



ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
 Field: Ritchie
 Facility: Hichman Pad

Slot: Slot #09
 Well: Griff Unit 3H
 Wellbore: Griff Unit 3H PWB

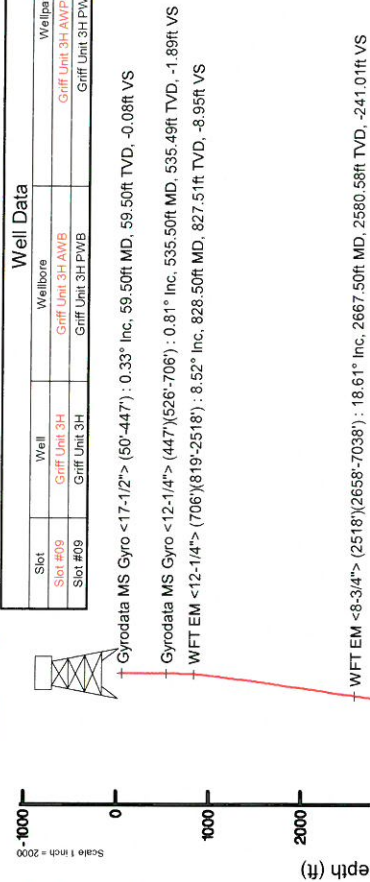


Plot reference wellpath is Griff Unit 3H PWP Rev-A.0	Grid System: NAD27/UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 1274.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot, Slot #09): -1250 feet	Created by: deisset on 2018-08-22
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Deirn

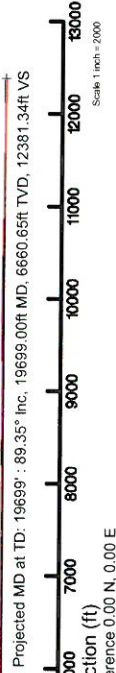
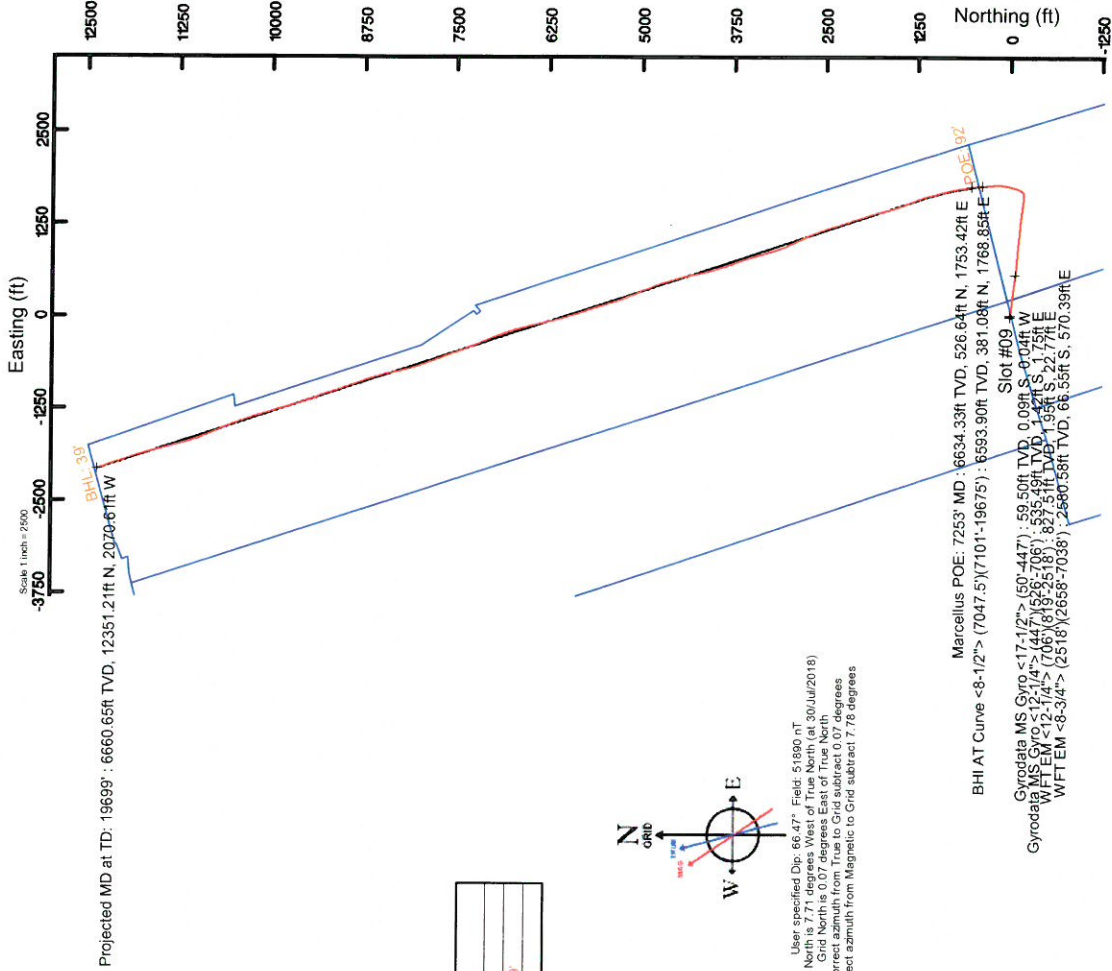
Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Hichman Pad	1673097.617	39°20'19.220"N	80°53'03.880"W
Slot	Local E (ft)	Grid East (US ft)	Longitude
Slot #09	-76.92	1673077.296	80°53'04.150"W
Frontier 22 (RKB) to Ground level (At Slot, Slot #09)	24.5ft	14285190.399	
Mean Sea Level to Ground level (At Slot, Slot #09)	-1250ft		
Frontier 22 (RKB) to Mean Sea Level	1274.5ft		

Well Profile Data					
Design Comment	MD (ft)	Az (°)	Local N (ft)	DLS (°/100ft)	VS (ft)
Tie On	7047.50	65.610	331.80	1772.96	-237.31
Proj. To Bottom	7121.50	72.110	354.840	1766.76	-170.10
POE	7234.29	77.260	350.060	1752.42	-63.23
Landing Pl.	7442.03	90.000	350.060	1716.86	6.13
On Azimuth	7853.88	90.000	341.636	1616.95	2.00
BHL	19871.89	90.000	341.636	2067.08	12269.13

Well Data		
Slot	Well	Wellbore
Slot #09	Griff Unit 3H	Griff Unit 3H AWB
Slot #09	Griff Unit 3H	Griff Unit 3H PWP
Slot #09	Griff Unit 3H	Griff Unit 3H PWP Rev-A.0



API: 47-085-10331-0000
 BHI Job #: 109315032
 Rig: Frontier 22
 Duration: 08/02/2018-08/05/2018



REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #09
Area	Ritchie County, WV	Griff Unit 3H
Field	Ritchie	Griff Unit 3H AWB
Facility	Hichman Pad	

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	22/Aug/2018 at 14:38
Convergence at slot	0.07° East	Database/Source file	WA_MPL_EasternUS_Defn/Griff_Unit_3H_AWP_Proj_19699_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-76.92	-20.33	1673077.30	14285190.40	39°20'18.460"N	80°53'04.150"W
Facility Reference Pt			1673097.62	14285267.29	39°20'19.220"N	80°53'03.890"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM

Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	24.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	1274.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Ground Level at Slot (Slot #09)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	341.84°



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Griff Unit 3H
Area	Ritchie County, WV	Wellbore	Griff Unit 3H AWB
Field	Ritchie		
Facility	Hichman Pad		

