

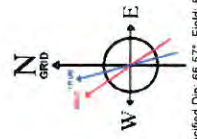
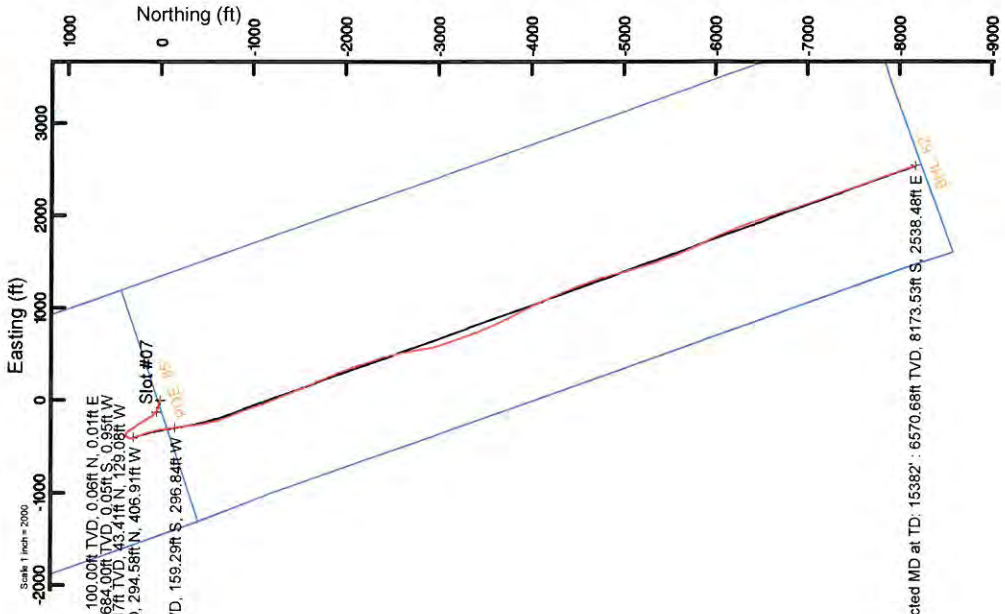


# ANTERO RESOURCES CORPORATION



Location: Tyler County, WV  
 Field: Tyler  
 Facility: Lemuel Pad  
 Slot: Slot #07  
 Well: Midge Unit 2H  
 Wellbore: Midge Unit 2H PWB

API: 47-095-02449-0000  
 BHI Job #: 9253213  
 Rig: Frontier 32  
 Duration: 07/05/2018-07/09/2018



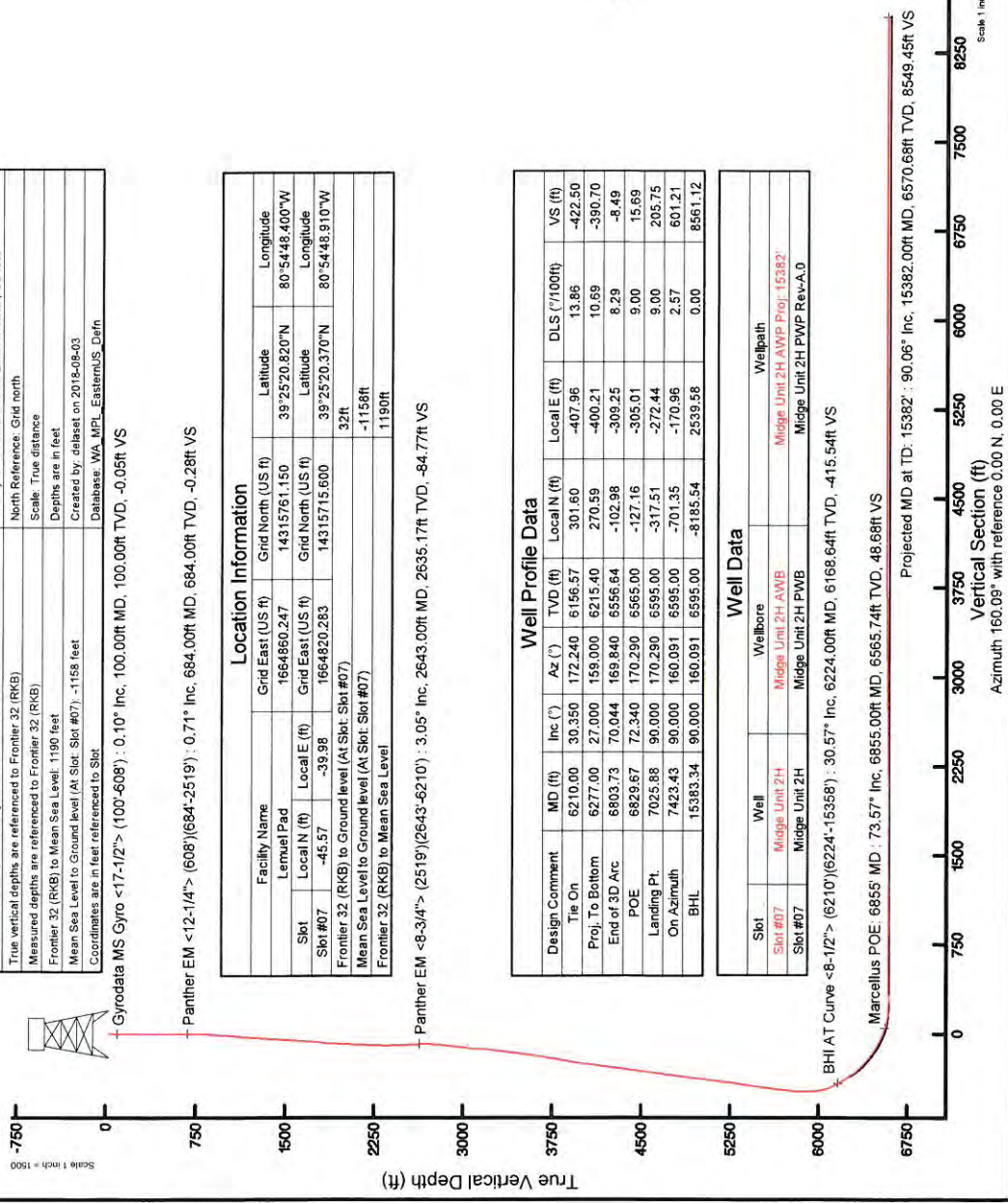
User specified Dip: 66.57° Field: 51882 NT  
 Magnetic North is 7.63 degrees West of True North (at 03/07/2018)  
 To correct azimuth from True North to Grid North, subtract 7.63 degrees  
 To correct azimuth from Magnetic to Grid subtract 7.68 degrees

Plot reference wellbore is Midge Unit 2H PWB Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 32 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 32 (RKB)	Scale: True distance
Frontier 32 (RKB) to Mean Sea Level: 1190 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #07): -1158 feet	Created by: dlabat on 2018-08-03
Coordinates are in feet referenced to Slot	Database: WA MPL_EasternUS_Defn

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Lemuel Pad	1664860.247	14315761.150	80°54'48.400"W
Slot	Local E (ft)	Local N (ft)	Latitude
Slot #07	-45.57	39°25'20.370"N	80°54'48.910"W
Frontier 32 (RKB) to Ground level (At Slot: Slot #07)	32ft		
Mean Sea Level to Ground level (At Slot: Slot #07)	-1158ft		
Frontier 32 (RKB) to Mean Sea Level	1190ft		

