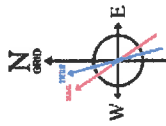




# ANTERO RESOURCES CORPORATION

Location: Tyler County, WV  
 Slot: Slot #04  
 Field: Tyler  
 Well: Horst Unit 2H  
 Facility: Meredith Pad  
 Wellbore: Horst Unit 2H PWB



User specified (HDGM) Dip: 66.45° Field: 51866 nT  
 Magnetic North is 7.64 degrees West of True North (at 2/1/2019)  
 Grid North is 0.00 degrees East of True North  
 To convert from Grid North to True North, subtract 7.64 degrees  
 To convert azimuth from Magnetic to Grid subtract 7.72 degrees

Plot reference wellbore in Horst Unit 2H PWB RevA.0	
Grid System: NAD27/UTM Zone 17 North, US feet	
True vertical depths are referenced to H&P 317 (RKB)	North Reference: Grid north
Measured depths are referenced to H&P 317 (RKB)	Scale: True distance
H&P 317 (RKB) to Mean Sea Level: 1136.5 feet	Delights are in feet
Mean Sea Level to Ground level (At Slot Slot #04): -1111 feet	Created by: defacet on 2019-09-22
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Defn

Gyrodata MS Gyro <17-1/2>(100-803) : 0.43° Inc, 110.50ft MD, 110.50ft TVD, -0.29ft VS

Panther EM <12-1/4>(803)(831-2619) : 0.31° Inc, 841.50ft MD, 841.49ft TVD, -0.66ft VS

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude
Meredith Pad	1677162.341	14288674.298	39°20'54.830"N
Slot	Local E (ft)	Grid East (US ft)	Latitude
Slot #04	0.00	1677162.341	39°20'54.830"N
H&P 317 (RKB) to Ground level (At Slot Slot #04)			25.5ft
Mean Sea Level to Ground level (At Slot Slot #04)			-1111ft
H&P 317 (RKB) to Mean Sea Level			1136.5ft

Panther EM <8-3/4>(2619)(218-6323) : 24.79° Inc, 2728.50ft MD, 2635.54ft TVD, -154.93ft VS

Well Profile Data						
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local E (ft)	DLS (°/100ft)
Tile On	6333.50	26.980	231.400	5889.78	-20.33	-2034.81
Proj. To Bottom	6391.50	28.860	220.520	5941.29	-38.91	-2053.84
Start Build/Turn	6511.50	29.860	220.520	6046.39	-82.94	-2091.48
POE	7226.14	74.900	169.390	6492.00	-596.96	-2144.68
Landing Pt.	7401.70	80.000	169.390	6515.00	-768.52	-2112.70
On Azimuth	7784.44	93.000	161.739	6515.00	-1139.89	-2017.32
BHL	16346.00	90.000	161.739	6515.00	-9268.33	665.11
						9010.96

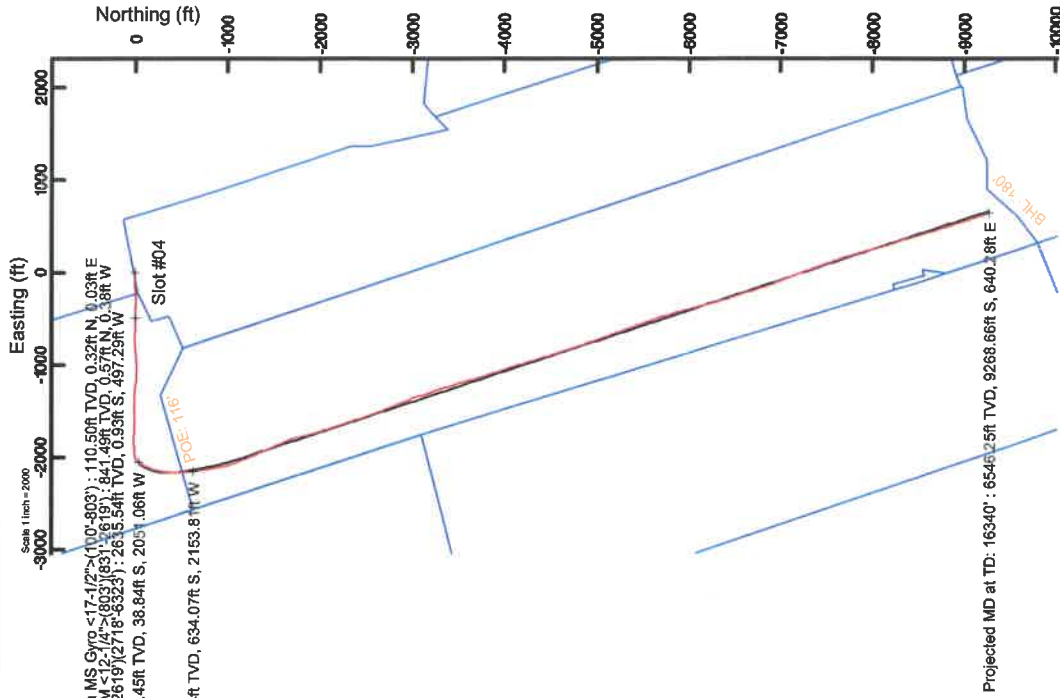
Well Data		
Well	Wellbore	Wellpath
Slot #04	Horst Unit 2H	Horst Unit 2H AWP Proj: 16340
Slot #04	Horst Unit 2H	Horst Unit 2H PWB RevA.0

BH AT Curve <8-1/2>(6333.5)(6389-16317) : 27.46° Inc, 6389.00ft MD, 5939.45ft TVD, -605.77ft VS

Marcellus POE: 7251° MD : 76.23° Inc, 7251.00ft MD, 6491.24ft TVD, -72.71ft VS

Projected MD at TD: 16340° : 89.75° Inc, 16340.00ft MD, 6546.25ft TVD, 9002.56ft VS

Vertical Section (ft)  
 Azimuth 161.74° with reference 0.00 N, 0.00 E



API: 47-095-02517-0000  
 BHI Job #: 109650475  
 Rig: H&P 317  
 Duration: 02/06/2019-02/08/2019

Scale 1 inch = 1500



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'  
Page 1 of 11



REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	Meredith Pad
Slot	Slot #04
Well	Horst Unit 2H
Wellbore	Horst Unit 2H AWB

REPORT SETUP INFORMATION	
Projection System	NAD27 / UTM Zone 17 North, US feet
North Reference	Grid
Scale	0.999602
Convergence at slot	0.08° East
Software System	WellArchitect® 5.1
User	Delaset
Report Generated	2/22/2019 at 7:22:08 PM
Database/Source file	WA_MPL_EasternUS_Defn/Horst_Unit_2H_AWP_Proj_16340_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Northing[US ft]	Latitude	Longitude	
Slot Location	0.00	0.00	14288874.30	39°20'54.830"N	80°52'12.070"W	
Facility Reference Pt			1677162.34	14288874.30	39°20'54.830"N	80°52'12.070"W
Field Reference Pt			0.00	0°00'00.000"	85°29'19.301"W	

WELLPATH DATUM	
Calculation method	Minimum curvature
Horizontal Reference Pt	Slot
Vertical Reference Pt	H&P 317 (RKB)
MD Reference Pt	H&P 317 (RKB)
Field Vertical Reference	Mean Sea Level
	H&P 317 (RKB) to Facility Vertical Datum
	H&P 317 (RKB) to Mean Sea Level
	H&P 317 (RKB) to Ground Level at Slot (Slot #04)
	Section Origin
	Section Azimuth
	25.50ft
	1136.50ft
	25.50ft
	N 0.00, E 0.00 ft
	161.74°



