

# ANTERO RESOURCES CORPORATION

Location: Tyler County, WV  
 Field: Tyler  
 Facility: Pyle Run Pad

Slot: Slot #01  
 Well: Heintzman Unit 1H  
 Wellbore: Heintzman Unit 1H PWB

API: 47-095-02526-0000  
 BHI Job #: 109507843  
 Rig: Patterson 342  
 Duration: 11/19/2018-11/23/2018

Scale 1 inch = 2000  
 Easting (ft)  
 -3000 -2000 -1000 0 1000 2000 3000

Gyrodata MS Gyro <17-1/2">(100'-427') : 100.00ft TVD, 0.02ft S, 0.08ft W  
 WFT EM <12-1/4">(427')(504'-2690') : 503.99ft TVD, 0.30ft N, 2.93ft W  
 WFT EM <8-3/4">(2690')(2825'-6238') : 2634.13ft TVD, 130.20ft S, 833.90ft W

BH AT Curve <8-1/2">(6238')(6279'-17731') : 5717.36ft TVD, 374.74ft S, 2367.18ft W  
 Marcellus POE: 7280' MD : 6459.36ft TVD, 912.01ft S, 2494.09ft W

Plot reference wellpath is Heintzman Unit 1H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Patterson 342 (RKB)	North Reference: Grid north
Measured depths are referenced to Patterson 342 (RKB)	Scale: True distance
Patterson 342 (RKB) to Mean Sea Level: 1140 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #01): -1115 feet	Created by: delaset on 2018-12-03
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Defn

Gyrodata MS Gyro <17-1/2">(100'-427') : 0.12° Inc, 100.00ft MD, 100.00ft TVD, -0.01ft VS  
 WFT EM <12-1/4">(427')(504'-2690') : 0.44° Inc, 504.00ft MD, 503.99ft TVD, -1.28ft VS

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Pyle Run Pad	1667566.130	14307672.036	39°24'00.812"N	80°54'14.016"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot #01	-54.96	-112.51	1667453.662	14307617.100	80°54'15.450"W
Comment	Heintzman Unit 1H				
Patterson 342 (RKB) to Ground level (At Slot: Slot #01)	25ft				
Mean Sea Level to Ground level (At Slot: Slot #01)	-1115ft				
Patterson 342 (RKB) to Mean Sea Level	1140ft				

WFT EM <8-3/4">(2690')(2825'-6238') : 25.77° Inc, 2825.00ft MD, 2634.13ft TVD, -159.26ft VS

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6238.00	24.320	259.950	5680.08	-371.84	-2350.36	1.12	-444.66
Proj. To Bottom	6298.00	25.500	260.700	5734.50	-376.09	-2375.27	2.04	-449.09
KOP	6333.00	25.500	260.700	5766.09	-378.52	-2390.14	0.00	-451.83
End of 3D Arc	6776.35	35.353	199.227	6156.69	-518.54	-2530.04	7.04	-367.35
POE	7315.69	73.569	160.241	6472.00	-934.47	-2491.66	9.00	37.07
Landing Pt.	7498.26	90.000	160.241	6498.00	-1103.95	-2430.78	9.00	217.15
BHL	17793.90	90.000	160.241	6498.00	-10793.43	1049.76	0.00	10512.78

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #01	Heintzman Unit 1H	Heintzman Unit 1H AWB	Heintzman Unit 1H AWP Proj: 17755'
Slot #01	Heintzman Unit 1H	Heintzman Unit 1H PWB	Heintzman Unit 1H PWP Rev-A.0

BH AT Curve <8-1/2">(6238')(6279'-17731') : 24.88° Inc, 6279.00ft MD, 5717.36ft TVD, -447.62ft VS

Marcellus POE: 7280' MD : 71.31° Inc, 7280.00ft MD, 6459.36ft TVD, 15.11ft VS

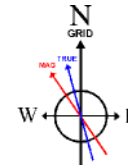
Projected MD at TD: 17755' : 89.88° Inc, 17755.00ft MD, 6509.88ft TVD, 10473.14ft VS

Scale 1 inch = 1500  
 True Vertical Depth (ft)  
 -750  
 0  
 750  
 1500  
 2250  
 3000  
 3750  
 4500  
 5250  
 6000  
 6750

Northing (ft)  
 0  
 -1000  
 -2000  
 -3000  
 -4000  
 -5000  
 -6000  
 -7000  
 -8000  
 -9000  
 -10000  
 -11000  
 -12000

Vertical Section (ft)  
 -750 0 750 1500 2250 3000 3750 4500 5250 6000 6750 7500 8250 9000 9750 10500 11250

Scale 1 inch = 1500  
 Azimuth 160.24° with reference 0.00 N, 0.00 E



User specified (HDGM) Dip: 66.54° Field: 51857 nT  
 Magnetic North is 7.63 degrees West of True North (at 16/Nov/2018)  
 Grid North is 0.06 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.06 degrees  
 To correct azimuth from Magnetic to Grid subtract 7.69 degrees

Projected MD at TD: 17755' : 6509.88ft TVD, 10759.51ft S, 1026.93ft E

BHL: 77'



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	03/Dec/2018 at 16:52
Convergence at slot	0.06° East	Database/Source file	WA_MPL_EasternUS_Defn/Heintzman_Unit_1H_AWP_Proj_17755_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-54.96	-112.51	1667453.66	14307617.10	39°24'00.270"N	80°54'15.450"W
Facility Reference Pt			1667566.13	14307672.04	39°24'00.812"N	80°54'14.016"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 342 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 342 (RKB) to Mean Sea Level	1140.00ft
Vertical Reference Pt	Patterson 342 (RKB)	Patterson 342 (RKB) to Ground Level at Slot (Slot #01)	25.00ft
MD Reference Pt	Patterson 342 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	160.24°