Well Profile Data						
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)
Tie On	6210.00	30.350	172.240	6156.57	301.60	-407.96
Proj. To Bottom	6277.00	27.000	159.000	6215.40	270.59	-400.21
End of 3D Arc	6803.73	70.044	169.840	6556.64	-102.98	-309.25
POE	6829.67	72.340	170.290	6565.00	-127.16	-305.01
Landing Pt.	7025.88	90.000	170.290	6595.00	-317.51	-272.44
On Azimuth	7423.43	90.000	160.091	6595.00	-701.35	-170.96
BHL	15383.34	90.000	160.091	6595.00	-8185.54	2539.58
						8561.12

Well Data		
Slot	Well	Wellbore
Slot #07	Midge Unit 2H	Midge Unit 2H AWB
Slot #07	Midge Unit 2H	Midge Unit 2H PWB
		Midge Unit 2H PWP Rev-A.0



Projected MD at TD: 15382° : 90.06° Inc, 15382.00ft MD, 6570.68ft TVD, 8549.45ft VS  
 BHI AT Curve <8-1/2"> : 6210°(6224-15358) : 30.57° Inc, 6224.00ft MD, 6168.64ft TVD, -415.54ft VS  
 Marcellus POE: 6855° MD : 73.57° Inc, 6855.00ft MD, 6565.74ft TVD, 48.68ft VS  
 Vertical Section (ft)  
 Azimuth 160.09° with reference 0.00 N, 0.00 E



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'

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03/08/2019

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Midge Unit 2H
Field	Tyler	Wellbore	Midge Unit 2H AWB
Facility	Lemuel Pad		

REPORT SETUP INFORMATION	
Projection System	NAD27 / UTM Zone 17 North, US feet
North Reference	Grid
Scale	0.999601
Convergence at slot	0.05° East
Software System	WellArchitect® 5.1
User	Delaset
Report Generated	03/Aug/2018 at 15:45
Database/Source file	WA_MPL_EasternUS_Defn\Midge_Unit_2H_AWP_Proj_15382_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-45.57	-39.98	1664820.28	14315715.60	39°25'20.370"N	80°54'48.910"W
Facility Reference Pt			1664860.25	14315761.15	39°25'20.820"N	80°54'48.400"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM	
Calculation method	Minimum curvature
Horizontal Reference Pt	Slot
Vertical Reference Pt	Frontier 32 (RKB)
MD Reference Pt	Frontier 32 (RKB)
Field Vertical Reference	Mean Sea Level
	Frontier 32 (RKB) to Facility Vertical Datum
	Frontier 32 (RKB) to Mean Sea Level
	Frontier 32 (RKB) to Ground Level at Slot (Slot #07)
	Section Origin
	Section Azimuth
	32.00ft
	1190.00ft
	32.00ft
	N 0.00, E 0.00 ft
	160.09°



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Midge Unit 2H
Field	Tyler	Wellbore	Midge Unit 2H AWB
Facility	Lemuel Pad		

WELLPATH DATA (200 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert.Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
0.00	0.00	10.480	0.00	0.00	0.00	0.00	1664820.28	14315715.60	39°25'20.370"N	80°54'48.910"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.00	10.480	32.00	0.00	0.00	0.00	1664820.28	14315715.60	39°25'20.370"N	80°54'48.910"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.100	10.480	100.00	-0.05	0.06	0.01	1664820.29	14315715.66	39°25'20.371"N	80°54'48.910"W	0.06	10.480	0.15	0.15	15.41	Cyrodatta MS Gyro <17-1/2"> (100'-608')
125.00	0.060	51.170	125.00	-0.07	0.09	0.02	1664820.31	14315715.69	39°25'20.371"N	80°54'48.910"W	0.09	15.833	0.27	-0.16	162.76	
150.00	0.100	29.680	150.00	-0.09	0.12	0.04	1664820.33	14315715.72	39°25'20.371"N	80°54'48.909"W	0.12	20.705	0.22	0.16	-109.96	
175.00	0.040	264.150	175.00	-0.11	0.14	0.04	1664820.33	14315715.74	39°25'20.371"N	80°54'48.909"W	0.14	18.016	0.50	-0.24	-478.12	
200.00	0.030	166.160	200.00	-0.11	0.13	0.04	1664820.34	14315715.73	39°25'20.371"N	80°54'48.910"W	0.13	16.069	0.21	-0.04	-391.96	
225.00	0.080	101.940	225.00	-0.09	0.12	0.06	1664820.34	14315715.72	39°25'20.371"N	80°54'48.909"W	0.13	25.185	0.29	0.20	-256.88	
250.00	0.010	164.640	250.00	-0.08	0.11	0.07	1664820.36	14315715.71	39°25'20.371"N	80°54'48.909"W	0.13	33.075	0.30	-0.28	250.80	
275.00	0.040	205.580	275.00	-0.07	0.10	0.07	1664820.37	14315715.68	39°25'20.371"N	80°54'48.909"W	0.12	34.355	0.13	0.12	163.76	
300.00	0.100	130.180	300.00	-0.05	0.08	0.08	1664820.37	14315715.65	39°25'20.371"N	80°54'48.909"W	0.12	45.858	0.39	0.24	-301.60	
325.00	0.100	127.990	325.00	-0.01	0.05	0.12	1664820.40	14315715.65	39°25'20.371"N	80°54'48.909"W	0.13	65.610	0.02	0.00	-8.76	
350.00	0.110	99.830	350.00	0.02	0.04	0.16	1664820.44	14315715.64	39°25'20.370"N	80°54'48.908"W	0.16	77.336	0.21	0.04	-112.64	
375.00	0.100	197.240	375.00	0.05	0.01	0.17	1664820.46	14315715.61	39°25'20.370"N	80°54'48.908"W	0.18	86.569	0.63	-0.04	389.64	
400.00	0.110	218.080	400.00	0.08	-0.03	0.15	1664820.44	14315715.57	39°25'20.370"N	80°54'48.908"W	0.16	100.788	0.16	0.04	83.36	
425.00	0.090	208.330	425.00	0.11	-0.07	0.13	1664820.41	14315715.53	39°25'20.369"N	80°54'48.908"W	0.14	116.823	0.10	-0.08	-39.00	
450.00	0.150	259.780	450.00	0.11	-0.09	0.09	1664820.37	14315715.51	39°25'20.369"N	80°54'48.909"W	0.12	135.211	0.47	0.24	205.80	
475.00	0.160	250.240	475.00	0.11	-0.11	0.02	1664820.31	14315715.49	39°25'20.369"N	80°54'48.910"W	0.11	167.871	0.11	0.04	-38.16	
500.00	0.190	223.940	500.00	0.13	-0.15	-0.04	1664820.24	14315715.45	39°25'20.369"N	80°54'48.910"W	0.15	194.716	0.34	0.12	-105.20	
525.00	0.130	231.160	525.00	0.15	-0.20	-0.09	1664820.19	14315715.40	39°25'20.368"N	80°54'48.911"W	0.21	204.649	0.25	-0.24	28.88	
550.00	0.190	263.720	550.00	0.15	-0.22	-0.15	1664820.13	14315715.38	39°25'20.368"N	80°54'48.912"W	0.27	215.089	0.43	0.24	130.24	
575.00	0.210	255.710	575.00	0.14	-0.23	-0.24	1664820.04	14315715.37	39°25'20.368"N	80°54'48.913"W	0.33	225.606	0.14	0.08	-32.04	
600.00	0.290	264.950	600.00	0.12	-0.25	-0.35	1664819.94	14315715.35	39°25'20.368"N	80°54'48.914"W	0.43	234.100	0.36	0.32	36.96	
608.00	0.260	256.780	608.00	0.11	-0.26	-0.38	1664819.90	14315715.34	39°25'20.367"N	80°54'48.915"W	0.46	236.258	0.62	-0.37	-102.13	
684.00	0.710	301.810	684.00	-0.28	-0.05	-0.95	1664819.33	14315715.55	39°25'20.370"N	80°54'48.922"W	0.95	267.137	0.73	0.59	59.25	Panther EIM <12-1/4"> (608')(684'-2519')
774.00	1.900	296.520	773.97	-1.80	0.91	-2.76	1664817.52	14315716.51	39°25'20.379"N	80°54'48.945"W	2.91	288.291	1.33	1.32	-5.88	
869.00	3.890	295.240	868.85	-5.22	2.99	-7.09	1664813.20	14315718.59	39°25'20.400"N	80°54'49.000"W	7.69	292.880	2.10	2.09	-1.35	
964.00	5.790	293.300	963.50	-10.79	6.26	-14.40	1664805.89	14315721.86	39°25'20.432"N	80°54'48.093"W	15.70	293.493	2.01	2.00	-2.04	
1059.00	7.200	289.600	1057.89	-17.86	10.15	-24.41	1664795.88	14315725.75	39°25'20.471"N	80°54'49.221"W	26.44	292.582	1.55	1.48	-3.89	
1154.00	7.820	288.010	1152.08	-25.62	14.15	-36.17	1664784.13	14315729.74	39°25'20.510"N	80°54'49.371"W	38.84	291.365	0.69	0.65	-1.67	