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'  
Page 2 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Horst Unit 2H
Field	Tyler	Wellbore	Horst Unit 2H AWB
Facility	Meredith Pad		

WELLPATH DATA (213 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 (1/100ft)	Build Rate (1/100ft)	Turn Rate (1/100ft)	Comments
0.00H	0.000	5.550	0.00	0.00	0.00	0.00	1677162.34	14288874.30	39°20'54.830"N	80°52'12.070"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	5.550	25.50	0.00	0.00	0.00	1677162.34	14288874.30	39°20'54.830"N	80°52'12.070"W	0.00	0.000	0.00	0.00	0.00	
110.50	0.430	5.550	110.50	-0.29	0.32	0.03	1677162.37	14288874.62	39°20'54.833"N	80°52'12.070"W	0.32	5.550	0.51	0.51	6.53	Gyrodata MS Gyro <17-1/2">(100'-803')
135.50	0.440	17.910	135.50	-0.46	0.50	0.07	1677162.41	14288874.80	39°20'54.835"N	80°52'12.069"W	0.51	7.873	0.38	0.04	0.04	49.44
160.50	0.440	20.310	160.50	-0.61	0.68	0.13	1677162.47	14288874.98	39°20'54.837"N	80°52'12.068"W	0.70	10.953	0.07	0.00	0.00	9.60
185.50	0.540	27.640	185.50	-0.76	0.88	0.22	1677162.56	14288875.18	39°20'54.841"N	80°52'12.067"W	0.91	14.083	0.47	0.40	29.32	
210.50	0.540	19.590	210.50	-0.94	1.09	0.31	1677162.66	14288875.39	39°20'54.841"N	80°52'12.066"W	1.14	16.044	0.30	0.00	0.00	-32.20
235.50	0.450	12.610	235.49	-1.12	1.30	0.38	1677162.72	14288875.60	39°20'54.843"N	80°52'12.065"W	1.35	16.104	0.43	-0.36	-27.92	
260.50	0.270	35.740	260.49	-1.24	1.44	0.43	1677162.77	14288875.74	39°20'54.844"N	80°52'12.064"W	1.51	16.629	0.91	-0.72	92.52	
285.50	0.160	355.470	285.49	-1.30	1.53	0.46	1677162.80	14288875.82	39°20'54.845"N	80°52'12.064"W	1.59	16.869	0.72	-0.44	-161.08	
310.50	0.070	342.160	310.49	-1.35	1.58	0.46	1677162.80	14288875.87	39°20'54.846"N	80°52'12.064"W	1.64	16.120	0.37	-0.36	-53.24	
335.50	0.040	7.970	335.49	-1.38	1.60	0.45	1677162.79	14288875.90	39°20'54.846"N	80°52'12.064"W	1.66	15.783	0.15	-0.12	103.24	
360.50	0.080	339.080	360.49	-1.40	1.62	0.45	1677162.79	14288875.92	39°20'54.846"N	80°52'12.064"W	1.68	15.388	0.20	0.16	-115.56	
385.50	0.070	30.150	385.49	-1.43	1.65	0.45	1677162.79	14288875.95	39°20'54.846"N	80°52'12.064"W	1.71	15.173	0.26	-0.04	204.28	
410.50	0.090	205.860	410.49	-1.43	1.65	0.45	1677162.77	14288875.95	39°20'54.846"N	80°52'12.064"W	1.71	15.183	0.64	0.08	702.84	
435.50	0.100	206.910	435.49	-1.40	1.61	0.43	1677162.77	14288875.91	39°20'54.846"N	80°52'12.065"W	1.67	14.906	0.04	0.04	4.20	
460.50	0.110	207.960	460.49	-1.36	1.57	0.41	1677162.75	14288875.87	39°20'54.846"N	80°52'12.065"W	1.62	14.554	0.04	0.04	4.20	
485.50	0.120	209.010	485.49	-1.33	1.53	0.38	1677162.72	14288875.82	39°20'54.845"N	80°52'12.065"W	1.57	14.114	0.04	0.04	4.20	
510.50	0.130	210.060	510.49	-1.29	1.48	0.36	1677162.70	14288875.78	39°20'54.845"N	80°52'12.065"W	1.52	13.567	0.04	0.04	4.20	
535.50	0.140	211.110	535.49	-1.25	1.43	0.33	1677162.67	14288875.73	39°20'54.844"N	80°52'12.066"W	1.47	12.892	0.04	0.04	4.20	
560.50	0.150	212.160	560.49	-1.21	1.37	0.29	1677162.63	14288875.67	39°20'54.844"N	80°52'12.066"W	1.41	12.063	0.04	0.04	4.20	
585.50	0.160	213.210	585.49	-1.17	1.32	0.26	1677162.60	14288875.62	39°20'54.843"N	80°52'12.067"W	1.34	11.046	0.04	0.04	4.20	
610.50	0.170	214.260	610.49	-1.13	1.26	0.22	1677162.56	14288875.56	39°20'54.842"N	80°52'12.067"W	1.28	9.799	0.04	0.04	4.20	
635.50	0.180	215.310	635.49	-1.08	1.20	0.17	1677162.51	14288875.49	39°20'54.842"N	80°52'12.068"W	1.21	8.268	0.04	0.04	4.20	
660.50	0.200	216.360	660.49	-1.03	1.13	0.13	1677162.47	14288875.43	39°20'54.841"N	80°52'12.068"W	1.14	6.330	0.08	0.08	4.20	
685.50	0.210	217.410	685.49	-0.98	1.06	0.07	1677162.41	14288875.35	39°20'54.840"N	80°52'12.069"W	1.06	3.869	0.04	0.04	4.20	
710.50	0.220	218.460	710.49	-0.93	0.98	0.01	1677162.35	14288875.28	39°20'54.840"N	80°52'12.070"W	0.98	0.803	0.04	0.04	4.20	
735.50	0.230	219.510	735.49	-0.88	0.91	-0.05	1677162.29	14288875.20	39°20'54.839"N	80°52'12.071"W	0.91	356.969	0.04	0.04	4.20	
760.50	0.240	220.550	760.49	-0.82	0.83	-0.11	1677162.23	14288875.13	39°20'54.838"N	80°52'12.071"W	0.84	352.163	0.04	0.04	4.16	
785.50	0.250	221.600	785.49	-0.77	0.75	-0.18	1677162.16	14288875.05	39°20'54.837"N	80°52'12.072"W	0.77	346.154	0.04	0.04	4.20	



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Horst Unit 2H
Field	Tyler	Wellbore	Horst Unit 2H AWB
Facility	Meredith Pad		