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

## WELLPATH DATA (217 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00†	0.000	257.580	0.00	0.00	0.00	0.00	1667453.66	14307617.10	39°24'00.270"N	80°54'15.450"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	257.580	25.00	0.00	0.00	0.00	1667453.66	14307617.10	39°24'00.270"N	80°54'15.450"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.120	257.580	100.00	-0.01	-0.02	-0.08	1667453.59	14307617.08	39°24'00.270"N	80°54'15.451"W	0.08	257.580	0.16	0.16	-136.56	Gyrodata MS Gyro <17-1/2">(100'-427')
125.00	0.100	262.850	125.00	-0.02	-0.03	-0.12	1667453.54	14307617.07	39°24'00.270"N	80°54'15.452"W	0.13	258.488	0.09	-0.08	21.08	
150.00	0.080	273.690	150.00	-0.03	-0.03	-0.16	1667453.50	14307617.07	39°24'00.270"N	80°54'15.452"W	0.17	260.652	0.10	-0.08	43.36	
175.00	0.150	268.500	175.00	-0.05	-0.03	-0.21	1667453.45	14307617.07	39°24'00.270"N	80°54'15.453"W	0.21	262.895	0.28	0.28	-20.76	
200.00	0.240	257.750	200.00	-0.06	-0.04	-0.30	1667453.37	14307617.06	39°24'00.270"N	80°54'15.454"W	0.30	262.608	0.39	0.36	-43.00	
225.00	0.230	289.750	225.00	-0.10	-0.03	-0.40	1667453.27	14307617.07	39°24'00.270"N	80°54'15.455"W	0.40	265.275	0.52	-0.04	128.00	
250.00	0.270	285.980	250.00	-0.17	0.00	-0.50	1667453.16	14307617.10	39°24'00.270"N	80°54'15.456"W	0.50	270.056	0.17	0.16	-15.08	
275.00	0.300	289.200	275.00	-0.24	0.04	-0.62	1667453.04	14307617.14	39°24'00.270"N	80°54'15.458"W	0.62	273.542	0.14	0.12	12.88	
300.00	0.360	283.630	300.00	-0.33	0.08	-0.76	1667452.91	14307617.18	39°24'00.271"N	80°54'15.460"W	0.76	275.912	0.27	0.24	-22.28	
325.00	0.560	266.160	325.00	-0.41	0.09	-0.95	1667452.71	14307617.19	39°24'00.271"N	80°54'15.462"W	0.96	275.305	0.97	0.80	-69.88	
350.00	0.490	275.470	350.00	-0.48	0.09	-1.18	1667452.48	14307617.19	39°24'00.271"N	80°54'15.465"W	1.19	274.382	0.44	-0.28	37.24	
375.00	0.740	285.900	375.00	-0.62	0.15	-1.44	1667452.22	14307617.24	39°24'00.271"N	80°54'15.468"W	1.45	275.735	1.09	1.00	41.72	
400.00	0.740	285.140	399.99	-0.81	0.23	-1.76	1667451.91	14307617.33	39°24'00.272"N	80°54'15.472"W	1.77	277.511	0.04	0.00	-3.04	
425.00	0.800	278.720	424.99	-0.99	0.30	-2.08	1667451.58	14307617.40	39°24'00.273"N	80°54'15.477"W	2.10	278.195	0.42	0.24	-25.68	
427.00	0.800	276.390	426.99	-1.00	0.30	-2.11	1667451.55	14307617.40	39°24'00.273"N	80°54'15.477"W	2.13	278.186	1.63	0.00	-116.50	
504.00	0.440	257.910	503.99	-1.28	0.30	-2.93	1667450.73	14307617.40	39°24'00.273"N	80°54'15.487"W	2.95	275.868	0.53	-0.47	-24.00	WFT EM <12-1/4">(427')(504'-2690')
593.00	1.570	259.440	592.97	-1.52	0.01	-4.47	1667449.20	14307617.11	39°24'00.270"N	80°54'15.507"W	4.47	270.084	1.27	1.27	1.72	
685.00	4.140	266.640	684.85	-2.66	-0.42	-9.02	1667444.64	14307616.68	39°24'00.266"N	80°54'15.565"W	9.03	267.340	2.82	2.79	7.83	
775.00	6.820	263.000	774.43	-4.75	-1.26	-17.57	1667436.10	14307615.84	39°24'00.258"N	80°54'15.674"W	17.62	265.895	3.00	2.98	-4.04	
870.00	9.250	261.740	868.49	-7.52	-3.05	-30.73	1667422.95	14307614.06	39°24'00.240"N	80°54'15.841"W	30.88	264.340	2.56	2.56	-1.33	
964.00	11.230	259.360	960.99	-10.48	-5.82	-47.20	1667406.48	14307611.28	39°24'00.213"N	80°54'16.051"W	47.56	262.969	2.15	2.11	-2.53	
1058.00	13.770	262.920	1052.75	-14.39	-8.89	-67.30	1667386.39	14307608.21	39°24'00.183"N	80°54'16.307"W	67.89	262.475	2.82	2.70	3.79	
1153.00	16.300	265.060	1144.50	-20.28	-11.43	-91.81	1667361.89	14307605.67	39°24'00.158"N	80°54'16.620"W	92.52	262.902	2.73	2.66	2.25	
1249.00	18.680	262.190	1236.05	-26.91	-14.68	-120.47	1667333.24	14307602.42	39°24'00.126"N	80°54'16.985"W	121.36	263.051	2.64	2.48	-2.99	
1343.00	21.530	257.050	1324.32	-32.07	-20.60	-152.20	1667301.52	14307596.51	39°24'00.068"N	80°54'17.389"W	153.59	262.294	3.56	3.03	-5.47	
1438.00	24.080	256.930	1411.89	-36.40	-28.89	-188.07	1667265.67	14307588.23	39°23'59.986"N	80°54'17.846"W	190.28	261.268	2.68	2.68	-0.13	
1533.00	26.530	260.980	1497.77	-42.61	-36.60	-227.91	1667225.84	14307580.52	39°23'59.911"N	80°54'18.354"W	230.83	260.878	3.16	2.58	4.26	
1627.00	29.070	264.170	1580.92	-52.02	-42.21	-271.38	1667182.40	14307574.91	39°23'59.856"N	80°54'18.907"W	274.64	261.159	3.13	2.70	3.39	



