

ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
 Field: Ritchie
 Facility: Lettie Pad
 Slot: Slot #06
 Well: Master Unit 3H
 Wellbore: Master Unit 3H PWB

Plot reference wellpath is Master Unit 3H PWP Rev-A.0
 True vertical depths are referenced to H&P 317 (RKB)
 Measured depths are referenced to H&P 317 (RKB)
 H&P 317 (RKB) to Mean Sea Level: 995.5 feet
 Mean Sea Level to Ground level (At Slot, Slot #06): -970 feet
 Coordinates are in feet referenced to Slot

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Lettie Pad	1665674.089	14294790.024	80°54'38.290"W
Slot	Local N (ft)	Local E (ft)	Latitude
Slot #06	-3.00	40.06	80°54'37.780"W
Comment	Master Unit 3H		
H&P 317 (RKB) to Ground level (At Slot, Slot #06)			25.5ft
Mean Sea Level to Ground level (At Slot, Slot #06)			-970ft
H&P 317 (RKB) to Mean Sea Level			995.5ft

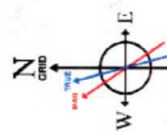
Well Data			
Slot	Well	Wellbore	Wellpath
Slot #06	Master Unit 3H	Master Unit 3H AWB	Master Unit 3H AWP Proj. 17541'
Slot #06	Master Unit 3H	Master Unit 3H PWB	Master Unit 3H PWP Rev-A.0

Gyrodata MS Gyro <12-1/4">-(100'-2490') : 0.19° Inc, 110.50ft MD, 110.50ft TVD, -0.14ft VS

Well Profile Data						
Design Comment	MD (ft)	Inc (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tile On	5998.50	24.930	3.170	5997.81	890.48	-472.36
Proj. To Bottom	6070.50	29.100	0.540	5961.95	-149.21	6.02
End of 3D Arc	6380.90	47.284	348.074	6189.56	869.89	-268.33
POE	6672.98	74.551	340.230	6340.00	286.44	1.06
Landing PL	6544.63	90.000	340.230	6363.00	446.02	9.00
BHL	17536.09	90.000	340.230	6363.00	10507.29	-2879.96

WFT EM <8-3/4">(2490')(2649'-5988') : 9.00° Inc, 2659.50ft MD, 2629.98ft TVD, -195.35ft VS

API: 47-085-10361-0000
 BHI Job #: 109555227
 Rig: H&P 317
 Duration: 12/14/2018-12/18/2018

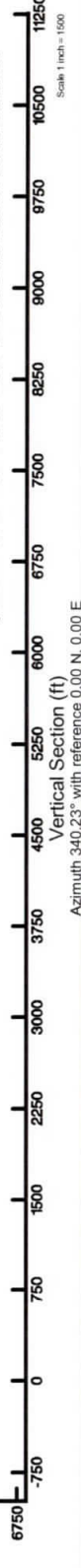
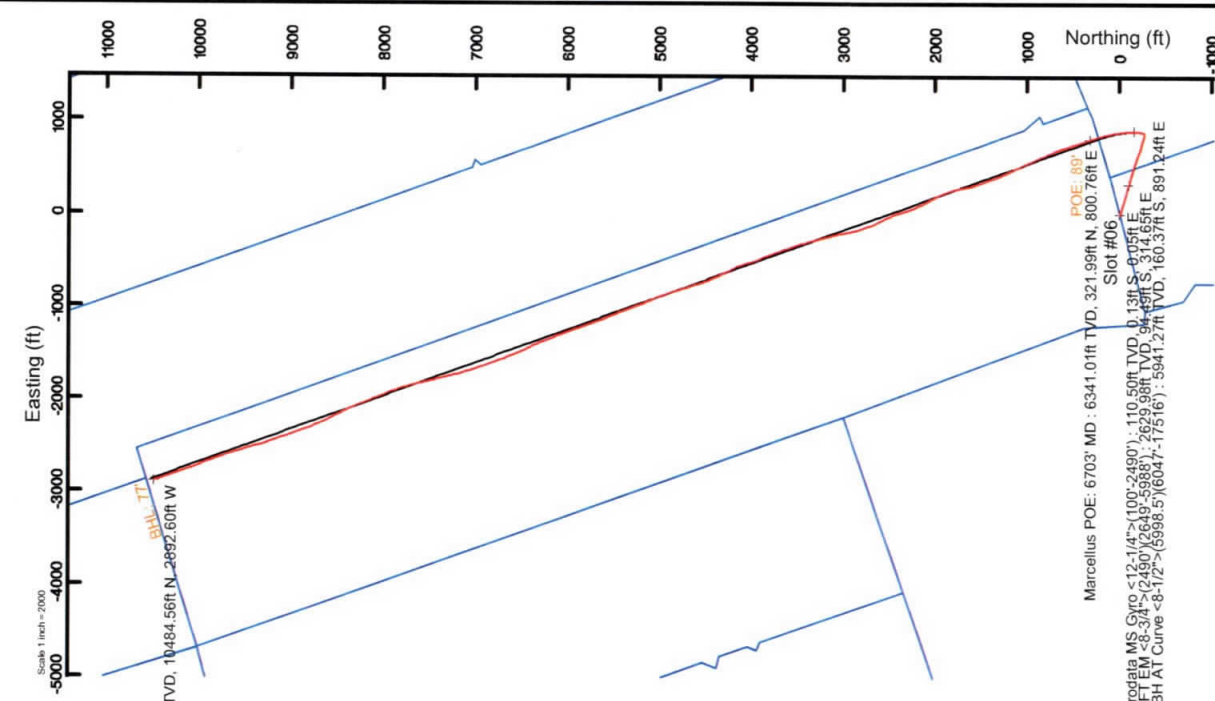


User specified (HOGM) Dip: 66.48° Field: 51834 RT
 Magnetic North is 7.66 degrees West of True North (at 12/10/2018)
 Grid North is 0.06 degrees East of True North
 To correct azimuth from True to Grid subtract 0.06 degrees
 To correct azimuth from Magnetic to Grid subtract 7.72 degrees

BH AT Curve <8-1/2">(5998.5')(6047'-17516') : 27.77° Inc, 6047.00ft MD, 5941.27ft TVD, -452.38ft VS

Marcellus POE: 6703' MD : 75.80° Inc, 6703.00ft MD, 6341.01ft TVD, 32.16ft VS

Projected MD at TD: 17541' : 89.88° Inc, 17541.00ft MD, 6343.99ft TVD, 10844.99ft VS