WELLPATH DATA (252 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 °/100ft	Comments
0.00	0.000	203.640	0.00	0.00	0.00	0.00	1673077.30	14285190.40	39°20'18.460"N	80°53'04.150"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	203.640	24.50	0.00	0.00	0.00	1673077.30	14285190.40	39°20'18.460"N	80°53'04.150"W	0.00	0.000	0.00	0.00	0.00	
59.50	0.330	203.640	59.50	-0.08	-0.09	-0.04	1673077.26	14285190.31	39°20'18.459"N	80°53'04.151"W	0.10	203.640	0.94	0.94	-446.74	Gyrodatta MS Gyro <17-1/2"> (50-447')
84.50	0.510	175.750	84.50	-0.24	-0.27	-0.06	1673077.23	14285190.13	39°20'18.457"N	80°53'04.151"W	0.28	192.774	1.07	0.72	-111.56	
109.50	0.610	170.910	109.50	-0.48	-0.51	-0.03	1673077.26	14285189.89	39°20'18.455"N	80°53'04.150"W	0.51	183.553	0.44	0.40	-19.36	
134.50	0.610	168.860	134.50	-0.74	-0.77	0.01	1673077.31	14285189.63	39°20'18.452"N	80°53'04.150"W	0.77	178.892	0.09	0.00	-8.20	
159.50	0.350	164.420	159.50	-0.95	-0.98	0.06	1673077.36	14285189.42	39°20'18.450"N	80°53'04.149"W	0.98	176.419	1.05	-1.04	-17.76	
184.50	0.250	128.410	184.50	-1.07	-1.09	0.12	1673077.42	14285189.31	39°20'18.449"N	80°53'04.148"W	1.09	173.459	0.83	-0.40	-144.04	
209.50	0.210	172.770	209.50	-1.16	-1.16	0.17	1673077.47	14285189.23	39°20'18.448"N	80°53'04.148"W	1.18	171.553	0.71	-0.16	177.44	
234.50	0.180	50.140	234.50	-1.18	-1.18	0.21	1673077.50	14285189.21	39°20'18.448"N	80°53'04.147"W	1.20	170.003	1.37	-0.12	-490.52	
259.50	0.280	103.100	259.49	-1.21	-1.17	0.30	1673077.59	14285189.23	39°20'18.448"N	80°53'04.146"W	1.21	165.728	0.90	0.40	211.84	
284.50	0.130	130.390	284.49	-1.26	-1.21	0.38	1673077.67	14285189.19	39°20'18.448"N	80°53'04.145"W	1.26	162.524	0.70	-0.60	109.16	
309.50	0.230	116.420	309.49	-1.32	-1.25	0.45	1673077.74	14285189.15	39°20'18.448"N	80°53'04.144"W	1.32	160.306	0.43	0.40	-55.88	
334.50	0.060	76.110	334.49	-1.36	-1.27	0.50	1673077.80	14285189.13	39°20'18.447"N	80°53'04.144"W	1.36	158.294	0.75	-0.68	-161.24	
359.50	0.360	115.940	359.49	-1.42	-1.30	0.59	1673077.88	14285189.10	39°20'18.447"N	80°53'04.143"W	1.42	155.842	1.27	1.20	159.32	
384.50	0.260	94.040	384.49	-1.49	-1.34	0.71	1673078.01	14285189.06	39°20'18.447"N	80°53'04.141"W	1.51	151.852	0.61	-0.40	-87.60	
409.50	0.260	95.760	409.49	-1.54	-1.34	0.83	1673078.12	14285189.05	39°20'18.447"N	80°53'04.139"W	1.58	148.400	0.03	0.00	6.88	
434.50	0.310	115.280	434.49	-1.61	-1.38	0.94	1673078.24	14285189.02	39°20'18.446"N	80°53'04.138"W	1.67	145.588	0.43	0.20	78.08	
456.50	0.290	126.030	456.49	-1.69	-1.44	1.04	1673078.34	14285189.96	39°20'18.446"N	80°53'04.137"W	1.78	144.018	0.27	-0.09	48.86	
535.50	0.810	76.100	535.49	-1.89	-1.42	1.75	1673079.04	14285189.98	39°20'18.446"N	80°53'04.128"W	2.25	129.117	0.84	0.66	-63.20	Gyrodatta MS Gyro <12-1/4"> (447')(526'-706')
625.50	2.480	87.240	625.45	-2.46	-1.17	4.31	1673081.60	14285189.22	39°20'18.445"N	80°53'04.095"W	4.47	105.242	1.88	1.86	12.38	
715.50	4.620	90.780	715.27	-4.15	-1.13	9.88	1673087.17	14285189.27	39°20'18.449"N	80°53'04.024"W	9.94	96.525	2.39	2.38	3.93	
828.50	8.520	95.170	827.51	-8.95	-1.95	22.77	1673100.06	14285188.45	39°20'18.440"N	80°53'03.860"W	22.86	94.886	3.48	3.45	3.88	WFT EM <12-1/4"> (706')(819'-2518')
922.50	12.010	97.170	919.99	-15.89	-3.80	39.42	1673116.70	14285188.61	39°20'18.422"N	80°53'03.648"W	39.60	95.500	3.73	3.71	2.13	
1016.50	14.830	97.010	1011.41	-25.19	-6.48	61.06	1673138.33	14285189.92	39°20'18.395"N	80°53'03.373"W	61.41	96.062	3.00	3.00	-0.17	
1111.50	17.260	97.080	1102.71	-36.38	-9.71	87.12	1673164.38	14285180.70	39°20'18.363"N	80°53'03.041"W	87.66	96.357	2.56	2.56	0.07	
1205.50	17.840	95.970	1192.33	-48.21	-12.92	115.28	1673192.53	14285177.48	39°20'18.331"N	80°53'02.683"W	116.00	96.396	0.71	0.62	-1.18	
1299.50	18.510	95.470	1281.64	-60.08	-15.84	144.45	1673221.69	14285174.56	39°20'18.302"N	80°53'02.312"W	145.32	96.259	0.73	0.71	-0.53	
1393.50	18.190	93.850	1370.86	-71.56	-18.25	173.95	1673251.17	14285172.16	39°20'18.277"N	80°53'01.936"W	174.90	95.989	0.64	-0.34	-1.72	
1488.50	18.590	95.820	1461.01	-83.27	-20.78	203.81	1673281.02	14285169.63	39°20'18.252"N	80°53'01.556"W	204.86	95.822	0.78	0.42	2.07	



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Griff Unit 3H
Area	Ritchie County, WV	Wellbore	Griff Unit 3H AWB
Field	Ritchie		
Facility	Hichman Pad		

