



ANTERO RESOURCES CORPORATION

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

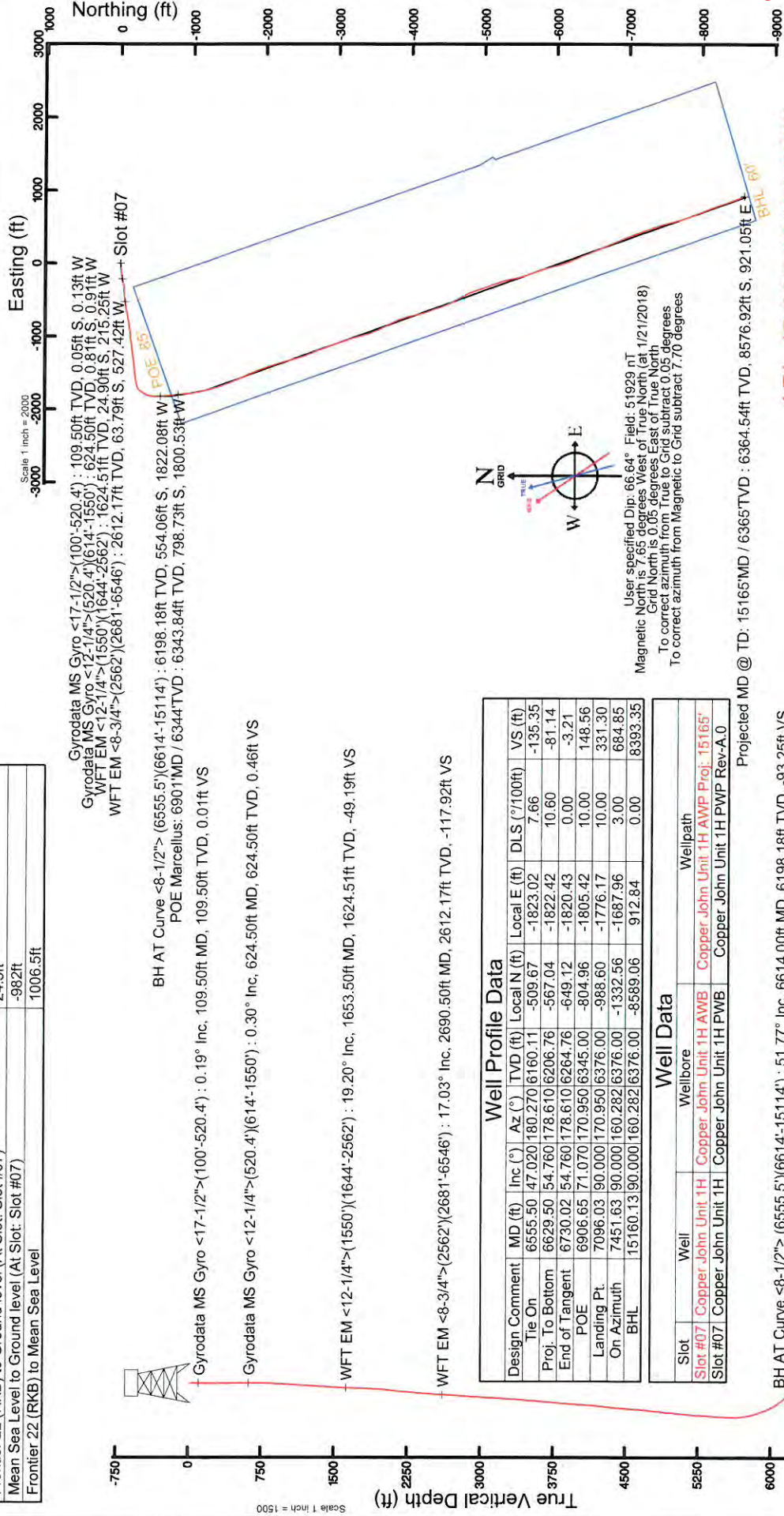
Slot: Slot #07
 Well: Copper John Unit 1H
 Wellbore: Copper John Unit 1H PWB



Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Stonefly Pad	1662255.770	14314034.380	39°25'03.770"N	80°55'21.620"W
Slot	Local N (ft)	Local E (ft)	Latitude	Longitude
Slot #07	47.54	-14.17	39°25'04.240"N	80°55'21.800"W
Comment:	Copper John Unit 1H			
Frontier 22 (RKB) to Ground level (At Slot: Slot #07)	24.5ft			
Mean Sea Level to Ground level (At Slot: Slot #07)	-982ft			
Frontier 22 (RKB) to Mean Sea Level	1006.5ft			

Plot reference wellpath is Copper John Unit 1H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 1006.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #07): -982 feet	Created by: mccrebn on 2018-05-11
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defn



Gyrodata MS Gyro <17-1/2">(100'-520.4') : 6198.18ft TVD, 554.06ft S, 1822.08ft W
 Gyrodata MS Gyro <12-1/4">(520.4')(614'-1550') : 624.50ft TVD, 0.81ft S, 0.91ft W
 WFT EM <12-1/4">(1550')(1644'-2562') : 1624.51ft TVD, 24.90ft S, 215.25ft W
 WFT EM <8-3/4">(2562')(2681'-6546') : 2612.17ft TVD, 63.79ft S, 527.42ft W

Slot #07

FOE 85°

BHL 60°

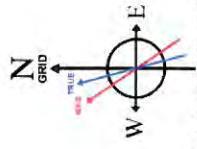
BH AT Curve <8-1/2"> (6555.5')(6614'-15114') : 6198.18ft TVD, 554.06ft S, 1822.08ft W
 POE Marcellus: 6901'MD / 6344'TVD : 71.04° Inc, 6901.00ft MD, 6343.84ft TVD, 144.34ft VS

Gyrodata MS Gyro <17-1/2">(100'-520.4') : 0.19° Inc, 109.50ft MD, 109.50ft TVD, 0.01ft VS

Gyrodata MS Gyro <12-1/4">(520.4')(614'-1550') : 0.30° Inc, 624.50ft MD, 624.50ft TVD, 0.46ft VS

WFT EM <12-1/4">(1550')(1644'-2562') : 19.20° Inc, 1653.50ft MD, 1624.51ft TVD, -49.19ft VS

WFT EM <8-3/4">(2562')(2681'-6546') : 17.03° Inc, 2690.50ft MD, 2612.17ft TVD, -117.92ft VS



04/05/2019

API: 47-095-02404-0000
 BH Job #: 8977274
 Rig: Frontier 22
 Duration: 01/22/18 - 01/24/18