Actual Wellpath Report

Master Unit 3H AWP Proj: 17541'

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REFERENCE WELLPATH IDENTIFICATION		
Operator	ANTERO RESOURCES CORPORATION	Slot #06
Area	Ritchie County, WV	Master Unit 3H
Field	Ritchie	Master Unit 3H AWB
Facility	Lettie Pad	

REPORT SETUP INFORMATION		
Projection System	NAD27 / UTM Zone 17 North, US feet	WellArchitect@ 5.1
North Reference	Grid	Delaset
Scale	0.999601	Report Generated 12/31/2018 at 12:36:12 PM
Convergence at slot	0.06° East	Database/Source file WA_MPL_EasternUS_Defn/Master_Unit_3H_AWP_Proj_17541_.xml

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Northing[US ft]	Latitude	Longitude	
Slot Location	-3.00	40.06	14294787.03	39°21'53.430"N	80°54'37.780"W	
Facility Reference Pt			1665674.09	39°21'53.460"N	80°54'38.290"W	
Field Reference Pt			0.00	0°00'00.000"	85°29'19.301"W	

WELLPATH DATUM		
Calculation method	Minimum curvature	H&P 317 (RKB) to Facility Vertical Datum
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level
Vertical Reference Pt	H&P 317 (RKB)	H&P 317 (RKB) to Ground Level at Slot (Slot #06)
MD Reference Pt	H&P 317 (RKB)	Section Origin
Field Vertical Reference	Mean Sea Level	Section Azimuth
		25.50ft
		995.50ft
		25.50ft
		N 0.00, E 0.00 ft
		340.23°

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Operator	ANTERO RESOURCES CORPORATION	Slot #06
Area	Ritchie County, WV	Master Unit 3H
Field	Ritchie	Master Unit 3H AWB
Facility	Lettie Pad	

WELLPATH DATA (209 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
0.00†	0.000	159.370	0.00	0.00	0.00	0.00	1665714.13	14294787.03	39°21'53.430"N	80°54'37.780"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	159.370	25.50	0.00	0.00	0.00	1665714.13	14294787.03	39°21'53.430"N	80°54'37.780"W	0.00	0.000	0.00	0.00	0.00	
110.50	0.190	159.370	110.50	-0.14	-0.13	0.05	1665714.18	14294786.90	39°21'53.429"N	80°54'37.779"W	0.14	159.370	0.22	0.22	187.49	Gyrodata MS Gyro <12-1/4">(100°-2490°)
210.50	0.500	198.720	210.50	-0.65	-0.70	-0.03	1665714.10	14294786.33	39°21'53.423"N	80°54'37.780"W	0.70	182.613	0.37	0.31	39.35	
310.50	0.510	198.110	310.49	-1.34	-1.54	-0.31	1665713.82	14294785.49	39°21'53.415"N	80°54'37.784"W	1.57	191.418	0.01	0.01	-0.61	
410.50	0.530	199.470	410.49	-2.05	-2.40	-0.60	1665713.53	14294784.63	39°21'53.406"N	80°54'37.788"W	2.47	194.125	0.02	0.02	1.36	
510.50	0.550	201.280	510.49	-2.77	-3.28	-0.93	1665713.20	14294783.75	39°21'53.398"N	80°54'37.792"W	3.41	195.854	0.03	0.02	1.81	
610.50	0.540	156.750	610.48	-3.60	-4.16	-0.92	1665713.21	14294782.87	39°21'53.389"N	80°54'37.792"W	4.26	192.465	0.41	-0.01	-44.53	
710.50	2.370	95.390	710.45	-4.95	-4.79	1.33	1665715.46	14294782.25	39°21'53.383"N	80°54'37.763"W	4.97	164.522	2.16	1.83	-61.36	
810.50	4.120	89.730	810.28	-7.03	-4.96	6.98	1665721.11	14294782.07	39°21'53.381"N	80°54'37.691"W	8.56	125.431	1.78	1.75	-5.66	
910.50	5.800	92.900	909.91	-10.18	-5.20	15.62	1665729.74	14294781.83	39°21'53.378"N	80°54'37.581"W	16.46	108.426	1.70	1.68	3.17	
1010.50	6.850	100.810	1009.30	-15.16	-6.58	26.52	1665740.64	14294780.46	39°21'53.365"N	80°54'37.442"W	27.32	103.927	1.36	1.09	7.91	
1110.50	7.840	106.880	1108.48	-22.26	-9.68	38.91	1665753.02	14294777.36	39°21'53.334"N	80°54'37.285"W	40.09	103.966	1.26	0.99	6.07	
1210.50	9.520	107.200	1207.33	-31.31	-14.10	53.33	1665767.44	14294772.93	39°21'53.290"N	80°54'37.101"W	55.17	104.811	1.68	1.68	0.32	
1310.50	10.230	106.210	1305.85	-41.50	-19.03	69.76	1665783.86	14294768.01	39°21'53.241"N	80°54'36.892"W	72.31	105.256	0.73	0.71	-0.99	
1410.50	11.180	106.460	1404.11	-52.45	-24.25	87.58	1665801.68	14294762.79	39°21'53.189"N	80°54'36.665"W	90.88	105.477	0.95	0.95	0.25	
1510.50	12.280	106.250	1502.02	-64.43	-29.98	107.09	1665821.18	14294757.07	39°21'53.133"N	80°54'36.417"W	111.21	105.637	1.10	1.10	-0.21	
1610.50	12.570	106.290	1599.67	-77.09	-36.00	127.75	1665841.83	14294751.04	39°21'53.073"N	80°54'36.154"W	132.72	105.740	0.29	0.28	0.04	
1710.50	12.880	105.260	1697.22	-89.89	-41.99	148.94	1665863.02	14294745.06	39°21'53.014"N	80°54'35.884"W	154.75	105.744	0.38	0.31	-1.03	
1810.50	11.510	108.570	1794.96	-102.48	-48.10	169.15	1665883.22	14294738.95	39°21'52.953"N	80°54'35.627"W	175.86	105.873	1.54	-1.37	3.31	
1910.50	11.230	110.140	1893.00	-114.92	-54.63	187.75	1665901.81	14294732.42	39°21'52.888"N	80°54'35.390"W	195.54	106.223	0.42	-0.28	1.57	
2010.50	12.000	110.180	1990.95	-127.84	-61.57	206.65	1665920.70	14294725.49	39°21'52.819"N	80°54'35.150"W	215.63	106.591	0.77	0.77	0.04	
2110.50	10.880	105.810	2088.96	-140.01	-67.73	225.49	1665939.53	14294719.33	39°21'52.758"N	80°54'34.910"W	235.44	106.718	1.42	-1.12	-4.37	
2210.50	10.150	102.990	2187.28	-150.27	-72.28	243.16	1665957.19	14294714.78	39°21'52.713"N	80°54'34.685"W	253.67	106.555	0.89	-0.73	-2.82	
2310.50	9.660	105.160	2285.79	-159.84	-76.45	259.84	1665973.87	14294710.61	39°21'52.672"N	80°54'34.473"W	270.86	106.395	0.62	-0.49	2.17	
2410.50	9.960	105.940	2384.33	-169.69	-81.02	276.26	1665990.28	14294706.04	39°21'52.626"N	80°54'34.264"W	287.89	106.346	0.33	0.30	0.78	
2500.50	9.470	110.690	2473.04	-179.04	-85.78	290.67	1666004.68	14294701.29	39°21'52.579"N	80°54'34.080"W	303.06	106.441	1.04	-0.54	5.28	
2659.50	9.000	109.220	2629.98	-195.35	-94.49	314.65	1666028.65	14294692.58	39°21'52.493"N	80°54'33.775"W	328.53	106.716	0.33	-0.30	-0.92	WFT EM <8-3/4">(2490°-5988°)
2754.50	10.270	107.630	2723.64	-205.17	-99.50	329.74	1666043.74	14294687.57	39°21'52.443"N	80°54'33.583"W	344.42	106.792	1.37	1.34	-1.67	
2848.50	10.240	105.740	2816.14	-215.11	-104.31	345.76	1666059.76	14294682.76	39°21'52.396"N	80°54'33.379"W	361.15	106.787	0.36	-0.03	-2.01	

