.287	0.61	0.10	0.61	
7831.00	89.850	161.460	6386.87	1229.47	-1615.27	-861.23	1661383.87	14312458.18	39°24'48.193"N	80°55'32.750"W	1830.52	208.065	1.97	0.08	1.97	
7925.00	89.880	163.880	6387.09	1323.38	-1705.00	-833.23	1661411.86	14312368.49	39°24'47.306"N	80°55'32.395"W	1897.71	206.045	2.57	0.03	2.57	
8019.00	89.820	164.460	6387.34	1417.16	-1795.43	-807.59	1661437.49	14312278.09	39°24'46.412"N	80°55'32.069"W	1968.70	204.218	0.62	-0.06	0.62	
8103.00	90.370	162.150	6387.18	1511.02	-1885.46	-780.58	1661464.48	14312188.09	39°24'45.521"N	80°55'31.726"W	2040.66	202.490	2.53	0.59	-2.46	
8207.00	90.220	159.680	6386.70	1605.01	-1974.29	-749.85	1661495.20	14312099.30	39°24'44.643"N	80°55'31.335"W	2111.89	200.797	2.63	-0.16	-2.63	
8301.00	90.220	160.580	6386.34	1699.00	-2062.69	-717.90	1661527.14	14312010.94	39°24'43.769"N	80°55'30.929"W	2184.05	199.190	0.96	0.00	0.96	
8395.00	90.280	161.930	6385.93	1792.99	-2151.70	-687.70	1661557.33	14311921.96	39°24'42.889"N	80°55'30.545"W	2258.93	197.724	1.44	0.06	1.44	
8490.00	90.120	163.660	6385.60	1887.89	-2242.45	-659.60	1661585.42	14311831.25	39°24'41.992"N	80°55'30.188"W	2337.44	196.391	1.83	-0.17	1.82	
8585.00	90.220	162.760	6385.32	1982.76	-2333.40	-632.16	1661612.85	14311740.34	39°24'41.093"N	80°55'29.839"W	2417.51	195.159	0.95	0.11	-0.95	
8679.00	90.580	159.680	6384.66	2076.74	-2422.37	-601.88	1661643.11	14311651.40	39°24'40.213"N	80°55'29.455"W	2496.03	193.954	3.32	0.38	-3.30	
8772.00	90.460	158.360	6383.82	2189.71	-2509.20	-588.57	1661676.41	14311564.61	39°24'39.355"N	80°55'29.031"W	2572.81	192.767	1.40	-0.13	-1.40	
8866.00	90.620	157.520	6382.93	2263.63	-2596.31	-533.27	1661717.70	14311477.53	39°24'38.494"N	80°55'28.582"W	2650.51	191.607	0.91	0.17	-0.89	



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Copper John Unit 2H
Field	Tyler	Wellbore	Copper John Unit 2H AWB
Facility	Stonefly Pad		