## WELLPATH DATA (213 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
810.50	0.260	222.650	810.49	-0.71	0.66	-0.26	1677162.08	14288874.96	39°20'54.837"N	80°52'12.073"W	0.71	338.729	0.04	0.04	4.20	
813.50	0.260	222.780	813.49	-0.71	0.65	-0.27	1677162.07	14288874.95	39°20'54.836"N	80°52'12.073"W	0.71	337.738	0.02	0.00	4.33	
841.50	0.310	237.570	841.49	-0.66	0.57	-0.38	1677161.97	14288874.87	39°20'54.836"N	80°52'12.075"W	0.68	326.539	0.32	0.18	52.82	Panther EM <12-1/4">(803')(831'-2619')
931.50	1.100	265.680	931.48	-0.81	0.37	-1.44	1677160.90	14288874.67	39°20'54.834"N	80°52'12.088"W	1.49	284.465	0.93	0.88	31.23	
1027.50	2.780	270.800	1027.43	-1.79	0.34	-4.69	1677157.65	14288874.63	39°20'54.833"N	80°52'12.130"W	4.70	274.088	1.76	1.75	5.33	
1121.50	4.510	276.080	1121.23	-4.06	0.76	-10.64	1677151.70	14288875.06	39°20'54.838"N	80°52'12.205"W	10.67	274.076	1.87	1.84	5.62	
1215.50	5.480	283.880	1214.88	-7.97	2.23	-18.68	1677143.67	14288876.52	39°20'54.852"N	80°52'12.308"W	18.81	276.799	1.26	1.03	8.30	
1309.50	6.500	279.790	1308.36	-12.86	4.21	-28.28	1677134.08	14288878.50	39°20'54.872"N	80°52'12.430"W	28.59	278.464	1.18	1.09	-4.35	
1404.50	7.510	270.400	1402.65	-17.37	5.17	-39.78	1677122.57	14288879.46	39°20'54.882"N	80°52'12.576"W	40.12	277.398	1.60	1.06	-9.88	
1498.50	8.710	270.400	1495.71	-21.61	5.26	-53.05	1677109.32	14288879.55	39°20'54.883"N	80°52'12.745"W	53.31	275.661	1.28	1.28	0.00	
1592.50	11.620	273.180	1588.23	-27.35	5.83	-69.62	1677092.75	14288880.13	39°20'54.889"N	80°52'12.956"W	69.86	274.790	3.14	3.10	2.96	
1686.50	14.410	274.190	1679.80	-35.28	7.21	-90.74	1677071.64	14288881.51	39°20'54.903"N	80°52'13.225"W	91.03	274.545	2.98	2.97	1.07	
1781.50	16.080	273.310	1771.46	-44.63	8.84	-115.67	1677046.72	14288883.13	39°20'54.919"N	80°52'13.542"W	116.00	274.369	1.77	1.76	-0.93	
1875.50	16.880	262.070	1861.62	-51.87	7.71	-142.19	1677020.21	14288882.00	39°20'54.908"N	80°52'13.880"W	142.39	273.102	3.49	0.85	-11.96	
1968.50	19.180	258.900	1950.05	-56.19	2.90	-170.55	1676991.86	14288877.20	39°20'54.861"N	80°52'14.241"W	170.58	270.974	2.69	2.47	-3.41	
2064.50	23.110	264.270	2039.58	-62.25	-2.02	-204.79	1676957.63	14288872.28	39°20'54.813"N	80°52'14.677"W	204.80	269.435	4.56	4.09	5.59	
2158.50	27.000	267.890	2124.72	-72.19	-4.65	-244.49	1676917.95	14288869.65	39°20'54.788"N	80°52'15.182"W	244.63	268.911	4.45	4.14	3.85	
2252.50	25.980	270.880	2293.50	-98.90	-4.58	-329.52	1676832.96	14288869.72	39°20'54.789"N	80°52'15.725"W	287.19	268.969	1.36	0.00	3.00	
2347.50	26.290	271.500	2377.89	-112.68	-3.72	-370.91	1676791.58	14288870.58	39°20'54.798"N	80°52'16.265"W	329.55	269.203	1.08	-1.07	0.18	
2441.50	26.290	271.500	2377.89	-112.68	-3.72	-370.91	1676791.58	14288870.58	39°20'54.798"N	80°52'16.791"W	370.93	269.425	0.44	0.33	0.66	
2535.50	26.780	271.990	2461.99	-127.05	-2.44	-412.89	1676749.62	14288871.86	39°20'54.812"N	80°52'17.326"W	412.89	269.661	0.57	0.52	0.52	
2629.50	26.120	270.800	2546.15	-141.14	-1.42	-454.74	1676707.78	14288872.88	39°20'54.822"N	80°52'17.859"W	454.74	269.822	0.90	-0.70	-1.27	
2728.50	24.790	270.490	2635.54	-154.93	-0.93	-497.29	1676665.25	14288873.36	39°20'54.828"N	80°52'18.400"W	497.29	269.892	1.35	-1.34	-0.31	Panther EM <8-3/4">(2619')(2718'-6323')
2822.50	25.410	266.610	2720.67	-166.44	-1.96	-537.13	1676625.43	14288872.34	39°20'54.818"N	80°52'19.407"W	537.13	269.791	1.87	0.66	-4.13	
2916.50	23.990	269.470	2806.07	-177.43	-3.33	-576.37	1676586.20	14288870.97	39°20'54.805"N	80°52'19.407"W	576.38	269.669	1.97	-1.51	3.04	
3011.50	22.890	274.100	2893.23	-190.35	-2.19	-614.12	1676548.47	14288872.11	39°20'54.817"N	80°52'19.887"W	614.12	269.796	2.26	-1.16	4.87	
3105.50	26.290	282.470	2978.72	-207.95	3.62	-652.70	1676509.90	14288877.92	39°20'54.875"N	80°52'20.378"W	652.71	270.318	5.17	3.62	8.90	
3200.50	27.090	272.380	3063.64	-226.33	9.06	-694.88	1676467.74	14288883.36	39°20'54.929"N	80°52'20.915"W	694.94	270.747	4.84	0.84	-10.62	
3300.50	26.690	261.980	3152.88	-238.36	6.88	-739.89	1676422.74	14288881.17	39°20'54.908"N	80°52'21.488"W	739.92	270.532	4.72	-0.40	-10.40	
3395.50	28.190	267.180	3237.20	-248.13	2.79	-783.44	1676379.21	14288877.09	39°20'54.869"N	80°52'22.042"W	783.44	270.204	2.97	1.58	5.47	



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Horst Unit 2H
Field	Tyler	Wellbore	Horst Unit 2H AWB
Facility	Meredith Pad		