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Copper John Unit 1H
Field	Tyler	Wellbore	Copper John Unit 1H AWB
Facility	Stoneyly Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet		
North Reference	Grid	WellArchitect®	5.1
Scale	0.999601	User	Mccrerib
Convergence at slot	0.05° East	Report Generated	5/11/2018 at 11:41:53 AM
		Database/Source file	WA_MPL_EASTERNUS_Defn/Copper_John_Unit_1H_AWP_Proj_15165_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	47.54	-14.17	1662241.61	14314081.90	39°25'04.240"N	80°55'21.800"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 #07)	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	160.28°

04/05/2019



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #07
Area	Tyler County, WV	Copper John Unit 1H
Field	Tyler	Copper John Unit 1H AWB
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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
0.00H	0.000	247.450	0.00	0.00	0.00	0.00	1662241.61	14314081.90	39°25'04.240"N	80°55'21.800"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	247.450	24.50	0.00	0.00	0.00	1662241.61	14314081.90	39°25'04.240"N	80°55'21.800"W	0.00	0.000	0.00	0.00	0.00	
109.50	0.190	247.450	109.50	0.01	-0.05	-0.13	1662241.48	14314081.85	39°25'04.239"N	80°55'21.802"W	0.14	247.450	0.22	0.22	-132.41	Gyrodata MS Gyro <17-1'2">(100-520.4')
209.50	0.180	263.690	209.50	-0.02	-0.13	-0.44	1662241.17	14314081.77	39°25'04.239"N	80°55'21.806"W	0.46	252.934	0.05	-0.01	16.24	
309.50	0.200	238.810	309.50	-0.02	-0.24	-0.74	1662240.86	14314081.66	39°25'04.238"N	80°55'21.809"W	0.78	251.963	0.08	0.02	-24.88	
409.50	0.040	198.330	409.50	0.04	-0.37	-0.91	1662240.70	14314081.54	39°25'04.236"N	80°55'21.812"W	0.98	247.980	0.17	-0.16	-40.48	
509.50	0.110	175.610	509.50	0.16	-0.49	-0.91	1662240.70	14314081.41	39°25'04.235"N	80°55'21.812"W	1.03	241.427	0.07	0.07	-22.72	
529.90	0.130	126.270	529.90	0.20	-0.53	-0.89	1662240.72	14314081.37	39°25'04.235"N	80°55'21.811"W	1.03	239.275	0.50	0.10	-241.86	
624.50	0.300	206.050	624.50	0.46	-0.81	-0.91	1662240.70	14314081.09	39°25'04.232"N	80°55'21.812"W	1.22	228.209	0.32	0.18	84.33	Gyrodata MS Gyro <12-1'4">(520.4')(614-1550')
714.50	2.020	266.950	714.48	0.17	-1.11	-2.60	1662239.01	14314080.79	39°25'04.229"N	80°55'21.833"W	2.83	246.864	2.10	1.91	67.67	
804.50	4.560	270.920	804.32	-1.55	-1.14	-7.76	1662233.85	14314080.77	39°25'04.228"N	80°55'21.899"W	7.84	261.663	2.83	2.82	4.41	
899.50	7.990	268.830	898.74	-4.98	-1.21	-18.14	1662223.47	14314080.69	39°25'04.228"N	80°55'22.031"W	18.18	266.180	3.62	3.61	-2.20	
993.50	10.180	268.550	991.55	-9.66	-1.56	-32.98	1662208.64	14314080.35	39°25'04.225"N	80°55'22.220"W	33.01	267.300	2.33	2.33	-0.30	
1087.50	11.890	266.440	1083.81	-14.96	-2.37	-50.95	1662190.68	14314079.54	39°25'04.217"N	80°55'22.449"W	51.00	267.340	1.87	1.82	-2.24	
1181.50	14.540	263.460	1175.32	-20.35	-4.31	-72.34	1662169.30	14314077.59	39°25'04.198"N	80°55'22.722"W	72.47	266.589	2.91	2.82	-3.17	
1275.50	17.020	263.580	1265.77	-26.21	-7.19	-97.74	1662143.91	14314074.71	39°25'04.170"N	80°55'23.045"W	98.00	265.790	2.64	2.64	0.13	
1370.50	16.940	263.350	1356.63	-32.53	-10.35	-125.30	1662116.36	14314071.55	39°25'04.139"N	80°55'23.397"W	125.73	265.277	0.11	-0.08	-0.24	
1464.50	18.870	262.440	1446.07	-38.83	-13.94	-163.98	1662087.69	14314067.97	39°25'04.104"N	80°55'23.762"W	154.60	264.828	2.07	2.05	-0.97	
1559.50	19.450	260.050	1535.81	-44.75	-18.69	-184.78	1662056.90	14314063.22	39°25'04.057"N	80°55'24.155"W	185.73	264.224	1.03	0.61	-2.52	
1653.50	19.200	256.900	1624.51	-49.19	-24.90	-215.25	1662026.44	14314057.01	39°25'03.996"N	80°55'24.543"W	216.69	263.401	1.14	-0.27	-3.35	WFT EM <12-1'4">(1550')(1644-2562')
1747.50	18.180	254.240	1713.56	-51.99	-32.39	-244.42	1661997.28	14314049.53	39°25'03.922"N	80°55'24.915"W	246.56	262.452	1.41	-1.09	-2.83	
1864.50	15.490	259.570	1825.54	-55.77	-40.17	-277.36	1661984.36	14314041.74	39°25'03.845"N	80°55'25.335"W	280.26	261.758	2.65	-2.30	4.56	
1990.50	16.440	261.720	1946.68	-62.02	-45.79	-311.55	1661930.18	14314036.13	39°25'03.790"N	80°55'25.770"W	314.90	261.639	0.89	0.75	1.71	
2084.50	17.500	269.930	2036.60	-69.42	-47.72	-338.86	1661902.89	14314034.20	39°25'03.771"N	80°55'26.118"W	342.20	261.984	2.78	1.13	6.73	
2179.50	20.130	267.090	2126.52	-78.95	-48.57	-369.47	1661872.28	14314033.35	39°25'03.730"N	80°55'26.508"W	372.65	262.511	2.93	2.77	-2.99	
2352.50	16.850	265.690	2230.56	-94.22	-51.97	-424.22	1661817.56	14314029.96	39°25'03.703"N	80°55'27.206"W	427.39	263.016	1.91	-1.90	-0.81	
2430.50	19.190	262.810	2364.73	-100.01	-54.42	-448.21	1661793.57	14314027.50	39°25'03.706"N	80°55'27.512"W	451.51	263.077	3.21	3.00	-3.69	
2571.50	17.560	265.400	2498.54	-110.59	-59.03	-492.41	1661749.39	14314022.90	39°25'03.661"N	80°55'28.075"W	495.94	263.164	1.29	-1.16	1.84	
2690.50	17.030	259.020	2612.17	-117.92	-63.79	-527.42	1661714.40	14314018.14	39°25'03.614"N	80°55'28.521"W	531.26	263.104	1.65	-0.45	-5.36	WFT EM <8-3/4">(2562')(2681-6546')
2785.50	20.500	261.390	2702.11	-123.24	-68.93	-557.53	1661684.30	14314013.00	39°25'03.563"N	80°55'28.905"W	561.77	262.952	3.74	3.65	2.49	