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

## WELLPATH DATA (217 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
1722.00	29.690	263.930	1663.70	-63.15	-47.04	-317.73	1667136.06	14307570.08	39°23'59.808"N	80°54'19.498"W	321.19	261.578	0.66	0.65	-0.25	
1816.00	29.580	261.660	1745.41	-73.25	-52.87	-363.84	1667089.97	14307564.25	39°23'59.751"N	80°54'20.085"W	367.66	261.732	1.20	-0.12	-2.41	
1911.00	28.360	258.650	1828.53	-81.19	-60.71	-409.16	1667044.66	14307556.41	39°23'59.674"N	80°54'20.663"W	413.64	261.560	2.00	-1.28	-3.17	
2006.00	26.730	258.320	1912.75	-87.50	-69.48	-452.21	1667001.63	14307547.65	39°23'59.588"N	80°54'21.211"W	457.52	261.266	1.72	-1.72	-0.35	
2100.00	26.620	260.930	1996.75	-94.38	-77.08	-493.71	1666960.15	14307540.05	39°23'59.513"N	80°54'21.740"W	499.69	261.127	1.25	-0.12	2.78	
2195.00	29.920	265.100	2080.42	-104.40	-82.46	-538.35	1666915.53	14307534.68	39°23'59.461"N	80°54'22.309"W	544.63	261.292	4.05	3.47	4.39	
2288.00	31.560	266.580	2160.35	-117.20	-85.89	-585.76	1666868.14	14307531.24	39°23'59.427"N	80°54'22.913"W	592.02	261.658	1.94	1.76	1.59	
2383.00	30.570	264.840	2241.73	-130.28	-89.55	-634.64	1666819.28	14307527.59	39°23'59.392"N	80°54'23.536"W	640.92	261.969	1.41	-1.04	-1.83	
2478.00	27.730	261.340	2324.69	-140.63	-95.05	-680.56	1666773.38	14307522.09	39°23'59.338"N	80°54'24.121"W	687.16	262.049	3.49	-2.99	-3.68	
2573.00	26.490	257.300	2409.26	-147.49	-103.04	-723.08	1666730.87	14307514.11	39°23'59.259"N	80°54'24.662"W	730.39	261.890	2.34	-1.31	-4.25	
2668.00	27.260	256.870	2494.00	-152.61	-112.64	-764.94	1666689.03	14307504.51	39°23'59.165"N	80°54'25.196"W	773.19	261.624	0.84	0.81	-0.45	
2690.00	27.630	256.950	2513.52	-153.79	-114.93	-774.82	1666679.16	14307502.21	39°23'59.142"N	80°54'25.322"W	783.29	261.563	1.69	1.68	0.36	
2825.00	25.770	253.780	2634.13	-159.26	-130.20	-833.50	1666620.50	14307486.95	39°23'58.992"N	80°54'26.069"W	843.61	261.122	1.73	-1.38	-2.35	WFT EM <8-3/4">(2690')(2825'-6238')
2920.00	26.030	256.760	2719.59	-162.90	-140.74	-873.62	1666580.39	14307476.41	39°23'58.888"N	80°54'26.580"W	884.88	260.848	1.40	0.27	3.14	
3015.00	26.660	260.530	2804.73	-169.07	-149.02	-914.94	1666539.09	14307468.14	39°23'58.807"N	80°54'27.107"W	926.99	260.749	1.88	0.66	3.97	
3110.00	24.230	266.180	2890.52	-178.24	-153.83	-955.42	1666498.62	14307463.33	39°23'58.759"N	80°54'27.623"W	967.73	260.853	3.61	-2.56	5.95	
3208.00	25.180	264.170	2979.55	-188.78	-157.29	-996.23	1666457.83	14307459.87	39°23'58.726"N	80°54'28.143"W	1008.57	261.028	1.29	0.97	-2.05	
3303.00	26.160	263.550	3065.17	-198.47	-161.69	-1037.14	1666416.93	14307455.47	39°23'58.683"N	80°54'28.664"W	1049.67	261.139	1.07	1.03	-0.65	
3397.00	26.950	262.970	3149.26	-207.93	-166.63	-1078.88	1666375.22	14307450.54	39°23'58.634"N	80°54'29.195"W	1091.67	261.220	0.88	0.84	-0.62	
3492.00	27.250	260.950	3233.83	-216.72	-172.68	-1121.72	1666332.39	14307444.48	39°23'58.575"N	80°54'29.741"W	1134.93	261.248	1.02	0.32	-2.13	
3587.00	26.460	259.920	3318.58	-224.32	-179.81	-1164.04	1666290.09	14307437.36	39°23'58.505"N	80°54'30.280"W	1177.84	261.219	0.97	-0.83	-1.08	
3682.00	25.740	258.370	3403.90	-230.79	-187.67	-1205.08	1666249.06	14307429.50	39°23'58.427"N	80°54'30.803"W	1219.61	261.148	1.04	-0.76	-1.63	
3776.00	25.150	259.890	3488.78	-237.03	-195.29	-1244.74	1666209.42	14307421.88	39°23'58.353"N	80°54'31.309"W	1259.97	261.083	0.94	-0.63	1.62	
3871.00	25.690	259.770	3574.58	-243.82	-202.50	-1284.88	1666169.30	14307414.69	39°23'58.282"N	80°54'31.820"W	1300.74	261.044	0.57	0.57	-0.13	
3966.00	26.570	262.960	3659.88	-251.91	-208.76	-1326.23	1666127.96	14307408.43	39°23'58.220"N	80°54'32.347"W	1342.56	261.055	1.74	0.93	3.36	
4061.00	27.220	264.830	3744.60	-262.06	-213.32	-1368.96	1666085.26	14307403.87	39°23'58.176"N	80°54'32.891"W	1385.48	261.143	1.12	0.68	1.97	
4156.00	27.790	264.290	3828.86	-272.91	-217.48	-1412.63	1666041.60	14307399.71	39°23'58.135"N	80°54'33.448"W	1429.27	261.248	0.65	0.60	-0.57	
4251.00	28.310	261.720	3912.71	-282.77	-222.93	-1456.96	1665997.29	14307394.26	39°23'58.082"N	80°54'34.012"W	1473.92	261.301	1.38	0.55	-2.71	
4346.00	27.900	260.960	3996.51	-291.39	-229.66	-1501.20	1665953.06	14307387.53	39°23'58.015"N	80°54'34.576"W	1518.67	261.302	0.57	-0.43	-0.80	
4440.00	27.500	263.110	4079.73	-300.31	-235.72	-1544.47	1665909.81	14307381.47	39°23'57.956"N	80°54'35.127"W	1562.35	261.322	1.15	-0.43	2.29	



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #01
Area	Tyler County, WV		Well	Heintzman Unit 1H
Field	Tyler		Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad			