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'  
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03/08/2019

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Midge Unit 2H
Field	Tyler	Wellbore	Midge Unit 2H AWB
Facility	Lemuel Pad		

WELLPATH DATA (200 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
1249.00	7.110	283.610	1246.27	-32.84	17.53	-48.03	1664772.28	14315733.12	39°25'20.544"N	80°54'49.522"W	51.13	290.052	0.96	-0.75	-4.63	
1344.00	7.200	278.710	1340.53	-38.94	19.81	-59.63	1664760.68	14315735.41	39°25'20.566"N	80°54'49.670"W	62.83	288.382	0.65	0.09	-5.16	
1439.00	6.010	281.530	1434.90	-44.38	21.71	-70.38	1664749.93	14315737.30	39°25'20.585"N	80°54'49.807"W	73.66	287.143	1.30	-1.25	2.97	
1534.00	5.080	292.510	1529.46	-49.81	24.31	-79.14	1664741.17	14315739.90	39°25'20.611"N	80°54'49.918"W	82.79	287.078	1.48	-0.98	11.56	
1629.00	6.100	295.330	1624.00	-56.23	28.08	-87.59	1664732.73	14315743.67	39°25'20.648"N	80°54'50.026"W	91.98	287.778	1.11	1.07	2.97	
1724.00	6.580	295.900	1718.42	-63.72	32.62	-97.05	1664723.27	14315748.21	39°25'20.693"N	80°54'50.146"W	102.39	288.579	0.51	0.51	0.60	
1819.00	7.510	294.530	1812.70	-71.97	37.58	-107.59	1664712.73	14315753.16	39°25'20.742"N	80°54'50.281"W	113.97	289.251	0.99	0.98	-1.44	
1915.00	5.210	292.020	1908.11	-78.67	41.09	-117.57	1664702.76	14315756.67	39°25'20.777"N	80°54'50.408"W	124.54	289.255	2.78	-2.40	-13.03	
2010.00	3.890	279.420	2002.81	-82.53	42.52	-124.96	1664695.37	14315758.16	39°25'20.791"N	80°54'50.502"W	132.00	288.789	1.41	-1.39	-2.74	
2105.00	3.090	297.000	2097.64	-85.98	44.21	-130.43	1664689.91	14315759.79	39°25'20.808"N	80°54'50.571"W	137.71	288.723	1.40	-0.84	18.51	
2200.00	2.520	329.130	2192.53	-89.90	47.16	-133.78	1664686.56	14315762.74	39°25'20.837"N	80°54'50.614"W	141.85	289.419	1.73	-0.60	33.82	
2295.00	2.300	351.120	2287.45	-93.82	50.84	-135.14	1664685.19	14315766.42	39°25'20.874"N	80°54'50.631"W	144.39	290.615	0.99	-0.23	23.15	
2391.00	1.810	100.640	2383.41	-94.94	52.46	-133.95	1664686.39	14315768.04	39°25'20.890"N	80°54'50.616"W	143.86	291.387	3.51	-0.51	114.08	
2486.00	2.300	143.820	2478.35	-92.35	50.64	-131.35	1664688.98	14315766.22	39°25'20.872"N	80°54'50.583"W	140.78	291.085	1.66	0.52	45.45	
2519.00	2.700	158.940	2511.32	-90.94	49.38	-130.68	1664689.65	14315764.96	39°25'20.859"N	80°54'50.575"W	139.70	290.702	2.33	1.21	45.82	
2643.00	3.050	170.350	2635.17	-84.77	43.41	-129.08	1664691.26	14315758.99	39°25'20.800"N	80°54'50.554"W	136.18	288.587	0.54	0.28	9.20	Panther EM <-8-3/4"> (2519)-(2643-6210)
2738.00	3.140	13.020	2730.12	-84.47	43.45	-128.07	1664692.27	14315759.03	39°25'20.801"N	80°54'50.541"W	135.24	288.741	6.39	0.09	-165.61	
2833.00	5.710	349.890	2824.83	-91.31	50.64	-128.31	1664692.02	14315766.22	39°25'20.872"N	80°54'50.544"W	137.94	291.537	3.24	2.71	-24.35	
2928.00	7.290	322.740	2919.24	-101.72	60.09	-132.79	1664687.54	14315775.67	39°25'20.965"N	80°54'50.601"W	145.76	294.348	3.59	1.66	-28.58	
3023.00	8.500	302.670	3013.36	-113.05	68.68	-142.35	1664677.99	14315784.25	39°25'21.050"N	80°54'50.723"W	158.06	295.756	3.15	1.27	-21.13	
3119.00	5.760	293.520	3108.61	-122.00	74.43	-152.74	1664667.60	14315790.00	39°25'21.107"N	80°54'50.855"W	169.92	295.981	3.08	-2.85	-9.53	
3218.00	6.520	303.730	3207.04	-129.94	79.54	-161.98	1664658.37	14315795.11	39°25'21.158"N	80°54'50.973"W	180.45	296.154	1.34	0.77	10.31	
3313.00	7.920	319.510	3301.30	-140.42	87.51	-170.71	1664649.64	14315803.08	39°25'21.237"N	80°54'51.084"W	191.84	297.141	2.54	1.47	16.61	
3408.00	7.330	341.050	3395.48	-152.61	98.22	-176.93	1664643.42	14315813.78	39°25'21.342"N	80°54'51.163"W	202.37	299.037	3.05	-0.62	22.67	
3503.00	7.320	327.510	3489.71	-164.57	109.06	-182.15	1664636.21	14315824.62	39°25'21.450"N	80°54'51.230"W	212.30	300.911	1.81	-0.01	-14.25	
3597.00	8.780	329.210	3582.78	-177.46	120.28	-189.04	1664631.32	14315835.83	39°25'21.561"N	80°54'51.317"W	224.06	302.466	1.57	1.55	1.81	
3692.00	10.120	333.340	3676.49	-192.87	133.96	-196.50	1664623.87	14315849.51	39°25'21.696"N	80°54'51.412"W	237.82	304.285	1.58	1.41	4.35	
3787.00	10.070	331.310	3770.02	-209.37	148.71	-204.23	1664616.14	14315864.25	39°25'21.842"N	80°54'51.511"W	252.63	306.060	0.38	-0.05	-2.14	
3882.00	9.900	328.130	3863.58	-225.57	162.93	-212.53	1664607.84	14315878.46	39°25'21.982"N	80°54'51.616"W	267.80	307.475	0.61	-0.18	-3.35	
3977.00	8.730	321.020	3957.33	-240.37	175.47	-221.38	1664599.00	14315891.00	39°25'22.106"N	80°54'51.729"W	282.48	308.402	1.73	-1.23	-7.48	