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Copper John Unit 1H
Field	Tyler	Wellbore	Copper John Unit 1H 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
2880.50	22.130	261.040	2790.61	-129.79	-74.21	-591.65	1661650.19	14314007.73	39°25'03.512"N	80°55'29.340"W	596.29	262.851	1.72	1.72	-0.37	
2978.50	22.180	259.960	2879.52	-136.21	-80.18	-627.36	1661614.50	14314001.75	39°25'03.453"N	80°55'29.795"W	632.46	262.717	0.43	0.05	-1.13	
3070.50	21.600	258.050	2966.74	-141.53	-86.86	-661.76	1661580.11	14313995.08	39°25'03.387"N	80°55'30.233"W	667.43	262.523	0.98	-0.62	-2.03	
3165.50	22.830	260.110	3054.69	-147.04	-93.64	-697.02	1661544.86	14313988.30	39°25'03.320"N	80°55'30.682"W	703.29	262.348	1.53	1.29	2.17	
3259.50	22.860	259.630	3141.32	-153.12	-100.06	-732.95	1661508.95	14313981.88	39°25'03.257"N	80°55'31.140"W	739.75	262.226	0.20	0.03	-0.51	
3353.50	22.860	257.690	3228.03	-158.41	-107.19	-768.53	1661473.39	14313974.75	39°25'03.187"N	80°55'31.594"W	775.97	262.060	0.86	-0.32	-2.06	
3448.50	22.340	261.040	3315.84	-164.13	-113.89	-804.17	1661437.76	14313968.06	39°25'03.121"N	80°55'32.048"W	812.19	261.939	1.37	-0.23	3.53	
3542.50	21.860	260.310	3402.93	-170.52	-119.62	-839.06	1661402.88	14313962.33	39°25'03.065"N	80°55'32.492"W	847.55	261.887	0.59	-0.51	-0.78	
3636.50	22.450	262.500	3489.99	-177.36	-124.91	-874.11	1661367.95	14313956.05	39°25'03.013"N	80°55'32.939"W	882.99	261.868	1.08	0.63	2.33	
3731.50	21.700	261.450	3578.03	-184.61	-129.89	-909.46	1661332.51	14313950.07	39°25'02.964"N	80°55'33.390"W	918.69	261.872	0.89	-0.78	-1.11	
3825.50	19.720	264.600	3665.95	-191.90	-133.96	-942.44	1661299.54	14313945.53	39°25'02.924"N	80°55'33.810"W	951.91	261.910	2.42	-2.11	3.35	
3920.50	19.830	266.600	3755.35	-200.39	-136.43	-974.48	1661267.52	14313941.18	39°25'02.900"N	80°55'34.218"W	983.99	262.030	0.72	0.12	2.11	
4014.50	19.120	264.750	3843.97	-208.72	-138.78	-1005.73	1661236.28	14313939.82	39°25'02.877"N	80°55'34.616"W	1015.26	262.143	1.00	-0.76	-1.97	
4109.50	19.870	262.040	3933.53	-215.89	-142.44	-1037.21	1661204.81	14313939.32	39°25'02.841"N	80°55'35.017"W	1046.95	262.181	1.24	0.79	-2.85	
4203.50	19.360	258.950	4022.07	-221.50	-147.64	-1068.33	1661173.71	14313934.32	39°25'02.790"N	80°55'35.414"W	1078.48	262.132	1.23	-0.54	-3.28	
4298.50	20.480	262.580	4111.39	-227.41	-152.80	-1100.26	1661141.79	14313929.16	39°25'02.739"N	80°55'35.821"W	1110.82	262.093	1.76	1.18	3.82	
4393.50	21.410	264.680	4200.11	-235.27	-156.56	-1134.01	1661108.05	14313925.41	39°25'02.702"N	80°55'36.251"W	1144.76	262.140	1.26	0.98	2.21	
4487.50	20.910	263.750	4287.78	-243.44	-159.97	-1167.77	1661074.31	14313921.99	39°25'02.669"N	80°55'36.681"W	1178.67	262.200	0.64	-0.53	-0.98	
4582.50	22.000	262.460	4376.19	-251.14	-164.15	-1202.26	1661039.83	14313917.81	39°25'02.627"N	80°55'37.121"W	1213.41	262.225	1.25	1.15	-1.36	
4676.50	22.230	261.400	4463.28	-258.29	-169.12	-1237.30	1661004.81	14313912.85	39°25'02.579"N	80°55'37.567"W	1248.80	262.217	0.49	0.24	-1.12	
4771.50	22.630	262.030	4551.09	-265.48	-174.34	-1273.17	1660968.95	14313907.63	39°25'02.527"N	80°55'38.024"W	1285.05	262.203	0.49	0.42	0.65	
4865.50	22.820	260.960	4637.79	-272.54	-179.71	-1309.08	1660933.05	14313902.26	39°25'02.475"N	80°55'38.482"W	1321.36	262.183	0.48	0.20	-1.14	
4960.50	23.650	262.470	4725.09	-279.98	-185.10	-1346.16	1660895.98	14313896.87	39°25'02.422"N	80°55'38.954"W	1358.83	262.171	1.08	0.87	1.59	
5054.50	22.780	264.750	4811.48	-288.51	-189.24	-1382.98	1660859.18	14313892.74	39°25'02.381"N	80°55'39.423"W	1395.86	262.208	1.33	-0.93	2.43	
5148.50	22.700	264.720	4898.17	-297.58	-192.57	-1419.16	1660823.02	14313889.41	39°25'02.348"N	80°55'39.885"W	1432.17	262.272	0.09	-0.09	-0.03	
5243.50	21.100	264.620	4986.31	-306.39	-195.86	-1454.44	1660787.75	14313886.12	39°25'02.316"N	80°55'40.334"W	1467.57	262.330	1.68	-1.68	-0.11	
5338.50	21.090	264.480	5074.95	-314.81	-199.11	-1488.48	1660753.73	14313882.87	39°25'02.284"N	80°55'40.788"W	1501.73	262.381	0.05	-0.01	-0.15	
5432.50	19.940	262.670	5162.99	-322.40	-202.78	-1521.21	1660721.01	14313879.20	39°25'02.248"N	80°55'41.185"W	1534.67	262.407	1.40	-1.22	-1.93	
5526.50	20.010	261.410	5251.33	-328.95	-207.23	-1553.01	1660689.22	14313874.76	39°25'02.205"N	80°55'41.590"W	1566.77	262.399	0.46	0.07	-1.34	
5621.50	20.270	260.350	5340.52	-334.96	-212.42	-1585.30	1660656.94	14313869.57	39°25'02.154"N	80°55'42.002"W	1599.47	262.368	0.47	0.27	-1.12	