WELLPATH DATA (252 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude (°)	Longitude (ft)	Closure Dist (ft)	Closure Dir (ft)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
1583.50	17.710	97.440	1551.28	-95.66	-24.19	233.20	16733310.40	14285166.22	39°20'18.218"N	80°53'01.182"W	234.45	95.922	1.07	-0.93	1.71	
1677.50	18.360	96.500	1640.66	-108.02	-27.72	262.09	16733329.28	14285162.69	39°20'18.183"N	80°53'00.815"W	263.55	96.036	0.76	0.69	-1.00	
1772.50	19.120	98.040	1730.63	-121.13	-31.58	292.36	16733369.54	14285158.83	39°20'18.144"N	80°53'00.430"W	294.06	96.166	0.95	0.80	1.62	
1866.50	18.380	96.910	1819.64	-134.21	-35.52	322.31	16733399.48	14285154.89	39°20'18.105"N	80°53'00.048"W	324.27	96.289	0.88	-0.79	-1.20	
1961.50	18.110	95.030	1909.86	-146.37	-38.82	351.89	1673429.05	14285151.80	39°20'18.074"N	80°52'59.672"W	354.00	96.263	0.68	-0.28	-1.98	
2056.50	18.310	96.480	1999.16	-158.28	-41.57	381.12	1673458.26	14285148.85	39°20'18.044"N	80°52'59.300"W	383.38	96.224	0.53	0.21	1.54	
2150.50	17.660	98.000	2089.51	-170.85	-45.25	410.21	1673487.34	14285145.16	39°20'18.008"N	80°52'58.930"W	412.70	96.295	0.84	-0.68	1.60	
2244.50	18.380	97.860	2178.90	-183.64	-49.27	439.01	1673516.13	14285141.15	39°20'17.967"N	80°52'58.563"W	441.77	96.403	0.77	0.77	-0.15	
2338.50	19.470	98.710	2267.82	-197.22	-53.66	469.18	1673546.29	14285136.76	39°20'17.924"N	80°52'58.179"W	472.24	96.525	1.20	1.16	0.90	
2432.50	18.180	98.350	2357.74	-210.99	-58.21	499.50	1673576.59	14285132.21	39°20'17.878"N	80°52'57.794"W	502.88	96.648	1.36	-1.36	-0.38	
2527.50	17.090	95.900	2447.32	-223.17	-61.76	527.74	1673604.83	14285128.66	39°20'17.843"N	80°52'57.434"W	531.35	96.675	1.40	-1.16	-2.61	
2627.50	18.610	96.860	2580.58	-241.01	-66.55	570.39	1673647.45	14285123.88	39°20'17.795"N	80°52'56.892"W	574.26	96.655	1.11	1.09	0.69	WFT EM <8.3/4> (2518)(2658-7038)
2761.50	18.300	97.000	2669.74	-253.62	-70.14	599.93	1673676.98	14285120.29	39°20'17.759"N	80°52'56.516"W	604.01	96.668	0.33	-0.33	0.15	
2856.50	18.930	96.320	2759.77	-266.35	-73.65	630.05	1673707.09	14285116.78	39°20'17.724"N	80°52'56.132"W	634.34	96.668	0.70	0.66	-0.72	
2951.50	19.300	93.910	2849.54	-278.63	-76.42	661.03	1673738.06	14285114.01	39°20'17.696"N	80°52'55.738"W	665.43	96.594	0.92	0.39	-2.54	
3045.50	18.510	97.730	2938.47	-290.99	-79.48	691.31	1673768.33	14285110.95	39°20'17.666"N	80°52'55.353"W	695.87	96.559	1.56	-0.84	4.06	
3139.50	18.070	96.580	3027.72	-303.60	-83.16	720.58	1673797.59	14285107.27	39°20'17.629"N	80°52'54.980"W	725.36	96.583	0.61	-0.47	-1.22	
3234.50	17.650	94.450	3118.14	-315.31	-85.97	749.57	1673826.57	14285104.47	39°20'17.601"N	80°52'54.611"W	754.49	96.543	0.82	-0.44	-2.24	
3328.50	18.650	95.240	3207.46	-326.76	-88.45	778.75	1673855.73	14285101.99	39°20'17.576"N	80°52'54.240"W	783.76	96.480	1.10	1.06	0.84	
3423.50	18.730	94.490	3297.45	-338.66	-91.03	809.08	1673886.05	14285099.41	39°20'17.550"N	80°52'53.854"W	814.19	96.419	0.27	0.08	-0.79	
3518.50	17.870	93.070	3387.65	-349.81	-93.00	838.84	1673915.80	14285097.43	39°20'17.530"N	80°52'53.475"W	843.98	96.327	1.02	-0.91	-1.49	
3617.50	18.700	94.660	3481.65	-361.47	-95.11	869.83	1673946.78	14285095.33	39°20'17.509"N	80°52'53.081"W	875.01	96.240	0.98	0.84	1.61	
3711.50	18.600	94.300	3570.71	-373.04	-97.45	899.80	1673976.73	14285092.98	39°20'17.485"N	80°52'52.700"W	905.06	96.181	0.16	-0.11	-0.38	
3806.50	19.410	97.290	3660.54	-385.61	-100.59	930.57	1674007.49	14285089.85	39°20'17.454"N	80°52'52.308"W	935.99	96.170	1.33	0.85	3.15	
3899.50	18.800	96.620	3748.41	-398.53	-104.28	960.78	1674037.69	14285086.16	39°20'17.417"N	80°52'51.924"W	966.42	96.195	0.70	-0.66	-0.72	
3994.50	18.200	94.390	3838.51	-410.64	-107.18	990.78	1674067.68	14285083.26	39°20'17.388"N	80°52'51.542"W	996.56	96.174	0.98	-0.63	-2.35	
4088.50	18.990	95.310	3927.60	-422.36	-109.72	1020.64	1674097.53	14285080.72	39°20'17.362"N	80°52'51.162"W	1026.52	96.136	0.90	0.84	0.98	
4183.50	18.860	95.300	4017.46	-434.63	-112.57	1051.32	1674128.20	14285077.87	39°20'17.334"N	80°52'50.771"W	1057.33	96.112	0.14	-0.14	-0.01	
4277.50	19.460	96.740	4106.26	-447.27	-115.81	1082.00	1674158.86	14285074.63	39°20'17.301"N	80°52'50.381"W	1088.18	96.109	0.81	0.64	1.53	
4372.50	18.890	95.520	4195.99	-460.11	-119.15	1113.02	1674189.87	14285071.30	39°20'17.268"N	80°52'49.986"W	1119.38	96.110	0.73	-0.60	-1.28	



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Griff Unit 3H
Area	Ritchie County, WV	Wellbore	Griff Unit 3H AWB
Field	Ritchie		
Facility	Hichman Pad		

WELLPATH DATA (252 stations)																
MD (ft)	Inclination (°)	Azimuth	TVD (ft)	Vert.Sect (ft)	North (ft)	East (ft)	Grid East (JUS ft)	Grid North (JUS ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
4466.50	18.130	93.130	4285.12	-471.53	-121.41	1142.77	1674219.61	14285069.04	39°20'17.245"N	80°52'49.608"W	1149.20	96.064	1.14	-0.81	-2.54	
4560.50	19.060	94.840	4374.22	-482.84	-123.50	1172.67	1674249.50	14285066.95	39°20'17.224"N	80°52'49.227"W	1179.16	96.012	1.15	0.99	1.82	
4654.50	19.070	95.470	4463.06	-494.99	-126.26	1203.25	1674280.06	14285064.19	39°20'17.197"N	80°52'48.838"W	1209.86	95.990	0.22	0.01	0.67	
4749.50	18.400	93.490	4553.03	-506.74	-128.65	1233.67	1674310.47	14285061.80	39°20'17.173"N	80°52'48.451"W	1240.36	95.954	0.97	-0.71	-2.08	
4843.50	18.970	94.960	4642.07	-518.22	-130.88	1263.70	1674340.48	14285059.57	39°20'17.150"N	80°52'48.069"W	1270.45	95.913	0.79	0.61	1.56	
4938.50	19.670	96.820	4731.72	-531.03	-134.11	1294.95	1674371.73	14285056.34	39°20'17.118"N	80°52'47.671"W	1301.88	95.913	0.98	0.74	1.96	
5032.50	19.650	97.580	4820.24	-544.58	-138.08	1326.33	1674403.09	14285052.38	39°20'17.078"N	80°52'47.272"W	1333.50	95.943	0.27	-0.02	0.81	
5127.50	19.230	97.080	4909.83	-558.19	-142.11	1357.69	1674434.44	14285048.35	39°20'17.038"N	80°52'46.873"W	1365.11	95.975	0.48	-0.44	-0.53	
5221.50	18.360	96.560	4998.81	-570.98	-145.71	1387.76	1674464.50	14285044.75	39°20'17.002"N	80°52'46.490"W	1395.39	95.994	0.94	-0.93	-0.55	
5315.50	18.050	95.550	5088.11	-583.02	-148.81	1416.96	1674493.69	14285041.65	39°20'16.971"N	80°52'46.118"W	1424.75	95.995	0.47	-0.33	-1.07	
5409.50	18.890	96.770	5177.27	-595.29	-152.01	1446.57	1674523.28	14285038.45	39°20'16.939"N	80°52'45.742"W	1454.53	95.999	0.98	0.89	1.30	
5504.50	18.780	97.190	5267.18	-608.32	-155.74	1477.01	1674553.71	14285034.72	39°20'16.902"N	80°52'45.354"W	1485.20	96.019	0.18	-0.12	0.44	
5599.50	18.940	96.440	5357.08	-621.29	-159.38	1507.50	1674584.19	14285031.08	39°20'16.865"N	80°52'44.966"W	1515.90	96.035	0.31	0.17	-0.79	
5693.50	19.270	96.240	5445.90	-634.05	-162.78	1538.08	1674614.76	14285027.69	39°20'16.831"N	80°52'44.577"W	1546.67	96.041	0.36	0.35	-0.21	
5787.50	17.840	96.340	5535.00	-646.44	-166.06	1567.84	1674644.51	14285024.41	39°20'16.798"N	80°52'44.198"W	1576.61	96.046	1.48	-1.48	0.11	
5882.50	17.420	96.350	5625.53	-658.39	-169.24	1596.47	1674673.12	14285021.22	39°20'16.767"N	80°52'43.834"W	1605.41	96.051	0.48	-0.48	0.01	
5976.50	17.840	95.060	5715.12	-669.90	-172.07	1624.80	1674701.44	14285018.40	39°20'16.738"N	80°52'43.474"W	1633.88	96.045	0.61	0.45	-1.37	
6070.50	18.600	89.730	5804.41	-680.18	-173.27	1654.13	1674730.77	14285017.20	39°20'16.726"N	80°52'43.100"W	1663.18	95.980	1.95	0.81	-5.67	
6101.50	17.550	84.400	5893.88	-688.72	-172.79	1663.73	1674740.36	14285017.68	39°20'16.731"N	80°52'42.978"W	1672.68	95.929	6.32	-3.39	-17.19	
6133.50	14.950	75.330	5864.60	-684.02	-171.27	1672.53	1674749.15	14285019.20	39°20'16.746"N	80°52'42.866"W	1681.27	95.847	11.33	-8.13	-28.34	
6165.50	14.440	59.650	5895.57	-683.43	-168.21	1679.97	1674756.59	14285022.26	39°20'16.776"N	80°52'42.771"W	1688.37	95.718	12.49	-1.59	-49.00	
6195.50	15.950	45.890	5925.49	-680.75	-163.29	1686.36	1674762.98	14285027.18	39°20'16.824"N	80°52'42.690"W	1694.25	95.531	12.58	4.87	-44.39	
6228.50	17.960	43.410	5966.10	-676.47	-156.84	1692.91	1674769.53	14285033.82	39°20'16.890"N	80°52'42.608"W	1700.14	95.286	6.67	6.28	-7.75	
6259.50	20.000	43.430	5985.42	-671.68	-149.32	1699.84	1674776.45	14285041.14	39°20'16.962"N	80°52'42.518"W	1706.39	95.020	6.58	6.58	0.06	
6291.50	21.630	41.190	6015.33	-666.06	-140.91	1707.49	1674784.10	14285049.55	39°20'17.045"N	80°52'42.421"W	1713.29	94.718	5.67	5.09	-7.00	
6322.50	22.270	34.160	6044.08	-659.56	-131.75	1714.55	1674791.16	14285058.71	39°20'17.136"N	80°52'42.331"W	1719.60	94.394	8.72	2.06	-22.68	
6354.50	23.860	28.070	6073.53	-651.38	-121.02	1721.00	1674797.61	14285069.43	39°20'17.242"N	80°52'42.248"W	1725.25	94.022	8.95	4.97	-19.03	
6385.50	25.840	24.100	6101.66	-642.04	-109.31	1726.71	1674803.31	14285081.13	39°20'17.357"N	80°52'42.175"W	1730.17	93.622	8.35	6.39	-12.81	
6417.50	28.030	22.130	6130.19	-631.14	-95.98	1732.39	1674808.99	14285094.46	39°20'17.489"N	80°52'42.103"W	1735.05	93.171	7.39	6.84	-6.16	
6448.50	30.370	20.240	6157.25	-619.44	-81.88	1737.85	1674814.56	14285108.55	39°20'17.628"N	80°52'42.033"W	1739.77	92.698	8.11	7.55	-6.10	



