



ANTERO RESOURCES CORPORATION
 Location: Tyler County, WV
 Field: Tyler
 Facility: McKim Pad
 Slot #06
 Well: Haga Unit 3H
 Wellbore: Haga Unit 3H PWB

API: 47-095-02425-0000
 BH Job #: 8935112
 Rig: Frontier 32
 Duration: 12/26/17 - 12/29/17

POE Marcellus: 6806MD / 6465TVD : 6465.38ft TVD, 151.78ft N, 608.63ft E
 BH ATCurve <8-1/2">(5542)(5630-19863) : 5556.49ft TVD, 612.02ft N, 295.12ft E
 Directional ONE MWD <8-3/4">(2492)(2654-5525) : 2648.70ft TVD, 68.10ft N, 32.98ft E
 Directional ONE MWD <12-1/4">(627)(772-2492) : 771.79ft TVD, 1.25ft S, 9.11ft E
 Gyrodatta MS Gyro <12-1/4">(530)(536-627) : 535.99ft TVD, 2.61ft S, 0.97ft E
 Gyrodatta MS Gyro <17-1/2">(100-530) : 100.00ft TVD, 0.30ft S, 0.13ft W

Plot reference wellpath is Haga Unit 3H 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: 1204 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot #06): -1172 feet	Created by: mcrcrib on 2018-05-08
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defn

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
McKim Pad	1654145.557	14302331.123	39°23'08.110"N	80°57'05.080"W
Slot #06	Local N (ft)	Grid East (US ft)	Latitude	Longitude
	-47.55	1654159.710	39°23'07.640"N	80°57'04.900"W
Frontier 32 (RKB) to Ground level (At Slot: Slot #06)	32ft			
Mean Sea Level to Ground level (At Slot: Slot #06)	-1172ft			
Frontier 32 (RKB) to Mean Sea Level	1204ft			

Gyrodatta MS Gyro <17-1/2">(100-530) : 0.55° Inc, 100.00ft MD, 100.00ft TVD, 0.23ft VS
 Gyrodatta MS Gyro <12-1/4">(530)(536-627) : 0.78° Inc, 536.00ft MD, 535.99ft TVD, 2.78ft VS
 Directional ONE MWD <12-1/4">(627)(772-2492) : 4.35° Inc, 772.00ft MD, 771.79ft TVD, 4.44ft VS

Well Data

Slot	Well	Wellbore	Wellpath
Slot #06	Haga Unit 3H	Haga Unit 3H AWB	Haga Unit 3H AWB Proj: 19887*
Slot #06	Haga Unit 3H	Haga Unit 3H PWB	Haga Unit 3H PWB Rev-A.0

Directional ONE MWD <8-3/4">(2492)(2654-5525) : 1.95° Inc, 2654.00ft MD, 2648.70ft TVD, -51.7ft VS

Well Profile Data

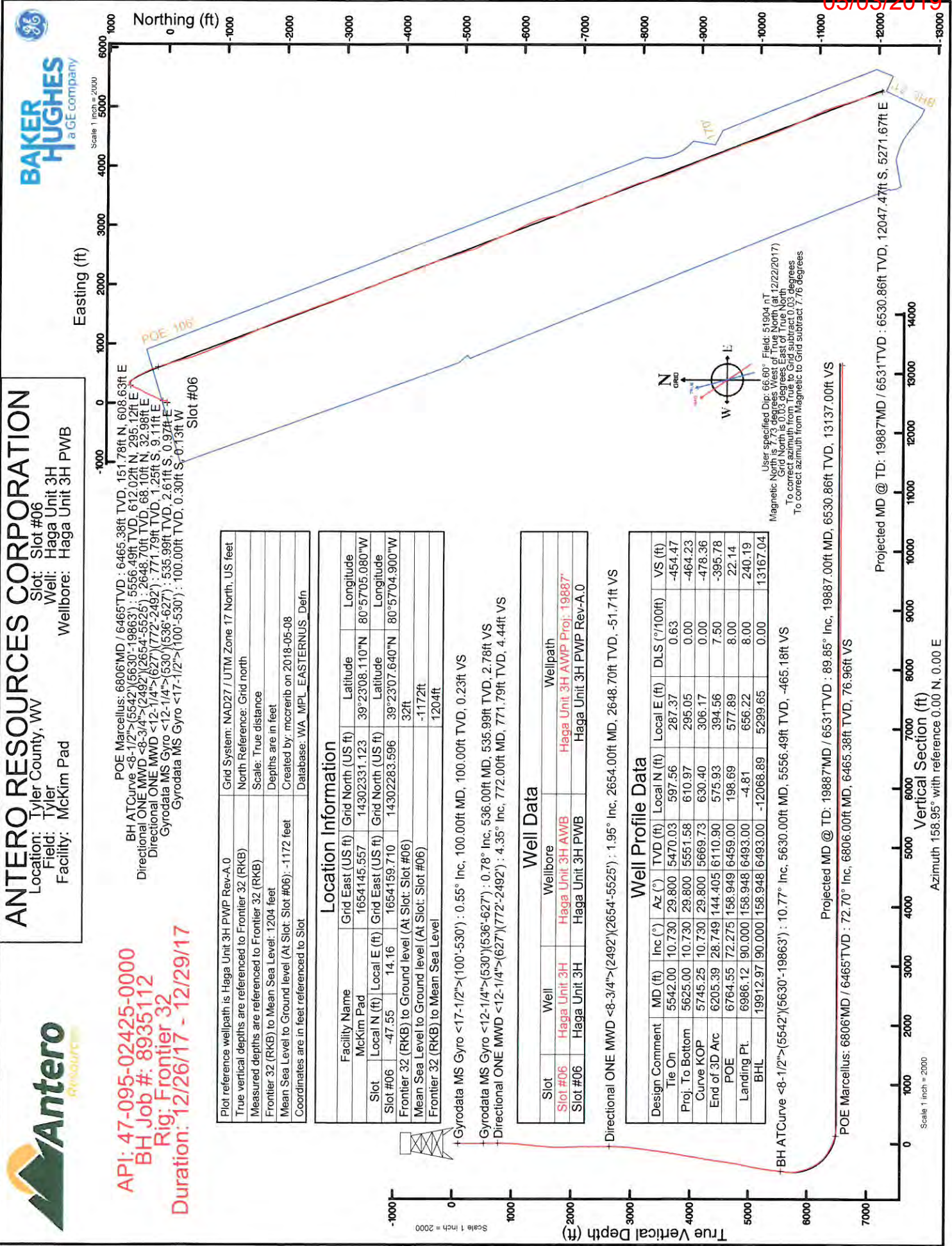
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	5542.00	10.730	29.800	5470.03	597.56	287.37	0.63	-454.47
Proj. To Bottom	5625.00	10.730	29.800	5551.58	610.97	295.05	0.00	-464.23
Curve KOP	5745.25	10.730	29.800	5669.73	630.40	306.17	0.00	-478.36
End of 3D Arc	6205.39	28.749	144.405	6110.90	575.93	394.56	7.50	-395.78
POE	6764.55	72.275	158.949	6459.00	198.69	577.89	8.00	22.14
Landing Pt.	6986.12	90.000	158.948	6493.00	-4.81	636.22	8.00	240.19
BHL	19912.97	90.000	158.948	6493.00	-12068.89	5299.65	0.00	13167.04

BH ATCurve <8-1/2">(5542)(5630-19863) : 10.77° Inc, 5630.00ft MD, 5556.49ft TVD, -465.18ft VS

Projected MD @ TD: 19887MD / 6531TVD : 89.85° Inc, 19887.00ft MD, 6530.86ft TVD, 13137.00ft VS
 POE Marcellus: 6806MD / 6465TVD : 72.70° Inc, 6806.00ft MD, 6465.38ft TVD, 76.96ft VS

Projected MD @ TD: 19887MD / 6531TVD : 89.85° Inc, 19887.00ft MD, 6530.86ft TVD, 13137.00ft VS
 POE Marcellus: 6806MD / 6465TVD : 72.70° Inc, 6806.00ft MD, 6465.38ft TVD, 76.96ft VS