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #07
ANTERO RESOURCES CORPORATION	Well	Midge Unit 2H
Tyler County, WV	Wellbore	Midge Unit 2H AWB
Tyler		
Lemuel Pad		

## WELLPATH DATA (200 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sec (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
4072.00	7.760	330.120	4051.35	-253.50	186.64	-229.11	1664591.27	14315902.16	39°25'22.217"N	80°54'51.827"W	295.50	309.167	1.71	-1.02	9.58	
4167.00	7.830	329.110	4145.47	-266.17	197.75	-235.62	1664584.75	14315913.27	39°25'22.327"N	80°54'51.910"W	307.61	310.006	0.16	0.07	-1.06	
4262.00	7.800	328.620	4239.59	-278.84	208.81	-242.30	1664578.08	14315924.32	39°25'22.436"N	80°54'51.995"W	319.86	310.754	0.08	-0.03	-0.52	
4357.00	7.300	329.680	4333.77	-291.10	219.52	-248.71	1664571.68	14315935.03	39°25'22.542"N	80°54'52.077"W	331.73	311.433	0.55	-0.53	1.12	
4452.00	7.160	329.470	4428.01	-302.85	229.83	-254.76	1664565.62	14315945.34	39°25'22.644"N	80°54'52.154"W	343.11	312.055	0.15	-0.15	-0.22	
4548.00	7.780	321.880	4523.20	-314.90	240.10	-261.81	1664558.58	14315955.60	39°25'22.745"N	80°54'52.243"W	355.24	312.523	1.21	0.65	-7.91	
4643.00	8.450	324.380	4617.28	-327.50	250.63	-269.70	1664550.69	14315966.13	39°25'22.850"N	80°54'52.344"W	368.18	312.901	0.53	0.39	2.63	
4738.00	8.500	321.920	4711.29	-340.61	261.60	-277.93	1664542.47	14315977.09	39°25'22.958"N	80°54'52.448"W	381.68	313.266	0.49	0.32	-2.59	
4833.00	8.500	320.010	4805.25	-353.84	272.47	-286.75	1664533.65	14315987.96	39°25'23.066"N	80°54'52.561"W	395.56	313.538	0.30	0.05	-2.01	
4929.00	7.310	319.340	4900.34	-366.21	282.54	-295.29	1664525.12	14315998.03	39°25'23.165"N	80°54'52.669"W	408.68	313.736	1.24	-1.24	-0.70	
5024.00	6.570	332.640	4994.64	-377.25	291.95	-301.72	1664518.68	14316007.44	39°25'23.258"N	80°54'52.751"W	419.85	314.057	1.86	-0.78	14.00	
5119.00	6.970	333.030	5088.98	-388.36	301.92	-306.83	1664513.57	14316017.40	39°25'23.357"N	80°54'52.816"W	430.47	314.537	0.42	0.42	0.41	
5214.00	7.410	331.570	5183.24	-400.14	312.44	-312.36	1664508.04	14316027.92	39°25'23.461"N	80°54'52.887"W	441.80	315.007	0.50	0.46	-1.54	
5310.00	8.140	328.550	5278.35	-412.92	323.68	-318.86	1664501.55	14316039.15	39°25'23.572"N	80°54'52.969"W	454.36	315.430	0.87	0.76	-3.15	
5404.00	8.910	327.220	5371.31	-426.54	335.48	-326.27	1664494.14	14316050.95	39°25'23.689"N	80°54'53.063"W	467.98	315.797	0.85	0.82	-1.41	
5499.00	8.530	320.700	5465.22	-440.36	347.12	-334.72	1664485.70	14316062.58	39°25'23.804"N	80°54'53.171"W	482.21	316.042	1.11	-0.40	-6.86	
5595.00	8.380	317.040	5560.17	-453.51	357.75	-343.99	1664476.43	14316073.20	39°25'23.909"N	80°54'53.289"W	496.30	316.123	0.58	-0.16	-3.81	
5690.00	7.490	304.640	5654.27	-464.93	366.34	-353.81	1664466.62	14316081.79	39°25'23.994"N	80°54'53.414"W	509.29	315.997	2.03	-0.94	-13.05	
5785.00	6.990	314.670	5748.52	-475.19	373.92	-363.01	1664457.42	14316089.37	39°25'24.069"N	80°54'53.551"W	521.15	315.848	1.43	-0.53	10.56	
5830.00	6.220	309.160	5793.22	-479.76	377.38	-366.85	1664453.58	14316092.83	39°25'24.103"N	80°54'53.580"W	526.31	315.811	2.21	-1.71	-12.24	
5879.00	5.950	263.770	5841.97	-482.63	378.78	-371.44	1664449.00	14316094.23	39°25'24.117"N	80°54'53.638"W	530.51	315.561	9.58	-0.55	-92.63	
5924.00	11.110	284.500	5886.46	-483.52	377.37	-377.94	1664442.50	14316092.82	39°25'24.103"N	80°54'53.721"W	534.08	314.957	11.83	11.47	-20.60	
5975.00	12.510	240.390	5936.39	-482.97	373.33	-387.48	1664432.96	14316088.78	39°25'24.063"N	80°54'53.843"W	538.06	313.935	6.27	2.75	-27.67	
6020.00	13.350	222.480	5980.26	-479.74	367.09	-395.23	1664425.22	14316082.54	39°25'24.002"N	80°54'53.942"W	539.40	312.886	9.06	1.87	-39.80	
6070.00	15.850	203.920	6028.67	-472.13	358.58	-401.90	1664418.55	14316072.04	39°25'23.898"N	80°54'54.027"W	537.28	311.581	10.55	5.00	-37.12	
6115.00	20.960	193.260	6071.37	-460.95	343.12	-406.24	1664414.21	14316058.58	39°25'23.765"N	80°54'54.082"W	531.75	310.185	13.55	11.36	-23.69	
6165.00	26.960	183.190	6117.06	-443.01	323.07	-408.92	1664411.52	14316038.54	39°25'23.567"N	80°54'54.117"W	521.15	308.310	14.48	12.00	-20.14	
6210.00	30.350	172.240	6156.57	-422.50	301.60	-407.96	1664412.49	14316017.08	39°25'23.355"N	80°54'54.105"W	507.34	306.475	13.86	7.53	-24.33	
6224.00	30.570	170.810	6168.64	-415.54	294.58	-406.91	1664413.54	14316010.06	39°25'23.285"N	80°54'54.092"W	502.35	305.902	5.41	1.57	-10.21	BHI AT Curve <-8-1/2"> (6210)(6224-15358')
6271.00	30.550	160.030	6209.14	-391.84	271.54	-400.92	1664419.53	14315987.03	39°25'23.057"N	80°54'54.015"W	484.22	304.109	11.65	-0.04	-22.94	