WELLPATH DATA (186 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
8960.00	90.150	158.730	6382.30	2357.56	-2683.54	-498.25	1661746.70	14311390.34	39°24'37.631"N	80°55'28.137"W	2729.40	190.518	1.38	-0.50	1.29	
9054.00	90.220	161.530	6381.99	2451.55	-2771.93	-466.30	1661778.64	14311301.98	39°24'36.757"N	80°55'27.731"W	2810.88	189.549	2.98	0.07	2.98	
9149.00	90.280	163.560	6381.58	2546.47	-2862.55	-437.81	1661807.12	14311211.40	39°24'35.862"N	80°55'27.369"W	2895.84	188.686	2.14	0.06	2.14	
9244.00	90.250	163.490	6381.14	2641.31	-2953.65	-410.87	1661834.05	14311120.34	39°24'34.967"N	80°55'27.027"W	2982.09	187.919	0.08	-0.03	-0.07	
9339.00	90.180	163.780	6380.78	2736.14	-3044.80	-384.10	1661860.81	14311029.22	39°24'34.060"N	80°55'26.687"W	3068.93	187.190	0.31	-0.07	0.31	
9434.00	90.550	163.120	6380.18	2830.99	-3135.86	-357.04	1661887.86	14310938.20	39°24'33.160"N	80°55'26.343"W	3156.13	186.496	0.80	0.39	-0.69	
9528.00	90.770	158.480	6379.10	2924.96	-3224.61	-326.14	1661918.75	14310849.49	39°24'32.292"N	80°55'25.950"W	3241.06	185.775	4.94	0.23	-4.94	
9623.00	90.150	156.030	6378.33	3019.82	-3312.21	-289.41	1661955.46	14310761.92	39°24'31.416"N	80°55'25.483"W	3324.83	184.994	2.66	-0.65	-2.58	
9717.00	90.220	157.700	6378.03	3113.65	-3398.65	-252.48	1661992.37	14310675.52	39°24'30.562"N	80°55'25.014"W	3408.01	184.249	1.78	0.07	1.78	
9811.00	90.250	162.500	6377.64	3207.62	-3487.01	-220.49	1662024.35	14310587.20	39°24'29.688"N	80°55'24.607"W	3493.97	183.618	5.11	0.03	5.11	
9906.00	90.400	166.120	6377.10	3302.36	-3578.45	-194.81	1662050.02	14310495.79	39°24'28.784"N	80°55'24.281"W	3583.75	183.116	3.81	0.16	3.81	
10000.00	91.020	166.090	6375.94	3395.87	-3669.69	-172.24	1662072.59	14310404.58	39°24'27.882"N	80°55'23.994"W	3673.73	182.687	0.66	0.66	-0.03	
10095.00	90.550	161.360	6374.64	3490.66	-3760.85	-145.62	1662099.19	14310313.46	39°24'26.981"N	80°55'23.656"W	3763.67	182.217	5.00	-0.49	-4.98	
10191.00	90.340	158.570	6373.89	3586.65	-3851.03	-112.74	1662132.06	14310223.32	39°24'26.089"N	80°55'23.338"W	3852.68	181.677	2.91	-0.22	-2.91	
10286.00	90.250	158.560	6373.40	3681.60	-3939.46	-79.02	1662166.78	14310134.93	39°24'25.215"N	80°55'22.797"W	3940.23	181.135	0.10	-0.09	-0.01	
10382.00	90.220	159.670	6373.01	3777.58	-4029.15	-43.80	1662200.97	14310045.27	39°24'24.328"N	80°55'22.362"W	4029.38	180.623	1.16	-0.03	1.16	
10476.00	90.250	157.460	6372.62	3871.53	-4116.64	-9.45	1662235.31	14309957.82	39°24'23.463"N	80°55'21.925"W	4116.65	180.132	2.35	0.03	-2.35	
10571.00	90.310	157.270	6372.16	3966.41	-4204.32	27.11	1662271.85	14309870.17	39°24'22.596"N	80°55'21.460"W	4204.41	179.631	0.21	0.06	-0.20	
10666.00	90.400	158.450	6371.57	4061.32	-4292.31	62.91	1662307.84	14309782.21	39°24'21.726"N	80°55'21.005"W	4292.77	179.160	1.25	0.09	1.24	
10761.00	90.370	159.220	6370.93	4156.29	-4380.90	97.21	1662341.93	14309693.66	39°24'20.850"N	80°55'20.569"W	4381.98	178.729	0.81	-0.03	0.81	
10857.00	90.220	158.920	6370.44	4252.27	-4470.57	131.51	1662376.21	14309604.03	39°24'19.964"N	80°55'20.133"W	4472.50	178.315	0.35	-0.16	-0.31	
10951.00	89.940	159.400	6370.31	4346.25	-4558.42	164.95	1662409.63	14309516.22	39°24'19.095"N	80°55'19.708"W	4561.40	177.928	0.59	-0.30	0.51	
11046.00	89.850	157.180	6370.48	4441.19	-4646.67	200.09	1662444.76	14309428.00	39°24'18.223"N	80°55'19.262"W	4650.98	177.534	2.34	-0.09	-2.34	
11140.00	90.030	156.670	6370.58	4535.03	-4733.15	236.93	1662481.59	14309341.55	39°24'17.368"N	80°55'18.793"W	4739.08	177.134	0.58	0.19	-0.54	
11236.00	90.060	159.160	6370.50	4630.94	-4822.10	273.02	1662517.66	14309252.64	39°24'16.488"N	80°55'18.335"W	4829.82	176.759	2.59	0.03	2.59	
11330.00	90.090	161.210	6370.38	4724.94	-4910.53	304.88	1662554.51	14309164.24	39°24'15.614"N	80°55'17.930"W	4919.98	176.447	2.18	0.03	2.18	
11424.00	90.120	159.800	6370.21	4818.93	-4999.14	336.25	1662590.87	14309075.67	39°24'14.738"N	80°55'17.531"W	5010.43	176.152	1.50	0.03	-1.50	
11519.00	89.880	158.170	6370.21	4913.91	-5087.82	370.32	1662626.42	14308987.03	39°24'13.861"N	80°55'17.098"W	5101.28	175.837	1.73	-0.25	-1.72	
11613.00	90.000	158.310	6370.31	5007.85	-5175.12	405.17	1662664.76	14308899.76	39°24'12.989"N	80°55'16.655"W	5190.95	175.523	0.20	0.13	0.15	
11708.00	90.220	157.230	6370.12	5102.76	-5263.06	441.11	1662685.88	14308811.86	39°24'12.129"N	80°55'16.198"W	5281.61	175.209	1.16	0.23	-1.14	