## WELLPATH DATA (213 stations)

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 (1/100ft)	Build Rate (1/100ft)	Turn Rate (1/100ft)	Comments
3490.50	29.520	267.270	3320.41	-260.37	0.57	-829.23	1676333.44	14288874.87	39°20'54.847"N	80°52'22.625"W	829.23	270.040	1.40	1.40	0.09	
3584.50	26.380	263.300	3403.44	-270.76	-2.97	-873.12	1676289.57	14288871.33	39°20'54.813"N	80°52'23.184"W	873.12	269.805	3.58	-3.34	-4.22	
3679.50	25.410	264.270	3488.90	-279.41	-7.46	-914.36	1676248.35	14288866.84	39°20'54.769"N	80°52'23.709"W	914.39	269.532	1.11	-1.02	1.02	
3774.50	24.220	266.610	3575.13	-288.83	-10.65	-954.10	1676208.63	14288863.65	39°20'54.738"N	80°52'24.215"W	954.16	269.360	1.62	-1.25	2.46	
3869.50	23.600	269.870	3661.98	-299.75	-11.85	-992.57	1676170.17	14288862.46	39°20'54.727"N	80°52'24.705"W	992.64	269.316	1.54	-0.65	3.43	
3964.50	23.910	269.300	3748.93	-311.48	-12.12	-1030.83	1676131.92	14288862.18	39°20'54.725"N	80°52'25.192"W	1030.91	269.326	0.41	0.33	-0.60	
4059.50	26.290	272.070	3834.96	-324.60	-11.60	-1071.12	1676091.65	14288862.70	39°20'54.730"N	80°52'25.705"W	1071.18	269.380	2.79	2.51	2.92	
4154.50	24.610	268.900	3920.74	-337.74	-11.22	-1111.92	1676050.86	14288863.08	39°20'54.735"N	80°52'26.224"W	1111.98	269.422	2.28	-1.77	-3.34	
4248.50	24.390	271.590	4006.28	-350.11	-11.06	-1150.89	1676011.91	14288863.25	39°20'54.737"N	80°52'26.720"W	1150.95	269.450	1.21	-0.23	2.86	
4343.50	27.000	280.580	4091.91	-367.18	-6.55	-1191.72	1675971.10	14288867.75	39°20'54.762"N	80°52'27.240"W	1191.74	269.685	4.93	2.75	9.46	
4438.50	24.220	277.270	4177.57	-385.99	-0.12	-1232.26	1675930.57	14288874.17	39°20'54.846"N	80°52'27.756"W	1232.26	269.994	3.29	-2.93	-3.48	
4533.50	23.690	272.780	4264.40	-401.24	3.27	-1270.66	1675892.19	14288877.57	39°20'54.860"N	80°52'28.244"W	1270.66	270.147	2.00	-0.56	-4.73	
4629.50	25.190	274.280	4351.79	-415.99	5.73	-1310.29	1675852.57	14288880.02	39°20'54.905"N	80°52'28.749"W	1310.31	270.250	1.69	1.56	1.56	
4724.50	28.280	277.010	4436.63	-433.36	9.99	-1352.80	1675810.08	14288884.28	39°20'54.948"N	80°52'29.290"W	1352.84	270.423	3.50	3.25	2.87	
4819.50	28.900	271.990	4520.06	-450.91	13.53	-1398.09	1675764.81	14288887.82	39°20'54.983"N	80°52'29.866"W	1398.15	270.554	2.61	0.65	-5.28	
4914.50	27.310	269.390	4603.86	-465.47	14.09	-1442.83	1675720.09	14288888.39	39°20'54.989"N	80°52'30.436"W	1442.90	270.560	2.11	-1.67	-2.74	
5009.50	29.210	270.000	4687.53	-479.34	13.86	-1487.80	1675675.13	14288888.16	39°20'54.988"N	80°52'31.008"W	1487.87	270.534	2.02	2.00	0.64	
5104.50	27.090	266.870	4771.29	-492.25	12.88	-1532.59	1675630.36	14288886.97	39°20'54.977"N	80°52'31.578"W	1532.64	270.474	2.72	-2.23	-3.29	
5198.50	25.320	266.870	4855.63	-503.08	10.41	-1574.04	1675588.93	14288884.71	39°20'54.955"N	80°52'32.106"W	1574.07	270.379	1.88	-1.88	0.00	
5293.50	23.990	267.490	4941.96	-513.63	8.46	-1613.62	1675549.37	14288882.75	39°20'54.936"N	80°52'32.610"W	1613.64	270.300	1.43	-1.40	0.65	
5387.50	23.110	274.190	5028.15	-525.86	8.97	-1651.11	1675511.89	14288883.27	39°20'54.942"N	80°52'33.087"W	1651.14	270.311	3.00	-0.94	7.13	
5482.50	24.700	274.670	5115.00	-540.72	11.95	-1689.49	1675473.53	14288886.24	39°20'54.972"N	80°52'33.576"W	1689.53	270.405	1.69	1.67	0.51	
5577.50	24.610	273.000	5201.34	-555.62	14.60	-1729.03	1675434.00	14288888.89	39°20'54.998"N	80°52'34.079"W	1729.09	270.484	0.74	-0.09	-1.76	
5670.50	24.390	271.590	5285.97	-569.16	16.15	-1767.56	1675395.49	14288890.44	39°20'55.014"N	80°52'34.569"W	1767.64	270.523	0.67	-0.24	-1.52	
5765.50	24.610	270.090	5372.41	-582.05	16.72	-1806.95	1675356.11	14288891.01	39°20'55.020"N	80°52'35.071"W	1807.03	270.530	0.69	0.23	-1.58	
5860.50	24.610	269.470	5458.78	-594.30	16.57	-1846.51	1675316.57	14288890.86	39°20'55.019"N	80°52'35.574"W	1846.59	270.514	0.27	0.00	-0.65	
5955.50	25.190	267.270	5544.95	-605.74	15.42	-1886.49	1675276.61	14288889.72	39°20'55.009"N	80°52'36.083"W	1886.55	270.468	1.15	0.61	-2.32	
6049.50	24.480	264.010	5630.27	-615.24	12.44	-1925.84	1675237.27	14288886.73	39°20'54.980"N	80°52'36.584"W	1925.88	270.370	1.64	-0.76	-3.47	
6144.50	23.110	259.470	5717.20	-621.93	6.98	-1963.75	1675199.38	14288881.27	39°20'54.926"N	80°52'37.067"W	1963.76	270.204	2.41	-1.44	-4.78	
6238.50	23.820	253.390	5803.43	-624.96	-1.82	-2000.08	1675163.06	14288882.48	39°20'54.840"N	80°52'37.529"W	2000.08	269.948	2.68	0.76	-6.47	



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #04
Area	Tyler County, WV	Horst Unit 2H
Field	Tyler	Horst Unit 2H AWB
Facility	Meredith Pad	