Vertical Section (ft)
 Azimuth 158.95° with reference 0.00 N, 0.00 E



User specified Dip: 66.60° Field: 51904 ft (2/22/2017)
 Magnetic North is 10.03 degrees East of True North
 To correct azimuth from True to Grid subtract 0.03 degrees
 To correct azimuth from Magnetic to Grid subtract 7.76 degrees

Scale 1 inch = 2000



Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887'
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REFERENCE WELLPATH IDENTIFICATION		
Operator	ANTERO RESOURCES CORPORATION	Slot #06
Area	Tyler County, WV	Haga Unit 3H
Field	Tyler	Haga Unit 3H AWB
Facility	McKim Pad	

REPORT SETUP INFORMATION	
Projection System	NAD27 / UTM Zone 17 North, US feet
North Reference	Grid
Scale	0.999600
Convergence at slot	0.03° East
Software System	WellArchitect® 5.1
User	McCrerib
Report Generated	5/8/2018 at 2:54:54 PM
Database/Source file	WA_MPL_EASTERNUS_Defn/Haga_Unit_3H_AWP_Proj_19887_.xml

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-47.55	14.16	1654159.71	14302283.60	39°23'07.640"N	80°57'04.900"W
Facility Reference Pt			1654145.56	14302331.12	39°23'08.110"N	80°57'05.080"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 #06)
	Section Origin
	Section Azimuth
	32.00ft
	1204.00ft
	32.00ft
	N 0.00, E 0.00 ft
	158.95°

05/03/2019



Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887'
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REFERENCE WELLPATH IDENTIFICATION

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Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

WELLPATH DATA (242 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (IUS ft)	Grid North (IUS ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
0.00†	0.00	204.300	0.00	0.00	0.00	0.00	1654159.71	14302283.60	39°23'07.640"N	80°57'04.900"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.00	204.300	32.00	0.00	0.00	0.00	1654159.71	14302283.60	39°23'07.640"N	80°57'04.900"W	0.00	0.000	0.00	0.00	0.00	
100.00†	0.552	204.300	100.00	0.23	-0.30	-0.13	1654159.58	14302283.30	39°23'07.637"N	80°57'04.902"W	0.33	204.300	0.81	0.81	-228.97	Syrodala MS Gyro <17-1/2">(100'-530')
117.00	0.690	204.300	117.00	0.36	-0.47	-0.21	1654159.50	14302283.13	39°23'07.635"N	80°57'04.903"W	0.51	204.300	0.81	0.81	0.00	
217.00	0.180	170.900	216.99	0.94	-1.17	-0.43	1654159.28	14302282.43	39°23'07.628"N	80°57'04.908"W	1.25	200.327	0.55	-0.51	-33.40	
317.00	0.360	112.780	316.99	1.31	-1.45	-0.12	1654159.99	14302282.15	39°23'07.626"N	80°57'04.902"W	1.45	184.704	0.31	0.18	-58.12	
417.00	0.320	143.420	416.99	1.79	-1.79	0.34	1654160.05	14302281.80	39°23'07.622"N	80°57'04.896"W	1.82	169.355	0.18	-0.04	30.64	
517.00	0.600	142.560	516.99	2.57	-2.43	0.82	1654160.53	14302281.16	39°23'07.616"N	80°57'04.896"W	2.57	161.338	0.28	0.28	-0.86	
536.00†	0.776	137.159	535.99	2.78	-2.61	0.97	1654160.68	14302280.99	39°23'07.614"N	80°57'04.888"W	2.78	159.592	0.99	0.93	-28.42	Syrodala MS Gyro <12-1/4">(530')(536'-627')
547.00	0.880	135.030	546.99	2.93	-2.72	1.08	1654160.79	14302280.88	39°23'07.613"N	80°57'04.886"W	2.93	158.348	0.99	0.95	-19.36	
553.00	0.630	131.950	552.99	3.00	-2.78	1.14	1654160.85	14302280.51	39°23'07.609"N	80°57'04.864"W	3.00	157.719	4.22	-4.17	-51.33	
644.00	1.620	89.030	643.97	3.89	-3.09	2.80	1654170.06	14302282.86	39°23'07.633"N	80°57'04.784"W	9.20	97.788	2.26	2.13	-16.34	Directional ONE MWD <12-1/4">(627')(772'-2492')
772.00†	4.352	68.112	771.79	4.44	-1.25	9.11	1654168.82	14302282.35	39°23'07.628"N	80°57'04.768"W	10.38	94.054	2.26	2.22	-5.48	
789.00	4.730	67.180	788.73	4.41	-0.73	10.36	1654170.06	14302282.86	39°23'07.714"N	80°57'04.598"W	15.59	83.617	2.54	2.42	-8.35	
849.00	6.180	62.170	848.46	3.95	1.73	15.49	1654175.20	14302285.33	39°23'07.657"N	80°57'04.703"W	24.84	72.454	1.76	0.41	-15.51	
940.00	6.550	48.060	938.90	1.52	7.49	23.69	1654183.39	14302291.08	39°23'07.714"N	80°57'04.598"W	33.79	63.454	1.92	0.11	-16.68	
1028.00	6.650	33.380	1026.33	-3.24	15.10	30.22	1654189.92	14302298.69	39°23'07.789"N	80°57'04.515"W	41.78	56.728	1.94	-0.98	-15.51	
1116.00	5.780	19.730	1113.81	-9.56	23.53	34.52	1654194.22	14302307.11	39°23'07.872"N	80°57'04.460"W	48.90	48.727	1.23	0.68	-12.07	
1205.00	5.890	8.990	1202.35	-16.90	32.25	36.75	1654196.45	14302315.84	39°23'07.959"N	80°57'04.432"W	56.03	41.923	1.32	0.68	-10.49	
1293.00	6.490	359.760	1289.84	-25.46	41.69	37.43	1654197.13	14302325.27	39°23'08.052"N	80°57'04.423"W	64.15	35.609	0.60	0.60	-0.45	
1382.00	7.020	359.360	1378.23	-35.26	52.16	37.35	1654197.05	14302335.73	39°23'08.155"N	80°57'04.424"W	71.82	30.878	1.98	-1.86	-6.18	
1470.00	5.380	353.920	1465.71	-44.29	61.64	36.86	1654196.55	14302345.21	39°23'08.249"N	80°57'04.445"W	77.85	27.259	1.06	-0.85	-7.16	
1646.00	3.790	339.780	1641.14	-58.20	75.41	33.89	1654193.59	14302358.97	39°23'08.385"N	80°57'04.468"W	82.67	24.201	1.15	-0.95	-8.91	
1735.00	1.920	334.410	1730.02	-62.63	79.51	32.23	1654191.93	14302363.08	39°23'08.426"N	80°57'04.489"W	85.80	22.065	2.12	-2.10	-6.03	
1823.00	0.590	200.800	1818.01	-63.76	80.42	31.43	1654191.13	14302363.98	39°23'08.435"N	80°57'04.499"W	86.34	21.349	2.69	-1.51	-151.83	
1911.00	2.080	171.600	1905.98	-61.87	78.41	31.50	1654191.20	14302361.98	39°23'08.415"N	80°57'04.498"W	84.51	21.889	1.81	1.69	-33.18	
2000.00	2.690	164.530	1994.90	-58.21	74.80	32.30	1654191.99	14302358.37	39°23'08.379"N	80°57'04.488"W	81.48	23.353	0.76	0.69	-7.94	
2088.00	2.290	139.860	2082.82	-54.50	71.47	33.99	1654193.68	14302355.04	39°23'08.346"N	80°57'04.467"W	79.14	25.432	1.30	-0.45	-28.26	
2176.00	1.610	116.050	2170.77	-51.93	69.59	36.24	1654195.93	14302353.16	39°23'08.328"N	80°57'04.438"W	78.46	27.506	1.18	-0.77	-26.83	



Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

WELLPATH DATA (242 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
2265.00	0.480	91.070	2259.76	-50.87	69.03	37.73	1654197.43	14302352.60	39°23'08.322"N	80°57'04.419"W	78.67	28.659	1.34	-1.27	-28.07	
2353.00	0.100	340.410	2347.76	-50.81	69.10	38.07	1654197.43	14302352.67	39°23'08.323"N	80°57'04.415"W	78.90	28.855	0.60	-0.43	-125.75	
2441.00	0.630	274.760	2435.75	-51.10	69.21	37.57	1654197.26	14302352.78	39°23'08.324"N	80°57'04.421"W	78.75	28.492	0.68	0.60	-74.60	
2509.00	1.070	268.040	2503.75	-51.47	69.22	36.56	1654196.25	14302352.79	39°23'08.324"N	80°57'04.434"W	78.28	27.841	0.66	0.65	-9.88	
2654.00†	1.955	244.156	2648.70	-51.71	68.10	32.98	1654192.68	14302351.67	39°23'08.313"N	80°57'04.479"W	75.66	25.842	0.74	0.61	-16.47	Directional ONE MWD <8-3/4">(2492)(2654-5625)
2671.00	2.070	242.750	2665.69	-51.65	67.83	32.45	1654192.14	14302351.40	39°23'08.310"N	80°57'04.486"W	75.19	25.564	0.74	0.68	-8.27	
2762.00	1.330	359.870	2756.66	-52.46	68.13	30.98	1654190.68	14302351.70	39°23'08.313"N	80°57'04.505"W	74.85	24.453	3.22	-0.81	128.70	
2850.00	3.810	23.090	2844.57	-55.51	71.85	32.13	1654191.82	14302355.41	39°23'08.350"N	80°57'04.490"W	78.70	24.093	3.00	2.82	26.39	
2938.00	6.740	19.620	2932.19	-61.53	79.40	35.01	1654194.70	14302362.96	39°23'08.425"N	80°57'04.454"W	86.78	23.793	3.35	3.33	-3.94	
3027.00	8.830	18.350	3020.36	-70.77	90.80	38.91	1654198.61	14302374.36	39°23'08.537"N	80°57'04.404"W	98.79	23.197	2.36	2.35	-1.43	
3115.00	10.670	24.820	3107.09	-81.66	104.61	44.46	1654204.15	14302388.17	39°23'08.674"N	80°57'04.333"W	113.67	23.025	2.43	2.09	7.35	
3203.00	11.930	28.010	3193.38	-93.29	120.04	52.15	1654211.84	14302403.58	39°23'08.826"N	80°57'04.235"W	130.88	23.483	1.60	1.43	3.62	
3292.00	12.420	30.400	3280.38	-105.29	136.41	61.31	1654221.00	14302419.95	39°23'08.988"N	80°57'04.118"W	149.56	24.203	0.79	0.55	2.63	
3380.00	13.340	32.230	3366.17	-117.25	153.16	71.52	1654231.20	14302436.70	39°23'09.153"N	80°57'03.988"W	169.04	25.030	1.14	1.05	2.08	
3468.00	11.790	25.290	3452.06	-129.53	169.88	80.77	1654240.45	14302453.41	39°23'09.319"N	80°57'03.870"W	188.11	25.430	2.46	-1.76	-7.89	
3557.00	10.720	20.130	3539.35	-142.04	185.88	87.51	1654247.18	14302469.40	39°23'09.477"N	80°57'03.784"W	205.44	25.210	1.65	-1.20	-5.80	
3645.00	12.200	25.580	3625.60	-154.59	201.95	94.34	1654254.01	14302485.46	39°23'09.635"N	80°57'03.697"W	222.90	25.039	2.08	1.68	6.19	
3733.00	14.210	28.560	3711.27	-167.97	219.82	103.52	1654263.19	14302503.33	39°23'09.812"N	80°57'03.580"W	242.98	25.217	2.41	2.28	3.39	
3821.00	13.340	23.490	3796.74	-182.21	238.62	112.73	1654272.39	14302522.12	39°23'09.998"N	80°57'03.463"W	263.91	25.287	1.69	-0.99	-5.76	
3910.00	12.290	18.380	3883.52	-196.84	257.03	119.81	1654279.47	14302540.52	39°23'10.180"N	80°57'03.372"W	283.58	24.992	1.73	-1.18	-5.74	
3998.00	12.930	22.480	3969.40	-211.22	275.02	126.53	1654286.19	14302558.50	39°23'10.357"N	80°57'03.287"W	302.73	24.706	1.25	0.73	4.66	
4086.00	13.860	23.910	4055.00	-225.82	293.76	134.57	1654294.23	14302577.24	39°23'10.543"N	80°57'03.184"W	323.12	24.612	1.14	1.08	1.63	
4175.00	14.010	26.340	4141.38	-240.67	313.18	143.68	1654303.33	14302596.65	39°23'10.735"N	80°57'03.068"W	344.56	24.644	0.67	0.15	2.73	
4263.00	14.040	31.140	4226.76	-254.43	331.86	153.92	1654313.57	14302615.32	39°23'10.919"N	80°57'02.937"W	365.82	24.883	1.32	0.03	5.45	
4351.00	12.980	26.000	4312.33	-267.71	349.88	163.78	1654323.42	14302633.33	39°23'11.097"N	80°57'02.812"W	386.31	25.084	1.82	-1.20	-5.84	
4440.00	11.890	22.930	4399.24	-281.11	367.31	171.73	1654331.37	14302650.76	39°23'11.269"N	80°57'02.710"W	405.47	25.058	1.43	-1.22	-3.45	
4528.00	12.540	28.820	4488.25	-293.79	384.03	179.87	1654339.51	14302667.47	39°23'11.435"N	80°57'02.607"W	424.06	25.097	1.60	0.74	6.69	
4616.00	12.850	32.810	4571.10	-305.72	400.62	189.78	1654349.41	14302684.06	39°23'11.599"N	80°57'02.480"W	443.30	25.347	1.06	0.35	4.53	
4705.00	14.000	32.380	4657.67	-317.97	418.03	200.90	1654360.53	14302701.46	39°23'11.771"N	80°57'02.338"W	463.80	25.669	1.30	1.29	-0.48	
4793.00	13.460	27.420	4743.16	-331.11	436.11	211.32	1654370.95	14302719.53	39°23'11.949"N	80°57'02.206"W	484.62	25.853	1.47	-0.61	-5.64	



Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #06
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Area	Tyler County, WV	Wellbore	Haga Unit 3H AWB
Field	Tyler		
Facility	McKim Pad		