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Copper John Unit 1H
Field	Tyler	Wellbore	Copper John Unit 1H AWB
Facility	Stoneyly Pad		

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5716.50	20.350	259.350	5429.62	-340.44	-218.23	-1617.76	1660624.49	14313863.76	39°25'02.086"N	80°55'42.415"W	1632.41	262.317	0.37	0.08	-1.05	
5810.50	21.030	257.640	5517.55	-345.18	-224.86	-1650.30	1660591.97	14313857.13	39°25'02.031"N	80°55'42.830"W	1665.55	262.241	0.97	0.72	-1.92	
5905.50	21.720	254.570	5606.02	-348.68	-233.18	-1683.90	1660558.39	14313848.81	39°25'01.949"N	80°55'43.258"W	1699.97	262.116	1.38	0.73	-3.23	
5937.50	21.080	248.890	5635.82	-348.98	-236.83	-1694.97	1660547.31	14313845.16	39°25'01.913"N	80°55'43.399"W	1711.44	262.046	6.78	-2.00	-17.75	
5968.50	20.400	240.210	5664.82	-347.90	-241.53	-1704.87	1660537.42	14313840.47	39°25'01.867"N	80°55'43.525"W	1721.89	261.937	10.15	-2.19	-28.00	
6000.50	19.590	233.220	5694.89	-345.35	-247.51	-1714.01	1660528.29	14313834.49	39°25'01.808"N	80°55'43.642"W	1731.78	261.783	7.88	-2.53	-21.84	
6063.50	20.420	226.270	5753.95	-337.52	-261.79	-1730.63	1660511.67	14313820.22	39°25'01.667"N	80°55'43.854"W	1740.87	261.606	4.92	2.03	-13.16	
6094.50	23.610	222.260	5782.58	-332.30	-270.30	-1738.90	1660500.08	14313817.71	39°25'01.583"N	80°55'43.959"W	1759.79	261.164	8.53	6.97	-12.87	
6125.50	26.430	217.470	5810.67	-325.64	-280.37	-1747.28	1660486.35	14313789.62	39°25'01.364"N	80°55'44.066"W	1769.63	260.884	11.21	9.10	-16.52	
6157.50	28.810	214.320	5839.03	-317.25	-292.40	-1755.96	1660469.48	14313763.56	39°25'01.240"N	80°55'44.283"W	1780.14	260.546	8.72	7.44	-9.84	
6188.50	29.530	212.750	5866.10	-308.21	-304.99	-1764.31	1660449.01	14313749.69	39°25'01.107"N	80°55'44.500"W	1790.47	260.192	3.39	2.32	-5.06	
6220.50	30.250	211.930	5893.84	-298.41	-318.47	-1772.84	1660432.21	14313735.72	39°25'00.970"N	80°55'44.717"W	1801.21	259.816	2.59	2.25	-2.56	
6252.50	30.840	210.900	5921.40	-288.20	-332.34	-1781.31	1660415.19	14313720.39	39°25'00.832"N	80°55'44.934"W	1812.05	259.432	2.46	1.84	-3.22	
6283.50	31.690	208.510	5947.90	-277.74	-346.32	-1789.28	1660403.05	14313705.55	39°25'00.680"N	80°55'45.151"W	1822.49	259.048	4.86	2.74	-7.71	
6315.50	33.510	205.850	5974.86	-265.95	-361.66	-1797.14	1660386.18	14313692.63	39°25'00.524"N	80°55'45.368"W	1833.17	258.622	7.24	5.69	-8.31	
6346.50	34.510	201.930	6000.56	-253.40	-377.51	-1804.16	1660369.33	14313677.43	39°25'00.352"N	80°55'45.585"W	1843.23	258.182	7.77	3.23	-12.65	
6378.50	35.670	196.080	6026.75	-239.05	-394.88	-1810.13	1660352.21	14313662.63	39°25'00.208"N	80°55'45.802"W	1852.70	257.694	11.11	3.63	-18.28	
6404.00†	36.540	192.750	6047.35	-226.62	-409.43	-1813.86	1660335.19	14313647.82	39°25'00.054"N	80°55'46.019"W	1859.50	257.280	8.42	3.41	-13.06	Sycamore: 6604MD / 6047TVD
6409.50	36.740	192.050	6051.76	-223.84	-412.64	-1814.57	1660318.18	14313632.63	39°25'00.176"N	80°55'46.236"W	1860.89	257.189	8.42	3.63	-12.73	
6440.50	38.890	188.420	6076.26	-207.37	-431.34	-1817.93	1660301.94	14313617.82	39°24'59.992"N	80°55'46.453"W	1868.40	256.652	9.98	6.94	-11.71	
6472.50	41.570	185.370	6100.69	-188.89	-451.85	-1820.39	1660284.74	14313603.23	39°24'59.789"N	80°55'46.670"W	1875.63	256.060	10.39	8.37	-9.53	
6503.50	43.580	183.320	6123.51	-169.74	-472.76	-1821.97	1660267.59	14313588.69	39°24'59.582"N	80°55'46.887"W	1882.31	255.454	7.88	6.48	-6.61	
6535.50	45.630	181.160	6146.30	-148.90	-495.21	-1822.85	1660250.44	14313574.03	39°24'59.360"N	80°55'47.104"W	1888.91	254.801	7.97	6.41	-6.75	
6555.50	47.020	180.270	6168.11	-135.35	-509.67	-1823.02	1660233.29	14313559.38	39°24'59.138"N	80°55'47.321"W	1892.93	254.380	7.66	6.95	-4.45	
6614.00	51.770	177.400	6198.18	-93.25	-554.06	-1822.08	1660216.14	14313544.72	39°24'58.916"N	80°55'47.538"W	1904.46	253.087	8.93	8.12	-4.91	BH AT Curve <8.1/2"> (6555.5)/(6614.15114)
6632.00†	52.821	176.883	6209.18	-79.62	-568.28	-1821.37	1660200.97	14313529.85	39°24'58.694"N	80°55'47.755"W	1907.97	252.672	6.27	5.84	-2.87	Middlesex: 6632MD / 6209TVD
6661.00	54.520	176.080	6226.36	-57.19	-591.60	-1819.94	1660184.20	14313515.13	39°24'58.472"N	80°55'48.072"W	1913.68	251.992	6.27	5.86	-2.77	
6707.00	54.450	175.940	6253.09	-21.15	-628.95	-1817.33	1660167.05	14313500.44	39°24'58.250"N	80°55'48.289"W	1923.09	250.910	0.29	-0.15	-0.30	
6754.00	56.750	174.500	6279.64	16.32	-667.59	-1814.06	1660150.24	14313485.78	39°24'58.028"N	80°55'48.506"W	1933.03	249.796	5.51	4.89	-3.06	