## WELLPATH DATA (213 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
6333.50	25.980	231.400	5889.78	-618.26	-20.33	-2034.81	1675128.35	14288853.98	39°20'54.657"N	80°52'37.972"W	2034.91	269.428	9.95	2.27	-23.15	
6389.00	27.460	211.680	5939.45	-605.77	-38.84	-2051.06	1675112.10	14288835.47	39°20'54.474"N	80°52'38.179"W	2051.43	268.915	16.13	2.67	-35.53	EH AT Curve <-8-1/2"> (6333.5)-(6389--16317)
6436.00	28.280	213.920	5981.00	-591.97	-57.30	-2062.96	1675100.20	14288817.02	39°20'54.292"N	80°52'38.331"W	2063.76	268.409	2.83	1.74	4.77	
6484.00	28.340	216.700	6023.26	-578.46	-75.87	-2076.12	1675087.05	14288798.46	39°20'54.109"N	80°52'38.499"W	2077.50	267.907	2.75	0.13	5.79	
6531.00	30.420	208.630	6064.23	-563.91	-95.27	-2088.49	1675074.68	14288779.07	39°20'53.917"N	80°52'38.658"W	2090.67	267.388	9.51	4.43	-17.17	
6579.00	32.570	204.490	6105.16	-546.12	-117.70	-2099.67	1675063.51	14288756.65	39°20'53.696"N	80°52'38.799"W	2102.97	266.792	6.35	4.48	-8.62	
6626.00	34.500	205.030	6144.34	-527.14	-141.28	-2110.55	1675052.84	14288733.08	39°20'53.463"N	80°52'38.938"W	2115.27	266.170	4.16	4.11	1.15	
6674.00	36.170	202.310	6183.50	-506.48	-166.70	-2121.68	1675041.51	14288707.67	39°20'53.212"N	80°52'39.080"W	2128.22	265.508	4.78	3.48	-5.67	
6721.00	38.860	197.900	6220.78	-484.03	-193.57	-2131.48	1675031.71	14288680.80	39°20'52.946"N	80°52'39.205"W	2140.25	264.811	8.08	5.72	-9.38	
6769.00	41.850	194.380	6257.36	-458.38	-223.42	-2140.09	1675023.11	14288650.97	39°20'52.651"N	80°52'39.315"W	2151.72	264.040	7.83	6.23	-7.33	
6816.00	45.580	191.090	6291.33	-430.54	-255.10	-2147.22	1675015.99	14288619.30	39°20'52.338"N	80°52'39.407"W	2162.32	263.225	9.29	7.94	-7.00	
6854.00†	48.395	189.312	6317.25	-406.11	-282.44	-2152.13	1675011.08	14288591.97	39°20'52.068"N	80°52'39.470"W	2170.58	262.523	8.16	7.41	-4.63	Middlesex: 6854' MD
6884.00	49.140	188.870	6323.84	-399.43	-289.87	-2153.31	1675009.89	14288584.55	39°20'51.995"N	80°52'39.485"W	2172.74	262.333	8.16	7.45	-4.42	
6911.00	53.450	185.680	6353.23	-366.33	-326.23	-2157.93	1675005.28	14288548.19	39°20'51.635"N	80°52'39.544"W	2182.45	261.403	10.59	9.17	-6.79	
6958.00	57.590	183.920	6379.83	-330.69	-364.83	-2161.15	1675002.05	14288509.61	39°20'51.254"N	80°52'39.586"W	2191.73	260.418	9.33	8.81	-3.74	
7005.00	61.550	181.840	6403.63	-292.90	-405.30	-2163.17	1675000.03	14288469.16	39°20'50.854"N	80°52'39.612"W	2200.81	259.388	9.25	8.43	-4.43	
7053.00	65.040	180.470	6425.20	-252.46	-448.16	-2164.03	1674999.18	14288426.32	39°20'50.430"N	80°52'39.624"W	2209.95	258.300	7.70	7.27	-2.85	
7087.00†	65.250	180.344	6426.88	-249.02	-451.79	-2164.05	1674999.15	14288422.69	39°20'50.395"N	80°52'39.624"W	2210.71	258.208	6.17	5.48	-3.14	Burkett: 7057' MD
7100.00	67.620	179.020	6444.07	-211.53	-491.20	-2163.83	1674999.38	14288383.30	39°20'50.005"N	80°52'39.622"W	2218.88	257.210	6.17	5.48	-3.08	
7143.00†	69.850	177.568	6469.66	-173.12	-531.25	-2162.63	1675000.57	14288343.26	39°20'49.609"N	80°52'39.608"W	2226.93	256.199	6.09	5.21	-3.38	Tully: 7143' MD
7148.00	70.120	177.400	6461.37	-168.60	-535.95	-2162.43	1675000.78	14288338.57	39°20'49.563"N	80°52'39.605"W	2227.85	256.080	6.09	5.22	-3.33	
7195.00	72.820	174.730	6476.31	-125.42	-580.39	-2159.36	1675003.84	14288294.14	39°20'49.123"N	80°52'39.567"W	2236.00	254.956	7.87	5.74	-5.68	
7243.00	75.760	173.650	6489.31	-80.31	-626.36	-2154.68	1675008.52	14288248.19	39°20'48.669"N	80°52'39.508"W	2243.88	253.791	6.50	6.13	-2.25	
7251.00†	76.230	173.462	6491.24	-72.71	-634.07	-2153.81	1675009.39	14288201.75	39°20'48.593"N	80°52'39.497"W	2245.21	253.596	6.34	5.91	-2.36	Marcellus POE: 7251' MD
7291.00	78.600	172.530	6499.96	-34.43	-672.82	-2149.05	1675014.15	14288161.45	39°20'48.210"N	80°52'39.437"W	2251.91	252.616	6.34	5.92	-2.33	
7338.00	82.100	172.070	6507.83	11.12	-718.72	-2142.84	1675020.36	14288155.86	39°20'47.756"N	80°52'39.359"W	2260.16	251.458	7.51	7.45	-0.98	
7386.00	86.430	171.970	6512.63	58.10	-766.01	-2136.21	1675026.98	14288108.59	39°20'47.289"N	80°52'39.275"W	2269.40	250.273	9.02	9.02	-0.21	
7433.00	89.290	172.400	6514.39	104.28	-812.54	-2129.83	1675033.37	14288062.09	39°20'46.829"N	80°52'39.195"W	2279.56	249.118	6.15	6.03	0.91	
7528.00	91.630	168.890	6513.62	198.11	-906.25	-2114.39	1675048.80	14287968.41	39°20'45.902"N	80°52'39.000"W	2300.42	246.800	4.44	2.46	-3.69	
7623.00	91.540	164.440	6510.99	292.70	-998.63	-2092.49	1675070.69	14287876.07	39°20'44.989"N	80°52'38.723"W	2318.57	244.487	4.68	-0.03	-4.68	



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #04
ANTERO RESOURCES CORPORATION	Well	Horst Unit 2H
Area Tyler County, WV	Wellbore	Horst Unit 2H AWP
Field Tyler		
Facility Meredith Pad		