WELLPATH DATA (217 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
4535.00	27.790	263.110	4163.89	-310.13	-241.01	-1588.23	1665866.07	14307376.19	39°23'57.904"N	80°54'35.685"W	1606.41	261.371	0.31	0.31	0.00	
4630.00	26.630	259.140	4248.38	-318.36	-247.68	-1631.13	1665823.19	14307369.52	39°23'57.839"N	80°54'36.231"W	1649.83	261.366	2.27	-1.22	-4.18	
4724.00	26.580	259.280	4332.43	-324.92	-255.56	-1672.48	1665781.85	14307361.64	39°23'57.761"N	80°54'36.758"W	1691.90	261.312	0.09	-0.05	0.15	
4819.00	26.240	260.880	4417.51	-332.14	-262.84	-1714.10	1665740.25	14307354.36	39°23'57.690"N	80°54'37.288"W	1734.14	261.282	0.83	-0.36	1.68	
4914.00	26.670	261.930	4502.57	-340.34	-269.17	-1755.95	1665698.42	14307348.04	39°23'57.628"N	80°54'37.822"W	1776.46	261.285	0.67	0.45	1.11	
5008.00	28.060	262.090	4586.05	-349.15	-275.17	-1798.74	1665655.65	14307342.04	39°23'57.569"N	80°54'38.367"W	1819.66	261.302	1.48	1.48	0.17	
5103.00	29.650	260.580	4669.25	-357.96	-282.09	-1844.05	1665610.35	14307335.12	39°23'57.501"N	80°54'38.944"W	1865.50	261.303	1.84	1.67	-1.59	
5198.00	29.590	256.240	4751.84	-364.63	-291.52	-1890.02	1665564.40	14307325.70	39°23'57.408"N	80°54'39.530"W	1912.37	261.232	2.26	-0.06	-4.57	
5292.00	25.820	254.930	4835.05	-368.73	-302.36	-1932.34	1665522.09	14307314.86	39°23'57.301"N	80°54'40.069"W	1955.86	261.107	4.06	-4.01	-1.39	
5387.00	24.570	255.180	4921.01	-372.12	-312.79	-1971.42	1665483.04	14307304.43	39°23'57.198"N	80°54'40.567"W	1996.08	260.984	1.32	-1.32	0.26	
5481.00	26.380	255.740	5005.87	-375.81	-322.94	-2010.55	1665443.92	14307294.29	39°23'57.099"N	80°54'41.066"W	2036.32	260.875	1.94	1.93	0.60	
5576.00	27.500	257.770	5090.56	-380.70	-332.78	-2052.45	1665402.04	14307284.45	39°23'57.002"N	80°54'41.599"W	2079.25	260.790	1.53	1.18	2.14	
5671.00	26.920	260.130	5175.05	-387.27	-341.12	-2095.07	1665359.43	14307276.12	39°23'56.920"N	80°54'42.142"W	2122.66	260.752	1.29	-0.61	2.48	
5765.00	26.830	263.190	5258.90	-395.68	-347.28	-2137.10	1665317.42	14307269.96	39°23'56.859"N	80°54'42.678"W	2165.13	260.770	1.47	-0.10	3.26	
5954.00	28.130	266.810	5426.59	-417.95	-354.82	-2223.95	1665230.61	14307262.42	39°23'56.785"N	80°54'43.784"W	2252.07	260.935	1.12	0.69	1.92	
6049.00	29.070	264.950	5510.00	-430.20	-358.10	-2269.30	1665185.28	14307259.15	39°23'56.754"N	80°54'44.362"W	2297.38	261.033	1.36	0.99	-1.96	
6144.00	24.950	257.930	5594.64	-438.74	-364.32	-2311.91	1665142.68	14307252.92	39°23'56.692"N	80°54'44.905"W	2340.44	261.045	5.48	-4.34	-7.39	
6238.00	24.320	259.950	5680.08	-444.66	-371.84	-2350.36	1665104.25	14307245.40	39°23'56.618"N	80°54'45.395"W	2379.59	261.010	1.12	-0.67	2.15	
6279.00	24.880	260.500	5717.36	-447.62	-374.74	-2367.18	1665087.43	14307242.51	39°23'56.590"N	80°54'45.609"W	2396.66	261.004	1.48	1.37	1.34	BH AT Curve <8-1/2">(6238')(6279'-17731')
6326.00	24.870	258.930	5760.00	-450.88	-378.27	-2386.63	1665067.99	14307238.98	39°23'56.555"N	80°54'45.857"W	2416.42	260.994	1.41	-0.02	-3.34	
6374.00	24.780	251.290	5803.58	-452.59	-383.44	-2406.07	1665048.56	14307233.82	39°23'56.504"N	80°54'46.104"W	2436.43	260.945	6.68	-0.19	-15.92	
6421.00	25.150	241.200	5846.21	-451.20	-391.41	-2424.16	1665030.48	14307225.84	39°23'56.426"N	80°54'46.335"W	2455.55	260.828	9.09	0.79	-21.47	
6469.00	25.700	233.290	5889.57	-446.56	-402.55	-2441.44	1665013.20	14307214.71	39°23'56.316"N	80°54'46.555"W	2474.41	260.637	7.16	1.15	-16.48	
6516.00	26.780	226.070	5931.74	-439.25	-415.99	-2457.24	1664997.40	14307201.27	39°23'56.183"N	80°54'46.757"W	2492.21	260.391	7.17	2.30	-15.36	
6563.00	27.750	222.610	5973.52	-429.84	-431.39	-2472.28	1664982.38	14307185.88	39°23'56.031"N	80°54'46.948"W	2509.63	260.102	3.95	2.06	-7.36	
6610.00	28.760	217.610	6014.92	-418.67	-448.41	-2486.59	1664968.07	14307168.87	39°23'55.863"N	80°54'47.131"W	2526.69	259.778	5.47	2.15	-10.64	
6658.00	30.450	210.890	6056.67	-404.72	-468.00	-2499.88	1664954.78	14307149.29	39°23'55.670"N	80°54'47.301"W	2543.31	259.397	7.76	3.52	-14.00	
6705.00	32.210	204.680	6096.82	-388.22	-489.61	-2511.23	1664943.44	14307127.69	39°23'55.456"N	80°54'47.445"W	2558.52	258.968	7.82	3.74	-13.21	
6753.00	34.670	199.880	6136.88	-368.57	-514.08	-2521.22	1664933.45	14307103.23	39°23'55.214"N	80°54'47.573"W	2573.10	258.475	7.52	5.13	-10.00	
6799.00	37.410	196.630	6174.08	-347.24	-539.78	-2529.67	1664925.01	14307077.54	39°23'54.960"N	80°54'47.681"W	2586.62	257.955	7.26	5.96	-7.07	