WELLPATH DATA (242 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
4881.00	14.660	25.590	4828.52	-345.54	455.25	220.85	1654380.47	14302738.66	39°23'12.138"N	80°57'02.084"W	505.99	25.879	1.45	1.36	-2.08	
4989.00	16.780	25.630	4913.22	-381.91	476.75	231.15	1654390.77	14302760.15	39°23'12.351"N	80°57'01.953"W	529.83	25.867	2.41	2.41	0.05	
5057.00	16.540	21.190	4997.53	-379.90	499.88	241.18	1654400.79	14302783.28	39°23'12.579"N	80°57'01.825"W	555.02	25.756	1.47	-0.27	-5.05	
5146.00	15.070	19.570	5083.16	-388.06	522.60	249.63	1654409.24	14302805.98	39°23'12.804"N	80°57'01.717"W	579.16	25.533	1.72	-1.65	-1.82	
5233.00	13.670	27.350	5167.45	-413.47	542.39	258.14	1654417.75	14302825.76	39°23'12.999"N	80°57'01.609"W	600.68	25.452	2.74	-1.61	8.94	
5322.00	12.040	27.530	5254.21	-426.59	559.96	267.27	1654426.87	14302843.33	39°23'13.173"N	80°57'01.492"W	620.47	25.515	1.83	-1.83	0.20	
5410.00	11.370	26.240	5340.38	-438.55	575.88	275.34	1654434.94	14302859.24	39°23'13.330"N	80°57'01.389"W	638.32	25.554	0.82	-0.76	-1.47	
5498.00	10.510	30.720	5426.79	-449.40	590.56	283.28	1654442.88	14302873.92	39°23'13.475"N	80°57'01.288"W	654.99	25.626	1.37	-0.98	5.09	
5542.00	10.730	29.800	5470.03	-454.47	597.56	287.37	1654446.96	14302880.92	39°23'13.545"N	80°57'01.236"W	663.07	25.683	0.63	0.50	-2.09	
5630.00	10.770	26.630	5556.49	-465.18	612.02	295.12	1654454.71	14302895.37	39°23'13.687"N	80°57'01.137"W	679.46	25.744	0.67	0.05	-3.60	BH ATCurve <-8-1/2">{(5542)}{6630}-19863}
5677.00	10.800	27.460	5602.66	-471.05	619.86	299.12	1654458.71	14302903.20	39°23'13.765"N	80°57'01.086"W	688.26	25.760	0.34	0.06	1.77	
5725.00	10.820	28.890	5649.81	-476.93	627.79	303.37	1654462.96	14302911.14	39°23'13.843"N	80°57'01.032"W	697.25	25.792	0.56	0.04	2.98	
5772.00	10.370	46.250	5696.02	-481.40	634.58	308.56	1654468.15	14302917.92	39°23'13.910"N	80°57'00.966"W	705.62	25.931	6.83	-0.96	36.94	
5819.00	12.260	74.140	5742.14	-482.59	638.87	316.42	1654476.01	14302922.21	39°23'13.953"N	80°57'00.866"W	712.94	26.348	12.18	4.02	59.34	
5866.00	15.090	92.330	5787.82	-479.70	639.99	327.34	1654486.92	14302927.33	39°23'13.964"N	80°57'00.727"W	718.85	27.089	10.88	6.02	38.70	
5913.00	16.390	109.480	5833.08	-472.96	637.53	339.71	1654499.29	14302920.87	39°23'13.939"N	80°57'00.569"W	722.39	28.051	10.24	2.77	36.48	
5960.00	16.030	122.730	5878.23	-463.42	631.81	351.43	1654511.00	14302915.15	39°23'13.883"N	80°57'00.420"W	722.97	29.084	7.89	-0.77	28.19	
6008.00	14.720	129.860	5924.51	-452.74	624.31	361.69	1654521.25	14302907.66	39°23'13.808"N	80°57'00.289"W	721.51	30.085	4.79	-2.73	14.85	
6055.00	17.590	138.940	5969.66	-440.84	615.13	370.94	1654530.50	14302898.48	39°23'13.718"N	80°57'00.171"W	718.32	31.091	8.12	6.11	19.32	
6102.00	21.060	144.300	6014.01	-425.99	602.91	380.53	1654540.09	14302886.26	39°23'13.597"N	80°57'00.049"W	712.96	32.259	8.28	7.38	11.40	
6149.00	24.810	145.130	6057.29	-408.24	587.96	391.10	1654550.66	14302871.32	39°23'13.449"N	80°56'59.915"W	706.16	33.632	8.01	7.98	1.77	
6197.00	28.370	143.720	6100.20	-387.45	570.50	403.61	1654563.16	14302853.86	39°23'13.276"N	80°56'59.579"W	698.83	35.279	7.53	7.42	-2.94	
6244.00	32.100	144.410	6140.80	-364.58	551.33	417.49	1654577.04	14302834.71	39°23'13.087"N	80°56'59.388"W	691.57	37.135	7.97	7.94	1.47	
6292.00	35.560	147.230	6180.67	-338.56	529.22	432.48	1654592.01	14302812.60	39°23'12.868"N	80°56'59.198"W	683.45	39.256	7.91	7.21	5.88	
6339.00	39.640	149.870	6217.90	-310.36	504.75	447.41	1654606.94	14302788.14	39°23'12.626"N	80°56'59.008"W	674.49	41.554	9.33	8.68	5.62	
6387.00	41.936	151.308	6242.13	-289.68	486.54	457.67	1654617.19	14302769.94	39°23'12.446"N	80°56'58.807"W	667.96	43.249	7.75	7.17	4.49	Sycamore @ 6371MD / 6242TVD
6434.00	47.500	153.330	6286.98	-245.76	447.35	478.13	1654637.64	14302730.77	39°23'12.352"N	80°56'58.002"W	664.63	44.133	7.75	7.21	4.20	
6482.00	51.570	153.730	6318.12	-209.42	414.67	494.40	1654653.91	14302698.09	39°23'11.736"N	80°56'58.600"W	645.27	50.012	8.50	8.48	0.83	
6510.00	54.352	153.285	6334.99	-187.17	394.66	504.37	1654663.87	14302678.10	39°23'11.538"N	80°56'58.474"W	640.43	51.957	10.02	9.93	-1.59	Middlesex @ 6510MD / 6335TVD



Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

WELLPATH DATA (242 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6529.00	56.240	153.000	6345.81	-171.63	380.73	511.42	1654670.93	14302664.17	39°23'11.400"N	80°56'58.384"W	637.56	53.334	10.02	9.94	-1.50	
6576.00	59.400	153.450	6370.83	-132.05	345.22	529.34	1654688.84	14302628.68	39°23'11.049"N	80°56'58.156"W	631.96	56.889	6.77	6.72	0.96	
6623.00	62.840	155.110	6393.53	-91.04	308.15	547.19	1654706.68	14302591.62	39°23'10.683"N	80°56'57.929"W	627.99	60.614	7.95	7.32	3.53	
6671.00	64.990	156.620	6414.84	-48.00	268.80	564.81	1654724.29	14302552.29	39°23'10.294"N	80°56'57.705"W	625.51	64.549	5.30	4.48	3.15	
6712.00†	66.235	158.708	6431.57	-10.67	234.27	578.99	1654738.47	14302512.77	39°23'09.952"N	80°56'57.524"W	624.59	67.971	5.54	3.04	5.09	Burket @ 6712MD / 6432'TVD
6718.00	66.420	159.010	6433.98	-5.17	229.14	580.98	1654740.45	14302512.65	39°23'09.902"N	80°56'57.499"W	624.53	68.475	5.54	3.08	5.04	
6766.00†	68.890	160.580	6452.22	39.21	187.48	596.30	1654755.77	14302471.00	39°23'09.490"N	80°56'57.304"W	625.08	72.547	5.97	5.15	3.27	
6767.00†	68.985	160.599	6452.58	40.15	186.60	596.61	1654756.08	14302470.12	39°23'09.481"N	80°56'57.300"W	625.11	72.632	5.97	5.15	3.27	
6806.00†	72.703	161.323	6465.38	76.96	151.78	608.63	1654768.09	14302435.32	39°23'09.137"N	80°56'57.148"W	627.27	75.997	9.69	9.53	1.86	Tully @ 6767MD / 6453'TVD
6813.00	73.370	161.450	6467.42	83.65	145.44	610.76	1654770.23	14302384.84	39°23'08.638"N	80°56'56.935"W	633.50	80.800	9.79	9.73	1.08	POE Marcellus: 6806MD / 6465'TVD
6861.00	78.040	161.970	6479.27	130.09	101.28	625.35	1654784.81	14302384.84	39°23'08.638"N	80°56'56.935"W	633.50	80.800	9.79	9.73	1.08	
6912.00	80.700	162.500	6488.68	180.13	53.55	640.65	1654800.10	14302337.13	39°23'08.166"N	80°56'56.740"W	642.88	85.222	5.31	5.22	1.04	
6955.00	83.000	162.860	6494.77	222.60	12.92	653.31	1654812.76	14302296.51	39°23'07.764"N	80°56'56.579"W	653.44	88.867	5.42	5.35	0.88	
7002.00	83.900	163.680	6500.13	269.16	-31.80	666.74	1654826.18	14302251.81	39°23'07.322"N	80°56'56.409"W	667.50	92.731	2.55	1.91	1.70	
7050.00	86.770	163.920	6504.04	316.83	-77.74	680.09	1654839.53	14302205.89	39°23'06.868"N	80°56'56.239"W	684.52	96.521	6.00	5.98	0.50	
7144.00	90.490	162.850	6506.29	410.50	-167.77	706.95	1654866.38	14302115.89	39°23'05.978"N	80°56'55.898"W	726.59	103.350	4.12	3.96	-1.14	
7240.00	90.370	165.620	6505.56	506.08	-260.15	733.03	1654892.45	14302023.55	39°23'05.065"N	80°56'55.566"W	777.83	109.539	2.89	-0.12	2.89	
7333.00	90.490	164.380	6504.87	598.56	-349.97	757.10	1654916.51	14301933.76	39°23'04.177"N	80°56'55.260"W	834.08	114.809	1.34	0.13	-1.33	
7428.00	90.490	161.170	6504.05	693.33	-440.70	785.23	1654944.62	14301843.08	39°23'03.280"N	80°56'54.903"W	900.44	119.303	3.38	0.00	-3.38	
7522.00	90.520	158.640	6503.23	787.31	-528.96	817.52	1654976.90	14301754.84	39°23'02.407"N	80°56'54.492"W	973.73	122.904	2.69	0.03	-2.69	
7616.00	90.060	158.730	6502.75	881.30	-616.53	851.69	1655011.06	14301667.31	39°23'01.542"N	80°56'54.057"W	1051.42	125.901	0.50	-0.49	0.10	
7711.00	90.090	158.440	6502.63	976.30	-704.97	886.38	1655045.73	14301578.90	39°23'00.667"N	80°56'53.816"W	1132.54	128.497	0.31	0.03	-0.31	
7806.00	90.150	156.920	6502.43	1071.27	-792.85	922.45	1655081.79	14301491.06	39°22'59.799"N	80°56'53.158"W	1216.36	130.679	1.60	0.06	-1.60	
7901.00	90.090	156.160	6502.23	1166.19	-880.00	960.27	1655119.60	14301403.95	39°22'58.937"N	80°56'52.677"W	1302.51	132.502	0.80	-0.06	-0.80	
7995.00	90.120	157.020	6502.05	1260.11	-966.26	997.62	1655156.93	14301317.72	39°22'58.084"N	80°56'52.202"W	1388.85	134.085	0.92	0.03	0.91	
8090.00	90.060	157.610	6501.91	1355.07	-1053.91	1034.26	1655193.55	14301230.11	39°22'57.218"N	80°56'51.736"W	1476.63	135.539	0.62	-0.06	0.62	
8185.00	89.970	156.240	6501.88	1450.05	-1141.95	1069.96	1655229.24	14301142.11	39°22'56.348"N	80°56'51.282"W	1564.88	136.864	0.67	-0.09	0.66	
8280.00	90.060	157.060	6501.86	1545.03	-1229.81	1106.09	1655265.35	14301054.28	39°22'55.479"N	80°56'50.822"W	1654.04	138.032	1.25	0.09	-1.24	
8374.00	89.880	155.290	6501.91	1638.91	-1315.80	1144.06	1655303.31	14300968.33	39°22'54.629"N	80°56'50.339"W	1743.61	138.994	1.89	-0.19	-1.88	
8469.00	89.970	155.470	6502.03	1733.73	-1402.16	1183.63	1655342.87	14300882.00	39°22'53.775"N	80°56'49.836"W	1834.95	139.831	0.21	0.09	0.19	



Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

WELLPATH DATA (242 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
8565.00	89.910	155.640	6502.13	1829.56	-1489.55	1223.36	1655382.58	14300794.64	39°22'52.91"N	80°56'49.33"W	1927.53	140.604	0.19	-0.06	0.18	
8660.00	89.750	155.740	6502.41	1924.41	-1576.13	1262.47	1655421.67	14300708.10	39°22'52.05"N	80°56'48.83"W	2019.41	141.306	0.20	-0.17	0.11	
8754.00	89.910	157.030	6502.69	2018.31	-1662.26	1300.12	1655459.31	14300822.01	39°22'51.204"N	80°56'48.354"W	2110.31	141.970	1.38	-0.17	1.37	
8849.00	89.750	157.670	6502.97	2113.27	-1749.93	1336.71	1655495.88	14300534.37	39°22'50.337"N	80°56'47.889"W	2202.05	142.625	0.69	-0.17	0.67	
8944.00	89.690	157.880	6503.44	2208.25	-1837.87	1372.64	1655531.80	14300446.47	39°22'49.468"N	80°56'47.432"W	2293.88	143.245	0.23	-0.06	0.22	
9038.00	89.540	158.190	6504.07	2302.24	-1925.04	1407.80	1655566.94	14300359.33	39°22'48.606"N	80°56'46.985"W	2384.89	143.822	0.37	-0.16	0.33	
9133.00	89.880	158.240	6504.55	2397.23	-2013.26	1443.05	1655602.18	14300271.15	39°22'47.734"N	80°56'46.537"W	2477.02	144.368	0.36	0.38	0.09	
9228.00	89.940	159.610	6504.70	2492.22	-2101.90	1477.21	1655636.33	14300182.54	39°22'46.857"N	80°56'46.102"W	2569.08	144.900	1.44	0.06	1.44	
9323.00	89.820	159.530	6504.90	2587.22	-2190.92	1510.38	1655669.48	14300093.55	39°22'45.977"N	80°56'45.681"W	2661.09	145.418	0.15	-0.13	-0.08	
9417.00	89.780	160.160	6505.23	2681.21	-2279.17	1542.76	1655701.85	14300005.34	39°22'45.105"N	80°56'45.269"W	2752.22	145.906	0.67	-0.04	0.67	
9512.00	90.060	158.790	6505.36	2776.20	-2368.13	1576.07	1655735.15	14299916.41	39°22'44.226"N	80°56'44.845"W	2844.66	146.355	1.47	0.28	-1.44	
9607.00	89.880	159.210	6505.41	2871.20	-2456.82	1610.12	1655769.18	14299827.76	39°22'43.349"N	80°56'44.413"W	2937.42	146.761	0.95	-0.19	0.44	
9701.00	89.660	160.080	6505.79	2965.19	-2544.95	1642.81	1655801.86	14299739.67	39°22'42.478"N	80°56'43.997"W	3029.13	147.157	0.95	-0.23	0.93	
9795.00	89.780	159.410	6506.25	3060.18	-2634.08	1675.70	1655834.74	14299650.58	39°22'41.596"N	80°56'43.579"W	3121.91	147.537	0.72	0.13	-0.71	
9890.00	89.820	159.360	6506.61	3154.18	-2722.06	1708.80	1655867.82	14299562.63	39°22'40.727"N	80°56'43.158"W	3213.97	147.881	0.05	0.00	-0.05	
9985.00	89.820	159.400	6506.94	3249.17	-2810.97	1742.25	1655901.26	14299473.75	39°22'39.848"N	80°56'42.733"W	3307.11	148.209	0.06	0.04	0.04	
10080.00	89.660	158.970	6507.37	3344.17	-2899.77	1776.01	1655935.01	14299384.99	39°22'38.970"N	80°56'42.303"W	3400.42	148.514	0.48	-0.17	-0.45	
10176.00	89.750	159.370	6507.87	3440.17	-2989.49	1810.15	1655969.13	14299295.30	39°22'38.083"N	80°56'41.869"W	3494.81	148.805	0.43	0.09	0.42	
10270.00	89.630	160.060	6508.38	3534.16	-3077.66	1842.73	1656001.70	14299207.17	39°22'37.211"N	80°56'41.455"W	3587.15	149.089	0.75	-0.13	0.73	
10365.00	89.720	160.360	6508.92	3629.13	-3167.05	1874.90	1656033.86	14299117.82	39°22'36.328"N	80°56'41.046"W	3680.41	149.374	0.33	0.06	0.32	
10460.00	89.690	160.260	6509.40	3724.11	-3256.49	1906.91	1656065.85	14299028.41	39°22'35.443"N	80°56'40.639"W	3773.73	149.648	0.11	-0.03	-0.11	
10555.00	89.630	159.480	6509.97	3819.09	-3345.69	1939.60	1656098.53	14298939.25	39°22'34.562"N	80°56'40.224"W	3867.26	149.898	0.82	-0.06	-0.82	
10650.00	89.600	158.480	6510.61	3914.09	-3434.36	1973.68	1656132.59	14298850.61	39°22'33.685"N	80°56'39.790"W	3961.09	150.115	1.05	-0.03	-1.05	
10744.00	89.720	159.260	6511.16	4008.09	-3522.04	2007.56	1656166.46	14298762.97	39°22'32.818"N	80°56'39.360"W	4054.02	150.317	0.84	0.13	0.83	
10838.00	89.510	158.170	6511.80	4102.08	-3609.63	2041.68	1656200.57	14298675.42	39°22'31.952"N	80°56'38.926"W	4147.03	150.507	1.18	-0.22	-1.16	
10933.00	89.600	157.380	6512.53	4197.06	-3697.56	2077.61	1656236.49	14298587.52	39°22'31.083"N	80°56'38.469"W	4241.28	150.669	0.84	0.06	-0.83	
11027.00	89.660	157.380	6513.14	4291.02	-3784.33	2113.77	1656272.63	14298500.79	39°22'30.225"N	80°56'38.009"W	4334.65	150.814	0.06	0.06	0.00	
11122.00	89.660	158.560	6513.70	4386.00	-3872.39	2149.40	1656308.25	14298412.76	39°22'29.355"N	80°56'37.566"W	4428.92	150.967	1.24	0.00	1.24	
11216.00	89.750	159.270	6514.19	4480.00	-3960.10	2183.21	1656342.05	14298325.09	39°22'28.488"N	80°56'37.126"W	4522.03	151.132	0.76	0.10	0.76	
11310.00	89.630	160.670	6514.70	4573.98	-4048.41	2215.41	1656374.23	14298236.82	39°22'27.615"N	80°56'36.717"W	4614.94	151.311	1.49	-0.13	1.49	



Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

WELLPATH DATA (242 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
11405.00	89.750	161.720	6515.21	4668.91	-4138.33	2246.03	1656404.84	14298146.93	39°22'26.726"N	80°56'36.328"W	4708.55	151.510	1.11	0.13	1.11	
11499.00	89.630	160.660	6515.72	4762.83	-4227.31	2276.34	1656435.14	14298057.98	39°22'25.846"N	80°56'35.943"W	4801.24	151.698	1.13	-0.13	-1.13	
11594.00	89.970	156.720	6516.05	4857.81	-4315.80	2310.86	1656469.64	14297969.53	39°22'24.971"N	80°56'35.504"W	4895.53	151.834	4.16	0.36	-4.15	
11688.00	89.690	155.130	6516.33	4951.68	-4401.62	2349.20	1656507.97	14297883.75	39°22'24.123"N	80°56'35.016"W	4989.29	151.911	1.72	-0.30	-1.68	
11783.00	89.660	160.880	6516.87	5046.62	-4489.66	2384.77	1656543.52	14297795.74	39°22'23.252"N	80°56'34.564"W	5083.72	152.024	6.05	-0.03	6.05	
11877.00	89.750	163.230	6517.35	5140.48	-4579.08	2413.72	1656572.47	14297706.35	39°22'22.368"N	80°56'34.196"W	5176.30	152.205	2.50	0.10	2.50	
11972.00	89.690	162.100	6517.82	5235.28	-4669.77	2442.03	1656600.76	14297615.71	39°22'21.472"N	80°56'33.836"W	5269.75	152.393	1.19	-0.06	-1.19	
12067.00	89.600	161.630	6518.41	5330.15	-4760.05	2471.60	1656630.32	14297525.46	39°22'20.579"N	80°56'33.481"W	5363.47	152.560	0.50	-0.06	-0.49	
12161.00	89.690	161.360	6518.99	5424.06	-4849.18	2501.43	1656660.14	14297436.36	39°22'19.698"N	80°56'33.081"W	5456.35	152.713	0.30	0.10	-0.29	
12256.00	89.780	159.770	6519.43	5519.01	-4938.77	2533.04	1656691.73	14297346.81	39°22'18.813"N	80°56'32.680"W	5550.47	152.847	1.68	0.09	-1.67	
12351.00	89.720	161.130	6519.84	5613.98	-5028.29	2564.83	1656723.51	14297257.33	39°22'17.928"N	80°56'32.276"W	5644.65	152.975	1.43	-0.06	1.43	
12445.00	89.880	163.400	6520.17	5707.81	-5117.81	2593.46	1656752.13	14297167.84	39°22'17.043"N	80°56'31.912"W	5737.43	153.126	2.42	0.17	2.41	
12540.00	90.120	158.130	6520.17	5802.73	-5207.48	2624.75	1656783.40	14297078.21	39°22'16.156"N	80°56'31.514"W	5831.56	153.250	5.55	0.25	-5.55	
12634.00	89.940	153.380	6520.12	5896.56	-5293.16	2663.34	1656821.98	14296992.56	39°22'15.309"N	80°56'31.023"W	5925.45	153.290	5.06	-0.19	-5.05	
12729.00	89.820	153.700	6520.32	5991.14	-5378.21	2705.67	1656864.29	14296907.55	39°22'14.468"N	80°56'30.485"W	6020.45	153.294	0.36	-0.13	0.34	
12823.00	89.970	155.080	6520.49	6084.84	-5462.97	2746.30	1656904.90	14296822.82	39°22'13.630"N	80°56'29.968"W	6114.43	153.311	1.48	0.16	1.47	
12918.00	89.910	155.710	6520.59	6179.65	-5549.35	2785.85	1656944.44	14296736.48	39°22'12.776"N	80°56'29.466"W	6209.36	153.343	0.67	-0.06	0.66	
13013.00	89.970	157.460	6520.74	6274.57	-5636.52	2823.60	1656982.18	14296649.34	39°22'11.914"N	80°56'28.986"W	6304.21	153.392	1.84	0.00	1.84	
13107.00	89.850	157.470	6520.94	6368.54	-5723.34	2859.63	1657018.19	14296562.55	39°22'11.056"N	80°56'28.528"W	6397.98	153.451	0.06	-0.06	0.01	
13202.00	89.660	155.190	6521.34	6463.43	-5810.34	2897.76	1657056.31	14296475.59	39°22'10.196"N	80°56'28.043"W	6492.85	153.493	2.41	-0.20	-2.40	
13296.00	90.090	153.440	6521.55	6557.12	-5895.05	2938.50	1657097.03	14296390.91	39°22'09.359"N	80°56'27.525"W	6586.84	153.505	1.92	0.46	-1.88	
13391.00	89.690	151.480	6521.73	6651.50	-5979.28	2982.42	1657140.94	14296306.72	39°22'08.526"N	80°56'26.966"W	6681.82	153.490	2.11	-0.42	-2.06	
13486.00	89.940	156.300	6522.04	6746.11	-6064.56	3024.22	1657182.72	14296221.47	39°22'07.683"N	80°56'26.435"W	6776.79	153.496	5.08	0.26	5.07	
13580.00	89.940	157.010	6522.14	6840.03	-6150.87	3061.47	1657219.95	14296135.20	39°22'06.829"N	80°56'25.961"W	6870.65	153.539	0.76	0.00	0.76	
13675.00	89.970	157.900	6522.26	6935.00	-6238.61	3097.89	1657256.36	14296047.50	39°22'05.962"N	80°56'25.498"W	6965.43	153.592	0.94	-0.03	0.94	
13769.00	89.850	155.340	6522.46	7028.83	-6327.75	3127.51	1657285.97	14295958.39	39°22'05.081"N	80°56'25.122"W	7058.45	153.699	7.92	-0.06	7.91	
13864.00	89.940	168.390	6522.63	7122.91	-6420.25	3149.10	1657307.54	14295865.92	39°22'04.166"N	80°56'24.848"W	7150.98	153.872	3.21	0.03	3.21	
13959.00	90.030	166.980	6522.66	7216.81	-6513.06	3169.36	1657327.80	14295773.15	39°22'03.249"N	80°56'24.590"W	7243.26	154.052	1.49	0.09	-1.48	
14053.00	89.720	162.350	6522.86	7310.31	-6603.69	3194.21	1657352.64	14295682.56	39°22'02.353"N	80°56'24.275"W	7335.65	154.187	4.94	-0.33	-4.93	
14147.00	89.880	159.370	6523.19	7404.25	-6692.48	3225.03	1657383.44	14295593.80	39°22'01.475"N	80°56'23.863"W	7429.01	154.271	3.17	0.17	-3.17	



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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