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'  
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03/08/2019

## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot #07
ANTERO RESOURCES CORPORATION	Midge Unit 2H
Tyler County, WV	Midge Unit 2H AWB
Tyler	
Lemuel Pad	

## WELLPATH DATA (200 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6319.00	32.460	158.320	6250.06	-366.76	248.10	-391.99	1664428.45	14315963.60	39°25'22.826"N	80°54'53.902"W	463.91	302.330	4.39	3.98	-3.56	
6366.00	36.150	159.670	6288.88	-340.28	223.37	-382.51	1664437.92	14315938.88	39°25'22.581"N	80°54'53.782"W	442.96	300.283	8.02	7.85	2.87	
6414.00	40.080	161.560	6326.64	-310.66	195.42	-372.70	1664447.73	14315910.94	39°25'22.305"N	80°54'53.657"W	420.83	297.670	8.54	8.19	3.94	
6461.00	43.660	162.320	6361.63	-279.32	165.60	-362.98	1664457.44	14315881.13	39°25'22.010"N	80°54'53.533"W	398.98	294.523	7.69	7.62	1.62	
6509.00	47.110	163.180	6395.34	-245.19	132.97	-352.86	1664467.56	14315848.52	39°25'21.688"N	80°54'53.405"W	377.08	290.648	7.30	7.19	1.79	
6549.00†	50.633	164.271	6421.65	-215.13	104.05	-344.43	1664475.99	14315819.61	39°25'21.402"N	80°54'53.298"W	359.80	286.810	9.04	8.81	2.73	Middlesex: 6549' MD
6596.00	51.250	164.450	6426.06	-209.71	98.82	-342.96	1664477.46	14315814.38	39°25'21.350"N	80°54'53.279"W	356.91	286.074	9.04	8.82	2.56	
6605.00	54.960	167.170	6455.47	-170.73	60.84	-333.38	1664487.04	14315776.41	39°25'20.974"N	80°54'53.157"W	338.89	280.342	8.78	7.57	5.55	
6652.00	57.950	169.420	6481.44	-131.97	22.48	-325.45	1664494.97	14315738.07	39°25'20.595"N	80°54'53.057"W	326.22	273.952	7.51	6.36	4.79	
6700.00	61.720	170.770	6505.56	-91.11	-18.39	-318.32	1664502.09	14315697.22	39°25'20.191"N	80°54'52.966"W	318.85	266.893	8.22	7.85	2.81	
6718.00†	62.822	171.170	6513.94	-75.46	-34.13	-315.82	1664504.59	14315681.49	39°25'20.036"N	80°54'52.935"W	317.66	263.833	6.43	6.12	2.22	Burkett: 6718' MD
6748.00	64.660	171.820	6527.21	-49.09	-60.73	-311.84	1664508.57	14315654.89	39°25'19.773"N	80°54'52.884"W	317.70	258.979	6.43	6.13	2.17	
6781.00†	66.949	171.792	6540.73	-19.62	-90.52	-307.55	1664512.65	14315625.11	39°25'19.478"N	80°54'52.830"W	320.60	253.599	6.94	6.94	-0.09	Jully: 6781' MD
6795.00	67.920	171.780	6546.11	-6.96	-103.32	-305.71	1664514.70	14315612.32	39°25'19.352"N	80°54'52.807"W	322.69	251.326	6.94	6.94	-0.08	
6842.00	72.630	170.480	6561.96	36.45	-147.02	-298.88	1664521.52	14315568.64	39°25'18.920"N	80°54'52.720"W	333.08	243.807	10.35	10.02	-2.77	
6855.00†	73.572	170.658	6565.74	48.68	-159.29	-296.84	1664523.56	14315556.37	39°25'18.798"N	80°54'52.694"W	336.88	241.781	7.37	7.25	1.37	Marcellus POE: 6855' MD
6890.00	76.110	171.130	6574.89	81.86	-192.64	-291.50	1664528.90	14315523.03	39°25'18.489"N	80°54'52.627"W	349.40	236.540	7.37	7.25	1.35	
6937.00	81.010	172.310	6584.21	126.97	-238.21	-284.87	1664535.53	14315477.48	39°25'18.018"N	80°54'52.543"W	371.34	230.097	10.71	10.43	2.51	
6985.00	83.620	173.620	6590.63	173.33	-285.42	-279.04	1664541.35	14315430.29	39°25'17.582"N	80°54'52.469"W	399.16	224.353	6.07	5.44	2.73	
7032.00	86.830	173.300	6593.73	218.95	-332.00	-273.70	1664546.69	14315383.74	39°25'17.091"N	80°54'52.402"W	430.27	219.503	11.11	11.09	-0.68	
7080.00	90.090	172.740	6594.18	265.72	-379.64	-267.87	1664552.52	14315336.11	39°25'16.620"N	80°54'52.328"W	464.63	215.207	2.87	2.63	-1.17	
7175.00	90.000	169.090	6594.10	369.02	-473.43	-252.87	1664567.51	14315242.36	39°25'15.693"N	80°54'52.138"W	536.73	208.108	3.84	-0.09	-3.84	
7271.00	90.120	166.310	6594.00	454.16	-567.22	-232.42	1664587.95	14315148.61	39°25'14.766"N	80°54'51.879"W	612.99	202.282	2.90	0.13	-2.90	
7366.00	90.400	161.740	6593.57	548.91	-658.52	-206.29	1664614.08	14315057.34	39°25'13.863"N	80°54'51.547"W	690.08	197.393	4.82	0.29	-4.81	
7460.00	89.940	157.970	6593.29	642.89	-746.76	-173.92	1664646.43	14314969.14	39°25'12.991"N	80°54'51.135"W	766.74	193.110	4.04	-0.49	-4.01	
7556.00	90.030	159.020	6593.32	738.86	-836.07	-138.73	1664681.61	14314879.86	39°25'12.108"N	80°54'50.888"W	847.50	189.421	1.10	0.09	1.09	
7650.00	89.910	160.380	6593.37	832.85	-924.23	-106.12	1664714.21	14314791.74	39°25'11.236"N	80°54'50.273"W	930.30	186.550	1.45	-0.13	1.45	
7746.00	90.000	160.400	6593.44	928.85	-1014.66	-73.90	1664746.42	14314701.34	39°25'10.342"N	80°54'49.864"W	1017.35	184.165	0.10	0.09	0.02	
7841.00	89.970	159.730	6593.47	1023.85	-1103.97	-41.51	1664778.79	14314612.07	39°25'09.459"N	80°54'49.452"W	1104.75	182.153	0.71	-0.03	-0.71	
7936.00	89.970	159.350	6593.52	1118.85	-1192.98	-8.30	1664811.99	14314523.10	39°25'08.579"N	80°54'49.030"W	1193.01	180.399	0.40	0.00	-0.40	



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'

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03/08/2019

REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	Lemuel Pad
Slot	Slot #07
Well	Midge Unit 2H
Wellbore	Midge Unit 2H AWB