## WELLPATH DATA (213 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
7718.00	89.200	159.320	6510.38	387.66	-1088.88	-2062.96	1675100.21	14287785.85	39°20'44.096"N	80°52'38.349"W	2332.89	242.174	5.93	-2.46	-5.39	
7813.00	89.230	158.060	6511.68	482.52	-1177.37	-2028.44	1675134.72	14287697.40	39°20'43.221"N	80°52'37.911"W	2345.37	239.868	1.33	0.03	-1.33	
7908.00	89.200	157.380	6512.98	577.27	-1265.27	-1992.42	1675170.72	14287609.53	39°20'42.352"N	80°52'37.454"W	2360.23	237.583	0.72	-0.03	-0.72	
8003.00	88.770	156.250	6514.67	671.91	-1352.89	-1955.03	1675208.10	14287522.25	39°20'41.489"N	80°52'36.879"W	2377.31	235.323	1.27	-0.45	-1.19	
8098.00	88.710	156.430	6516.75	766.46	-1439.58	-1916.91	1675246.20	14287435.30	39°20'40.628"N	80°52'36.496"W	2397.28	233.094	0.20	-0.06	0.19	
8193.00	88.710	157.010	6518.89	861.07	-1526.82	-1879.38	1675283.72	14287348.09	39°20'39.766"N	80°52'36.019"W	2421.41	230.909	0.61	0.00	0.61	
8289.00	88.460	157.000	6521.26	956.72	-1615.17	-1841.89	1675321.19	14287259.78	39°20'38.892"N	80°52'35.544"W	2449.06	228.752	0.26	-0.26	-0.01	
8384.00	88.030	160.840	6524.17	1051.54	-1703.75	-1807.74	1675355.33	14287171.23	39°20'38.016"N	80°52'35.111"W	2484.09	226.696	4.07	-0.45	4.04	
8479.00	89.050	165.170	6526.60	1146.46	-1794.55	-1779.99	1675383.07	14287080.47	39°20'37.118"N	80°52'34.759"W	2527.60	224.787	4.68	1.07	4.56	
8574.00	89.230	165.690	6528.02	1241.25	-1886.48	-1756.09	1675406.95	14286988.57	39°20'36.209"N	80°52'34.456"W	2577.34	222.950	0.58	0.19	0.55	
8669.00	89.420	163.450	6529.14	1336.12	-1978.05	-1730.82	1675432.21	14286897.04	39°20'35.304"N	80°52'34.136"W	2628.39	221.186	2.37	0.20	-2.36	
8764.00	89.750	162.950	6529.83	1431.09	-2068.99	-1703.36	1675459.66	14286806.14	39°20'34.405"N	80°52'33.789"W	2679.96	219.464	0.63	0.35	-0.53	
8859.00	89.380	161.190	6530.55	1526.08	-2159.37	-1674.12	1675488.89	14286715.79	39°20'33.511"N	80°52'33.418"W	2732.32	217.786	1.89	-0.39	-1.85	
8953.00	89.600	159.990	6531.39	1620.06	-2248.02	-1642.88	1675520.12	14286627.18	39°20'32.634"N	80°52'33.022"W	2784.36	216.160	1.30	0.23	-1.28	
9048.00	91.050	162.960	6530.85	1715.04	-2338.09	-1612.70	1675550.28	14286537.15	39°20'31.744"N	80°52'32.639"W	2840.33	214.596	3.48	1.53	3.13	
9143.00	89.820	162.850	6530.13	1810.02	-2428.88	-1584.78	1675578.20	14286446.39	39°20'30.846"N	80°52'32.285"W	2900.17	213.123	1.30	-1.29	-0.12	
9238.00	90.000	161.610	6530.28	1905.01	-2519.35	-1555.79	1675607.18	14286355.96	39°20'29.951"N	80°52'31.918"W	2961.01	211.697	1.32	0.19	-1.31	
9333.00	89.540	159.170	6530.66	1999.98	-2608.83	-1523.91	1675639.05	14286266.51	39°20'29.067"N	80°52'31.514"W	3021.31	210.291	2.61	-0.48	-2.57	
9428.00	90.000	157.990	6531.04	2094.83	-2697.27	-1489.21	1675673.73	14286178.11	39°20'28.192"N	80°52'31.074"W	3081.07	208.904	1.33	0.48	-1.24	
9523.00	90.000	157.370	6531.04	2189.59	-2785.15	-1453.13	1675709.79	14286090.26	39°20'27.323"N	80°52'30.616"W	3141.44	207.553	0.65	0.00	-0.65	
9618.00	89.940	157.660	6531.09	2284.33	-2872.93	-1416.80	1675746.11	14286002.52	39°20'26.455"N	80°52'30.155"W	3203.29	206.250	0.31	-0.06	0.31	
9713.00	89.880	158.230	6531.24	2379.13	-2960.98	-1381.13	1675781.76	14285914.51	39°20'25.584"N	80°52'29.703"W	3267.25	205.006	0.60	-0.06	0.60	
9807.00	90.430	161.240	6530.98	2473.06	-3049.15	-1348.58	1675814.31	14285826.37	39°20'24.712"N	80°52'29.290"W	3334.06	203.859	3.26	0.59	3.20	
9902.00	90.120	162.310	6530.53	2568.05	-3139.38	-1318.86	1675844.00	14285736.18	39°20'23.820"N	80°52'28.913"W	3405.16	202.787	1.17	-0.33	1.13	
9997.00	90.280	161.530	6530.20	2663.05	-3229.69	-1289.38	1675873.47	14285645.91	39°20'22.927"N	80°52'28.540"W	3477.55	201.763	0.84	0.17	-0.82	
10092.00	90.280	161.940	6529.73	2758.05	-3319.90	-1259.61	1675903.24	14285555.73	39°20'22.035"N	80°52'28.162"W	3550.82	200.777	0.43	0.00	0.43	
10187.00	90.430	162.160	6529.14	2853.05	-3410.27	-1230.33	1675932.50	14285465.39	39°20'21.141"N	80°52'27.791"W	3625.42	199.838	0.28	0.16	0.23	
10282.00	90.550	163.260	6528.33	2948.03	-3500.97	-1202.10	1675960.72	14285374.73	39°20'20.245"N	80°52'27.434"W	3701.60	198.950	1.16	0.13	1.16	
10377.00	90.400	164.630	6527.54	3042.95	-3592.26	-1175.83	1675986.99	14285283.87	39°20'19.342"N	80°52'27.101"W	3779.81	198.124	1.45	-0.16	1.44	
10472.00	90.370	165.100	6526.90	3137.81	-3683.97	-1151.02	1676011.78	14285191.81	39°20'18.435"N	80°52'26.787"W	3859.59	197.351	0.50	-0.03	0.49	



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Horst Unit 2H
Field	Tyler	Wellbore	Horst Unit 2H AWB
Facility	Meredith Pad		