WELLPATH DATA (242 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
14242.00	89.720	156.570	6523.52	7499.23	-6780.54	3260.66	1657419.06	14295505.78	39°22'00.605"N	80°56'23.430"W	7523.80	154.318	2.95	-0.17	-2.95	
14337.00	89.630	153.570	6524.06	7594.00	-6866.68	3300.70	1657459.08	14295419.68	39°21'59.753"N	80°56'22.921"W	7618.78	154.327	3.16	-0.09	-3.16	
14432.00	90.280	154.190	6524.14	7688.62	-6951.97	3342.52	1657500.89	14295334.42	39°21'58.910"N	80°56'22.389"W	7713.78	154.322	0.95	0.68	0.65	
14527.00	90.030	160.950	6523.88	7783.54	-7039.73	3378.75	1657537.10	14295246.69	39°21'58.042"N	80°56'21.929"W	7808.57	154.361	7.12	-0.26	7.12	
14622.00	90.220	164.240	6523.67	7878.34	-7130.37	3407.16	1657566.50	14295156.09	39°21'57.146"N	80°56'21.566"W	7902.59	154.460	3.47	0.20	3.46	
14717.00	89.910	162.840	6523.56	7973.03	-7221.48	3434.08	1657592.41	14295065.02	39°21'56.245"N	80°56'21.226"W	7996.41	154.567	1.51	-0.33	-1.47	
14812.00	89.940	159.070	6523.69	8067.95	-7311.26	3465.07	1657623.93	14294975.27	39°21'55.358"N	80°56'20.832"W	8090.81	154.642	3.97	0.03	-3.97	
14908.00	90.150	156.160	6523.61	8163.92	-7400.02	3501.63	1657659.93	14294886.55	39°21'54.480"N	80°56'20.367"W	8186.67	154.677	3.04	0.22	-3.03	
15003.00	89.970	156.730	6523.51	8258.83	-7487.10	3539.59	1657697.88	14294799.50	39°21'53.619"N	80°56'19.885"W	8281.63	154.697	0.63	-0.19	0.60	
15097.00	89.970	154.750	6523.56	8352.67	-7572.80	3578.21	1657736.48	14294713.84	39°21'52.772"N	80°56'19.394"W	8375.61	154.709	2.11	0.00	-2.11	
15192.00	89.820	156.450	6523.74	8447.51	-7659.31	3617.46	1657775.71	14294627.37	39°21'51.917"N	80°56'18.895"W	8470.59	154.719	1.80	-0.16	1.79	
15287.00	89.970	158.850	6523.91	8542.48	-7747.16	3653.58	1657811.82	14294539.55	39°21'51.048"N	80°56'18.436"W	8565.46	154.751	2.53	0.16	2.53	
15382.00	89.910	159.540	6524.01	8637.47	-7835.97	3687.32	1657848.55	14294450.78	39°21'50.170"N	80°56'18.007"W	8660.18	154.800	0.73	-0.06	0.73	
15477.00	89.970	161.060	6524.11	8732.45	-7925.41	3719.34	1657877.56	14294361.37	39°21'49.286"N	80°56'17.600"W	8754.75	154.860	1.60	0.06	1.60	
15572.00	89.940	162.760	6524.19	8827.32	-8015.71	3748.84	1657907.05	14294271.11	39°21'48.383"N	80°56'17.225"W	8849.03	154.935	1.79	-0.03	1.79	
15667.00	90.030	165.430	6524.21	8921.92	-8107.06	3774.87	1657933.07	14294179.79	39°21'47.490"N	80°56'16.895"W	8942.82	155.032	2.81	0.09	2.81	
15761.00	89.970	165.290	6524.21	9015.34	-8198.01	3798.63	1657956.81	14294088.88	39°21'46.591"N	80°56'16.593"W	9035.32	155.139	0.16	-0.06	-0.15	
15856.00	89.940	163.850	6524.28	9109.88	-8289.58	3823.91	1657982.08	14293997.34	39°21'45.686"N	80°56'16.272"W	9129.04	155.237	1.52	-0.03	-1.52	
15951.00	89.780	158.230	6524.52	9204.78	-8379.39	3854.76	1658012.92	14293907.57	39°21'44.798"N	80°56'15.880"W	9223.52	155.296	5.92	-0.17	-5.92	
16045.00	89.750	159.640	6524.90	9298.77	-8467.11	3888.54	1658046.69	14293819.89	39°21'43.931"N	80°56'15.450"W	9317.33	155.333	1.50	-0.03	1.50	
16141.00	89.750	155.860	6525.32	9394.73	-8555.95	3924.87	1658083.01	14293731.08	39°21'43.053"N	80°56'14.989"W	9413.23	155.358	3.92	0.00	-3.92	
16235.00	89.820	158.770	6525.67	9488.68	-8642.67	3961.11	1658119.22	14293644.39	39°21'42.195"N	80°56'14.528"W	9507.16	155.377	3.08	0.07	3.07	
16329.00	89.820	159.380	6525.97	9582.68	-8730.47	3994.68	1658152.78	14293556.63	39°21'41.327"N	80°56'14.102"W	9600.97	155.413	0.65	0.00	0.65	
16424.00	89.940	158.040	6526.17	9677.68	-8818.99	4029.17	1658187.28	14293468.15	39°21'40.452"N	80°56'13.663"W	9695.81	155.446	1.42	0.13	-1.41	
16519.00	89.880	155.580	6526.32	9772.61	-8906.31	4066.58	1658224.65	14293380.87	39°21'39.589"N	80°56'13.188"W	9790.78	155.459	2.59	-0.06	-2.59	
16614.00	89.850	158.150	6526.54	9867.54	-8993.66	4103.90	1658261.96	14293293.55	39°21'38.725"N	80°56'12.713"W	9885.74	155.472	2.71	-0.03	2.71	
16709.00	89.780	159.840	6526.85	9962.53	-9082.34	4137.95	1658296.00	14293204.90	39°21'37.849"N	80°56'12.281"W	9980.56	155.506	1.78	-0.07	1.78	
16803.00	89.820	160.450	6527.18	10056.51	-9170.75	4169.88	1658327.91	14293116.53	39°21'36.975"N	80°56'11.875"W	10074.25	155.549	0.65	0.04	0.65	
16898.00	89.880	159.530	6527.43	10151.49	-9260.02	4202.38	1658360.40	14293027.30	39°21'35.092"N	80°56'11.462"W	10168.97	155.590	0.97	0.06	-0.97	
16992.00	89.820	157.850	6527.67	10245.49	-9347.59	4236.54	1658394.55	14292939.77	39°21'35.226"N	80°56'11.028"W	10262.83	155.619	1.79	-0.06	-1.79	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