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

## WELLPATH DATA (217 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
6846.00	39.820	191.730	6210.81	-322.91	-568.20	-2536.82	1664917.86	14307049.13	39°23'54.679"N	80°54'47.772"W	2599.67	257.375	8.28	5.13	-10.43	
6893.00	42.580	185.020	6246.18	-295.62	-598.80	-2541.27	1664913.41	14307018.54	39°23'54.377"N	80°54'47.829"W	2610.87	256.741	11.08	5.87	-14.28	
6941.00	45.310	179.920	6280.75	-264.79	-632.05	-2542.67	1664912.01	14306985.30	39°23'54.048"N	80°54'47.848"W	2620.05	256.040	9.31	5.69	-10.62	
6988.00	48.760	175.880	6312.79	-232.03	-666.40	-2541.38	1664913.31	14306950.96	39°23'53.709"N	80°54'47.832"W	2627.30	255.307	9.66	7.34	-8.60	Middlesex: 6988' MD
7036.00	52.180	173.490	6343.34	-196.18	-703.25	-2537.93	1664916.75	14306914.13	39°23'53.345"N	80°54'47.788"W	2633.56	254.512	8.09	7.13	-4.98	
7083.00	55.950	170.810	6370.92	-158.95	-740.94	-2532.71	1664921.97	14306876.46	39°23'52.972"N	80°54'47.722"W	2638.87	253.693	9.25	8.02	-5.70	
7130.00	59.940	168.640	6395.86	-119.67	-780.12	-2525.59	1664929.08	14306837.29	39°23'52.585"N	80°54'47.632"W	2643.33	252.835	9.35	8.49	-4.62	
7146.00†	60.902	168.228	6403.76	-105.90	-793.75	-2522.80	1664931.87	14306823.67	39°23'52.450"N	80°54'47.596"W	2644.73	252.535	6.42	6.01	-2.58	Burkett: 7146' MD
7177.00	62.770	167.450	6418.39	-78.81	-820.46	-2517.04	1664937.63	14306796.96	39°23'52.186"N	80°54'47.523"W	2647.39	251.946	6.42	6.03	-2.51	
7213.00†	64.990	166.426	6434.24	-46.71	-851.95	-2509.74	1664944.93	14306765.49	39°23'51.875"N	80°54'47.431"W	2650.39	251.250	6.68	6.17	-2.85	Tully: 7213' MD
7224.00	65.670	166.120	6438.83	-36.77	-861.66	-2507.36	1664947.30	14306755.79	39°23'51.779"N	80°54'47.401"W	2651.29	251.035	6.68	6.18	-2.78	
7271.00	70.390	164.640	6456.41	6.63	-903.82	-2496.36	1664958.31	14306713.64	39°23'51.362"N	80°54'47.261"W	2654.94	250.097	10.46	10.04	-3.15	
7280.00†	71.306	164.444	6459.36	15.11	-912.01	-2494.09	1664960.57	14306705.45	39°23'51.281"N	80°54'47.232"W	2655.61	249.914	10.39	10.18	-2.17	Marcellus POE: 7280' MD
7319.00	75.280	163.620	6470.57	52.37	-947.92	-2483.81	1664970.84	14306669.56	39°23'50.926"N	80°54'47.102"W	2658.55	249.111	10.39	10.19	-2.11	
7366.00	79.950	163.250	6480.65	98.19	-991.91	-2470.73	1664983.92	14306625.59	39°23'50.491"N	80°54'46.936"W	2662.40	248.126	9.97	9.94	-0.79	
7414.00	83.680	163.060	6487.48	145.63	-1037.37	-2456.96	1664997.68	14306580.15	39°23'50.042"N	80°54'46.761"W	2666.98	247.110	7.78	7.77	-0.40	
7461.00	87.910	163.030	6490.92	192.44	-1082.20	-2443.30	1665011.35	14306535.34	39°23'49.599"N	80°54'46.587"W	2672.24	246.110	9.00	9.00	-0.06	
7510.00	89.850	163.250	6491.88	241.37	-1129.08	-2429.09	1665025.55	14306488.47	39°23'49.135"N	80°54'46.407"W	2678.67	245.070	3.98	3.96	0.45	
7605.00	89.940	161.740	6492.06	336.29	-1219.68	-2400.51	1665054.11	14306397.91	39°23'48.239"N	80°54'46.044"W	2692.60	243.065	1.59	0.09	-1.59	
7700.00	90.030	159.490	6492.08	431.28	-1309.28	-2368.99	1665085.63	14306308.34	39°23'47.353"N	80°54'45.644"W	2706.72	241.072	2.37	0.09	-2.37	
7795.00	89.970	157.460	6492.08	526.23	-1397.65	-2334.13	1665120.47	14306220.01	39°23'46.480"N	80°54'45.201"W	2720.59	239.087	2.14	-0.06	-2.14	
7890.00	89.660	156.880	6492.39	621.09	-1485.21	-2297.27	1665157.31	14306132.48	39°23'45.614"N	80°54'44.732"W	2735.56	237.117	0.69	-0.33	-0.61	
7985.00	89.630	156.090	6492.98	715.89	-1572.32	-2259.37	1665195.20	14306045.41	39°23'44.753"N	80°54'44.250"W	2752.62	235.166	0.83	-0.03	-0.83	
8079.00	89.630	156.120	6493.58	809.64	-1658.26	-2221.29	1665233.26	14305959.50	39°23'43.903"N	80°54'43.767"W	2772.00	233.258	0.03	0.00	0.03	
8174.00	89.630	156.070	6494.20	904.39	-1745.11	-2182.80	1665271.74	14305872.69	39°23'43.044"N	80°54'43.277"W	2794.64	231.358	0.05	0.00	-0.05	
8269.00	89.570	157.800	6494.86	999.23	-1832.51	-2145.58	1665308.94	14305785.32	39°23'42.180"N	80°54'42.804"W	2821.63	229.500	1.82	-0.06	1.82	
8364.00	89.690	159.470	6495.47	1094.18	-1920.98	-2110.97	1665343.53	14305696.89	39°23'41.305"N	80°54'42.365"W	2854.18	227.698	1.76	0.13	1.76	
8458.00	89.720	159.530	6495.96	1188.17	-2009.02	-2078.06	1665376.44	14305608.88	39°23'40.435"N	80°54'41.946"W	2890.41	225.968	0.07	0.03	0.06	
8554.00	89.570	159.110	6496.55	1284.16	-2098.84	-2044.15	1665410.33	14305519.11	39°23'39.547"N	80°54'41.516"W	2929.79	224.244	0.46	-0.16	-0.44	
8648.00	89.660	161.090	6497.18	1378.15	-2187.22	-2012.16	1665442.31	14305430.76	39°23'38.673"N	80°54'41.109"W	2971.99	222.613	2.11	0.10	2.11	



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

## WELLPATH DATA (217 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
8743.00	89.570	162.970	6497.82	1473.10	-2277.58	-1982.85	1665471.60	14305340.44	39°23'37.780"N	80°54'40.737"W	3019.78	221.043	1.98	-0.09	1.98	
8837.00	89.540	164.390	6498.55	1566.93	-2367.78	-1956.44	1665498.01	14305250.27	39°23'36.888"N	80°54'40.402"W	3071.49	219.566	1.51	-0.03	1.51	
8932.00	89.660	164.640	6499.22	1661.66	-2459.33	-1931.08	1665523.36	14305158.75	39°23'35.983"N	80°54'40.080"W	3126.88	218.139	0.29	0.13	0.26	
9027.00	89.630	164.270	6499.80	1756.40	-2550.86	-1905.62	1665548.81	14305067.27	39°23'35.078"N	80°54'39.757"W	3184.06	216.762	0.39	-0.03	-0.39	
9121.00	89.630	164.070	6500.41	1850.18	-2641.29	-1879.98	1665574.44	14304976.87	39°23'34.184"N	80°54'39.431"W	3242.02	215.442	0.21	0.00	-0.21	
9216.00	89.690	164.270	6500.98	1944.95	-2732.68	-1854.06	1665600.34	14304885.51	39°23'33.280"N	80°54'39.102"W	3302.29	214.156	0.22	0.06	0.21	
9311.00	89.630	163.570	6501.54	2039.75	-2823.96	-1827.75	1665626.64	14304794.27	39°23'32.378"N	80°54'38.768"W	3363.84	212.912	0.74	-0.06	-0.74	
9405.00	89.600	162.480	6502.17	2133.64	-2913.87	-1800.31	1665654.08	14304704.40	39°23'31.489"N	80°54'38.420"W	3425.16	211.710	1.16	-0.03	-1.16	
9500.00	89.690	161.810	6502.76	2228.58	-3004.29	-1771.18	1665683.19	14304614.02	39°23'30.595"N	80°54'38.050"W	3487.52	210.522	0.71	0.09	-0.71	
9595.00	89.850	161.140	6503.14	2323.56	-3094.36	-1741.00	1665713.36	14304523.98	39°23'29.704"N	80°54'37.667"W	3550.52	209.364	0.73	0.17	-0.71	
9690.00	89.750	159.120	6503.47	2418.56	-3183.70	-1708.71	1665745.64	14304434.67	39°23'28.821"N	80°54'37.257"W	3613.26	208.223	2.13	-0.11	-2.13	
9784.00	89.660	159.070	6503.96	2512.54	-3271.51	-1675.17	1665779.16	14304346.90	39°23'27.953"N	80°54'36.831"W	3675.46	207.115	0.11	-0.10	-0.05	
9879.00	89.630	157.720	6504.54	2607.48	-3359.84	-1640.19	1665814.13	14304258.61	39°23'27.080"N	80°54'36.386"W	3738.81	206.021	1.42	-0.03	-1.42	
9973.00	90.280	158.790	6504.62	2701.42	-3447.15	-1605.37	1665848.94	14304171.34	39°23'26.216"N	80°54'35.944"W	3802.63	204.972	1.33	0.69	1.14	
10068.00	89.820	159.840	6504.54	2796.41	-3536.02	-1571.81	1665882.48	14304082.50	39°23'25.338"N	80°54'35.518"W	3869.63	203.966	1.21	-0.48	1.11	
10163.00	90.030	161.050	6504.66	2891.41	-3625.54	-1540.01	1665914.26	14303993.01	39°23'24.453"N	80°54'35.114"W	3939.06	203.014	1.29	0.22	1.27	
10257.00	89.910	160.490	6504.71	2985.40	-3714.29	-1509.06	1665945.21	14303904.30	39°23'23.575"N	80°54'34.720"W	4009.14	202.111	0.61	-0.13	-0.60	
10352.00	89.910	160.050	6504.86	3080.40	-3803.72	-1476.98	1665977.27	14303814.91	39°23'22.691"N	80°54'34.313"W	4080.41	201.221	0.46	0.00	-0.46	
10446.00	89.880	160.850	6505.03	3174.40	-3892.30	-1445.53	1666008.71	14303726.36	39°23'21.815"N	80°54'33.914"W	4152.05	200.374	0.85	-0.03	0.85	
10541.00	89.880	160.800	6505.23	3269.40	-3982.03	-1414.33	1666039.90	14303636.67	39°23'20.928"N	80°54'33.517"W	4225.74	199.554	0.05	0.00	-0.05	
10636.00	89.970	162.220	6505.35	3364.37	-4072.12	-1384.20	1666070.02	14303546.61	39°23'20.037"N	80°54'33.135"W	4300.95	198.774	1.50	0.09	1.49	
10730.00	89.970	161.800	6505.40	3458.32	-4161.52	-1355.17	1666099.04	14303457.25	39°23'19.153"N	80°54'32.766"W	4376.61	198.037	0.45	0.00	-0.45	
10825.00	89.940	160.160	6505.48	3553.31	-4251.33	-1324.21	1666129.99	14303367.47	39°23'18.265"N	80°54'32.373"W	4452.79	197.301	1.73	-0.03	-1.73	
10920.00	89.910	157.590	6505.60	3648.28	-4339.94	-1289.97	1666164.21	14303278.90	39°23'17.389"N	80°54'31.938"W	4527.60	196.554	2.71	-0.03	-2.71	
11014.00	89.780	156.390	6505.86	3742.13	-4426.46	-1253.23	1666200.94	14303192.41	39°23'16.534"N	80°54'31.471"W	4600.45	195.808	1.28	-0.14	-1.28	
11109.00	89.970	155.160	6506.06	3836.83	-4513.09	-1214.25	1666239.90	14303105.82	39°23'15.677"N	80°54'30.976"W	4673.59	195.059	1.31	0.20	-1.29	
11203.00	90.060	155.990	6506.04	3930.52	-4598.68	-1175.38	1666278.75	14303020.26	39°23'14.831"N	80°54'30.482"W	4746.51	194.337	0.89	0.10	0.88	
11298.00	90.000	157.390	6505.99	4025.34	-4685.92	-1137.79	1666316.33	14302933.06	39°23'13.968"N	80°54'30.004"W	4822.08	193.648	1.48	-0.06	1.47	
11392.00	89.970	160.620	6506.01	4119.30	-4773.67	-1104.12	1666349.99	14302845.34	39°23'13.101"N	80°54'29.577"W	4899.70	193.023	3.44	-0.03	3.44	
11487.00	89.690	159.650	6506.30	4214.30	-4863.02	-1071.83	1666382.26	14302756.03	39°23'12.217"N	80°54'29.167"W	4979.74	192.430	1.06	-0.29	-1.02	