WELLPATH DATA (200 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
8031.00	89.940	158.730	6593.59	1213.83	-1281.69	25.68	1664845.96	14314434.42	39°25'07.702"N	80°54'48.598"W	1281.95	178.862	0.65	-0.03	-0.65	
8126.00	89.970	158.600	6593.67	1308.80	-1370.18	60.25	1664880.51	14314434.97	39°25'06.827"N	80°54'48.159"W	1371.50	177.482	0.14	0.03	-0.14	
8220.00	90.400	157.050	6593.36	1402.72	-1457.22	95.72	1664915.97	14314258.96	39°25'05.967"N	80°54'47.708"W	1460.37	176.242	1.71	0.46	-1.65	
8315.00	90.370	157.550	6592.72	1497.61	-1544.86	132.38	1664952.61	14314171.36	39°25'05.100"N	80°54'47.242"W	1550.53	175.102	0.53	-0.03	-0.53	
8410.00	90.280	156.600	6592.19	1592.47	-1632.36	169.39	1664989.60	14314083.90	39°25'04.235"N	80°54'46.772"W	1641.12	174.076	1.00	-0.09	-1.00	
8506.00	90.340	157.030	6591.67	1688.32	-1720.60	207.18	1665027.38	14313995.09	39°25'03.362"N	80°54'46.291"W	1733.03	173.134	0.45	0.06	0.45	
8602.00	90.310	157.290	6591.12	1784.19	-1809.72	244.45	1665064.63	14313907.25	39°25'02.488"N	80°54'45.817"W	1825.51	172.305	0.27	-0.03	0.27	
8696.00	90.310	157.090	6590.61	1878.07	-1895.72	280.89	1665101.26	14313820.64	39°25'01.631"N	80°54'45.354"W	1916.42	171.572	0.21	0.00	-0.21	
8791.00	90.310	158.150	6590.10	1972.98	-1983.56	317.06	1665137.21	14313732.83	39°25'00.762"N	80°54'44.894"W	2008.74	170.919	1.12	0.00	1.12	
8886.00	90.280	160.070	6589.61	2067.96	-2072.31	350.93	1665171.07	14313644.12	39°24'59.885"N	80°54'44.484"W	2101.82	170.389	2.02	-0.03	2.02	
8982.00	90.310	162.410	6589.12	2163.93	-2163.21	381.80	1665201.93	14313555.26	39°24'58.986"N	80°54'44.072"W	2196.64	169.991	2.44	0.03	2.44	
9074.00	90.310	161.440	6588.62	2255.88	-2250.66	410.34	1665230.46	14313465.84	39°24'58.122"N	80°54'43.709"W	2287.76	169.667	1.05	0.00	-1.05	
9167.00	90.250	160.850	6588.16	2348.86	-2338.67	440.40	1665260.51	14313377.87	39°24'57.252"N	80°54'43.327"W	2379.78	169.335	0.64	-0.06	-0.63	
9261.00	90.430	163.840	6587.61	2442.78	-2428.23	468.90	1665289.00	14313288.34	39°24'56.366"N	80°54'42.965"W	2473.09	169.070	3.19	0.19	3.18	
9356.00	90.770	166.790	6586.61	2537.37	-2520.11	492.98	1665313.07	14313196.50	39°24'55.458"N	80°54'42.689"W	2567.88	168.932	3.13	0.36	3.11	
9452.00	90.740	168.260	6585.35	2632.55	-2613.84	513.72	1665333.80	14313102.81	39°24'54.531"N	80°54'42.396"W	2663.84	168.881	1.53	-0.03	1.53	
9547.00	90.860	169.900	6584.02	2726.37	-2707.10	531.71	1665351.78	14313009.58	39°24'53.609"N	80°54'42.168"W	2758.83	168.888	1.73	0.13	1.73	
9642.00	89.820	170.240	6583.46	2819.93	-2800.68	548.09	1665368.16	14312916.05	39°24'52.684"N	80°54'41.961"W	2853.81	168.927	1.15	-1.09	0.36	
9737.00	91.320	170.410	6582.51	2913.41	-2894.32	564.06	1665384.12	14312822.44	39°24'51.759"N	80°54'41.759"W	2948.77	168.972	1.59	1.58	0.18	
9832.00	90.740	162.860	6580.80	3007.71	-2986.66	586.00	1665406.05	14312730.13	39°24'50.846"N	80°54'41.480"W	3043.61	168.899	7.97	-0.61	-7.95	
9927.00	90.770	161.790	6579.55	3102.62	-3077.17	614.84	1665434.88	14312639.66	39°24'49.951"N	80°54'41.114"W	3137.99	168.701	1.13	0.03	-1.13	
10022.00	90.650	161.800	6578.37	3197.57	-3167.41	644.52	1665464.54	14312549.46	39°24'49.059"N	80°54'40.737"W	3232.32	168.498	0.13	-0.13	0.01	
10117.00	89.940	160.980	6577.88	3292.55	-3257.44	674.83	1665494.85	14312459.47	39°24'48.169"N	80°54'40.352"W	3326.61	168.296	1.14	-0.75	-0.86	
10212.00	90.060	158.870	6577.88	3387.54	-3346.66	707.44	1665527.44	14312370.28	39°24'47.286"N	80°54'39.937"W	3420.62	168.064	2.22	0.13	-2.22	
10307.00	90.890	157.090	6577.09	3482.47	-3434.72	743.06	1665563.04	14312282.25	39°24'46.416"N	80°54'39.485"W	3514.18	167.793	2.07	0.87	-1.87	
10402.00	90.830	156.940	6575.67	3577.32	-3522.17	780.15	1665600.12	14312194.84	39°24'45.551"N	80°54'39.013"W	3607.54	167.511	0.17	-0.06	-0.16	
10497.00	90.860	155.730	6574.27	3672.11	-3609.17	818.27	1665638.23	14312107.88	39°24'44.691"N	80°54'38.529"W	3700.77	167.226	1.27	0.03	-1.27	
10592.00	90.890	154.600	6572.82	3766.74	-3695.38	858.17	1665678.11	14312021.71	39°24'43.839"N	80°54'38.021"W	3793.71	166.926	1.19	0.03	-1.19	
10687.00	90.250	152.830	6571.87	3861.15	-3780.54	900.24	1665720.16	14311936.57	39°24'42.996"N	80°54'37.487"W	3886.25	166.606	1.98	-0.67	-1.86	
10782.00	90.280	151.930	6571.43	3955.29	-3864.72	944.28	1665764.18	14311852.43	39°24'42.164"N	80°54'36.926"W	3978.40	166.270	0.95	0.03	-0.95	



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'

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03/08/2019

## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #07
ANTERO RESOURCES CORPORATION	Well	Midge Unit 2H
Tyler County, WV	Wellbore	Midge Unit 2H AWB
Tyler		
Lemuel Pad		