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Griff Unit 3H
Area	Ritchie County, WV	Wellbore	Griff Unit 3H AWP
Field	Ritchie		
Facility	Hichman Pad		

WELLPATH DATA (252 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 °/100ft	Comments
6480.50	32.770	17.360	6184.51	-606.05	-66.02	1743.23	1674819.83	14285124.40	39°20'17.785"N	80°52'41.964"W	1744.48	92.169	8.86	7.50	-9.00	
6511.50	34.980	15.360	6210.25	-591.81	-49.44	1748.09	1674824.68	14285140.98	39°20'17.949"N	80°52'41.902"W	1748.79	91.620	7.98	7.13	-6.45	
6543.50	36.660	14.180	6236.19	-576.09	-31.33	1752.86	1674829.45	14285159.08	39°20'18.128"N	80°52'41.841"W	1753.14	91.024	5.68	5.25	-3.69	
6574.50	38.380	13.260	6260.78	-560.06	-12.99	1757.33	1674833.92	14285177.41	39°20'18.309"N	80°52'41.784"W	1757.38	90.424	5.84	5.55	-2.97	
6606.50	39.910	12.890	6285.60	-542.78	6.88	1761.90	1674838.49	14285197.08	39°20'18.503"N	80°52'41.726"W	1761.91	89.783	4.84	4.78	-1.16	
6637.50	40.370	12.400	6309.30	-525.62	26.18	1766.28	1674842.86	14285216.57	39°20'18.696"N	80°52'41.670"W	1766.47	89.151	1.80	1.48	-1.58	
6669.50	40.730	12.160	6333.61	-507.68	46.51	1770.77	1674847.29	14285236.89	39°20'18.897"N	80°52'41.613"W	1771.31	88.495	1.23	1.13	-0.75	
6700.50	40.990	10.980	6357.06	-490.07	66.38	1774.77	1674851.35	14285256.75	39°20'19.093"N	80°52'41.561"W	1776.01	87.858	2.63	0.84	-3.81	
6732.50	41.430	8.930	6381.12	-471.47	87.15	1778.41	1674855.00	14285277.52	39°20'19.288"N	80°52'41.514"W	1780.55	87.194	4.50	1.56	-6.41	
6764.50	41.370	6.290	6405.12	-453.40	108.14	1781.22	1674857.80	14285298.49	39°20'19.506"N	80°52'41.478"W	1784.50	86.526	5.47	-0.38	-8.25	
6795.50	41.950	3.360	6428.28	-433.44	128.67	1783.95	1674859.53	14285319.01	39°20'19.709"N	80°52'41.456"W	1787.58	85.872	6.55	1.87	-9.45	
6827.50	44.860	1.270	6451.52	-412.84	150.63	1783.82	1674860.40	14285340.97	39°20'19.926"N	80°52'41.444"W	1790.17	85.173	10.14	9.09	-6.53	
6829.00†	45.016	1.170	6452.59	-411.84	151.69	1783.85	1674860.43	14285342.03	39°20'19.936"N	80°52'41.444"W	1790.28	85.139	11.45	10.43	-6.69	Middlesex: 6829' MD
6858.50	48.110	359.300	6472.87	-391.51	173.11	1783.92	1674860.51	14285363.44	39°20'20.148"N	80°52'41.442"W	1792.30	84.457	11.45	10.49	-6.34	
6890.50	51.540	358.080	6493.51	-368.11	197.55	1783.36	1674859.94	14285387.87	39°20'20.389"N	80°52'41.449"W	1794.27	83.679	11.11	10.72	-3.81	
6921.50	55.540	357.110	6511.93	-344.12	222.45	1782.31	1674858.89	14285412.76	39°20'20.636"N	80°52'41.462"W	1796.14	82.886	13.15	12.90	-3.13	
6953.50	58.620	355.540	6529.32	-318.12	249.25	1780.58	1674857.16	14285439.55	39°20'20.900"N	80°52'41.484"W	1797.94	82.031	10.47	9.63	-4.91	
6984.50	60.880	354.490	6544.93	-292.04	275.93	1778.25	1674854.83	14285466.22	39°20'21.164"N	80°52'41.513"W	1799.53	81.180	7.86	7.29	-3.39	
7016.50	62.790	354.520	6560.04	-264.52	304.01	1775.55	1674852.13	14285494.29	39°20'21.442"N	80°52'41.547"W	1801.39	80.284	5.97	5.97	0.09	
7039.00†	64.837	354.754	6569.97	-244.83	324.11	1773.66	1674850.25	14285514.38	39°20'21.640"N	80°52'41.570"W	1803.03	79.644	9.14	9.10	1.04	Burkett: 7039' MD
7047.50	65.610	354.840	6573.53	-237.31	331.80	1772.96	1674849.55	14285522.06	39°20'21.716"N	80°52'41.579"W	1803.74	79.400	9.14	9.10	1.01	
7101.00	69.620	355.600	6593.90	-189.20	381.08	1768.85	1674845.43	14285571.33	39°20'22.204"N	80°52'41.631"W	1809.43	77.842	7.61	7.50	1.42	BHI AT Curve <8-1/2"> (7047.5)-(7101-19675)
7124.00†	71.903	355.190	6601.48	-168.09	402.73	1767.10	1674843.69	14285592.96	39°20'22.417"N	80°52'41.653"W	1812.41	77.161	10.07	9.93	-1.78	Jully: 7124' MD
7143.00	73.790	354.860	6607.08	-150.41	420.81	1765.53	1674842.12	14285611.04	39°20'22.596"N	80°52'41.672"W	1814.99	76.594	10.07	9.93	-1.74	
7190.00	74.800	354.140	6619.80	-106.27	465.85	1761.19	1674837.78	14285656.06	39°20'23.041"N	80°52'41.727"W	1821.76	75.184	2.61	2.15	-1.53	
7238.00†	77.620	351.910	6631.24	-60.54	512.11	1755.53	1674832.12	14285702.31	39°20'23.499"N	80°52'41.798"W	1828.70	73.737	7.41	5.88	-4.65	
7253.00†	78.660	351.588	6634.33	-46.08	526.64	1753.42	1674830.01	14285716.83	39°20'23.642"N	80°52'41.825"W	1830.80	73.282	7.24	6.93	-2.14	Marcellus POE: 7253' MD
7285.00	80.880	350.910	6640.01	-15.02	557.76	1748.63	1674825.22	14285747.94	39°20'24.950"N	80°52'41.865"W	1835.43	72.309	7.24	6.94	-2.12	
7333.00	84.140	350.230	6646.27	32.01	604.70	1740.83	1674817.43	14285794.86	39°20'24.414"N	80°52'41.984"W	1842.87	70.845	6.94	6.79	-1.42	
7380.00	86.400	350.150	6650.14	78.35	650.85	1732.85	1674809.45	14285840.99	39°20'24.870"N	80°52'42.084"W	1851.05	69.414	4.81	4.81	-0.17	