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Master Unit 3H AWP Proj: 17541'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Master Unit 3H
Field	Ritchie	Wellbore	Master Unit 3H AWB
Facility	Lettie Pad		

WELLPATH DATA (209 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (1/100ft)	Build Rate (1/100ft)	Turn Rate (1/100ft)	Comments
2943.50	11.570	102.680	2909.42	-225.13	-108.69	363.19	1666077.17	14294678.38	39°21'52.352"N	80°54'33.157"W	379.10	106.661	1.53	1.40	-3.22	
3043.50	11.630	105.520	3007.38	-236.33	-113.59	382.68	1666096.66	14294673.49	39°21'52.304"N	80°54'32.909"W	399.18	106.532	0.57	0.06	2.84	
3138.50	11.180	103.320	3100.50	-246.89	-118.27	400.87	1666114.84	14294668.80	39°21'52.257"N	80°54'32.678"W	417.95	106.438	0.66	-0.47	-2.32	
3233.50	11.630	107.840	3193.63	-257.77	-123.33	418.95	1666132.91	14294663.75	39°21'52.207"N	80°54'32.447"W	436.72	106.403	1.05	0.47	4.76	
3328.50	12.300	107.040	3286.56	-269.67	-129.23	437.74	1666151.70	14294657.85	39°21'52.148"N	80°54'32.208"W	456.42	106.447	0.73	0.71	-0.84	
3423.50	11.860	105.890	3379.46	-281.43	-134.86	456.80	1666170.75	14294652.22	39°21'52.093"N	80°54'31.966"W	476.30	106.448	0.53	-0.46	-1.21	
3518.50	12.150	110.090	3472.38	-293.53	-140.97	475.58	1666189.52	14294646.11	39°21'52.032"N	80°54'31.727"W	496.04	106.511	0.97	0.31	4.42	
3613.50	11.570	109.030	3565.36	-305.90	-147.51	493.98	1666207.91	14294639.58	39°21'51.967"N	80°54'31.493"W	515.53	106.627	0.65	-0.61	-1.12	
3707.50	11.100	107.900	3657.52	-317.34	-153.37	511.50	1666225.43	14294633.72	39°21'51.909"N	80°54'31.270"W	534.00	106.691	0.55	-0.50	-1.20	
3802.50	10.760	105.810	3750.80	-328.09	-158.59	528.73	1666242.65	14294628.50	39°21'51.857"N	80°54'31.050"W	552.01	106.697	0.55	-0.36	-2.20	
3897.50	10.720	110.030	3844.14	-338.90	-164.04	545.57	1666259.48	14294623.06	39°21'51.803"N	80°54'30.836"W	569.70	106.734	0.83	-0.04	4.44	
3992.50	10.760	108.720	3937.47	-350.08	-169.91	562.27	1666276.17	14294617.19	39°21'51.745"N	80°54'30.623"W	587.38	106.814	0.26	0.04	-1.38	
4118.50	11.040	108.030	4061.20	-364.79	-177.42	584.88	1666298.78	14294609.68	39°21'51.671"N	80°54'30.336"W	611.20	106.875	0.25	0.22	-0.55	
4181.50	10.750	108.950	4123.06	-372.17	-181.19	596.17	1666310.07	14294605.91	39°21'51.633"N	80°54'30.192"W	623.10	106.905	0.54	-0.46	1.46	
4276.50	10.100	106.890	4216.50	-382.68	-186.49	612.52	1666326.41	14294600.61	39°21'51.581"N	80°54'29.984"W	640.28	106.982	0.79	-0.68	-2.17	
4371.50	10.870	110.530	4309.91	-393.45	-192.05	628.88	1666342.76	14294595.06	39°21'51.526"N	80°54'29.775"W	657.55	106.982	1.07	0.81	3.83	
4466.50	11.540	111.580	4403.10	-405.52	-198.69	646.11	1666359.98	14294588.42	39°21'51.460"N	80°54'29.566"W	675.97	107.093	0.74	0.71	1.11	
4561.50	11.310	111.610	4496.22	-417.96	-205.61	663.61	1666377.47	14294581.50	39°21'51.391"N	80°54'29.334"W	694.73	107.215	0.24	-0.24	0.03	
4655.50	11.310	108.830	4588.39	-429.80	-211.98	680.90	1666394.76	14294575.13	39°21'51.328"N	80°54'29.113"W	713.13	107.293	0.58	0.00	-2.96	
4750.50	11.060	107.540	4681.59	-441.13	-217.74	698.40	1666412.26	14294569.38	39°21'51.271"N	80°54'28.891"W	731.56	107.316	0.37	-0.26	-1.36	
4845.50	10.970	107.790	4774.84	-452.17	-223.24	715.70	1666429.54	14294563.87	39°21'51.216"N	80°54'28.671"W	749.71	107.324	0.11	-0.09	0.26	
4940.50	11.150	106.940	4868.07	-463.17	-228.68	733.09	1666446.93	14294558.44	39°21'51.163"N	80°54'28.449"W	767.93	107.325	0.26	0.19	-0.89	
5035.50	11.130	106.210	4961.28	-474.05	-233.92	750.69	1666464.52	14294553.20	39°21'51.111"N	80°54'28.225"W	786.29	107.307	0.15	-0.02	-0.77	
5130.50	11.130	105.500	5054.50	-484.73	-238.93	768.33	1666482.15	14294548.20	39°21'51.061"N	80°54'28.001"W	804.62	107.274	0.14	0.00	-0.75	
5225.50	11.490	107.680	5147.65	-495.78	-244.25	786.18	1666499.99	14294542.87	39°21'51.008"N	80°54'27.773"W	823.25	107.259	0.59	0.38	2.29	
5320.50	11.320	107.420	5240.77	-507.17	-249.92	804.09	1666517.90	14294537.21	39°21'50.952"N	80°54'27.546"W	842.03	107.266	0.19	-0.18	-0.27	
5415.50	11.400	105.850	5333.91	-518.27	-255.27	822.02	1666535.82	14294531.86	39°21'50.899"N	80°54'27.317"W	860.74	107.252	0.34	0.08	-1.65	
5509.50	10.780	108.240	5426.16	-529.09	-260.56	839.30	1666553.10	14294526.57	39°21'50.846"N	80°54'27.097"W	878.82	107.247	0.82	-0.66	2.54	
5604.50	11.530	105.530	5519.36	-540.05	-265.88	856.89	1666570.68	14294521.25	39°21'50.794"N	80°54'26.873"W	897.19	107.239	0.96	0.79	-2.85	
5636.50	10.630	94.910	5550.77	-543.13	-266.99	862.91	1666576.70	14294520.14	39°21'50.783"N	80°54'26.797"W	903.27	107.193	6.96	-2.81	-33.19	