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #08
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 2H
Area	Tyler County, WV	Wellbore	Copper John Unit 2H AWB
Field	Tyler		
Facility	Stonefly Pad		

WELLPATH DATA (186 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
11802.00	89.940	155.220	6369.99	5196.52	-5349.07	479.00	1662723.56	1430825.88	39°24'11.278"N	80°55'15.716"W	5370.48	174.853	2.16	-0.30	-2.14	
11897.00	89.850	156.960	6370.17	5291.26	-5435.92	517.50	1662762.05	14308639.07	39°24'10.420"N	80°55'15.227"W	5460.50	174.562	1.83	-0.09	1.83	
11992.00	90.000	160.730	6370.29	5386.22	-5524.50	551.78	1662796.31	14308550.52	39°24'09.544"N	80°55'14.791"W	5551.99	174.296	3.97	0.16	3.97	
12086.00	89.260	161.470	6370.90	5480.20	-5613.43	582.23	1662826.75	14308461.63	39°24'08.665"N	80°55'14.404"W	5643.54	174.078	1.11	-0.79	0.79	
12181.00	89.880	164.210	6371.61	5575.10	-5704.19	610.25	1662854.76	14308370.90	39°24'07.767"N	80°55'14.048"W	5736.74	173.894	2.96	0.65	2.88	
12275.00	90.180	164.010	6371.56	5668.88	-5794.60	635.99	1662880.49	14308280.53	39°24'06.874"N	80°55'13.721"W	5829.39	173.737	0.38	0.32	-0.21	
12369.00	90.280	162.580	6371.18	5762.75	-5884.63	663.01	1662907.50	14308190.54	39°24'05.984"N	80°55'13.378"W	5921.86	173.572	1.52	0.11	-1.52	
12464.00	90.370	161.400	6370.65	5857.70	-5974.97	692.38	1662936.85	14308100.23	39°24'05.090"N	80°55'13.005"W	6014.95	173.390	1.25	0.09	-1.24	
12558.00	90.460	159.480	6369.97	5951.69	-6063.54	723.85	1662968.31	14308011.70	39°24'04.215"N	80°55'12.605"W	6106.59	173.192	2.04	0.10	-2.04	
12653.00	90.060	160.260	6369.53	6046.69	-6152.73	756.54	1663000.99	14307922.94	39°24'03.333"N	80°55'12.190"W	6199.07	172.990	0.92	-0.42	0.82	
12747.00	90.280	162.660	6369.26	6140.66	-6241.85	786.43	1663030.87	14307833.46	39°24'02.452"N	80°55'11.810"W	6291.19	172.819	2.56	0.23	2.55	
12842.00	90.400	164.000	6368.69	6235.52	-6332.85	813.68	1663058.11	14307742.49	39°24'01.552"N	80°55'11.484"W	6384.91	172.678	1.42	0.13	1.41	
12938.00	90.220	164.010	6368.17	6331.32	-6425.13	840.13	1663084.55	14307650.25	39°24'00.640"N	80°55'11.128"W	6479.83	172.550	0.19	-0.19	0.01	
13033.00	91.050	164.580	6367.12	6426.07	-6516.58	865.84	1663110.25	14307558.84	39°23'59.736"N	80°55'10.802"W	6573.85	172.432	1.06	0.87	0.60	
13127.00	90.370	161.580	6365.95	6519.94	-6606.48	893.22	1663137.61	14307468.97	39°23'58.847"N	80°55'10.454"W	6666.59	172.300	3.30	-0.72	-3.22	