WELLPATH DATA (242 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
17086.00	89.850	157.280	6527.94	10339.46	-9434.47	4272.42	1658430.41	14292852.92	39°21'34.367"N	80°56'10.572"W	10366.77	155.937	0.61	0.03	-0.61	
17181.00	89.780	158.670	6528.25	10434.44	-9522.54	4308.04	1658466.02	14292764.89	39°21'33.497"N	80°56'10.119"W	10451.69	155.658	1.47	-0.07	1.46	
17275.00	89.750	160.060	6528.63	10528.44	-9610.50	4341.17	1658499.13	14292676.96	39°21'32.627"N	80°56'09.698"W	10545.50	155.091	1.48	-0.03	1.48	
17369.00	89.750	156.840	6529.04	10622.42	-9697.92	4375.69	1658533.64	14292589.57	39°21'31.763"N	80°56'09.259"W	10639.37	155.715	3.43	0.00	-3.43	
17464.00	89.850	162.340	6529.38	10717.38	-9786.92	4408.81	1658566.74	14292500.61	39°21'30.883"N	80°56'08.839"W	10734.12	155.749	5.79	0.11	5.79	
17558.00	89.850	162.000	6529.62	10811.23	-9876.40	4437.59	1658595.51	14292411.16	39°21'29.998"N	80°56'08.473"W	10827.54	155.805	0.36	0.00	-0.36	
17653.00	89.850	159.770	6529.87	10906.17	-9966.16	4468.69	1658626.61	14292321.44	39°21'29.111"N	80°56'08.078"W	10922.16	155.849	2.35	0.00	-2.35	
17748.00	89.850	159.410	6530.12	11001.16	-10055.20	4501.82	1658659.73	14292232.44	39°21'28.231"N	80°56'07.657"W	11016.96	155.881	0.38	0.00	-0.38	
17843.00	89.750	158.530	6530.45	11096.16	-10143.87	4535.92	1658693.80	14292143.80	39°21'27.354"N	80°56'07.224"W	11111.82	155.908	0.93	-0.11	-0.93	
17938.00	89.780	158.070	6530.84	11191.15	-10232.13	4571.04	1658728.91	14292055.57	39°21'26.482"N	80°56'06.777"W	11206.74	155.928	0.49	0.03	-0.48	
18033.00	89.720	159.730	6531.26	11286.15	-10320.76	4605.24	1658763.10	14291966.98	39°21'25.605"N	80°56'06.343"W	11301.61	155.953	1.75	-0.06	1.75	
18127.00	89.850	156.420	6531.61	11380.13	-10407.95	4640.33	1658798.18	14291879.83	39°21'24.743"N	80°56'05.897"W	11395.53	155.971	3.52	0.14	-3.52	
18222.00	89.850	155.120	6531.86	11474.98	-10494.58	4679.32	1658837.15	14291793.24	39°21'23.887"N	80°56'05.401"W	11490.53	155.969	1.37	0.00	-1.37	
18317.00	89.720	155.080	6532.21	11569.76	-10580.75	4719.32	1658877.13	14291707.10	39°21'23.035"N	80°56'04.893"W	11585.51	155.962	0.14	-0.14	-0.04	
18411.00	89.880	155.030	6532.54	11663.54	-10665.98	4758.96	1658916.76	14291621.90	39°21'22.192"N	80°56'04.389"W	11679.50	155.954	0.18	0.17	-0.05	
18506.00	89.970	155.240	6532.67	11758.33	-10752.17	4798.91	1658956.69	14291535.75	39°21'21.340"N	80°56'03.881"W	11774.49	155.948	0.24	0.09	0.22	
18600.00	89.850	154.630	6532.81	11852.10	-10837.32	4838.73	1658996.50	14291450.63	39°21'20.498"N	80°56'03.375"W	11868.48	155.940	0.66	-0.13	-0.65	
18695.00	90.120	154.980	6532.84	11946.85	-10923.28	4879.17	1659036.92	14291364.71	39°21'19.648"N	80°56'02.861"W	11963.46	155.931	0.47	0.28	0.37	
18789.00	90.090	155.680	6532.67	12040.66	-11008.70	4918.41	1659076.14	14291279.32	39°21'18.804"N	80°56'02.362"W	12057.45	155.926	0.75	-0.03	0.74	
18883.00	90.120	158.490	6532.49	12134.61	-11095.27	4955.00	1659112.72	14291192.78	39°21'17.948"N	80°56'01.997"W	12151.42	155.935	2.99	0.03	2.98	
18978.00	90.090	160.000	6532.32	12229.60	-11184.10	4988.67	1659146.37	14291103.99	39°21'17.070"N	80°56'01.469"W	12246.26	155.961	1.59	-0.03	1.59	
19073.00	90.150	160.980	6532.12	12324.57	-11273.65	5020.39	1659178.09	14291014.48	39°21'16.184"N	80°56'01.066"W	12340.97	155.996	1.03	0.06	1.03	
19168.00	89.940	164.320	6532.05	12419.35	-11364.31	5048.72	1659206.40	14290923.85	39°21'15.288"N	80°56'00.707"W	12435.32	156.046	3.52	-0.22	3.52	
19263.00	90.030	163.260	6532.07	12514.01	-11455.53	5075.24	1659232.91	14290832.66	39°21'14.386"N	80°56'00.370"W	12529.46	156.105	1.12	0.09	-1.12	
19358.00	89.970	160.760	6532.07	12608.87	-11545.88	5104.58	1659262.24	14290742.35	39°21'13.493"N	80°55'59.997"W	12623.95	156.149	2.63	-0.06	-2.63	
19452.00	89.910	159.470	6532.17	12702.85	-11634.28	5136.55	1659294.20	14290653.99	39°21'12.619"N	80°55'59.591"W	12717.73	156.178	1.37	-0.06	-1.37	
19547.00	90.340	161.370	6531.96	12797.81	-11723.78	5168.38	1659326.02	14290564.53	39°21'11.734"N	80°55'59.187"W	12812.46	156.210	2.05	0.06	2.00	
19641.00	90.120	166.410	6531.59	12891.43	-11814.06	5194.46	1659352.08	14290474.29	39°21'10.842"N	80°55'58.856"W	12905.59	156.266	5.37	-0.23	5.36	
19736.00	90.340	161.370	6531.20	12986.05	-11905.30	5220.81	1659378.42	14290383.08	39°21'09.940"N	80°55'58.521"W	12999.73	156.321	5.31	0.23	-5.31	
19831.00	90.150	159.980	6530.80	13081.00	-11994.94	5252.25	1659409.85	14290293.47	39°21'09.054"N	80°55'58.122"W	13094.45	156.353	1.48	-0.20	-1.48	



Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887'

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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	McKim Pad
Slot	Slot #06
Well	Haga Unit 3H
Wellbore	Haga Unit 3H AWB

WELLPATH DATA (242 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
19863.00	89.850	159.600	6530.80	13113.00	-12024.97	5263.30	1659420.90	14290263.46	39°21'08.75"N	80°55'57.98"W	13126.40	156.361	1.51	-0.94	-1.19	
19887.00	89.850	159.600	6530.86	13137.00	-12047.47	5271.67	1659429.26	14290240.97	39°21'08.534"N	80°55'57.875"W	13150.36	156.367	0.00	0.00	0.00	Projected MD @ TD: 19887MD / 6531'TVD

HOLE & CASING SECTIONS - Ref Wellbore: Haga Unit 3H AWB Ref Wellpath: Haga Unit 3H AWP Proj: 19887'											
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	-0.41	-0.19		
17.5in Open Hole	112.00	550.70	438.70	112.00	550.69	-0.41	-0.19	-2.76	1.12		
13.375in Casing Surface	32.00	550.70	518.70	32.00	550.69	0.00	0.00	-2.76	1.12		
12.25in Open Hole	550.70	2581.00	2030.30	550.69	2575.73	-2.76	1.12	68.92	35.00		
9.625in Casing Intermediate	32.00	2581.00	2549.00	32.00	2575.73	0.00	0.00	68.92	35.00		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Haga Unit 3H POE Rev-2	6459.00	198.69	577.89	1654737.37	14302482.21	39°23'09.601"N	80°56'57.539"W	point
Haga Unit 3H BHL Rev-2	6493.00	-12068.89	5299.65	1659457.23	14290219.56	39°21'08.323"N	80°55'57.519"W	point
Haga Unit 3H LP Rev-1	6493.00	-4.81	656.22	1654815.66	14302278.79	39°23'07.589"N	80°56'56.543"W	point

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Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

WELLPATH COMPOSITION - Ref Wellbore: Haga Unit 3H AWB Ref Wellpath: Haga Unit 3H AWP Proj: 19887'			
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment
32.00	547.00	Gyrodata standard - Drop gyro or Multi-shot	01_Gyrodata MS Gyro <17-1/2">(100'-530')
644.00	644.00	Gyrodata standard - Drop gyro or Multi-shot	02_Gyrodata MS Gyro <12-1/4">(630')(536'-627')
2509.00	2509.00	ISCVSA MWD, Rev. 4 (Standard)	03_Directional ONE MWD <12-1/4">(627')(772'-2492')
5542.00	5542.00	ISCVSA MWD, Rev. 4 (Standard)	04_Directional ONE MWD <8-3/4">(2492')(2654'-5525')
19863.00	19863.00	BH AutoTrak Curve (Short)	05_BH ATCurve <8-1/2">(5542')(5630'-19863')
19863.00	19887.00	Blind Drilling (std)	Projection to bit
			Haga Unit 3H AWB
			Haga Unit 3H AWB
			Haga Unit 3H AWB
			Haga Unit 3H AWB
			Haga Unit 3H AWB

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Actual Wellpath Report

Haga Unit 3H AWP Proj: 19887'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Haga Unit 3H
Field	Tyler	Wellbore	Haga Unit 3H AWB
Facility	McKim Pad		

COMMENTS
<p>Wellpath general comments API: 47-095-02425-0000 BH Job #: 8935112 Rig: Frontier 32 Duration: 12/26/17 - 12/29/17 Comment Gyrodatta MS Gyro <17-1/2">(100'-530') Gyrodatta MS Gyro <12-1/4">(530')(536'-627') Directional ONE MWD <12-1/4">(627')(772'-2492') Directional ONE MWD <8-3/4">(2492')(2654'-5525') BH ATCurve <8-1/2">(5542')(5630'-19863') Sycamore @ 6371'MD / 6242'TVD Middlesex @ 6510'MD / 6335'TVD Burket @ 6712'MD / 6432'TVD Tully @ 6767'MD / 6453'TVD POE Marcellus: 6806'MD / 6465'TVD Projected MD @ TD: 19887'MD / 6531'TVD</p>

05/03/2019