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	RITCHEY COUNTY, WY	Well	Griff Unit 3H
Field	RITCHEY	Wellbore	Griff Unit 3H AWP
Facility	HICHMAN PAD		

WELLPATH DATA (252 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
7428.00	90.550	350.360	6651.42	125.81	698.13	1724.73	1674801.33	14285888.25	39°20'25.338"N	80°52'42.187"W	1860.67	67.963	8.66	8.65	0.44	
7523.00	90.370	348.370	6650.66	219.98	791.49	1707.20	1674783.81	14285981.58	39°20'26.261"N	80°52'42.408"W	1881.75	65.127	2.10	-0.19	-2.09	
7617.00	90.830	345.560	6649.67	313.59	883.06	1686.00	1674762.62	14286073.10	39°20'27.166"N	80°52'42.677"W	1903.26	62.356	3.03	0.49	-2.99	
7713.00	90.740	344.290	6648.36	409.44	975.74	1661.04	1674737.67	14286165.75	39°20'28.082"N	80°52'42.993"W	1926.43	59.569	1.33	-0.09	-1.32	
7807.00	90.740	344.040	6647.14	503.36	1066.17	1635.39	1674712.03	14286256.14	39°20'28.976"N	80°52'43.318"W	1952.23	56.898	0.27	0.00	-0.27	
7902.00	88.610	343.040	6647.68	598.31	1157.27	1608.47	1674685.12	14286347.20	39°20'29.877"N	80°52'43.659"W	1981.53	54.266	2.48	-2.24	-1.05	
7997.00	90.060	340.740	6648.78	693.29	1247.55	1578.95	1674655.61	14286437.45	39°20'30.770"N	80°52'44.033"W	2012.32	51.687	2.86	1.53	-2.42	
8092.00	88.950	338.270	6649.60	788.20	1336.52	1545.69	1674622.37	14286526.39	39°20'31.650"N	80°52'44.455"W	2043.39	49.151	2.85	-1.17	-2.60	
8186.00	89.510	338.740	6650.87	882.03	1423.98	1511.25	1674587.94	14286613.80	39°20'32.515"N	80°52'44.892"W	2076.44	46.703	0.78	0.60	0.50	
8280.00	89.420	342.020	6651.75	975.99	1512.50	1479.69	1674556.39	14286702.30	39°20'33.390"N	80°52'45.292"W	2115.93	44.372	3.49	-0.10	3.49	
8375.00	90.000	344.120	6652.23	1070.96	1603.38	1452.03	1674528.74	14286793.14	39°20'34.288"N	80°52'45.642"W	2163.15	42.164	2.29	0.61	2.21	
8470.00	89.320	344.290	6652.79	1165.87	1694.79	1426.17	1674502.90	14286884.51	39°20'35.192"N	80°52'45.970"W	2215.01	40.081	0.74	-0.72	0.18	
8565.00	89.880	344.790	6653.45	1260.77	1786.35	1400.85	1674477.58	14286976.03	39°20'36.098"N	80°52'46.291"W	2270.11	38.103	0.79	0.59	0.53	
8660.00	90.000	344.020	6653.55	1355.67	1877.85	1375.31	1674452.05	14287067.50	39°20'37.002"N	80°52'46.614"W	2327.62	36.218	0.82	0.13	-0.81	
8755.00	89.480	341.490	6653.98	1450.65	1968.57	1347.15	1674423.90	14287158.18	39°20'37.899"N	80°52'46.971"W	2385.39	34.385	2.72	-0.55	-2.66	
8850.00	89.720	341.270	6654.65	1545.64	2058.60	1316.82	1674393.59	14287248.17	39°20'38.789"N	80°52'47.356"W	2443.73	32.606	0.34	0.25	-0.23	
8944.00	90.000	341.170	6654.88	1639.64	2147.59	1286.56	1674363.34	14287337.13	39°20'39.669"N	80°52'47.739"W	2503.47	30.925	0.32	0.30	-0.11	
9039.00	90.980	342.570	6654.06	1734.63	2237.87	1257.00	1674333.79	14287427.37	39°20'40.562"N	80°52'48.114"W	2566.73	29.323	1.80	1.03	1.47	
9134.00	90.980	342.510	6652.44	1829.61	2328.48	1228.50	1674305.30	14287517.94	39°20'41.458"N	80°52'48.475"W	2632.68	27.816	0.06	0.00	-0.06	
9229.00	90.150	342.910	6651.50	1924.59	2419.18	1200.26	1674277.08	14287608.61	39°20'42.355"N	80°52'48.833"W	2700.57	26.388	0.97	-0.87	0.42	
9324.00	90.090	342.290	6651.30	2019.58	2509.83	1171.85	1674248.68	14287699.23	39°20'43.251"N	80°52'49.193"W	2769.93	25.028	0.66	-0.06	-0.65	
9419.00	89.320	339.570	6651.79	2114.56	2599.61	1140.82	1674217.66	14287788.97	39°20'44.139"N	80°52'49.587"W	2838.91	23.694	2.98	-0.81	-2.86	
9513.00	89.820	337.410	6652.50	2208.39	2687.05	1106.36	1674183.21	14287876.38	39°20'45.004"N	80°52'50.024"W	2905.91	22.379	2.36	0.53	-2.30	
9607.00	90.120	335.290	6652.55	2301.96	2773.15	1068.65	1674145.52	14287962.44	39°20'45.855"N	80°52'50.502"W	2971.94	21.074	2.28	0.32	-2.26	
9702.00	90.460	334.810	6652.07	2396.29	2859.29	1028.58	1674105.46	14288048.54	39°20'46.707"N	80°52'51.011"W	3038.67	19.785	0.62	0.36	-0.51	
9796.00	89.450	334.910	6652.14	2489.59	2944.38	988.64	1674065.54	14288133.60	39°20'47.548"N	80°52'51.518"W	3105.93	18.561	1.08	-1.07	0.11	
9891.00	90.280	338.530	6652.36	2584.19	3031.63	951.10	1674028.02	14288220.82	39°20'48.411"N	80°52'51.994"W	3177.32	17.418	3.91	0.87	3.81	
9985.00	89.880	340.790	6652.23	2678.12	3119.76	918.43	1673995.36	14288308.91	39°20'49.283"N	80°52'52.409"W	3252.15	16.404	2.44	-0.43	2.40	
10080.00	89.750	341.820	6652.54	2773.11	3209.75	887.98	1673964.92	14288398.86	39°20'50.173"N	80°52'52.795"W	3330.32	15.464	1.09	-0.14	1.08	
10172.00	90.150	343.670	6652.62	2865.10	3297.61	860.70	1673937.65	14288486.68	39°20'51.041"N	80°52'53.141"W	3408.08	14.628	2.06	0.43	2.01	



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Ritchie County, WV	Well	Griff Unit 3H
Field	Ritchie	Wellbore	Griff Unit 3H AWB
Facility	Hichman Pad		

WELLPATH DATA (252 stations)