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

## WELLPATH DATA (217 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
11582.00	89.600	158.560	6506.88	4309.28	-4951.77	-1037.95	1666416.13	14302667.32	39°23'11.340"N	80°54'28.736"W	5059.38	191.839	1.15	-0.09	-1.15	
11676.00	89.660	159.280	6507.49	4403.25	-5039.47	-1004.15	1666449.92	14302579.65	39°23'10.472"N	80°54'28.307"W	5138.54	191.269	0.77	0.06	0.77	
11771.00	89.690	161.010	6508.03	4498.25	-5128.82	-971.88	1666482.17	14302490.34	39°23'09.589"N	80°54'27.897"W	5220.09	190.730	1.82	0.03	1.82	
11866.00	89.540	162.120	6508.67	4593.22	-5218.94	-941.84	1666512.20	14302400.25	39°23'08.698"N	80°54'27.516"W	5303.25	190.230	1.18	-0.16	1.17	
11960.00	89.690	161.810	6509.30	4687.17	-5308.32	-912.74	1666541.29	14302310.91	39°23'07.814"N	80°54'27.146"W	5386.22	189.756	0.37	0.16	-0.33	
12055.00	89.630	164.440	6509.86	4782.04	-5399.22	-885.16	1666568.85	14302220.04	39°23'06.916"N	80°54'26.796"W	5471.30	189.310	2.77	-0.06	2.77	
12149.00	89.720	165.050	6510.40	4875.75	-5489.91	-860.43	1666593.57	14302129.39	39°23'06.019"N	80°54'26.482"W	5556.93	188.907	0.66	0.10	0.65	
12244.00	89.690	163.410	6510.89	4970.52	-5581.33	-834.61	1666619.38	14302038.01	39°23'05.115"N	80°54'26.155"W	5643.39	188.505	1.73	-0.03	-1.73	
12338.00	89.750	159.580	6511.35	5064.47	-5670.45	-804.79	1666649.20	14301948.92	39°23'04.234"N	80°54'25.776"W	5727.28	188.078	4.07	0.06	-4.07	
12433.00	89.660	157.740	6511.84	5159.43	-5758.93	-770.22	1666683.75	14301860.48	39°23'03.359"N	80°54'25.337"W	5810.21	187.618	1.94	-0.09	-1.94	
12527.00	89.820	159.740	6512.26	5253.39	-5846.53	-736.14	1666717.82	14301772.92	39°23'02.493"N	80°54'24.904"W	5892.69	187.176	2.13	0.17	2.13	
12621.00	89.880	160.790	6512.51	5347.39	-5935.01	-704.39	1666749.55	14301684.47	39°23'01.618"N	80°54'24.501"W	5976.66	186.768	1.12	0.06	1.12	
12716.00	89.940	162.010	6512.66	5442.37	-6025.04	-674.09	1666779.84	14301594.47	39°23'00.728"N	80°54'24.116"W	6062.63	186.384	1.29	0.06	1.28	
12810.00	90.000	163.380	6512.71	5536.28	-6114.79	-646.13	1666807.79	14301504.77	39°22'59.841"N	80°54'23.761"W	6148.83	186.032	1.46	0.06	1.46	
12905.00	89.970	163.390	6512.73	5631.14	-6205.82	-618.97	1666834.94	14301413.77	39°22'58.941"N	80°54'23.417"W	6236.61	185.696	0.03	-0.03	0.01	
12999.00	89.940	163.390	6512.81	5725.00	-6295.90	-592.10	1666861.80	14301323.73	39°22'58.050"N	80°54'23.076"W	6323.68	185.373	0.03	-0.03	0.00	
13094.00	89.970	162.930	6512.88	5819.87	-6386.82	-564.58	1666889.31	14301232.84	39°22'57.151"N	80°54'22.726"W	6411.73	185.052	0.49	0.03	-0.48	
13188.00	90.000	160.750	6512.90	5913.83	-6476.14	-535.28	1666918.59	14301143.56	39°22'56.268"N	80°54'22.354"W	6498.22	184.725	2.32	0.03	-2.32	
13282.00	90.340	158.210	6512.63	6007.82	-6564.16	-502.34	1666951.53	14301055.57	39°22'55.398"N	80°54'21.936"W	6583.36	184.376	2.73	0.36	-2.70	
13377.00	90.180	156.290	6512.19	6102.68	-6651.77	-465.60	1666988.25	14300968.00	39°22'54.532"N	80°54'21.469"W	6668.04	184.004	2.03	-0.17	-2.02	
13471.00	90.250	156.770	6511.84	6196.48	-6737.99	-428.16	1667025.67	14300881.81	39°22'53.679"N	80°54'20.994"W	6751.58	183.636	0.52	0.07	0.51	
13566.00	90.150	156.290	6511.51	6291.28	-6825.13	-390.33	1667063.49	14300794.71	39°22'52.818"N	80°54'20.513"W	6836.28	183.273	0.52	-0.11	-0.51	
13660.00	90.060	156.650	6511.34	6385.08	-6911.31	-352.80	1667101.00	14300708.56	39°22'51.965"N	80°54'20.036"W	6920.31	182.922	0.39	-0.10	0.38	
13755.00	90.150	157.580	6511.16	6479.94	-6998.83	-315.86	1667137.93	14300621.07	39°22'51.100"N	80°54'19.567"W	7005.96	182.584	0.98	0.09	0.98	
13849.00	90.150	158.260	6510.92	6573.86	-7085.94	-280.52	1667173.25	14300534.00	39°22'50.239"N	80°54'19.118"W	7091.49	182.267	0.72	0.00	0.72	
13944.00	90.150	158.220	6510.67	6668.80	-7174.17	-245.30	1667208.46	14300445.81	39°22'49.366"N	80°54'18.671"W	7178.36	181.958	0.04	0.00	-0.04	
14039.00	90.090	157.880	6510.47	6763.73	-7262.28	-209.79	1667243.95	14300357.73	39°22'48.495"N	80°54'18.220"W	7265.31	181.655	0.36	-0.06	-0.36	
14134.00	90.120	157.730	6510.30	6858.64	-7350.24	-173.91	1667279.83	14300269.80	39°22'47.625"N	80°54'17.764"W	7352.30	181.355	0.16	0.03	-0.16	
14229.00	89.820	159.130	6510.35	6953.60	-7438.59	-138.98	1667314.74	14300181.50	39°22'46.752"N	80°54'17.320"W	7439.89	181.070	1.51	-0.32	1.47	
14323.00	89.820	161.570	6510.64	7047.59	-7527.11	-107.37	1667346.33	14300093.01	39°22'45.877"N	80°54'16.919"W	7527.87	180.817	2.60	0.00	2.60	





# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

## WELLPATH DATA (217 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
14418.00	89.780	162.360	6510.97	7142.54	-7617.44	-77.96	1667375.73	14300002.72	39°22'44.984"N	80°54'16.546"W	7617.84	180.586	0.83	-0.04	0.83	
14512.00	90.370	163.740	6510.85	7236.43	-7707.35	-50.56	1667403.12	14299912.84	39°22'44.095"N	80°54'16.198"W	7707.52	180.376	1.60	0.63	1.47	
14607.00	90.370	164.810	6510.24	7331.19	-7798.79	-24.81	1667428.86	14299821.43	39°22'43.191"N	80°54'15.871"W	7798.83	180.182	1.13	0.00	1.13	
14702.00	90.340	162.970	6509.65	7425.99	-7890.06	1.55	1667455.21	14299730.21	39°22'42.288"N	80°54'15.537"W	7890.06	179.989	1.94	-0.03	-1.94	
14796.00	90.340	161.820	6509.09	7519.92	-7979.65	29.98	1667483.63	14299640.65	39°22'41.402"N	80°54'15.176"W	7979.71	179.785	1.22	0.00	-1.22	
14891.00	90.400	160.480	6508.48	7614.90	-8069.55	60.67	1667514.31	14299550.78	39°22'40.514"N	80°54'14.786"W	8069.78	179.569	1.41	0.06	-1.41	
14986.00	90.180	158.680	6508.00	7709.89	-8158.58	93.81	1667547.44	14299461.79	39°22'39.633"N	80°54'14.365"W	8159.12	179.341	1.91	-0.23	-1.89	
15080.00	89.940	161.880	6507.90	7803.88	-8247.05	125.52	1667579.14	14299373.35	39°22'38.759"N	80°54'13.963"W	8248.01	179.128	3.41	-0.26	3.40	
15175.00	90.150	165.470	6507.82	7898.69	-8338.21	152.22	1667605.82	14299282.24	39°22'37.857"N	80°54'13.624"W	8339.60	178.954	3.79	0.22	3.78	
15270.00	90.180	167.250	6507.55	7993.15	-8430.52	174.63	1667628.22	14299189.96	39°22'36.945"N	80°54'13.340"W	8432.33	178.813	1.87	0.03	1.87	
15364.00	90.090	166.100	6507.33	8086.55	-8521.99	196.29	1667649.87	14299098.53	39°22'36.040"N	80°54'13.065"W	8524.25	178.681	1.23	-0.10	-1.22	
15459.00	90.030	163.630	6507.23	8181.24	-8613.69	221.09	1667674.67	14299006.86	39°22'35.134"N	80°54'12.751"W	8616.53	178.530	2.60	-0.06	-2.60	
15553.00	89.750	159.020	6507.41	8275.19	-8702.72	251.18	1667704.74	14298917.87	39°22'34.254"N	80°54'12.369"W	8706.34	178.347	4.91	-0.30	-4.90	
15647.00	89.720	153.750	6507.84	8368.95	-8788.81	288.82	1667742.37	14298831.81	39°22'33.402"N	80°54'11.891"W	8793.56	178.118	5.61	-0.03	-5.61	
15742.00	89.630	151.680	6508.38	8463.12	-8873.24	332.37	1667785.90	14298747.42	39°22'32.567"N	80°54'11.337"W	8879.46	177.855	2.18	-0.09	-2.18	
15837.00	89.630	153.590	6509.00	8557.28	-8957.60	376.04	1667829.55	14298663.09	39°22'31.733"N	80°54'10.782"W	8965.49	177.596	2.01	0.00	2.01	
15931.00	89.600	155.840	6509.63	8650.84	-9042.59	416.18	1667869.68	14298578.14	39°22'30.893"N	80°54'10.272"W	9052.16	177.365	2.39	-0.03	2.39	
16026.00	89.570	157.860	6510.32	8745.66	-9129.93	453.53	1667907.01	14298490.83	39°22'30.029"N	80°54'09.798"W	9141.19	177.156	2.13	-0.03	2.13	
16120.00	89.940	159.570	6510.72	8839.63	-9217.52	487.65	1667941.11	14298403.28	39°22'29.163"N	80°54'09.365"W	9230.41	176.972	1.86	0.39	1.82	
16214.00	90.030	160.640	6510.74	8933.62	-9305.90	519.63	1667973.09	14298314.93	39°22'28.289"N	80°54'08.959"W	9320.40	176.804	1.14	0.10	1.14	
16309.00	89.970	160.950	6510.74	9028.62	-9395.62	550.89	1668004.33	14298225.25	39°22'27.402"N	80°54'08.562"W	9411.75	176.644	0.33	-0.06	0.33	
16404.00	90.180	162.370	6510.62	9123.59	-9485.79	580.78	1668034.21	14298135.12	39°22'26.511"N	80°54'08.183"W	9503.55	176.496	1.51	0.22	1.49	
16499.00	90.090	163.470	6510.39	9218.48	-9576.60	608.68	1668062.10	14298044.34	39°22'25.613"N	80°54'07.829"W	9595.92	176.363	1.16	-0.09	1.16	
16593.00	90.060	164.290	6510.27	9312.29	-9666.90	634.78	1668088.18	14297954.08	39°22'24.720"N	80°54'07.497"W	9687.72	176.243	0.87	-0.03	0.87	
16688.00	90.000	163.910	6510.22	9407.08	-9758.27	660.80	1668114.20	14297862.75	39°22'23.817"N	80°54'07.167"W	9780.61	176.126	0.40	-0.06	-0.40	
16782.00	90.060	163.880	6510.17	9500.88	-9848.58	686.88	1668140.26	14297772.47	39°22'22.924"N	80°54'06.836"W	9872.50	176.010	0.07	0.06	-0.03	
16878.00	90.120	162.900	6510.02	9596.74	-9940.57	714.32	1668167.70	14297680.52	39°22'22.014"N	80°54'06.488"W	9966.20	175.890	1.02	0.06	-1.02	
16972.00	90.150	160.240	6509.80	9690.70	-10029.74	744.04	1668197.40	14297591.38	39°22'21.133"N	80°54'06.111"W	10057.30	175.757	2.83	0.03	-2.83	
17067.00	90.090	158.240	6509.60	9785.68	-10118.57	777.71	1668231.06	14297502.59	39°22'20.254"N	80°54'05.684"W	10148.41	175.605	2.11	-0.06	-2.11	
17161.00	90.090	157.420	6509.45	9879.60	-10205.62	813.18	1668266.51	14297415.58	39°22'19.394"N	80°54'05.233"W	10237.96	175.444	0.87	0.00	-0.87	