## WELLPATH DATA (200 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
10877.00	90.310	152.900	6570.94	4049.43	-3948.92	988.27	1665808.15	14311768.27	39°24'41.331"N	80°54'36.367"W	4070.70	165.950	1.02	0.03	1.02	
10972.00	90.280	154.920	6570.45	4143.87	-4034.23	1030.04	1665849.91	14311682.99	39°24'40.488"N	80°54'35.836"W	4163.65	165.677	2.13	-0.03	2.13	
11066.00	89.630	155.440	6570.53	4237.53	-4119.55	1069.50	1665889.36	14311597.71	39°24'39.644"N	80°54'35.334"W	4256.11	165.446	0.89	-0.69	0.55	
11162.00	89.910	156.620	6570.91	4333.28	-4207.26	1108.50	1665928.34	14311510.02	39°24'38.777"N	80°54'34.839"W	4350.84	165.240	1.26	0.29	1.23	
11256.00	90.150	158.420	6570.86	4427.19	-4294.12	1144.44	1665964.27	14311423.20	39°24'37.918"N	80°54'34.382"W	4444.01	165.077	1.93	0.26	1.91	
11352.00	90.000	158.850	6570.74	4523.09	-4382.89	1180.97	1666000.78	14311334.46	39°24'37.040"N	80°54'33.917"W	4539.21	164.920	1.64	-0.16	-1.64	
11446.00	89.600	157.480	6571.07	4616.97	-4469.53	1217.45	1666037.24	14311247.87	39°24'36.184"N	80°54'33.454"W	4632.37	164.763	0.79	-0.43	0.67	
11542.00	89.570	160.450	6571.76	4712.94	-4559.12	1251.90	1666071.68	14311158.31	39°24'35.298"N	80°54'33.016"W	4727.87	164.645	3.09	-0.03	3.09	
11636.00	89.480	161.330	6572.54	4806.93	-4647.93	1282.67	1666102.44	14311069.53	39°24'34.422"N	80°54'32.625"W	4821.67	164.572	0.94	-0.10	0.94	
11731.00	89.570	162.250	6573.33	4901.88	-4738.17	1312.36	1666132.12	14310979.33	39°24'33.528"N	80°54'32.248"W	4916.56	164.519	0.97	0.09	0.97	
11827.00	89.780	163.970	6573.87	4997.74	-4830.02	1340.25	1666160.00	14310887.51	39°24'32.619"N	80°54'31.894"W	5012.52	164.492	1.80	0.22	1.79	
11922.00	90.090	164.610	6573.98	5092.49	-4921.47	1365.97	1666185.71	14310796.10	39°24'31.715"N	80°54'31.567"W	5107.52	164.488	0.75	0.33	0.67	
12016.00	90.030	164.900	6573.88	5186.17	-5012.17	1390.69	1666210.42	14310705.44	39°24'30.819"N	80°54'31.254"W	5201.52	164.493	0.32	-0.06	0.31	
12111.00	90.180	164.120	6573.71	5280.89	-5103.72	1416.06	1666235.78	14310613.93	39°24'29.914"N	80°54'30.932"W	5296.52	164.493	0.84	0.16	-0.82	
12207.00	90.030	163.280	6573.53	5376.70	-5195.86	1443.01	1666262.71	14310521.83	39°24'29.003"N	80°54'30.590"W	5392.51	164.479	0.89	-0.16	-0.88	
12302.00	90.090	161.990	6573.43	5471.60	-5286.52	1471.36	1666291.05	14310431.20	39°24'28.106"N	80°54'30.229"W	5487.46	164.447	1.36	0.06	-1.36	
12397.00	90.090	160.890	6573.28	5566.58	-5376.58	1501.60	1666321.28	14310341.18	39°24'27.216"N	80°54'29.845"W	5582.33	164.396	1.16	0.00	-1.16	
12492.00	90.060	160.220	6573.16	5661.57	-5466.16	1533.22	1666352.89	14310251.63	39°24'26.330"N	80°54'29.444"W	5677.12	164.332	0.71	-0.03	-0.71	
12586.00	90.060	159.950	6573.06	5755.57	-5554.26	1566.01	1666385.66	14310163.57	39°24'25.459"N	80°54'29.027"W	5770.80	164.254	1.35	0.00	-1.35	
12681.00	90.060	157.280	6572.96	5850.51	-5642.41	1601.42	1666421.06	14310075.46	39°24'24.588"N	80°54'28.577"W	5865.26	164.155	1.76	0.00	-1.76	
12776.00	90.060	155.950	6572.86	5945.33	-5729.60	1639.12	1666458.75	14309988.30	39°24'23.725"N	80°54'28.098"W	5959.45	164.035	1.40	0.00	-1.40	
12871.00	90.090	155.150	6572.74	6040.03	-5816.08	1678.44	1666498.05	14309901.85	39°24'22.870"N	80°54'27.598"W	6053.43	163.903	0.84	0.03	-0.84	
12966.00	90.120	155.290	6572.56	6134.69	-5902.33	1718.26	1666537.86	14309815.63	39°24'22.017"N	80°54'27.092"W	6147.35	163.769	0.15	0.03	0.15	
13061.00	90.060	155.200	6572.41	6229.35	-5988.60	1758.04	1666577.62	14309729.40	39°24'21.164"N	80°54'26.586"W	6241.32	163.640	0.11	-0.06	-0.09	
13156.00	90.000	156.400	6572.36	6324.08	-6075.25	1796.98	1666616.55	14309642.78	39°24'20.308"N	80°54'26.091"W	6335.44	163.522	1.26	-0.06	-1.26	
13251.00	90.030	157.340	6572.34	6418.93	-6162.62	1834.30	1666653.85	14309555.46	39°24'19.444"N	80°54'25.617"W	6429.81	163.424	0.99	0.03	0.99	
13346.00	90.060	158.550	6572.26	6513.86	-6250.66	1869.97	1666689.51	14309467.45	39°24'18.573"N	80°54'25.164"W	6524.38	163.345	1.27	0.03	1.27	
13441.00	90.060	159.610	6572.17	6608.84	-6339.40	1903.89	1666723.41	14309378.75	39°24'17.696"N	80°54'24.733"W	6619.12	163.284	1.12	0.00	1.12	
13537.00	90.060	161.600	6572.06	6704.84	-6429.95	1935.77	1666755.28	14309288.23	39°24'16.801"N	80°54'24.328"W	6715.01	163.245	2.07	0.00	2.07	
13631.00	90.120	162.730	6571.92	6798.77	-6519.43	1964.56	1666784.06	14309198.79	39°24'15.916"N	80°54'23.962"W	6809.00	163.230	1.20	0.06	1.20	





# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'  
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03/08/2019

REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #07
Operator	ANTERO RESOURCES CORPORATION	Well	Midge Unit 2H
Area	Tyler County, WV	Wellbore	Midge Unit 2H AWB
Field	Tyler		
Facility	Lemuel Pad		