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Operator	ANTERO RESOURCES CORPORATION	Well	Master Unit 3H
Area	Ritchie County, WV	Wellbore	Master Unit 3H AWB
Field	Ritchie		
Facility	Lettie Pad		

WELLPATH DATA (209 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
5668.50	9.630	76.990	5582.28	-544.68	-266.64	868.46	1666582.24	14294520.49	39°21'50.786"N	80°54'26.726"W	908.47	107.068	10.28	-3.13	-56.00	
5699.50	9.060	58.110	5612.87	-544.47	-264.77	873.06	1666586.84	14294522.37	39°21'50.804"N	80°54'26.668"W	912.33	106.871	10.01	-1.84	-60.90	
5731.50	9.160	36.990	5644.48	-542.55	-261.40	876.73	1666590.51	14294525.73	39°21'50.838"N	80°54'26.621"W	914.87	106.602	10.40	0.31	-66.00	
5763.50	10.580	23.810	5676.01	-539.02	-256.68	879.45	1666593.23	14294530.45	39°21'50.884"N	80°54'26.586"W	916.14	106.271	8.31	4.44	-41.19	
5794.50	13.210	16.590	5706.34	-534.11	-250.68	881.61	1666595.39	14294536.45	39°21'50.944"N	80°54'26.558"W	916.56	105.873	9.73	8.48	-23.29	
5826.50	16.110	12.360	5737.30	-527.40	-242.84	883.61	1666597.38	14294544.29	39°21'51.021"N	80°54'26.533"W	916.37	105.367	9.65	9.06	-13.22	
5857.50	18.820	8.970	5766.87	-519.37	-233.70	885.31	1666599.08	14294553.43	39°21'51.111"N	80°54'26.511"W	915.63	104.787	9.33	8.74	-10.94	
5889.50	19.950	7.120	5797.05	-509.98	-223.18	886.79	1666600.57	14294563.94	39°21'51.215"N	80°54'26.492"W	914.44	104.126	4.02	3.53	-5.78	
5921.50	21.130	5.730	5827.02	-499.90	-212.02	888.04	1666601.82	14294575.09	39°21'51.326"N	80°54'26.476"W	913.00	103.428	3.99	3.69	-4.34	
5952.50	22.770	5.060	5855.77	-489.41	-200.49	889.13	1666602.90	14294586.62	39°21'51.440"N	80°54'26.462"W	911.45	102.707	5.35	5.29	-2.16	
5984.50	24.430	3.850	5885.09	-477.73	-187.72	890.12	1666603.89	14294599.39	39°21'51.566"N	80°54'26.449"W	909.70	101.908	5.40	5.19	-3.78	
5998.50	24.930	3.170	5897.81	-472.36	-181.88	890.48	1666604.25	14294605.22	39°21'51.623"N	80°54'26.445"W	908.86	101.544	4.11	3.57	-4.86	
6047.00	27.770	0.980	5941.27	-452.38	-160.37	891.24	1666605.01	14294626.72	39°21'51.836"N	80°54'26.435"W	905.55	100.201	6.19	5.86	-4.52	BH AT Curve <-8-1/2"> (5998.5') (6047'-17516')
6104.00	30.870	359.000	5990.96	-426.11	-132.47	891.21	1666604.98	14294654.61	39°21'52.112"N	80°54'26.435"W	901.00	98.454	5.70	5.44	-3.47	
6151.00	33.790	357.270	6030.68	-402.19	-107.35	890.37	1666604.15	14294679.72	39°21'52.360"N	80°54'26.445"W	896.82	96.875	6.52	6.21	-3.68	
6199.00	37.610	355.440	6069.65	-375.28	-79.41	888.57	1666602.35	14294707.65	39°21'52.636"N	80°54'26.468"W	892.12	95.107	8.26	7.96	-3.81	
6246.00	40.730	354.630	6106.08	-346.58	-49.84	886.00	1666599.77	14294737.21	39°21'52.929"N	80°54'26.500"W	887.40	93.219	6.73	6.64	-1.72	
6294.00	43.250	353.310	6141.76	-315.39	-17.91	882.62	1666596.39	14294769.13	39°21'53.244"N	80°54'26.543"W	882.80	91.162	5.56	5.25	-2.75	
6341.00	46.710	350.760	6175.00	-282.88	14.98	877.99	1666591.77	14294802.00	39°21'53.569"N	80°54'26.601"W	878.12	89.022	8.30	7.36	-5.43	
6342.00†	46.796	350.718	6175.69	-282.16	15.70	877.87	1666591.65	14294802.72	39°21'53.576"N	80°54'26.603"W	878.02	88.975	9.08	8.55	-4.21	Middlesex: 6342' MD
6389.00	50.830	348.860	6206.63	-247.29	50.50	871.59	1666585.37	14294837.51	39°21'53.920"N	80°54'26.682"W	873.05	86.684	9.08	8.58	-3.95	
6436.00	54.660	348.290	6235.08	-210.28	87.16	864.18	1666577.96	14294874.15	39°21'54.283"N	80°54'26.776"W	868.56	84.241	8.21	8.15	-1.21	
6483.00	59.430	347.510	6260.64	-171.21	125.71	855.90	1666569.69	14294912.68	39°21'54.664"N	80°54'26.881"W	865.09	81.645	10.24	10.15	-1.66	
6528.00†	64.169	346.388	6281.90	-131.83	164.33	846.94	1666560.73	14294951.29	39°21'55.046"N	80°54'26.994"W	862.74	79.020	10.76	10.53	-2.49	Burkett: 6528' MD
6530.00	64.380	346.340	6282.77	-130.04	166.08	846.52	1666560.31	14294953.04	39°21'55.063"N	80°54'27.000"W	862.66	78.900	10.76	10.54	-2.38	
6578.00	67.520	345.390	6302.33	-86.43	208.58	835.81	1666549.61	14294995.52	39°21'55.483"N	80°54'27.136"W	861.44	75.988	6.79	6.54	-1.98	
6609.00†	69.752	343.842	6313.62	-57.64	236.41	828.15	1666541.95	14295023.34	39°21'55.758"N	80°54'27.233"W	861.23	74.068	8.57	7.20	-4.99	Jully: 6609' MD
6625.00	70.910	343.060	6319.00	-42.60	250.85	823.86	1666537.66	14295037.78	39°21'55.901"N	80°54'27.287"W	861.20	73.066	8.57	7.23	-4.88	
6673.00	74.420	341.510	6333.30	-3.18	294.49	809.91	1666523.72	14295081.40	39°21'56.333"N	80°54'27.464"W	861.79	70.019	7.94	7.31	-3.23	
6703.00†	75.799	341.677	6341.01	32.16	321.99	800.76	1666514.57	14295108.89	39°21'56.604"N	80°54'27.580"W	863.07	68.094	4.63	4.60	0.56	Marcellus POE: 6703' MD