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Copper John Unit 1H
Field	Tyler	Wellbore	Copper John Unit 1H AWB
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
6787.00†	60.267	174.158	6296.88	43.61	-695.59	-1811.31	1660431.02	14313386.59	39°24'57.380"N	80°55'44.886"W	1940.28	248.992	10.70	10.66	-1.04	Burket: 6787' MD / 6297' TVD
6801.00	61.760	174.020	6303.66	55.51	-707.77	-1810.05	1660432.28	14313374.42	39°24'57.259"N	80°55'44.870"W	1943.51	248.643	10.70	10.66	-0.98	
6843.00†	65.451	174.217	6322.33	92.03	-745.19	-1806.20	1660436.14	14313337.01	39°24'56.890"N	80°55'44.822"W	1953.88	247.980	8.80	8.79	0.47	Tully: 6843' MD / 6322' TVD
6848.00	65.890	174.240	6324.39	96.45	-749.72	-1805.74	1660436.59	14313329.06	39°24'56.845"N	80°55'44.816"W	1955.19	247.452	8.80	8.79	0.45	
6894.00	70.360	173.730	6341.52	137.91	-792.16	-1801.26	1660441.07	14313290.06	39°24'56.425"N	80°55'44.769"W	1967.76	246.261	9.77	9.72	-1.11	
6901.00†	71.045	173.581	6343.84	144.34	-798.73	-1800.53	1660441.80	14313283.50	39°24'56.380"N	80°55'44.750"W	1969.74	246.078	9.99	9.78	-2.13	POE Marcellus: 6901' MD / 6344' TVD
6941.00	74.980	172.750	6355.53	181.62	-836.70	-1795.98	1660446.35	14313245.54	39°24'55.985"N	80°55'44.692"W	1981.31	245.020	9.99	9.78	-2.08	
6988.00	79.850	172.660	6365.77	226.40	-882.18	-1790.16	1660446.35	14313200.07	39°24'55.595"N	80°55'44.619"W	1995.72	243.766	10.41	10.40	-0.19	
7035.00	83.830	172.860	6372.44	271.82	-928.33	-1784.29	1660458.03	14313153.95	39°24'55.079"N	80°55'44.544"W	2011.34	242.513	8.48	8.47	0.43	
7081.00	88.120	173.220	6375.67	316.56	-973.87	-1778.74	1660463.59	14313108.43	39°24'54.629"N	80°55'44.474"W	2027.88	241.299	9.36	9.33	0.78	
7175.00	90.060	168.810	6377.18	408.88	-1066.67	-1764.06	1660478.25	14313015.66	39°24'53.712"N	80°55'44.288"W	2061.48	238.840	5.12	2.06	-4.69	
7269.00	89.850	165.560	6377.24	502.18	-1158.32	-1743.21	1660499.09	14312924.05	39°24'52.806"N	80°55'44.023"W	2092.96	236.397	3.46	-0.22	-3.48	
7362.00	89.940	164.470	6377.41	594.87	-1248.15	-1719.17	1660523.13	14312834.25	39°24'51.918"N	80°55'43.718"W	2124.48	234.019	1.18	0.10	-1.17	
7456.00	90.220	162.740	6377.28	688.70	-1338.33	-1692.54	1660549.65	14312744.11	39°24'51.026"N	80°55'43.381"W	2157.81	231.667	1.86	0.30	-1.84	
7549.00	90.250	161.780	6376.89	781.65	-1426.90	-1664.90	1660577.98	14312655.57	39°24'50.151"N	80°55'43.020"W	2192.25	229.392	1.03	0.03	-1.03	
7643.00	89.850	158.760	6376.81	875.64	-1515.38	-1632.57	1660609.69	14312567.13	39°24'49.276"N	80°55'42.617"W	2227.48	227.132	3.24	-0.43	-3.21	
7737.00	89.940	155.970	6376.99	969.50	-1602.13	-1596.40	1660645.85	14312480.42	39°24'48.418"N	80°55'42.157"W	2261.70	224.897	2.97	0.10	-2.97	
7831.00	89.970	159.000	6377.03	1063.31	-1688.38	-1559.04	1660683.20	14312394.20	39°24'47.566"N	80°55'41.682"W	2298.09	222.719	1.30	0.06	1.30	
7925.00	89.850	156.580	6377.16	1157.14	-1774.83	-1522.13	1660720.08	14312307.78	39°24'46.711"N	80°55'41.213"W	2338.15	220.617	0.67	-0.16	-0.65	
8019.00	89.850	158.670	6377.40	1251.03	-1861.75	-1486.35	1660755.85	14312220.90	39°24'45.852"N	80°55'40.768"W	2382.30	218.603	2.22	0.00	2.22	
8112.00	89.970	159.000	6377.55	1344.00	-1948.48	-1452.78	1660789.41	14312134.21	39°24'44.994"N	80°55'40.331"W	2430.46	216.708	0.38	0.13	0.35	
8207.00	90.030	160.360	6377.55	1439.00	-2037.56	-1419.79	1660822.39	14312045.16	39°24'44.113"N	80°55'39.911"W	2483.44	214.869	1.43	0.06	1.43	
8300.00	89.970	162.940	6377.60	1531.96	-2125.83	-1390.51	1660851.65	14311956.93	39°24'43.241"N	80°55'39.539"W	2540.21	213.189	2.78	-0.13	2.77	
8395.00	89.970	163.720	6377.70	1626.83	-2216.83	-1363.26	1660878.90	14311865.96	39°24'42.341"N	80°55'39.193"W	2602.47	211.590	0.82	0.06	0.82	
8489.00	89.970	163.940	6377.75	1720.65	-2307.12	-1337.08	1660905.06	14311775.71	39°24'41.449"N	80°55'38.860"W	2666.56	210.094	0.23	0.00	0.23	
8584.00	89.820	162.670	6377.92	1815.51	-2398.11	-1309.79	1660932.34	14311684.76	39°24'40.549"N	80°55'38.514"W	2732.49	208.642	1.35	-0.16	-1.34	
8678.00	89.820	161.650	6378.22	1909.46	-2487.59	-1280.99	1660961.13	14311595.31	39°24'39.664"N	80°55'38.148"W	2798.04	207.246	1.09	0.00	-1.09	
8772.00	90.550	159.750	6377.91	2003.45	-2576.30	-1249.93	1660992.18	14311506.64	39°24'38.787"N	80°55'37.763"W	2863.50	205.881	2.17	0.78	-2.02	
8865.00	90.150	159.020	6377.34	2096.44	-2663.34	-1217.18	1661024.91	14311419.63	39°24'37.927"N	80°55'37.336"W	2928.30	204.561	0.90	-0.43	-0.78	
8959.00	90.120	159.300	6377.12	2190.42	-2751.19	-1183.74	1661058.34	14311331.81	39°24'37.058"N	80°55'36.911"W	2995.05	203.281	0.30	-0.03	0.30	