WELLPATH DATA (200 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 (ft/100ft)	Comments
13727.00	90.120	162.880	6571.72	6894.66	-6611.16	1992.86	1666812.34	14309107.09	39°24'15.009"N	80°54'23.603"W	6904.99	163.225	0.26	0.00	0.26	
13822.00	90.090	162.050	6571.54	6989.57	-6701.77	2021.40	1666840.88	14309016.52	39°24'14.113"N	80°54'23.241"W	6999.99	163.216	0.98	-0.03	-0.98	
13917.00	90.060	161.340	6571.42	7084.54	-6791.96	2051.24	1666870.70	14308926.36	39°24'13.221"N	80°54'22.862"W	7094.95	163.195	0.75	-0.03	-0.75	
14012.00	90.090	161.120	6571.29	7179.52	-6881.91	2081.81	1666901.26	14308836.45	39°24'12.332"N	80°54'22.474"W	7189.90	163.169	0.23	0.03	-0.23	
14107.00	90.090	161.040	6571.14	7274.50	-6971.78	2112.61	1666932.05	14308746.62	39°24'11.444"N	80°54'22.082"W	7284.83	163.142	0.08	0.00	-0.08	
14202.00	90.090	161.040	6570.99	7369.49	-7061.62	2143.48	1666962.90	14308656.81	39°24'10.555"N	80°54'21.690"W	7379.77	163.115	0.00	0.00	0.00	
14297.00	90.090	160.740	6570.85	7464.48	-7151.39	2174.58	1666993.99	14308567.08	39°24'09.668"N	80°54'21.295"W	7474.70	163.087	0.32	0.00	-0.32	
14392.00	90.030	160.100	6570.70	7559.48	-7240.89	2206.42	1667025.81	14308477.61	39°24'08.783"N	80°54'20.891"W	7569.60	163.053	0.67	0.00	-0.67	
14486.00	90.030	159.760	6570.60	7653.48	-7329.19	2238.67	1667058.06	14308389.36	39°24'07.910"N	80°54'20.481"W	7663.46	163.015	0.37	-0.06	-0.36	
14580.00	90.030	160.300	6570.55	7747.48	-7417.53	2270.78	1667090.15	14308301.04	39°24'07.036"N	80°54'20.073"W	7757.33	162.979	0.57	0.00	0.57	
14674.00	90.090	160.560	6570.45	7841.47	-7506.10	2302.26	1667121.62	14308212.51	39°24'06.161"N	80°54'19.673"W	7851.24	162.948	0.28	0.06	0.28	
14770.00	89.750	160.810	6570.58	7937.47	-7596.70	2334.02	1667153.36	14308121.95	39°24'05.265"N	80°54'19.270"W	7947.17	162.921	0.44	-0.35	0.26	
14865.00	89.820	160.590	6570.94	8032.46	-7686.36	2365.42	1667184.75	14308032.33	39°24'04.378"N	80°54'18.871"W	8042.10	162.895	0.24	0.07	-0.23	
14960.00	89.940	160.700	6571.14	8127.46	-7775.99	2396.90	1667216.22	14307942.73	39°24'03.492"N	80°54'18.471"W	8131.02	162.868	0.17	0.13	0.12	
15055.00	90.060	160.800	6571.14	8222.45	-7865.68	2428.22	1667247.53	14307853.08	39°24'02.605"N	80°54'18.074"W	8231.96	162.844	0.16	0.13	0.11	
15148.00	90.060	159.820	6571.04	8315.45	-7953.24	2459.56	1667278.85	14307765.55	39°24'01.740"N	80°54'17.676"W	8324.87	162.816	1.05	0.00	-1.05	
15244.00	90.060	160.540	6570.94	8411.45	-8043.55	2492.11	1667311.39	14307675.28	39°24'00.847"N	80°54'17.262"W	8420.77	162.786	0.75	0.00	0.75	
15339.00	90.180	160.340	6570.74	8506.45	-8133.07	2523.91	1667343.18	14307585.79	39°23'59.962"N	80°54'16.858"W	8515.69	162.759	0.25	0.13	-0.21	
15358.00	90.060	160.160	6570.70	8525.45	-8150.95	2530.33	1667349.60	14307545.35	39°23'59.785"N	80°54'16.777"W	8534.67	162.754	1.14	-0.63	-0.95	
15382.00	90.060	160.160	6570.68	8549.45	-8173.53	2538.48	1667357.74	14307545.35	39°23'59.662"N	80°54'16.673"W	8558.65	162.747	0.00	0.00	0.00	Projected MD at TD: 15382'



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Midge Unit 2H
Field	Tyler	Wellbore	Midge Unit 2H AWB
Facility	Lemuel Pad		

## HOLE & CASING SECTIONS - Ref Wellbore: Midge Unit 2H AWB Ref Wellpath: Midge Unit 2H AWP Proj: 15382'

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	32.00	112.00	80.00	32.00	112.00	0.00	0.00	0.08	0.02
17.5in Open Hole	112.00	641.30	529.30	112.00	641.30	0.08	0.02	-0.24	-0.58
13.375in Casing Surface	32.00	641.30	609.30	32.00	641.30	0.00	0.00	-0.24	-0.58
12.25in Open Hole	641.30	2584.00	1942.70	641.30	2576.25	-0.24	-0.58	46.38	-129.72
9.625in Casing Intermediate	32.00	2584.00	2552.00	32.00	2576.25	0.00	0.00	46.38	-129.72
8.75in Open Hole	2584.00	6277.00	3693.00	2576.25	6214.30	46.38	-129.72	268.66	-399.87
8.5in Open Hole	6277.00	15382.00	9105.00	6214.30	6570.68	268.66	-399.87	-8173.53	2538.48
5.5in Casing Production	32.00	15382.00	15350.00	32.00	6570.68	0.00	0.00	-8173.53	2538.48

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Midge Unit 2H POE - Rev-2	6565.00	-127.16	-305.01	1664515.40	14315588.49	39°25'19.116"N	80°54'52.798"W	point
Midge Unit 2H BHL - Rev-2	6595.00	-8185.54	2539.58	1667358.84	14307533.34	39°23'59.443"N	80°54'16.659"W	point
Midge Unit 2H LP - Rev-1	6595.00	-317.51	-272.44	1664547.95	14315398.22	39°25'17.234"N	80°54'52.385"W	point



# Actual Wellpath Report

Midge Unit 2H AWP Proj: 15382'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Slot	Slot #07	
ANTERO RESOURCES CORPORATION	Well	Midge Unit 2H	
Tyler County, WV	Wellbore	Midge Unit 2H AWB	
Tyler			
Lemuel Pad			

WELLPATH COMPOSITION - Ref Wellbore: Midge Unit 2H AWB Ref Wellpath: Midge Unit 2H AWP Proj: 15382'			
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment
32.00	608.00	Gyrodata standard - Drop gyro or Multi-shot	01_Gyrodata MS Gyro <17-1/2">(100'-608')
608.00	2519.00	ISCVSA MWD, Rev. 4 (Standard)	02_Panther EM <12-1/4">(608')(684'-2519')
2519.00	6210.00	ISCVSA MWD, Rev. 4 (Standard)	03_Panther EM <8-3/4">(2519')(2643'-6210')
6210.00	15358.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8-1/2">(6210')(6224'-15358')
15358.00	15382.00	Blind Drilling (std)	Projection to bit
			Midge Unit 2H AWB
			Midge Unit 2H AWB
			Midge Unit 2H AWB
			Midge Unit 2H AWB



# Actual Wellpath Report

Midige Unit 2H AWP Proj: 15382'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Tyler County, WV	Well	Midige Unit 2H
Field	Tyler	Wellbore	Midige Unit 2H AWB
Facility	Lemuel Pad		

## COMMENTS

Wellpath general comments  
 API: 47-095-02449-0000  
 BHI Job #: 9253213  
 Rig: Frontier 32  
 Duration: 07/05/2018-07/09/2018  
 Gyrodatta MS Gyro <17-1/2"> (100'-608')  
 Panther EM <12-1/4"> (608')(684'-2519')  
 Panther EM <8-3/4"> (2519')(2643'-6210')  
 BHI AT Curve <8-1/2"> (6210')(6224'-15358')  
 Middlesex: 6549' MD  
 Burkett: 6718' MD  
 Tully: 6781' MD  
 Marcellus POE: 6855' MD  
 Projected MD at TD: 15382'