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Actual Wellpath Report

Master Unit 3H AWP Proj: 17541'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Master Unit 3H
Field	Ritchie	Wellbore	Master Unit 3H AWB
Facility	Lettie Pad		

WELLPATH DATA (209 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (1/100ft)	Build Rate (1/100ft)	Turn Rate (1/100ft)	Comments
6720.00	76.580	341.770	6345.07	48.67	337.67	795.58	1666509.39	14295124.56	39°21'56.759"N	80°54'27.646"W	864.27	67.002	4.63	4.60	0.55	
6768.00	79.110	341.460	6355.18	95.57	382.20	780.78	1666494.60	14295169.07	39°21'57.200"N	80°54'27.834"W	869.31	63.918	5.31	5.27	-0.65	
6815.00	83.990	342.920	6362.08	142.02	426.44	766.57	1666480.40	14295213.30	39°21'57.637"N	80°54'28.014"W	877.20	60.913	10.83	10.38	3.11	
6863.00	87.260	344.420	6365.74	189.78	472.37	753.12	1666466.95	14295259.21	39°21'58.091"N	80°54'28.185"W	889.00	57.904	7.49	6.81	3.13	
6900.00	90.310	344.780	6366.53	226.66	508.02	743.30	1666457.13	14295294.85	39°21'58.444"N	80°54'28.310"W	900.32	55.648	8.30	8.24	0.97	
6958.00	91.290	341.870	6365.72	284.57	563.57	726.66	1666440.50	14295350.38	39°21'58.993"N	80°54'28.521"W	919.59	52.204	5.29	1.69	-5.02	
7053.00	93.910	338.930	6361.41	379.45	652.96	694.83	1666408.68	14295439.73	39°21'59.877"N	80°54'28.925"W	953.49	46.779	4.14	2.76	-3.03	
7147.00	91.850	335.380	6356.68	473.18	739.46	658.39	1666372.25	14295526.19	39°22'00.732"N	80°54'29.388"W	990.09	41.681	4.36	-2.19	-3.78	
7242.00	89.630	336.410	6355.46	567.89	826.16	619.59	1666333.48	14295612.86	39°22'01.589"N	80°54'29.881"W	1032.68	36.869	2.58	-2.34	1.08	
7337.00	90.650	337.020	6355.22	662.71	913.42	582.04	1666295.94	14295700.08	39°22'02.452"N	80°54'30.358"W	1083.10	32.506	1.25	1.07	0.64	
7432.00	91.080	336.230	6353.79	757.51	1000.61	544.36	1666258.27	14295787.24	39°22'03.314"N	80°54'30.836"W	1139.10	28.547	0.95	0.45	-0.83	
7527.00	90.090	335.580	6352.82	852.23	1087.33	505.57	1666219.50	14295873.92	39°22'04.172"N	80°54'31.329"W	1199.12	24.937	1.25	-1.04	-0.68	
7621.00	90.550	334.050	6352.30	945.81	1172.39	465.58	1666179.52	14295958.95	39°22'05.013"N	80°54'31.837"W	1261.45	21.659	1.70	0.49	-1.63	
7716.00	88.520	335.100	6353.07	1040.34	1258.18	424.79	1666138.75	14296044.70	39°22'05.861"N	80°54'32.355"W	1327.96	18.656	2.41	-2.14	1.11	
7811.00	89.630	339.580	6354.60	1135.18	1345.81	388.21	1666102.18	14296132.30	39°22'06.728"N	80°54'32.820"W	1400.68	16.091	4.86	1.17	4.72	
7906.00	89.110	338.990	6355.65	1230.16	1434.66	354.61	1666068.60	14296221.12	39°22'07.606"N	80°54'33.247"W	1477.84	13.884	0.83	-0.55	-0.62	
8001.00	88.460	342.000	6357.66	1325.12	1524.18	322.90	1666036.90	14296310.60	39°22'08.491"N	80°54'33.649"W	1558.01	11.961	3.24	-0.88	3.17	
8096.00	88.370	344.370	6360.29	1419.95	1615.08	295.43	1666009.44	14296401.46	39°22'09.390"N	80°54'33.998"W	1641.88	10.366	2.50	-0.09	2.49	
8190.00	89.720	349.080	6361.86	1513.31	1706.53	273.85	1665987.88	14296492.87	39°22'10.294"N	80°54'34.271"W	1728.36	9.117	5.21	1.44	5.01	
8285.00	91.260	347.020	6361.04	1607.42	1799.46	254.19	1665968.22	14296585.76	39°22'11.213"N	80°54'34.521"W	1817.32	8.040	2.71	1.62	-2.17	
8380.00	90.120	338.990	6359.90	1702.22	1890.22	226.44	1665940.48	14296676.50	39°22'12.110"N	80°54'34.873"W	1903.74	6.831	8.54	-1.20	-8.45	
8475.00	90.000	334.370	6359.80	1797.01	1977.44	188.85	1665902.90	14296763.68	39°22'12.972"N	80°54'35.350"W	1986.44	5.455	4.86	-0.13	-4.86	
8570.00	90.000	330.530	6359.80	1891.12	2061.65	144.91	1665858.99	14296847.85	39°22'13.805"N	80°54'35.909"W	2066.74	4.021	4.04	0.00	-4.04	
8664.00	89.910	332.970	6359.87	1984.08	2144.45	100.43	1665814.52	14296930.62	39°22'14.624"N	80°54'36.474"W	2146.80	2.681	2.60	-0.10	2.60	
8759.00	89.850	338.410	6360.07	2078.75	2230.99	61.33	1665775.44	14297017.13	39°22'15.480"N	80°54'36.971"W	2231.84	1.575	5.73	-0.06	5.73	
8854.00	90.150	342.130	6360.07	2173.73	2320.40	29.27	1665743.39	14297106.50	39°22'16.364"N	80°54'37.378"W	2320.59	0.723	3.93	0.32	3.92	
8949.00	90.250	341.910	6359.74	2268.69	2410.76	-0.06	1665714.07	14297196.82	39°22'17.257"N	80°54'37.750"W	2410.76	359.999	0.25	0.11	-0.23	
9044.00	90.150	336.160	6359.41	2363.62	2499.43	-34.03	1665680.11	14297285.46	39°22'18.134"N	80°54'38.182"W	2499.67	359.220	6.05	-0.11	-6.05	
9139.00	90.120	332.950	6359.18	2458.15	2585.21	-74.85	1665639.32	14297371.20	39°22'18.982"N	80°54'38.700"W	2586.29	358.342	3.38	-0.03	-3.38	
9234.00	90.090	335.420	6359.01	2552.61	2670.72	-116.21	1665597.97	14297456.68	39°22'19.827"N	80°54'39.226"W	2673.25	357.508	2.60	-0.03	2.60	