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #07
Operator	ANTERO RESOURCES CORPORATION	Well	Copper John Unit 1H
Area	Tyler County, WV	Wellbore	Copper John Unit 1H 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 (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
9054.00	90.550	159.410	6376.57	2285.41	-2840.09	-1150.25	1661091.82	14311242.95	39°24'36.179"N	80°55'36.486"W	3064.18	202.048	0.47	0.45	0.12	
9148.00	90.030	160.610	6376.09	2379.40	-2928.42	-1118.11	1661123.94	14311154.65	39°24'35.306"N	80°55'36.077"W	3134.62	200.898	1.39	-0.55	1.28	
9244.00	90.310	159.770	6375.81	2475.40	-3018.74	-1085.58	1661156.46	14311064.37	39°24'34.413"N	80°55'35.663"W	3208.00	199.779	0.92	0.29	-0.87	
9338.00	89.660	160.220	6375.83	2569.40	-3107.07	-1053.42	1661188.61	14310976.08	39°24'33.540"N	80°55'35.255"W	3280.79	198.729	0.84	-0.69	0.48	
9433.00	90.520	161.890	6375.68	2664.38	-3196.92	-1022.68	1661219.44	14310886.27	39°24'32.682"N	80°55'34.863"W	3356.48	197.738	1.98	0.91	1.76	
9528.00	90.710	165.780	6374.66	2759.18	-3288.14	-996.14	1661248.87	14310795.08	39°24'31.760"N	80°55'34.527"W	3435.72	196.854	4.10	0.20	4.03	
9622.00	90.400	164.620	6373.75	2852.83	-3379.02	-972.13	1661269.87	14310704.24	39°24'30.852"N	80°55'34.222"W	3516.07	196.050	1.28	-0.33	-1.23	
9716.00	90.770	159.210	6372.79	2946.75	-3468.33	-942.96	1661299.02	14310614.96	39°24'29.969"N	80°55'33.851"W	3594.23	195.210	5.77	0.39	-5.76	
9811.00	90.220	154.030	6371.97	3041.52	-3555.50	-905.28	1661336.69	14310527.83	39°24'29.107"N	80°55'33.372"W	3668.94	194.285	5.48	-0.58	-5.45	
9905.00	89.850	154.040	6371.91	3134.96	-3640.01	-864.12	1661377.83	14310443.35	39°24'28.271"N	80°55'32.849"W	3741.18	193.355	0.39	-0.39	0.01	
10000.00	89.970	154.680	6372.06	3229.45	-3725.66	-823.01	1661418.92	14310357.74	39°24'27.424"N	80°55'32.326"W	3815.48	192.457	0.69	0.13	0.67	
10095.00	89.880	157.010	6372.19	3324.16	-3812.33	-784.14	1661457.78	14310271.10	39°24'26.587"N	80°55'31.831"W	3892.14	191.623	2.45	-0.09	2.45	
10190.00	89.780	161.640	6372.47	3419.12	-3901.19	-750.61	1661491.30	14310182.28	39°24'25.669"N	80°55'31.405"W	3972.74	190.891	4.87	-0.11	4.87	
10285.00	89.970	166.160	6372.68	3513.91	-3992.44	-724.27	1661517.63	14310091.07	39°24'24.787"N	80°55'31.071"W	4057.60	190.282	4.76	0.20	4.76	
10381.00	90.280	167.540	6372.47	3609.27	-4085.92	-702.43	1661539.46	14309997.62	39°24'23.863"N	80°55'30.793"W	4145.86	189.755	1.47	0.32	1.44	
10476.00	90.950	162.370	6371.45	3703.92	-4177.63	-677.78	1661564.10	14309905.95	39°24'22.956"N	80°55'30.480"W	4232.25	189.215	5.49	0.71	-5.44	
10571.00	89.880	158.520	6370.76	3798.90	-4267.13	-645.99	1661595.87	14309816.49	39°24'22.071"N	80°55'30.076"W	4315.75	188.609	4.21	-1.13	-4.05	
10665.00	90.620	161.510	6370.35	3892.88	-4355.45	-613.87	1661627.98	14309728.20	39°24'21.198"N	80°55'29.668"W	4398.50	188.023	3.28	0.79	3.18	
10761.00	90.120	159.760	6369.73	3988.88	-4446.02	-582.04	1661659.80	14309637.67	39°24'20.303"N	80°55'29.263"W	4483.95	187.458	1.90	-0.52	-1.82	
10856.00	89.880	154.360	6369.73	4083.69	-4533.47	-545.03	1661696.80	14309550.25	39°24'19.438"N	80°55'28.793"W	4566.12	186.855	5.69	-0.25	-5.68	
10950.00	90.000	150.170	6369.83	4176.75	-4616.65	-501.29	1661740.52	14309467.10	39°24'18.615"N	80°55'28.237"W	4643.79	186.197	4.46	0.13	-4.46	
11045.00	89.630	151.300	6370.13	4270.44	-4699.53	-454.85	1661786.94	14309384.26	39°24'17.796"N	80°55'27.646"W	4721.49	185.528	1.25	-0.39	1.19	
11140.00	89.750	156.700	6370.65	4364.83	-4784.88	-413.22	1661828.55	14309298.94	39°24'16.952"N	80°55'27.116"W	4802.69	184.936	5.69	0.13	5.68	
11235.00	89.910	161.380	6370.93	4459.78	-4873.57	-379.25	1661862.51	14309210.29	39°24'16.075"N	80°55'26.685"W	4888.30	184.450	4.93	0.17	4.93	
11329.00	89.880	160.830	6371.10	4553.77	-4962.50	-348.81	1661892.94	14309121.39	39°24'15.196"N	80°55'26.298"W	4974.75	184.021	0.59	-0.03	-0.58	
11424.00	89.750	161.100	6371.41	4648.76	-5052.31	-317.82	1661923.91	14309031.62	39°24'14.308"N	80°55'25.904"W	5062.29	183.600	0.32	-0.14	0.28	
11519.00	89.910	160.420	6371.69	4743.76	-5142.00	-286.52	1661955.20	14308941.97	39°24'13.421"N	80°55'25.506"W	5149.98	183.189	0.74	0.17	-0.72	
11613.00	89.260	161.890	6372.37	4837.74	-5230.96	-256.16	1661985.55	14308853.05	39°24'12.542"N	80°55'25.120"W	5237.22	182.804	1.71	-0.69	1.56	
11707.00	89.820	167.240	6373.13	4931.44	-5321.53	-231.15	1662010.55	14308762.51	39°24'11.647"N	80°55'24.803"W	5326.55	182.487	5.72	0.60	5.68	
11801.00	90.000	167.870	6373.27	5024.68	-5413.32	-210.89	1662030.80	14308670.75	39°24'10.739"N	80°55'24.548"W	5417.43	182.231	0.70	0.19	0.67	