## WELLPATH DATA (213 stations)

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 (°/100ft)	Comments
10567.00	90.220	163.400	6526.42	3232.71	-3775.40	-1125.24	1676037.55	14285100.41	39°20'17.531"N	80°52'26.460"W	3939.51	196.596	1.80	-0.16	-1.79	
10662.00	90.220	161.950	6526.05	3327.70	-3866.08	-1096.95	1676065.83	14285009.76	39°20'16.634"N	80°52'26.102"W	4018.69	195.841	1.53	0.00	-1.53	
10756.00	89.750	161.240	6526.08	3421.70	-3955.27	-1067.27	1676095.50	14284920.61	39°20'15.763"N	80°52'25.726"W	4096.74	195.101	0.91	-0.50	-0.76	
10851.00	89.750	161.630	6526.49	3516.69	-4045.33	-1037.02	1676125.73	14284830.59	39°20'14.862"N	80°52'25.342"W	4176.13	194.378	0.41	0.00	0.41	
10946.00	89.660	163.070	6526.98	3611.68	-4135.85	-1008.22	1676154.52	14284740.10	39°20'13.967"N	80°52'24.977"W	4256.97	193.700	1.52	-0.09	1.52	
11040.00	89.820	163.910	6527.41	3705.64	-4225.98	-981.51	1676181.23	14284650.01	39°20'13.076"N	80°52'24.639"W	4338.46	193.075	0.91	0.17	0.89	
11135.00	89.780	163.690	6527.74	3800.58	-4317.20	-955.00	1676207.72	14284558.82	39°20'12.174"N	80°52'24.303"W	4421.57	192.473	0.24	-0.04	-0.23	
11230.00	89.850	162.870	6528.04	3895.54	-4408.19	-927.67	1676235.04	14284467.88	39°20'11.274"N	80°52'23.957"W	4504.74	191.884	0.87	0.07	-0.86	
11324.00	89.850	162.980	6528.29	3989.52	-4498.04	-900.07	1676262.63	14284378.06	39°20'10.366"N	80°52'23.607"W	4587.21	191.316	0.12	0.00	0.12	
11419.00	89.630	161.510	6528.72	4084.51	-4588.51	-871.10	1676291.59	14284287.62	39°20'09.491"N	80°52'23.240"W	4670.47	190.749	1.56	-0.23	-1.55	
11514.00	89.820	163.000	6529.18	4179.51	-4678.99	-842.15	1676320.53	14284197.18	39°20'08.596"N	80°52'22.874"W	4754.17	190.203	1.58	0.20	1.57	
11609.00	90.550	162.980	6528.87	4274.48	-4769.83	-814.36	1676348.31	14284106.38	39°20'07.698"N	80°52'22.521"W	4838.85	189.689	0.77	0.77	-0.02	
11703.00	89.600	160.500	6528.75	4368.47	-4859.09	-784.91	1676377.75	14284017.15	39°20'06.816"N	80°52'22.148"W	4922.08	189.176	2.83	-1.01	-2.64	
11798.00	89.570	159.680	6529.44	4463.43	-4948.41	-752.56	1676410.08	14283927.87	39°20'05.932"N	80°52'21.738"W	5005.31	188.647	0.86	-0.03	-0.86	
11893.00	89.570	159.870	6530.15	4558.37	-5037.55	-719.72	1676442.91	14283838.77	39°20'05.051"N	80°52'21.322"W	5088.70	188.131	0.20	0.00	0.20	
11988.00	89.510	159.790	6530.91	4653.32	-5126.72	-686.96	1676475.65	14283749.63	39°20'04.169"N	80°52'20.907"W	5172.94	187.632	0.11	-0.06	-0.08	
12082.00	89.510	160.520	6531.72	4747.28	-5215.13	-655.05	1676507.55	14283661.25	39°20'03.295"N	80°52'20.502"W	5256.11	187.159	0.78	0.00	0.78	
12177.00	89.480	159.990	6532.55	4842.24	-5304.55	-622.96	1676539.63	14283571.88	39°20'02.411"N	80°52'20.095"W	5341.00	186.688	0.56	-0.03	-0.56	
12271.00	89.510	161.020	6533.38	4936.21	-5393.15	-591.59	1676570.99	14283483.31	39°20'01.534"N	80°52'19.698"W	5425.50	186.260	1.10	0.03	1.10	
12366.00	89.450	161.470	6534.24	5031.21	-5483.10	-561.05	1676601.52	14283393.39	39°20'00.645"N	80°52'19.311"W	5511.73	185.842	0.48	-0.06	0.47	
12461.00	89.510	160.390	6535.11	5126.19	-5572.88	-530.01	1676632.54	14283303.64	39°19'59.757"N	80°52'18.917"W	5598.03	185.433	1.14	0.06	-1.14	
12555.00	89.850	161.360	6535.63	5220.18	-5661.89	-499.22	1676663.33	14283214.87	39°19'58.879"N	80°52'18.527"W	5683.66	185.039	1.09	0.36	1.03	
12650.00	89.910	163.080	6535.83	5315.17	-5752.15	-470.21	1676692.32	14283124.45	39°19'57.985"N	80°52'18.159"W	5771.34	184.673	1.81	0.06	1.81	
12745.00	89.690	163.270	6536.16	5410.14	-5843.09	-442.71	1676719.81	14283033.55	39°19'57.085"N	80°52'17.811"W	5859.83	184.333	0.31	-0.23	0.20	
12839.00	89.970	164.880	6536.44	5504.06	-5933.47	-416.92	1676745.59	14282943.20	39°19'56.192"N	80°52'17.484"W	5948.10	184.019	1.74	0.30	1.71	
12934.00	89.820	164.950	6536.61	5598.91	-6025.20	-392.20	1676770.30	14282851.51	39°19'55.285"N	80°52'17.171"W	6037.95	183.724	0.17	-0.16	0.07	
13029.00	89.780	166.190	6536.95	5693.70	-6117.20	-368.52	1676793.97	14282759.55	39°19'54.375"N	80°52'16.872"W	6128.29	183.448	1.31	-0.04	1.31	
13123.00	90.000	166.690	6537.13	5787.38	-6208.58	-346.48	1676816.00	14282668.20	39°19'53.472"N	80°52'16.593"W	6218.24	183.194	0.58	0.23	0.53	
13218.00	90.090	164.930	6537.05	5882.14	-6300.68	-323.20	1676839.28	14282576.14	39°19'52.561"N	80°52'16.298"W	6308.96	182.936	1.86	0.09	-1.85	
13313.00	89.910	161.870	6537.05	5977.09	-6391.86	-295.90	1676866.56	14282485.20	39°19'51.661"N	80°52'15.953"W	6398.50	182.651	3.44	-0.19	-3.43	





# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Horst Unit 2H
Field	Tyler	Wellbore	Horst Unit 2H AWB
Facility	Meredith Pad		

## WELLPATH DATA (213 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 (°/100ft)	Comments
13407.00	89.820	161.561	6537.27	6071.09	-6480.86	-266.25	1676896.20	14282396.03	39°19'50.779"N	80°52'15.577"W	6486.33	182.353	0.15	-0.10	-0.12	
13502.00	89.750	161.820	6537.63	6166.09	-6571.05	-236.41	1676926.03	14282305.88	39°19'49.888"N	80°52'15.199"W	6575.30	182.060	0.28	-0.07	0.27	
13597.00	89.850	163.530	6537.96	6261.07	-6661.74	-208.12	1676954.31	14282215.23	39°19'48.991"N	80°52'14.840"W	6664.99	181.789	1.80	0.11	1.80	
13692.00	89.880	163.160	6538.18	6356.03	-6752.75	-180.89	1676981.52	14282124.25	39°19'48.091"N	80°52'14.496"W	6765.17	181.534	0.39	0.03	-0.39	
13787.00	89.970	161.830	6538.31	6451.02	-6843.35	-152.32	1677010.09	14282033.69	39°19'47.195"N	80°52'14.134"W	6845.04	181.275	1.40	0.09	-1.40	
13882.00	89.940	158.370	6538.38	6545.97	-6932.66	-119.99	1677042.40	14281944.41	39°19'46.312"N	80°52'13.724"W	6933.70	180.992	3.64	-0.03	-3.64	
13976.00	89.940	157.960	6538.48	6639.79	-7019.92	-85.02	1677077.35	14281857.19	39°19'45.449"N	80°52'13.280"W	7020.43	180.694	0.44	0.00	-0.44	
14071.00	89.940	158.110	6538.58	6734.59	-7108.02	-49.49	1677112.87	14281769.12	39°19'44.578"N	80°52'12.830"W	7108.20	180.399	0.16	0.00	0.16	
14166.00	89.880	159.750	6538.73	6829.47	-7196.67	-15.34	1677147.01	14281680.51	39°19'43.701"N	80°52'12.397"W	7196.68	180.122	1.73	-0.06	1.73	
14261.00	89.750	159.620	6539.04	6924.41	-7285.76	17.64	1677179.98	14281591.46	39°19'42.820"N	80°52'11.979"W	7285.78	179.861	0.19	-0.14	-0.14	
14356.00	89.910	160.470	6539.32	7019.37	-7375.05	50.07	1677212.39	14281502.20	39°19'41.937"N	80°52'11.568"W	7375.22	179.611	0.91	0.17	0.89	
14451.00	89.910	161.400	6539.47	7114.36	-7464.84	81.10	1677243.40	14281412.45	39°19'41.049"N	80°52'11.175"W	7465.28	179.378	0.98	0.00	0.98	
14546.00	89.880	161.520	6539.64	7209.35	-7554.91	111.30	1677273.60	14281322.41	39°19'40.158"N	80°52'10.792"W	7555.73	179.156	0.13	-0.03	0.13	
14641.00	89.940	161.690	6539.79	7304.35	-7645.06	141.28	1677303.57	14281232.30	39°19'39.267"N	80°52'10.412"W	7646.36	178.941	0.19	0.06	0.18	
14736.00	89.940	161.890	6539.89	7399.35	-7735.30	170.97	1677333.24	14281142.10	39°19'38.375"N	80°52'10.036"W	7737.19	178.734	0.21	0.00	0.21	
14831.00	89.600	163.160	6540.27	7494.34	-7825.91	199.50	1677361.76	14281051.52	39°19'37.479"N	80°52'09.675"W	7828.45	178.540	1.38	-0.36	1.34	
14926.00	89.880	165.720	6540.70	7589.23	-7917.42	224.98	1677387.23	14280960.05	39°19'36.574"N	80°52'09.352"W	7920.62	178.372	2.71	0.29	2.69	
15021.00	90.030	166.060	6540.78	7683.96	-8009.56	248.14	1677410.38	14280867.95	39°19'35.663"N	80°52'09.059"W	8013.40	178.226	0.39	0.16	0.36	
15115.00	90.000	163.480	6540.75	7777.84	-8100.25	272.83	1677435.06	14280777.30	39°19'34.766"N	80°52'08.746"W	8104.84	178.071	2.74	-0.03	-2.74	
15210.00	89.880	161.340	6540.85	7872.83	-8190.80	301.54	1677463.76	14280686.78	39°19'33.871"N	80°52'08.383"W	8196.35	177.892	2.26	-0.13	-2.25	
15305.00	89.940	162.460	6541.00	7967.82	-8281.10	331.05	1677493.26	14280596.52	39°19'32.978"N	80°52'08.009"W	8287.71	177.711	1.18	0.06	1.18	
15400.00	89.970	163.940	6541.08	8062.79	-8372.04	358.51	1677520.70	14280505.61	39°19'32.079"N	80°52'07.661"W	8379.71	177.548	1.56	0.03	1.56	
15495.00	89.970	163.800	6541.13	8157.73	-8463.30	384.90	1677547.09	14280414.39	39°19'31.176"N	80°52'07.327"W	8472.06	177.396	0.15	0.00	-0.15	
15590.00	89.570	163.390	6541.51	8252.67	-8554.43	411.73	1677573.90	14280323.29	39°19'30.275"N	80°52'06.987"W	8564.33	177.244	0.60	-0.42	-0.43	
15685.00	89.690	163.010	6542.12	8347.64	-8645.37	439.19	1677601.35	14280232.39	39°19'29.376"N	80°52'06.640"W	8656.52	177.092	0.42	0.13	-0.40	
15780.00	89.600	162.620	6542.71	8442.62	-8736.13	467.25	1677629.41	14280141.67	39°19'28.479"N	80°52'06.284"W	8748.62	176.938	0.42	-0.09	-0.41	
15874.00	89.570	162.550	6543.39	8536.61	-8825.82	495.39	1677657.53	14280052.01	39°19'27.582"N	80°52'05.928"W	8839.71	176.787	0.08	-0.03	-0.07	
15969.00	89.600	162.650	6544.08	8631.60	-8916.47	523.79	1677685.93	14279961.40	39°19'26.695"N	80°52'05.568"W	8931.84	176.638	0.11	0.03	0.11	
16064.00	89.690	162.690	6544.67	8726.58	-9007.16	552.09	1677714.21	14279870.75	39°19'25.799"N	80°52'05.210"W	9024.06	176.492	0.10	0.09	0.09	
16159.00	89.750	161.760	6545.13	8821.58	-9097.62	581.09	1677743.20	14279780.32	39°19'24.904"N	80°52'04.842"W	9116.16	176.345	0.98	0.06	-0.98	