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

## WELLPATH DATA (217 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
17256.00	90.060	157.140	6509.33	9974.47	-10293.25	849.87	1668303.19	14297327.98	39°22'18.527"N	80°54'04.767"W	10328.27	175.280	0.30	-0.03	-0.29	
17350.00	89.820	156.740	6509.43	10068.32	-10379.73	886.69	1668339.99	14297241.53	39°22'17.672"N	80°54'04.300"W	10417.54	175.117	0.50	-0.26	-0.43	
17445.00	89.910	158.410	6509.65	10163.21	-10467.55	922.93	1668376.22	14297153.75	39°22'16.804"N	80°54'03.839"W	10508.16	174.961	1.76	0.09	1.76	
17539.00	89.940	159.560	6509.77	10257.19	-10555.29	956.64	1668409.91	14297066.04	39°22'15.936"N	80°54'03.411"W	10598.55	174.821	1.22	0.03	1.22	
17634.00	90.060	160.780	6509.77	10352.18	-10644.66	988.86	1668442.13	14296976.71	39°22'15.052"N	80°54'03.002"W	10690.49	174.693	1.29	0.13	1.28	
17731.00	89.880	162.250	6509.82	10449.16	-10736.65	1019.62	1668472.87	14296884.76	39°22'14.143"N	80°54'02.612"W	10784.96	174.575	1.53	-0.19	1.52	
17755.00	89.880	162.250	6509.88	10473.14	-10759.51	1026.93	1668480.18	14296861.91	39°22'13.917"N	80°54'02.519"W	10808.40	174.548	0.00	0.00	0.00	Projected MD at TD: 17755'

## HOLE & CASING SECTIONS - Ref Wellbore: Heintzman Unit 1H AWB      Ref Wellpath: Heintzman Unit 1H AWP Proj: 17755'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
20in Conductor	25.00	105.00	80.00	25.00	105.00	0.00	0.00	-0.02	-0.09
17.5in Open Hole	105.00	453.00	348.00	105.00	452.99	-0.02	-0.09	0.33	-2.44
13.375in Casing Surface	25.00	453.00	428.00	25.00	452.99	0.00	0.00	0.33	-2.44
12.25in Open Hole	453.00	2751.25	2298.25	452.99	2568.00	0.33	-2.44	-121.58	-802.01
9.625in Casing Intermediate	25.00	2751.25	2726.25	25.00	2568.00	0.00	0.00	-121.58	-802.01
8.75in Open Hole	2751.25	6298.00	3546.75	2568.00	5734.60	-121.58	-802.01	-376.10	-2375.05
8.5in Open Hole	6298.00	17755.00	11457.00	5734.60	6509.88	-376.10	-2375.05	-10759.51	1026.93
5.5in Casing Production	25.00	17755.00	17730.00	25.00	6509.88	0.00	0.00	-10759.51	1026.93



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
Field	Tyler	Wellbore	Heintzman Unit 1H AWB
Facility	Pyle Run Pad		

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Heintzman Unit 1H POE Rev-1	6472.00	-934.47	-2491.66	1664963.00	14306683.00	39°23'51.059"N	80°54'47.201"W	point
Heintzman Unit 1H BHL Rev-1	6498.00	-10793.43	1049.76	1668503.00	14296828.00	39°22'13.581"N	80°54'02.229"W	point
Heintzman Unit 1H LP Rev-1	6498.00	-1103.95	-2430.78	1665023.86	14306513.59	39°23'49.383"N	80°54'46.428"W	point

## WELLPATH COMPOSITION - Ref Wellbore: Heintzman Unit 1H AWB Ref Wellpath: Heintzman Unit 1H AWP Proj: 17755'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	427.00	Gyrodatta standard - Drop gyro or Multi-shot	01_Gyrodatta MS Gyro <17-1/2">(100'-427')	Heintzman Unit 1H AWB
427.00	2690.00	ISCWSA MWD, Rev. 4 (Standard)	02_WFT EM <12-1/4">(427')(504'-2690')	Heintzman Unit 1H AWB
2690.00	6238.00	ISCWSA MWD, Rev. 4 (Standard)	03_WFT EM <8-3/4">(2690')(2825'-6238')	Heintzman Unit 1H AWB
6238.00	17731.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8-1/2">(6238')(6279'-17731')	Heintzman Unit 1H AWB
17731.00	17755.00	Blind Drilling (std)	Projection to bit	Heintzman Unit 1H AWB



# Actual Wellpath Report

Heintzman Unit 1H AWP Proj: 17755'

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Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Heintzman Unit 1H
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Facility	Pyle Run Pad		

COMMENTS
<p><b>Wellpath general comments</b> API: 47-095-02526-0000 BHI Job #: 109507843 Rig: Patterson 342 Duration: 11/19/2018-11/23/2018 Gyrodata MS Gyro &lt;17-1/2"&gt;(100'-427') WFT EM &lt;12-1/4"&gt;(427')(504'-2690') WFT EM &lt;8-3/4"&gt;(2690')(2825'-6238') BH AT Curve &lt;8-1/2"&gt;(6238')(6279'-17731') Middlesex: 6988' MD Burkett: 7146' MD Tully: 7213' MD Marcellus POE: 7280' MD Projected MD at TD: 17755'</p>