13222.00	91.380	164.000	6364.50	6614.83	-6697.20	921.35	1663165.73	14307378.29	39°23'57.950"N	80°55'10.097"W	6760.28	172.167	2.79	1.06	2.58	
13317.00	90.430	161.010	6363.00	6709.73	-6787.79	949.90	1663194.27	14307287.74	39°23'57.055"N	80°55'09.734"W	6853.93	172.034	3.30	-1.00	-3.15	
13412.00	89.660	156.730	6362.83	6804.72	-6876.94	982.68	1663227.04	14307198.62	39°23'56.173"N	80°55'09.317"W	6946.80	171.868	2.56	-0.39	-2.53	
13506.00	89.660	156.730	6362.83	6898.62	-6963.89	1018.40	1663262.74	14307111.71	39°23'55.313"N	80°55'08.863"W	7037.96	171.680	2.04	-0.43	-2.00	
13601.00	89.750	156.180	6363.31	6993.41	-7050.98	1056.35	1663300.67	14307024.65	39°23'54.452"N	80°55'08.381"W	7129.67	171.480	0.59	0.09	-0.58	
13695.00	89.970	156.170	6363.54	7087.17	-7136.97	1094.32	1663338.63	14306938.70	39°23'53.602"N	80°55'07.898"W	7220.98	171.283	0.23	0.23	-0.01	
13790.00	90.030	155.340	6363.54	7181.88	-7223.59	1133.33	1663377.62	14306852.11	39°23'52.746"N	80°55'07.402"W	7311.95	171.083	0.88	0.06	-0.87	
13885.00	89.910	157.120	6363.59	7276.64	-7310.53	1171.62	1663415.90	14306765.21	39°23'51.886"N	80°55'06.916"W	7403.81	170.895	1.88	-0.13	1.87	
13980.00	89.940	159.410	6363.72	7371.58	-7398.77	1206.79	1663451.06	14306677.01	39°23'51.014"N	80°55'06.468"W	7496.54	170.736	2.41	0.03	2.41	
14075.00	89.910	157.900	6363.84	7466.54	-7487.25	1241.37	1663485.63	14306588.56	39°23'50.139"N	80°55'06.029"W	7589.46	170.586	1.59	-0.03	-1.59	
14169.00	89.880	159.760	6364.02	7560.50	-7574.90	1275.32	1663519.56	14306500.94	39°23'49.272"N	80°55'05.598"W	7681.51	170.443	1.98	-0.03	-1.98	
14263.00	89.940	160.950	6364.16	7654.50	-7663.43	1306.92	1663551.15	14306412.45	39°23'48.397"N	80°55'05.196"W	7774.07	170.322	1.27	0.06	1.27	
14358.00	89.820	161.820	6364.36	7749.48	-7753.46	1337.24	1663581.46	14306322.46	39°23'47.507"N	80°55'04.811"W	7867.93	170.214	0.92	-0.13	0.92	
14452.00	89.970	164.000	6364.53	7843.37	-7843.30	1364.86	1663609.07	14306232.55	39°23'46.619"N	80°55'04.460"W	7961.17	170.128	2.32	0.16	2.32	
14547.00	89.970	165.080	6364.63	7938.11	-7934.86	1390.19	1663634.38	14306141.13	39°23'45.714"N	80°55'04.139"W	8055.72	170.063	1.14	-0.06	-1.14	



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'



REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Copper John Unit 2H
Field	Tyler	Wellbore	Copper John Unit 2H AWB
Facility	Stonefly Pad		