MD	Inclination	Azimuth	TVD	Vert.Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	(ft)	(ft)			(ft)	(°)	(°/100ft)	(°/100ft)	(°/100ft)	
10267.00	90.400	345.210	6652.16	2960.00	3389.12	835.21	1673912.17	14288578.16	39°20'51.946"N	80°52'53.463"W	3490.52	13.844	1.64	0.26	1.62	
10361.00	90.460	344.180	6651.46	3053.88	3479.78	810.40	1673887.37	14288668.79	39°20'52.842"N	80°52'53.778"W	3572.90	13.110	1.10	0.06	-1.10	
10455.00	90.090	342.530	6651.01	3147.84	3659.84	783.48	1673860.46	14288758.81	39°20'53.733"N	80°52'54.119"W	3654.80	12.879	1.80	-0.39	-1.76	
10549.00	90.180	340.340	6650.79	3241.83	3658.94	753.55	1673830.55	14288847.88	39°20'54.614"N	80°52'54.498"W	3735.73	11.637	2.33	0.10	-2.33	
10644.00	90.860	340.590	6649.92	3336.80	3748.47	721.79	1673798.79	14288937.37	39°20'55.499"N	80°52'54.901"W	3817.33	10.899	0.76	0.72	0.26	
10739.00	90.150	340.380	6649.09	3431.77	3838.01	690.05	1673767.07	14289026.87	39°20'56.385"N	80°52'55.304"W	3899.55	10.193	0.78	-0.75	-0.22	
10833.00	90.120	341.990	6648.87	3525.76	3926.98	659.74	1673736.77	14289115.81	39°20'57.264"N	80°52'55.688"W	3982.02	9.537	1.71	-0.03	1.71	
10928.00	89.940	344.810	6648.82	3620.71	4018.01	632.60	1673709.64	14289206.80	39°20'58.164"N	80°52'56.032"W	4067.51	8.947	2.97	-0.19	2.97	
11023.00	89.750	346.290	6649.07	3715.51	4110.01	608.90	1673685.95	14289298.76	39°20'59.074"N	80°52'56.332"W	4154.86	8.427	1.57	-0.20	1.56	
11118.00	89.880	347.940	6649.38	3810.10	4202.61	587.71	1673664.77	14289391.32	39°20'59.990"N	80°52'56.600"W	4243.50	7.961	1.74	0.14	1.74	
11214.00	89.660	346.440	6649.76	3905.68	4296.22	566.43	1673643.50	14289484.89	39°21'00.915"N	80°52'56.870"W	4333.40	7.511	1.58	-0.23	-1.56	
11308.00	90.830	345.000	6649.36	3999.46	4387.31	543.24	1673620.32	14289575.95	39°21'01.816"N	80°52'57.163"W	4420.81	7.059	1.97	1.24	-1.53	
11402.00	89.540	344.570	6649.06	4093.34	4478.01	518.57	1673595.66	14289666.61	39°21'02.712"N	80°52'57.476"W	4507.94	6.606	1.45	-1.37	-0.46	
11496.00	89.970	344.060	6649.46	4187.25	4568.51	493.16	1673570.26	14289757.08	39°21'03.607"N	80°52'57.798"W	4595.05	6.161	0.71	0.46	-0.54	
11590.00	89.970	342.750	6649.51	4281.21	4658.59	466.32	1673543.42	14289847.12	39°21'04.498"N	80°52'58.138"W	4681.87	5.716	1.39	0.00	-1.39	
11685.00	90.650	341.680	6649.00	4376.20	4749.05	437.30	1673514.42	14289937.54	39°21'05.392"N	80°52'58.506"W	4769.14	5.261	1.33	0.72	-1.13	
11780.00	90.430	339.700	6648.10	4471.18	4838.69	405.89	1673483.02	14290027.15	39°21'06.279"N	80°52'58.904"W	4855.69	4.795	2.10	-0.23	-2.08	
11875.00	89.970	337.540	6647.77	4566.02	4927.15	371.26	1673448.40	14290115.58	39°21'07.153"N	80°52'59.344"W	4941.12	4.309	2.32	-0.48	-2.27	
11969.00	89.970	337.370	6647.82	4659.74	5013.97	335.22	1673412.38	14290202.36	39°21'08.012"N	80°52'59.801"W	5025.16	3.825	0.18	0.00	-0.18	
12063.00	90.490	338.210	6647.44	4753.51	5100.99	299.69	1673376.66	14290289.35	39°21'08.872"N	80°53'00.252"W	5109.79	3.362	1.05	0.55	0.89	
12158.00	89.880	336.840	6647.33	4848.23	5188.77	263.37	1673340.56	14290377.09	39°21'09.741"N	80°53'00.713"W	5195.45	2.906	1.58	-0.64	-1.44	
12253.00	89.880	340.650	6647.33	4943.08	5277.29	228.94	1673306.14	14290465.58	39°21'10.616"N	80°53'01.150"W	5282.26	2.484	4.01	0.00	4.01	
12347.00	89.850	344.750	6647.56	5037.05	5367.02	200.99	1673278.20	14290555.27	39°21'11.503"N	80°53'01.504"W	5370.78	2.145	4.36	-0.03	4.36	
12442.00	90.370	342.630	6647.37	5131.99	5458.19	174.31	1673251.54	14290646.40	39°21'12.404"N	80°53'01.842"W	5460.98	1.829	2.30	0.55	-2.23	
12537.00	90.220	341.550	6646.88	5226.99	5548.59	145.10	1673222.34	14290736.76	39°21'13.298"N	80°53'02.213"W	5550.48	1.498	1.15	-0.16	-1.14	
12631.00	90.150	342.010	6646.58	5320.99	5637.87	115.71	1673192.96	14290826.01	39°21'14.181"N	80°53'02.585"W	5639.06	1.176	0.49	-0.07	0.49	
12725.00	90.180	341.810	6646.31	5414.99	5727.23	86.52	1673163.78	14290915.33	39°21'15.065"N	80°53'02.965"W	5727.88	0.865	0.22	0.03	-0.21	
12820.00	90.310	340.590	6645.90	5509.98	5817.16	55.91	1673133.18	14291005.22	39°21'15.954"N	80°53'03.344"W	5817.42	0.551	1.29	0.14	-1.28	
12914.00	90.710	342.170	6645.07	5603.97	5906.23	25.89	1673103.18	14291094.26	39°21'16.835"N	80°53'03.724"W	5906.29	0.251	1.73	0.43	1.68	
13009.00	90.060	342.840	6644.43	5698.96	5996.83	-2.86	1673074.63	14291184.83	39°21'17.730"N	80°53'04.086"W	5996.83	359.975	0.98	-0.68	0.71	



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'

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REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Well	Wellbore	Slot #09	Griff Unit 3H	Griff Unit 3H AWB
ANTERO RESOURCES CORPORATION	Ritchie County, WV	Ritchie	Hichman Pad						