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Actual Wellpath Report

Master Unit 3H AWP Proj: 17541'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Master Unit 3H
Field	Ritchie	Wellbore	Master Unit 3H AWB
Facility	Lettie Pad		

WELLPATH DATA (209 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
9329.00	90.180	339.690	6358.79	2647.48	2758.50	-152.47	1665561.72	14297544.43	39°22'20.695"N	80°54'39.687"W	2762.71	356.836	4.50	0.09	4.49	
9423.00	89.510	345.740	6359.04	2741.35	2848.21	-180.39	1665533.81	14297634.10	39°22'21.582"N	80°54'40.041"W	2853.92	356.376	6.48	-0.71	6.44	
9518.00	90.400	348.120	6359.11	2835.69	2940.75	-201.87	1665512.34	14297726.60	39°22'22.497"N	80°54'40.313"W	2947.67	356.073	2.67	0.94	2.51	
9613.00	90.090	346.950	6358.71	2929.92	3033.50	-222.38	1665491.84	14297819.32	39°22'23.414"N	80°54'40.573"W	3041.64	355.807	1.27	-0.33	-1.23	
9708.00	90.120	346.690	6358.53	3024.29	3126.00	-244.05	1665470.18	14297911.77	39°22'24.328"N	80°54'40.848"W	3135.51	355.536	0.29	0.03	-0.28	
9803.00	90.090	346.620	6358.36	3118.70	3218.43	-265.98	1665448.26	14298004.17	39°22'25.242"N	80°54'41.126"W	3229.40	355.276	0.07	-0.03	-0.06	
9897.00	90.220	343.860	6358.11	3212.33	3309.32	-289.93	1665424.32	14298095.02	39°22'26.141"N	80°54'41.430"W	3322.00	354.993	2.94	0.14	-2.94	
9992.00	90.250	343.090	6357.72	3307.18	3400.40	-316.95	1665397.31	14298186.06	39°22'27.041"N	80°54'41.773"W	3415.14	354.675	0.81	0.03	-0.81	
10087.00	92.460	344.430	6355.47	3401.96	3491.57	-343.51	1665370.76	14298277.20	39°22'27.943"N	80°54'42.110"W	3508.43	354.381	2.72	2.33	1.41	
10182.00	90.150	340.930	6353.31	3496.83	3582.22	-371.78	1665342.50	14298367.81	39°22'28.839"N	80°54'42.469"W	3601.46	354.075	4.41	-2.43	-3.68	
10277.00	89.200	338.930	6353.84	3591.82	3671.44	-404.37	1665309.92	14298457.00	39°22'29.721"N	80°54'42.883"W	3693.65	353.715	2.33	-1.00	-2.11	
10372.00	89.880	340.780	6354.61	3686.81	3760.63	-437.09	1665277.22	14298546.15	39°22'30.603"N	80°54'43.298"W	3785.94	353.370	2.07	0.72	1.95	
10468.00	89.970	338.010	6354.73	3782.79	3850.48	-470.87	1665243.45	14298635.96	39°22'31.491"N	80°54'43.727"W	3879.16	353.028	2.89	0.09	-2.89	
10563.00	88.710	338.750	6355.83	3877.73	3938.78	-505.87	1665208.46	14298724.23	39°22'32.364"N	80°54'44.172"W	3971.14	352.681	1.54	-1.33	0.78	
10657.00	89.600	343.890	6357.21	3971.67	4027.79	-535.96	1665178.38	14298813.20	39°22'33.244"N	80°54'44.554"W	4063.29	352.420	5.55	0.95	5.47	
10752.00	89.780	340.120	6357.73	4066.61	4118.13	-565.31	1665149.05	14298903.50	39°22'34.137"N	80°54'44.927"W	4156.75	352.184	3.97	0.19	-3.97	
10847.00	89.970	333.740	6357.94	4161.40	4205.48	-602.51	1665111.86	14298990.83	39°22'35.001"N	80°54'45.399"W	4248.43	351.847	6.72	0.20	-6.72	
10942.00	89.850	333.500	6358.09	4255.77	4290.59	-644.72	1665069.67	14299075.90	39°22'35.843"N	80°54'45.936"W	4338.76	351.454	0.28	-0.13	-0.25	
11037.00	89.720	336.800	6358.44	4350.38	4376.78	-684.64	1665029.77	14299162.06	39°22'36.695"N	80°54'46.443"W	4430.01	351.110	3.48	-0.14	3.47	
11132.00	90.220	338.820	6358.49	4445.29	4464.74	-720.52	1664993.90	14299249.98	39°22'37.565"N	80°54'46.899"W	4522.51	350.833	2.19	0.53	2.13	
11227.00	90.090	341.070	6358.23	4540.29	4553.98	-753.09	1664961.34	14299339.18	39°22'38.447"N	80°54'47.313"W	4615.82	350.610	2.37	-0.14	2.37	
11322.00	90.120	343.030	6358.06	4635.23	4644.35	-782.37	1664932.08	14299429.51	39°22'39.340"N	80°54'47.684"W	4709.78	350.438	2.06	0.03	2.06	
11417.00	90.310	342.040	6357.70	4730.15	4734.97	-810.88	1664903.58	14299520.10	39°22'40.236"N	80°54'48.046"W	4803.90	350.282	1.06	0.20	-1.04	
11512.00	90.280	342.770	6357.22	4825.08	4825.52	-839.60	1664874.87	14299610.61	39°22'41.131"N	80°54'48.411"W	4898.02	350.130	0.77	-0.03	0.77	
11607.00	90.280	341.830	6356.75	4920.02	4916.02	-868.48	1664846.00	14299701.08	39°22'42.026"N	80°54'48.778"W	4992.14	349.981	0.99	0.00	-0.99	
11701.00	90.340	338.720	6356.24	5014.01	5004.49	-900.20	1664814.29	14299789.51	39°22'42.901"N	80°54'49.181"W	5084.81	349.803	3.31	0.06	-3.31	
11796.00	90.340	336.450	6355.68	5108.90	5092.31	-936.42	1664778.08	14299877.29	39°22'43.769"N	80°54'49.641"W	5177.69	349.580	2.39	0.00	-2.39	
11891.00	90.280	337.890	6355.16	5203.76	5179.86	-973.28	1664741.24	14299964.81	39°22'44.635"N	80°54'50.109"W	5270.51	349.358	1.52	-0.06	1.52	
11986.00	90.280	339.740	6354.70	5298.72	5268.44	-1007.61	1664706.93	14300053.35	39°22'45.511"N	80°54'50.545"W	5363.93	349.173	1.95	0.00	1.95	
12081.00	90.280	340.030	6354.24	5393.72	5357.64	-1040.28	1664674.27	14300142.52	39°22'46.393"N	80°54'50.960"W	5457.70	349.012	0.31	0.00	0.31	

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Actual Wellpath Report

Master Unit 3H AWP Proj: 17541'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Ritchie County, WV	Well	Master Unit 3H
Field	Ritchie	Wellbore	Master Unit 3H AWB
Facility	Lettie Pad		

WELLPATH DATA (209 stations)