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Copper John Unit 1H
Field	Tyler	Wellbore	Copper John Unit 1H AWB
Facility	Stonefly Pad		

WELLPATH DATA (186 stations)

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
11896.00	90.280	164.350	6373.04	5119.18	-5505.53	-188.09	1662053.59	14308578.58	39°24'09.828"N	80°55'24.256"W	5508.74	181.957	3.72	0.29	-3.71	
11991.00	90.060	160.210	6372.76	5214.10	-5596.00	-159.18	1662082.49	14308488.15	39°24'08.933"N	80°55'23.889"W	5598.26	181.629	4.36	-0.23	-4.36	
12085.00	90.340	160.430	6372.43	5308.10	-5684.51	-127.53	1662114.13	14308399.68	39°24'08.058"N	80°55'23.487"W	5685.94	181.285	0.38	0.30	0.23	
12180.00	90.740	161.760	6371.54	5403.08	-5774.38	-96.75	1662144.90	14308309.84	39°24'07.170"N	80°55'23.095"W	5775.19	180.960	1.46	0.42	1.40	
12274.00	90.460	162.650	6370.55	5497.02	-5863.87	-68.02	1662173.61	14308220.38	39°24'06.285"N	80°55'22.731"W	5864.27	180.665	0.99	-0.30	0.95	
12368.00	90.890	165.400	6369.44	5590.81	-5954.23	-42.16	1662199.47	14308130.06	39°24'05.392"N	80°55'22.402"W	5954.38	180.406	2.96	0.46	2.93	
12463.00	90.710	166.690	6368.12	5685.31	-6046.41	-19.25	1662222.36	14308037.91	39°24'04.480"N	80°55'22.111"W	6046.45	180.182	1.37	-0.19	1.36	
12558.00	90.370	159.620	6367.22	5780.13	-6137.28	8.26	1662249.86	14307947.09	39°24'03.582"N	80°55'21.762"W	6137.28	179.923	7.45	-0.36	-7.44	
12653.00	90.120	156.700	6366.81	5875.01	-6225.13	44.36	1662285.95	14307859.27	39°24'02.713"N	80°55'21.303"W	6225.29	179.592	4.13	-0.28	-4.13	
12746.00	90.150	156.610	6366.60	5967.77	-6310.19	81.96	1662323.53	14307774.25	39°24'01.872"N	80°55'20.825"W	6310.72	179.256	0.98	0.03	0.98	
12842.00	90.250	156.950	6366.26	6063.67	-6399.05	118.26	1662359.82	14307685.42	39°24'00.994"N	80°55'20.363"W	6400.15	178.941	2.44	0.10	2.44	
12937.00	90.250	158.450	6365.85	6158.63	-6487.56	152.77	1662394.31	14307596.94	39°24'00.119"N	80°55'19.925"W	6489.36	178.651	0.53	0.00	-0.53	
13032.00	90.180	158.190	6365.49	6253.58	-6575.84	187.86	1662429.39	14307508.70	39°23'59.246"N	80°55'19.479"W	6578.52	178.364	0.28	-0.07	-0.27	
13127.00	90.180	156.430	6365.19	6348.44	-6663.49	224.51	1662466.02	14307421.03	39°23'58.379"N	80°55'19.013"W	6667.27	178.070	1.85	0.00	-1.85	
13221.00	90.090	156.110	6364.97	6442.21	-6749.54	262.34	1662503.84	14307335.07	39°23'57.529"N	80°55'18.532"W	6754.63	177.774	0.35	-0.10	-0.34	
13316.00	90.060	157.810	6364.70	6537.05	-6836.96	299.51	1662541.00	14307247.69	39°23'56.664"N	80°55'18.059"W	6843.51	177.492	1.79	-0.03	1.79	
13411.00	90.120	157.210	6364.41	6631.94	-6924.73	335.85	1662577.33	14307159.95	39°23'55.796"N	80°55'17.597"W	6932.87	177.223	0.63	0.06	-0.63	
13506.00	90.220	156.680	6364.11	6726.86	-7012.78	371.53	1662612.98	14307071.94	39°23'54.926"N	80°55'17.144"W	7022.61	176.967	1.55	0.11	1.55	
13600.00	90.310	156.440	6363.98	6820.83	-7100.57	405.12	1662646.56	14306984.19	39°23'54.058"N	80°55'16.717"W	7112.11	176.735	0.81	0.10	0.81	
13695.00	90.280	160.780	6363.49	6915.83	-7189.90	437.44	1662678.87	14306894.89	39°23'53.175"N	80°55'16.306"W	7203.19	176.518	1.41	-0.03	1.41	
13790.00	90.180	159.360	6363.11	7010.83	-7279.20	469.82	1662711.24	14306805.62	39°23'52.292"N	80°55'15.895"W	7294.35	176.307	1.50	-0.11	-1.49	
13884.00	90.310	160.730	6362.71	7104.82	-7367.56	501.90	1662743.31	14306717.30	39°23'51.418"N	80°55'15.487"W	7384.63	176.103	1.46	0.14	1.46	
13979.00	89.750	164.460	6362.66	7199.73	-7458.19	530.31	1662771.71	14306626.71	39°23'50.522"N	80°55'15.126"W	7477.02	175.933	3.97	-0.59	3.93	
14074.00	89.910	166.270	6362.94	7294.35	-7550.10	554.31	1662795.70	14306534.83	39°23'49.614"N	80°55'14.822"W	7570.42	175.801	1.91	0.17	1.91	
14169.00	89.970	163.810	6363.04	7389.02	-7641.88	578.83	1662820.21	14306443.03	39°23'48.706"N	80°55'14.510"W	7663.77	175.668	2.59	0.06	-2.59	
14263.00	89.940	161.700	6363.11	7482.92	-7731.65	606.70	1662848.06	14306353.36	39°23'47.819"N	80°55'14.156"W	7755.41	175.513	2.24	-0.03	-2.24	
14358.00	89.690	160.120	6363.42	7577.91	-7821.42	637.77	1662879.12	14306263.62	39°23'46.931"N	80°55'13.761"W	7847.38	175.338	1.68	-0.29	-1.68	
14451.00	89.940	159.540	6363.72	7670.91	-7908.71	669.84	1662911.17	14306176.36	39°23'46.068"N	80°55'13.354"W	7937.03	175.159	0.68	0.27	-0.62	
14546.00	89.850	157.600	6363.89	7765.86	-7997.14	704.54	1662945.87	14306087.97	39°23'45.194"N	80°55'12.913"W	8028.12	174.965	2.04	-0.09	-2.04	
14641.00	89.780	157.640	6364.20	7860.76	-8084.99	740.71	1662982.02	14306000.16	39°23'44.326"N	80°55'12.463"W	8118.85	174.765	0.08	-0.07	0.04	