WELLPATH DATA (252 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
13104.00	90.310	344.140	6644.12	5793.92	6087.91	-29.66	1673047.65	14291275.87	39°21'18.631"N	80°53'04.429"W	6087.98	359.721	1.39	0.26	1.37	
13198.00	90.950	346.340	6643.09	5887.74	6178.80	-53.61	1673023.71	14291386.72	39°21'19.550"N	80°53'04.732"W	6179.03	359.503	2.44	0.68	2.34	
13293.00	90.400	346.290	6641.97	5982.44	6271.10	-76.08	1673001.25	14291468.98	39°21'20.442"N	80°53'05.016"W	6271.56	359.305	0.58	-0.58	-0.05	
13388.00	91.020	346.150	6640.79	6077.16	6363.35	-98.71	1672978.63	14291551.20	39°21'21.354"N	80°53'05.303"W	6364.12	359.111	0.67	0.65	-0.15	
13481.00	90.980	347.400	6639.17	6169.80	6453.87	-119.98	1672957.36	14291641.68	39°21'22.249"N	80°53'05.572"W	6454.99	358.935	1.34	-0.04	1.34	
13575.00	90.310	346.000	6638.11	6263.45	6545.34	-141.60	1672935.75	14291733.12	39°21'23.153"N	80°53'05.846"W	6546.87	358.761	1.65	-0.71	-1.49	
13670.00	89.660	344.080	6638.13	6358.30	6637.12	-166.12	1672911.24	14291824.86	39°21'24.061"N	80°53'06.157"W	6639.20	358.566	2.13	-0.68	-2.02	
13765.00	89.140	342.640	6639.13	6453.26	6728.13	-193.33	1672894.05	14291915.83	39°21'24.961"N	80°53'06.502"W	6730.91	358.354	1.61	-0.55	-1.52	
13860.00	89.420	340.940	6640.32	6548.24	6818.36	-223.01	1672874.38	14292006.03	39°21'25.853"N	80°53'06.878"W	6822.01	358.127	1.81	0.29	-1.79	
13955.00	90.490	339.920	6640.40	6643.21	6907.87	-254.83	1672852.57	14292095.50	39°21'26.738"N	80°53'07.282"W	6912.57	357.887	1.56	1.13	-1.07	
14049.00	90.550	337.720	6639.54	6737.07	6995.51	-288.79	1672832.62	14292183.11	39°21'27.605"N	80°53'07.713"W	7001.47	357.636	2.34	0.06	-2.34	
14143.00	89.050	337.810	6639.87	6830.83	7082.52	-324.36	1672815.85	14292270.08	39°21'28.465"N	80°53'08.164"W	7089.94	357.378	1.60	-1.60	0.10	
14238.00	90.340	338.330	6640.38	6925.62	7170.54	-359.84	1672797.60	14292358.17	39°21'29.336"N	80°53'08.614"W	7179.67	357.127	1.46	1.36	0.55	
14333.00	89.320	337.820	6640.66	7020.42	7258.77	-395.31	1672682.15	14292446.26	39°21'30.208"N	80°53'09.065"W	7269.53	356.883	1.20	-1.07	-0.54	
14427.00	90.460	339.280	6640.84	7114.26	7346.26	-429.68	1672667.79	14292533.71	39°21'31.073"N	80°53'09.501"W	7358.81	356.653	1.97	1.21	1.55	
14521.00	90.430	340.980	6640.11	7208.21	7434.85	-461.63	1672651.85	14292622.07	39°21'31.947"N	80°53'09.906"W	7448.97	356.447	1.81	-0.03	1.81	
14615.00	90.400	341.070	6639.43	7302.20	7523.54	-492.19	1672585.30	14292710.93	39°21'32.826"N	80°53'10.294"W	7539.63	356.257	0.10	-0.03	0.10	
14709.00	90.650	338.780	6638.57	7396.13	7611.82	-524.45	1672553.05	14292799.17	39°21'33.699"N	80°53'10.703"W	7629.87	356.059	2.45	0.27	-2.44	
14804.00	89.750	339.140	6638.24	7491.01	7700.49	-558.56	1672518.96	14292887.80	39°21'34.576"N	80°53'11.136"W	7720.72	355.851	1.02	-0.95	0.38	
14899.00	90.400	340.690	6638.11	7585.96	7789.71	-591.18	1672486.35	14292976.98	39°21'35.458"N	80°53'11.550"W	7812.11	355.660	1.77	0.68	1.63	
14994.00	89.880	340.170	6637.88	7680.93	7879.22	-623.00	1672454.54	14293066.46	39°21'36.343"N	80°53'11.953"W	7903.81	355.479	0.77	-0.55	-0.55	
15088.00	89.880	341.460	6638.08	7774.91	7968.00	-653.89	1672423.66	14293155.20	39°21'37.221"N	80°53'12.345"W	7994.78	355.309	1.37	0.00	1.37	
15183.00	90.490	343.570	6637.77	7869.90	8058.60	-682.43	1672395.13	14293245.77	39°21'38.117"N	80°53'12.707"W	8087.44	355.160	2.31	0.64	2.22	
15276.00	89.820	344.040	6637.52	7962.84	8147.91	-708.37	1672369.21	14293335.04	39°21'39.000"N	80°53'13.036"W	8178.64	355.031	0.88	-0.72	0.51	
15370.00	90.460	346.550	6637.29	8056.66	8238.92	-732.23	1672345.36	14293425.92	39°21'39.898"N	80°53'13.338"W	8271.30	354.921	2.76	0.68	2.67	
15464.00	90.280	348.490	6636.68	8150.19	8330.59	-752.54	1672325.05	14293517.65	39°21'40.806"N	80°53'13.595"W	8364.52	354.838	2.07	-0.19	2.06	
15559.00	92.150	346.150	6634.67	8244.73	8423.25	-773.39	1672304.22	14293610.27	39°21'41.722"N	80°53'13.859"W	8458.68	354.754	3.15	1.97	-2.46	
15653.00	88.520	342.120	6634.12	8338.61	8513.63	-799.08	1672278.54	14293700.62	39°21'42.615"N	80°53'14.185"W	8551.05	354.638	5.77	-3.86	-4.29	
15748.00	89.750	343.890	6635.55	8433.58	8604.47	-826.84	1672250.79	14293791.42	39°21'43.514"N	80°53'14.537"W	8644.10	354.511	2.27	1.29	1.86	
15844.00	88.830	341.170	6636.74	8529.55	8696.02	-855.65	1672221.99	14293882.93	39°21'44.419"N	80°53'14.902"W	8738.02	354.380	2.99	-0.96	-2.83	



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #09
Operator	ANTERO RESOURCES CORPORATION	Well	Griff Unit 3H
Area	Ritchie County, WV	Wellbore	Griff Unit 3H AWB
Field	Ritchie		
Facility	Hichman Pad		

WELLPATH DATA (252 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
15939.00	89.170	339.700	6638.40	8624.51	8785.52	-887.46	1672190.19	14293972.40	39°21'45.304"N	80°53'15.306"W	8930.23	354.232	1.59	0.36	-1.55	
16034.00	90.620	340.840	6638.57	8719.47	8874.94	-919.53	1672158.13	14294061.78	39°21'46.188"N	80°53'15.713"W	8922.45	354.085	1.94	1.53	1.20	
16128.00	90.680	340.310	6637.51	8813.44	8963.58	-950.79	1672126.89	14294150.39	39°21'47.064"N	80°53'16.109"W	9013.87	353.945	0.87	0.06	-0.56	
16222.00	89.540	341.130	6637.33	8907.42	9052.31	-981.83	1672095.86	14294239.08	39°21'47.942"N	80°53'16.503"W	9105.40	353.810	1.49	-1.21	0.87	
16317.00	89.510	343.140	6638.11	9002.41	9142.72	-1010.97	1672066.73	14294329.45	39°21'48.836"N	80°53'16.873"W	9198.44	353.690	2.12	-0.03	2.12	
16412.00	90.680	341.790	6637.96	9097.40	9233.30	-1039.59	1672038.12	14294420.00	39°21'49.731"N	80°53'17.238"W	9291.64	353.576	1.88	1.23	-1.42	
16508.00	90.060	339.440	6637.94	9193.37	9323.85	-1071.45	1672006.28	14294510.51	39°21'50.627"N	80°53'17.640"W	9385.21	353.445	2.53	-0.65	-2.45	
16602.00	90.890	338.270	6636.56	9287.23	9411.52	-1105.36	1671972.38	14294598.14	39°21'51.493"N	80°53'18.070"W	9476.20	353.301	1.53	0.88	-1.24	
16697.00	91.200	342.070	6634.82	9382.16	9500.85	-1137.57	1671940.18	14294687.44	39°21'52.377"N	80°53'18.479"W	9568.71	353.172	4.01	0.33	4.00	
16792.00	90.370	342.650	6633.52	9477.15	9591.37	-1166.36	1671911.41	14294777.93	39°21'53.272"N	80°53'18.844"W	9662.03	353.067	1.07	-0.87	0.61	
16887.00	90.220	343.160	6633.03	9572.13	9682.18	-1194.28	1671883.49	14294868.69	39°21'54.170"N	80°53'19.198"W	9755.55	352.968	0.56	-0.16	0.54	
16982.00	90.770	342.300	6632.21	9667.11	9772.89	-1222.48	1671855.30	14294959.37	39°21'55.067"N	80°53'19.556"W	9849.05	352.870	1.07	0.58	-0.91	
17077.00	89.350	343.730	6632.11	9762.09	9863.74	-1250.23	1671827.56	14295050.19	39°21'55.965"N	80°53'19.908"W	9942.66	352.776	2.12	-1.49	1.51	
17173.00	90.220	343.760	6632.47	9858.03	9955.90	-1277.11	1671800.70	14295142.31	39°21'56.876"N	80°53'20.248"W	10037.48	352.690	0.91	0.91	0.03	
17267.00	90.650	342.630	6631.76	9952.00	10045.88	-1304.28	1671773.54	14295232.25	39°21'57.766"N	80°53'20.593"W	10130.20	352.603	1.29	0.46	-1.20	
17362.00	90.090	342.960	6631.15	10046.99	10136.63	-1332.38	1671745.45	14295322.96	39°21'58.663"N	80°53'20.949"W	10223.82	352.512	0.68	-0.59	0.35	
17457.00	89.050	343.030	6631.86	10141.96	10227.47	-1360.16	1671717.68	14295413.77	39°21'59.561"N	80°53'21.302"W	10317.52	352.425	1.10	-1.09	0.07	
17551.00	89.350	340.960	6633.17	10235.95	10316.85	-1389.21	1671688.84	14295503.12	39°22'00.445"N	80°53'21.670"W	10409.97	352.331	2.22	0.32	-2.20	
17647.00	89.570	339.830	6634.08	10331.91	10407.28	-1421.42	1671656.44	14295593.51	39°22'01.339"N	80°53'22.079"W	10503.90	352.223	1.20	0.23	-1.18	
17741.00	88.920	339.830	6635.32	10425.85	10495.51	-1453.83	1671624.05	14295681.70	39°22'02.211"N	80°53'22.490"W	10595.72	352.114	0.69	-0.69	0.00	
17836.00	89.260	339.420	6636.82	10520.76	10584.56	-1486.90	1671590.99	14295770.71	39°22'03.092"N	80°53'22.910"W	10688.48	352.004	0.56	0.36	-0.43	
17931.00	88.620	338.360	6638.58	10615.62	10673.16	-1521.11	1671556.79	14295859.28	39°22'03.968"N	80°53'23.344"W	10781.01	351.889	1.30	-0.67	-1.12	
18026.00	89.200	336.090	6640.39	10710.29	10760.73	-1557.88	1671520.04	14295946.82	39°22'04.834"N	80°53'23.811"W	10872.92	351.762	2.47	0.61	-2.39	
18120.00	89.170	336.780	6641.73	10803.86	10846.89	-1595.45	1671482.48	14296032.94	39°22'05.686"N	80°53'24.288"W	10963.59	351.632	0.73	-0.03	0.73	
18215.00	89.020	338.810	6643.23	10898.61	10934.82	-1631.35	1671446.60	14296120.84	39°22'06.556"N	80°53'24.744"W	11055.84	351.515	2.14	-0.16	2.14	
18309.00	88.890	340.190	6644.94	10992.51	11022.86	-1664.26	1671413.70	14296208.84	39°22'07.426"N	80°53'25.161"W	11147.78	351.414	1.47	-0.14	1.47	
18404.00	89.510	343.330	6646.27	11087.49	11113.06	-1693.99	1671383.98	14296299.01	39°22'08.318"N	80°53'25.538"W	11241.43	351.333	3.37	0.65	3.31	
18498.00	89.880	346.240	6646.77	11181.35	11203.76	-1718.66	1671359.33	14296389.66	39°22'09.215"N	80°53'25.851"W	11334.81	351.279	3.12	0.39	3.10	
18593.00	89.570	344.360	6647.23	11276.17	11295.64	-1742.76	1671335.23	14296481.51	39°22'10.123"N	80°53'26.157"W	11429.29	351.229	2.01	-0.33	-1.98	
18688.00	89.570	345.090	6647.94	11371.05	11387.28	-1767.79	1671310.21	14296573.12	39°22'11.029"N	80°53'26.474"W	11523.68	351.176	0.77	0.00	0.77	