WELLPATH DATA (186 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
14641.00	89.940	166.620	6364.76	8031.66	-8026.01	1413.17	1663657.35	14306050.02	39°23'44.812"N	80°55'03.847"W	8149.47	170.014	1.64	0.03	1.64	
14736.00	89.940	167.460	6364.86	8125.99	-8118.58	1434.47	1663678.65	14305957.48	39°23'43.897"N	80°55'03.577"W	8244.34	169.980	0.88	0.00	0.88	
14831.00	89.850	165.270	6365.03	8220.45	-8210.90	1456.87	1663701.03	14305865.20	39°23'42.985"N	80°55'03.293"W	8339.15	169.939	2.31	-0.09	-2.31	
14926.00	90.060	161.110	6365.10	8315.30	-8301.82	1484.33	1663728.49	14305774.31	39°23'42.086"N	80°55'02.944"W	8433.47	169.863	4.38	0.22	-4.38	
14975.00	89.910	158.050	6365.12	8364.29	-8347.74	1501.43	1663745.58	14305728.42	39°23'41.632"N	80°55'02.726"W	8481.69	169.804	6.25	-0.31	-6.24	
15000.00	89.910	158.050	6365.16	8389.27	-8370.92	1510.77	1663754.92	14305705.24	39°23'41.403"N	80°55'02.608"W	8506.16	169.769	0.00	0.00	0.00	Projected MD @ TD: 15000'MD / 6365'TVD

HOLE & CASING SECTIONS - Ref Wellbore: Copper John Unit 2H AWB Ref Wellpath: Copper John Unit 2H AWP Proj: 15000'

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]
20in Conductor	24.50	104.50	80.00	24.50	104.50	0.00	-0.03	0.00	-0.09
17.5in Open Hole	104.50	623.40	518.90	104.50	623.40	-0.03	-0.45	-0.09	-0.33
13.375in Casing Surface	24.50	623.40	598.90	24.50	623.40	0.00	-0.45	0.00	-0.33
12.25in Open Hole	623.40	2655.70	2032.30	623.40	2621.77	-0.45	-5.77	-0.33	-315.69
9.625in Casing Intermediate	24.50	2655.70	2631.20	24.50	2621.77	0.00	-5.77	0.00	-315.69



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Copper John Unit 2H
Field	Tyler	Wellbore	Copper John Unit 2H AWB
Facility	Stonefly Pad		

TARGETS							
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude Longitude	Shape
Copper John Unit 2H POE Rev-2	6354.00	-576.14	-1172.16	1661073.06	14313496.89	39°24'58.465"N 80°55'36.701"W	point
Copper John Unit 2H BHL Rev-2	6385.00	-8389.01	1551.36	1663795.49	14306687.16	39°23'41.224"N 80°55'02.091"W	point
Copper John Unit 2H LP Rev-1	6385.00	-754.34	-1145.56	1661099.65	14313318.77	39°24'56.704"N 80°55'36.364"W	point

WELLPATH COMPOSITION - Ref Wellbore: Copper John Unit 2H AWB Ref Wellpath: Copper John Unit 2H AWP Proj: 15000'			
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment
24.50	601.50	Gyrodata standard - Drop gyro or Multi-shot	
601.50	1064.50	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(100'-592')
1064.50	2572.50	ISWASA MWD, Rev. 4 (Standard)	02 Gyrodata MS Gyro <12-1/4">(592')(682'-1055')
2572.50	6382.50	ISWASA MWD, Rev. 4 (Standard)	03 WFT EM <12-1/4">(1055')(1172'-2563')
6382.50	14975.00	BHI AutoTrak Curve (Short)	04 WFT EM <8-3/4">(2563')(2684'-6373')
14975.00	15000.00	Blind Drilling (std)	05 BH AT Curve <8-1/2">(6382.5')(6427'-14975')
			Projection to bit
			Copper John Unit 2H AWB



Actual Wellpath Report

Copper John Unit 2H AWP Proj: 15000'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Copper John Unit 2H
Field	Tyler	Wellbore	Copper John Unit 2H AWB
Facility	Stonefly Pad		

COMMENTS
<p>Wellpath general comments</p> <p>API: 47-095-02405-0000 BH Job #: 8970052 Rig: Frontier 22 Duration: 01/18/18 - 01/20/18 Gyrodatta MS Gyro <17-1/2">(100'-592') Gyrodatta MS Gyro <12-1/4">(592')(682'-1055) WFT EM <12-1/4">(1055')(1172'-2563') WFT EM <8-3/4">(2563')(2684'-6373') Sycamore: 6245'MD / 6056'TVD BH AT Curve <8-1/2"> (6382.5')(6427'-14975') Middlesex @ 6477'MD / 6215'TVD Burket: 6629'MD / 6304'TVD Tully: 6685'MD / 6330'TVD POE Marcellus: 6738'MD / 6351'TVD Projected MD @ TD: 15000'MD / 6365'TVD</p>

04/05/2019