ID (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
12176.00	90.060	337.880	6353.95	5488.69	5446.30	-1074.39	1664640.17	14300231.14	39°22'47.269"N	80°54'51.393"W	5551.26	348.841	2.27	-0.23	-2.26	
12270.00	90.120	336.970	6353.81	5582.58	5533.09	-1110.48	1664604.10	14300317.90	39°22'48.127"N	80°54'51.852"W	5643.43	348.652	0.97	0.06	-0.97	
12365.00	90.180	338.200	6353.56	5677.47	5620.92	-1146.70	1664567.89	14300405.69	39°22'48.996"N	80°54'52.312"W	5736.69	348.470	1.30	0.06	1.29	
12460.00	90.460	341.180	6353.03	5772.46	5710.00	-1179.67	1664534.93	14300494.74	39°22'49.876"N	80°54'52.731"W	5830.58	348.327	3.15	0.29	3.14	
12555.00	90.620	342.660	6352.13	5867.41	5800.30	-1209.15	1664505.46	14300585.00	39°22'50.769"N	80°54'53.105"W	5924.99	348.225	1.57	0.17	1.56	
12650.00	90.310	340.190	6351.36	5962.38	5890.34	-1239.41	1664475.22	14300675.01	39°22'51.659"N	80°54'53.490"W	6019.32	348.117	2.62	-0.33	-2.60	
12745.00	90.740	339.560	6350.49	6057.37	5979.54	-1272.10	1664442.55	14300764.17	39°22'52.541"N	80°54'53.905"W	6113.35	347.990	0.80	0.45	-0.66	
12840.00	90.150	338.430	6349.75	6152.34	6068.22	-1306.15	1664408.51	14300852.81	39°22'53.418"N	80°54'54.337"W	6207.20	347.853	1.34	-0.62	-1.19	
12935.00	90.280	338.770	6349.40	6247.31	6156.67	-1340.81	1664373.86	14300941.23	39°22'54.293"N	80°54'54.778"W	6300.98	347.714	0.38	0.14	0.36	
13030.00	90.520	338.390	6348.73	6342.26	6245.10	-1375.50	1664339.18	14301029.63	39°22'55.167"N	80°54'55.219"W	6394.79	347.579	0.47	0.25	-0.40	
13124.00	90.460	337.440	6347.93	6436.18	6332.20	-1410.84	1664303.85	14301116.69	39°22'56.028"N	80°54'55.668"W	6487.47	347.439	1.01	-0.06	-1.01	
13219.00	89.850	333.220	6347.67	6530.81	6418.51	-1450.49	1664264.23	14301202.97	39°22'56.882"N	80°54'56.171"W	6580.37	347.266	4.49	-0.64	-4.44	
13314.00	90.220	334.870	6347.61	6625.26	6503.93	-1492.06	1664222.67	14301288.35	39°22'57.726"N	80°54'56.700"W	6672.88	347.079	1.78	0.39	1.74	
13409.00	90.030	339.030	6347.41	6720.08	6591.32	-1529.25	1664185.49	14301375.71	39°22'58.590"N	80°54'57.172"W	6766.40	346.938	4.38	-0.20	4.38	
13504.00	90.150	338.950	6347.26	6815.06	6680.01	-1563.31	1664151.45	14301464.36	39°22'59.467"N	80°54'57.605"W	6860.50	346.828	0.15	0.13	-0.08	
13599.00	89.420	340.070	6347.61	6910.05	6768.99	-1596.57	1664118.21	14301553.31	39°23'00.347"N	80°54'58.028"W	6954.73	346.729	1.41	-0.77	1.18	
13693.00	90.680	340.460	6347.53	7004.04	6857.47	-1628.31	1664086.48	14301641.75	39°23'01.222"N	80°54'58.431"W	7048.14	346.643	1.40	1.34	0.41	
13788.00	89.970	341.150	6346.99	7099.04	6947.19	-1659.54	1664055.26	14301731.43	39°23'02.109"N	80°54'58.828"W	7142.65	346.565	1.04	-0.75	0.73	
13883.00	90.060	341.000	6346.97	7194.03	7037.05	-1690.35	1664024.46	14301821.26	39°23'02.997"N	80°54'59.219"W	7237.22	346.493	0.18	0.09	-0.16	
13978.00	90.280	344.110	6346.69	7288.94	7127.67	-1718.83	1663995.99	14301911.84	39°23'03.893"N	80°54'59.580"W	7331.99	346.442	3.28	0.23	3.27	