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Copper John Unit 1H
Field	Tyler	Wellbore	Copper John Unit 1H 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
14735.00	90.000	160.570	6364.38	7854.73	-8172.79	774.24	1663015.53	14305912.39	39°23'43.457"N	80°55'12.027"W	8209.39	174.588	3.13	0.23	3.12	
14831.00	89.910	160.790	6364.46	8050.73	-8263.39	806.00	1663047.28	14305821.83	39°23'42.562"N	80°55'11.624"W	8302.60	174.429	0.25	-0.09	0.23	
14925.00	90.030	160.620	6364.51	8144.72	-8352.11	837.06	1663078.33	14305733.15	39°23'41.685"N	80°55'11.229"W	8393.95	174.277	0.22	0.13	-0.18	
15020.00	90.060	159.200	6364.43	8239.72	-8441.33	869.69	1663110.95	14305643.97	39°23'40.803"N	80°55'10.814"W	8486.01	174.118	1.50	0.03	-1.48	
15114.00	89.910	159.280	6364.46	8333.70	-8529.22	903.01	1663144.25	14305556.10	39°23'39.933"N	80°55'10.391"W	8576.89	173.956	0.18	-0.16	0.09	
15165.00	89.910	159.280	6364.54	8384.70	-8576.92	921.05	1663162.29	14305508.42	39°23'39.462"N	80°55'10.162"W	8626.24	173.871	0.00	0.00	0.00	Projected MD @ TD: 15165'MD / 6365'TVD

HOLE & CASING SECTIONS - Ref Wellbore: Copper John Unit 1H AWB Ref Wellpath: Copper John Unit 1H AWP Proj: 15165'

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	0.00	0.00	-0.05
17.5in Open Hole	104.50	581.50	477.00	104.50	581.50	-0.05	-0.12	-0.12	-0.64
13.375in Casing Surface	24.50	581.50	557.00	24.50	581.50	0.00	0.00	0.00	-0.64
12.25in Open Hole	581.50	2654.80	2073.30	581.50	2578.05	-0.85	-0.85	-0.85	-517.08
9.625in Casing Intermediate	24.50	2654.80	2630.30	24.50	2578.05	0.00	0.00	0.00	-61.96



Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Copper John Unit 1H
Field	Tyler	Wellbore	Copper John Unit 1H AWB
Facility	Stoneyfield Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Copper John Unit 1H POE Rev-2	6345.00	-804.96	-1805.42	1660436.91	14313277.26	39°24'56.239"N	80°55'44.812"W	point
Copper John Unit 1H BHL Rev-2	6376.00	-8589.06	912.84	1663154.08	14305496.29	39°23'39.342"N	80°55'10.266"W	point
Copper John Unit 1H LP Rev-2	6376.00	-988.60	-1776.17	1660466.15	14313093.70	39°24'54.484"N	80°55'44.441"W	point

WELLPATH COMPOSITION - Ref Wellbore: Copper John Unit 1H AWB Ref Wellpath: Copper John Unit 1H AWP Proj: 15165'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	529.90	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(100'-520.4')	Copper John Unit 1H AWB
529.90	1559.50	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4">(520.4')(614'-1550')	Copper John Unit 1H AWB
1559.50	2571.50	ISCWSA MWD, Rev. 4 (Standard)	03 WFT EM <12-1/4">(1550')(1644'-2562')	Copper John Unit 1H AWB
2571.50	6555.50	ISCWSA MWD, Rev. 4 (Standard)	04 WFT EM <8-3/4">(2562')(2681'-6546')	Copper John Unit 1H AWB
6555.50	15114.00	BHI AutoTrak Curve (Short)	05 BH AT Curve <8-1/2"> (6555.5')(6614'-15114')	Copper John Unit 1H AWB
15114.00	15765.00	Blind Drilling (std)	Projection to bit	Copper John Unit 1H AWB

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Actual Wellpath Report

Copper John Unit 1H AWP Proj: 15165'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Copper John Unit 1H
Field	Tyler	Wellbore	Copper John Unit 1H AWB
Facility	Stonefly Pad		

COMMENTS
<p>Wellpath general comments API: 47-095-02404-0000 BH Job #: 8977274 Rig: Frontier 22 Duration: 01/22/18 - 01/24/18 Gyrodatta MS Gyro <17-1/2">(100'-520.4') Gyrodatta MS Gyro <12-1/4">(520.4')(614'-1550') WFT EM <12-1/4">(1550')(1644'-2562') WFT EM <8-3/4">(2562')(2681'-6546') Sycamore: 6404'MD / 6047'TVD BH AT Curve <8-1/2">(6555.5')(6614'-15114') Middlesex: 6632'MD / 6209'TVD Burket: 6787'MD / 6297'TVD Tully: 6843'MD / 6322'TVD POE Marcellus: 6901'MD / 6344'TVD Projected MD @ TD: 15165'MD / 6365'TVD</p>

04/05/2019