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'
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REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Slot #09
ANTERO RESOURCES CORPORATION	Ritchie County, WV	Ritchie	Hichman Pad	Well	Griff Unit 3H
				Wellbore	Griff Unit 3H AWP

WELLPATH DATA (252 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
18783.00	89.540	346.140	6648.68	11465.84	11479.30	-1791.39	1671286.62	14296665.10	39°22'11.939"N	80°53'26.773"W	11618.23	351.130	1.11	-0.03	1.11	
18878.00	89.720	345.170	6649.29	11560.63	11571.33	-1814.93	1671263.10	14296757.09	39°22'12.849"N	80°53'27.071"W	11712.80	351.086	1.04	0.19	-1.02	
18972.00	89.230	343.020	6650.15	11654.54	11661.73	-1840.68	1671237.35	14296847.45	39°22'13.742"N	80°53'27.398"W	11806.10	351.030	2.35	-0.52	-2.29	
19066.00	89.320	343.040	6651.34	11748.51	11751.63	-1868.12	1671209.93	14296937.31	39°22'14.631"N	80°53'27.746"W	11899.18	350.967	0.10	0.10	0.02	
19161.00	89.290	341.840	6652.49	11843.50	11842.19	-1896.78	1671181.28	14297027.84	39°22'15.527"N	80°53'28.109"W	11993.13	350.900	1.26	-0.03	-1.26	
19256.00	89.320	341.680	6653.64	11938.49	11932.41	-1926.51	1671151.56	14297118.03	39°22'16.419"N	80°53'28.487"W	12086.93	350.829	0.17	0.03	-0.17	
19351.00	89.170	342.090	6654.90	12033.49	12022.69	-1956.05	1671122.03	14297208.27	39°22'17.312"N	80°53'28.861"W	12180.77	350.759	0.46	-0.16	0.43	
19445.00	89.380	341.320	6656.09	12127.48	12111.93	-1985.55	1671092.54	14297297.48	39°22'18.194"N	80°53'29.236"W	12273.60	350.690	0.85	0.22	-0.82	
19539.00	88.400	339.340	6657.91	12221.42	12200.43	-2017.18	1671060.92	14297385.94	39°22'19.069"N	80°53'29.637"W	12366.06	350.612	2.35	-1.04	-2.11	
19634.00	89.230	340.900	6659.87	12316.35	12289.74	-2049.48	1671028.64	14297475.22	39°22'19.952"N	80°53'30.047"W	12459.46	350.532	1.86	0.87	1.64	
19675.00	89.350	341.080	6660.38	12357.35	12328.50	-2062.83	1671015.29	14297513.96	39°22'20.335"N	80°53'30.216"W	12499.89	350.501	0.53	0.29	0.44	
19699.00	89.350	341.080	6660.65	12381.34	12351.21	-2070.61	1671007.51	14297536.65	39°22'20.560"N	80°53'30.315"W	12523.57	350.483	0.00	0.00	0.00	Projected MD at ID: 19699'

HOLE & CASING SECTIONS - Ref Wellbore: Griff Unit 3H AWP Ref Wellpath: Griff Unit 3H AWP Proj: 19699'

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	24.50	104.50	80.00	24.50	104.50	0.00	0.00	-0.46	-0.04
17.5in Open Hole	104.50	458.60	354.10	104.50	458.59	-0.46	-0.04	-1.44	1.05
13.375in Casing Surface	24.50	458.60	434.10	24.50	458.59	0.00	0.00	-1.44	1.05
12.25in Open Hole	458.60	2617.30	2158.70	458.59	2532.93	-1.44	1.05	-64.70	554.70
9.625in Casing Intermediate	24.50	2617.30	2592.80	24.50	2532.93	0.00	0.00	-64.70	554.70
8.75in Open Hole	2617.30	7121.50	4504.20	2532.93	6600.70	-64.70	554.70	400.36	1767.30
8.5in Open Hole	7121.50	19699.00	12577.50	6600.70	6660.65	400.36	1767.30	12351.21	-2070.61
5.5in Casing Production	24.50	19699.00	19674.50	24.50	6660.65	0.00	0.00	12351.21	-2070.61



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Ritchie County, WV	Well	Griff Unit 3H
Field	Ritchie	Wellbore	Griff Unit 3H AWB
Facility	Hichman Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Griff Unit 3H POE Rev-3	6630.00	508.27	1752.42	1674829.01	14285698.46	39°20'23.461"N	80°52'41.838"W	point
Griff Unit 3H BHL Rev-3	6653.00	12339.51	-2067.08	1671011.04	14297524.96	39°22'20.444"N	80°53'30.270"W	point
Griff Unit 3H LP Rev-3	6653.00	711.20	1716.86	1674793.46	14285901.31	39°20'25.467"N	80°52'42.287"W	point

WELLPATH COMPOSITION - Ref Wellbore: Griff Unit 3H AWB Ref Wellpath: Griff Unit 3H AWP Proj: 19699'

Start MID [ft]	End MID [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	456.50	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(50'-447')	Griff Unit 3H AWB
456.50	715.50	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4">(447')(526'-706')	Griff Unit 3H AWB
715.50	2527.50	ISWASA MWD, Rev. 4 (Standard)	03 WFT EM <12-1/4">(706')(819'-2518')	Griff Unit 3H AWB
2527.50	7047.50	ISWASA MWD, Rev. 4 (Standard)	04 WFT EM <8-3/4">(2518')(2658'-7038')	Griff Unit 3H AWB
7047.50	19675.00	BHI AutoTrak Curve (Short)	05 BH AT Curve <8-1/2">(7047.5')(7101'-19675')	Griff Unit 3H AWB
19675.00	19699.00	Blind Drilling (std)	Projection to bit	Griff Unit 3H AWB



Actual Wellpath Report

Griff Unit 3H AWP Proj: 19699'
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REFERENCE WELLPATH IDENTIFICATION		
Operator	ANTERO RESOURCES CORPORATION	Slot #09
Area	Ritchie County, WV	Griff Unit 3H
Field	Ritchie	Griff Unit 3H AWB
Facility	Hichman Pad	Wellbore

COMMENTS
<p>Wellpath general comments API: 47-085-10331-0000 BHI Job #: 109315032 Rig: Frontier 22 Duration: 08/02/2018-08/05/2018 Gyrodatta MS Gyro <17-1/2"> (50'-447') Gyrodatta MS Gyro <12-1/4"> (447')(526'-706') WFT EM <12-1/4"> (706')(819'-2518') WFT EM <8-3/4"> (2518')(2658'-7038') BHI AT Curve <8-1/2"> (7047.5')(7101'-19675') Middlesex: 6829' MD Burkett: 7039' MD Tully: 7124' MD Marcellus POE: 7253' MD Projected MD at TD: 19699'</p>