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot #04
ANTERO RESOURCES CORPORATION	Horst Unit 2H
Area	Horst Unit 2H AWB
Field	
Facility	

## WELLPATH DATA (213 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 (1/100ft)	Build Rate (1/100ft)	Turn Rate (1/100ft)	Comments
16254.00	89.510	160.940	6545.75	8916.57	-9187.63	611.47	1677773.57	14279690.35	39°19'24.014"N	80°52'04.457"W	9207.95	176.192	0.90	-0.25	-0.86	
16317.00	89.750	160.130	6546.15	8979.56	-9247.03	632.47	1677794.55	14279630.98	39°19'23.427"N	80°52'04.191"W	9268.63	176.087	1.34	0.38	-1.29	
16340.00	89.750	160.130	6546.25	9002.55	-9268.66	640.28	1677802.37	14279609.35	39°19'23.213"N	80°52'04.092"W	9290.74	176.048	0.00	0.00	0.00	Projected MD at TD: 16340'

## HOLE & CASING SECTIONS - Ref Wellbore: Horst Unit 2H AWB Ref Wellpath: Horst Unit 2H AWP Proj: 16340'

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	25.50	105.50	80.00	25.50	105.50	0.00	0.00	0.00	0.00
17.5in Open Hole	105.50	824.70	719.20	105.50	824.69	0.28	0.62	0.03	-0.31
13.375in Casing Surface	25.50	824.70	799.20	25.50	824.69	0.00	0.62	0.00	-0.31
12.25in Open Hole	824.70	2708.50	1883.80	824.69	2617.40	0.62	-1.01	-0.31	-488.86
9.625in Casing Intermediate	25.50	2708.50	2683.00	25.50	2617.40	0.00	-1.01	0.00	-488.86
8.75in Open Hole	2708.50	6391.50	3683.00	2617.40	5941.67	-1.01	-39.82	-488.86	-2051.67
8.5in Open Hole	6391.50	16340.00	9948.50	5941.67	6546.25	-39.82	-9268.66	-2051.67	640.28
5.5in Casing Production	25.50	16340.00	16314.50	25.50	6546.25	0.00	-9268.66	0.00	640.28



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Horst Unit 2H
Field	Tyler	Wellbore	Horst Unit 2H AWB
Facility	Meredith Pad		

## TARGETS

Name	TVD (ft)	North (ft)	East (ft)	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Horst Unit 2H - POE - Rev-1	6492.00	-598.96	-2144.68	1675018.52	14288275.58	39°20'48.940"N	80°52'39.380"W	point
Horst Unit 2H - BHL - Rev-2	6515.00	-9269.33	665.11	1677827.18	14279608.68	39°19'23.206"N	80°52'03.776"W	point
Horst Unit 2H - LP - Rev-1	6515.00	-769.52	-2112.70	1675050.49	14288105.08	39°20'47.254"N	80°52'38.976"W	point

## WELLPATH COMPOSITION - Ref Wellbore: Horst Unit 2H AWB Ref Wellpath: Horst Unit 2H AWP Proj: 16340'

Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.50	813.50	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(100'-803')	Horst Unit 2H AWB
813.50	2629.50	ISCWSA MWD, Rev. 4 (Standard)	02 Panther EM <12-1/4">(803')(831'-2619')	Horst Unit 2H AWB
2629.50	6333.50	ISCWSA MWD, Rev. 4 (Standard)	03 Panther EM <8-3/4">(2619')(2718'-6323')	Horst Unit 2H AWB
6333.50	16317.00	BHI AutoTrak Curve (Short)	04 BHI AT Curve <8-1/2">(6333.5')(6389'-16317')	Horst Unit 2H AWB
16317.00	16340.00	Blind Drilling (std)	Projection to bit	Horst Unit 2H AWB



# Actual Wellpath Report

Horst Unit 2H AWP Proj: 16340'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Slot	Slot #04	
ANTERO RESOURCES CORPORATION	Well	Horst Unit 2H	
Tyler County, WV	Wellbore	Horst Unit 2H AWB	
Tyler			
Meredith Pad			

COMMENTS
<p>Wellpath general comments</p> <p>API: 47-095-02517-0000</p> <p>BHI Job #: 109650475</p> <p>Rig: H&amp;P 317</p> <p>Duration: 02/06/2019-02/08/2019</p> <p>Gyrodatta MS Gyro &lt;17-1/2"&gt;(100'-803')</p> <p>Panther EM &lt;12-1/4"&gt;(803')(831'-2619')</p> <p>Panther EM &lt;8-3/4"&gt;(2619')(2718'-6323')</p> <p>BH AT Curve &lt;8-1/2"&gt;(6333.5')(6389'-16317')</p> <p>Middlesex: 6854' MD</p> <p>Burkett: 7057' MD</p> <p>Tully: 7143' MD</p> <p>Marcellus POE: 7251' MD</p> <p>Projected MD at TD: 16340'</p>