14073.00	89.720	344.940	6346.69	7383.67	7219.23	-1744.17	1663970.66	14302003.36	39°23'04.798"N	80°54'59.902"W	7426.93	346.418	1.05	-0.59	0.87	
14168.00	89.820	346.760	6347.07	7478.21	7311.34	-1767.40	1663947.44	14302095.43	39°23'05.709"N	80°55'00.197"W	7521.93	346.410	1.92	0.11	1.92	
14263.00	90.280	346.970	6346.98	7572.57	7403.85	-1788.99	1663925.86	14302187.91	39°23'06.623"N	80°55'00.471"W	7616.92	346.416	0.53	0.48	0.22	
14358.00	89.880	346.580	6346.85	7666.95	7496.33	-1810.72	1663904.14	14302280.35	39°23'07.538"N	80°55'00.746"W	7711.92	346.420	0.59	-0.42	-0.41	
14453.00	90.030	345.850	6346.93	7761.43	7588.60	-1833.36	1663881.51	14302372.58	39°23'08.450"N	80°55'01.034"W	7806.92	346.418	0.78	0.16	-0.77	
14548.00	90.250	345.250	6346.69	7856.02	7680.59	-1857.06	1663857.82	14302464.54	39°23'09.359"N	80°55'01.334"W	7901.91	346.408	0.67	0.23	-0.63	
14642.00	89.880	343.860	6346.59	7949.75	7771.19	-1882.09	1663832.79	14302555.10	39°23'10.255"N	80°55'01.652"W	7995.86	346.386	1.53	-0.39	-1.48	
14737.00	89.820	341.040	6346.84	8044.67	7861.76	-1910.74	1663804.16	14302645.64	39°23'11.150"N	80°55'02.016"W	8090.62	346.340	2.97	-0.06	-2.97	
14832.00	89.820	337.710	6347.13	8139.65	7950.66	-1944.20	1663770.72	14302734.50	39°23'12.029"N	80°55'02.441"W	8184.92	346.259	3.51	0.00	-3.51	
14927.00	90.150	337.970	6347.16	8234.56	8038.64	-1980.03	1663734.90	14302822.45	39°23'12.899"N	80°55'02.896"W	8278.91	346.163	0.44	0.35	0.27	

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Actual Wellpath Report

Master Unit 3H AWP Proj: 17541'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #06	WV Department C
Area	Ritchie County, WV	Master Unit 3H	Environmental Protection
Field	Ritchie	Master Unit 3H AWB	
Facility	Lettie Pad		

WELLPATH DATA (209 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (1/100ft)	Build Rate (1/100ft)	Turn Rate (1/100ft)	Comments
15022.00	90.220	338.790	6346.85	8329.51	8126.96	-2015.03	1663699.91	14302910.73	39°23'13.772"N	80°55'03.341"W	8373.04	346.075	0.87	0.07	0.86	
15117.00	90.800	338.510	6346.01	8424.47	8215.43	-2049.62	1663665.34	14302999.17	39°23'14.647"N	80°55'03.781"W	8467.25	345.992	0.68	0.61	-0.29	
15212.00	90.000	338.220	6345.34	8519.42	8303.74	-2084.64	1663630.33	14303087.44	39°23'15.520"N	80°55'04.226"W	8561.41	345.907	0.90	-0.84	-0.31	
15307.00	90.120	334.160	6345.24	8614.16	8390.63	-2122.98	1663592.00	14303174.30	39°23'16.379"N	80°55'04.713"W	8655.05	345.801	4.28	0.13	-4.27	
15402.00	90.000	332.950	6345.14	8708.52	8475.69	-2165.29	1663549.71	14303259.32	39°23'17.220"N	80°55'05.251"W	8747.90	345.669	1.28	-0.13	-1.27	
15497.00	90.000	333.510	6345.14	8802.81	8560.51	-2208.08	1663506.94	14303344.10	39°23'18.059"N	80°55'05.795"W	8840.70	345.537	0.59	0.00	0.59	
15592.00	89.660	334.980	6345.43	8897.29	8646.07	-2249.36	1663465.68	14303429.63	39°23'18.905"N	80°55'06.320"W	8933.88	345.417	1.59	-0.36	1.55	
15687.00	89.630	337.340	6346.02	8992.04	8732.96	-2287.75	1663427.30	14303516.48	39°23'19.764"N	80°55'06.808"W	9027.64	345.320	2.48	-0.03	2.48	
15781.00	89.940	338.230	6346.37	9085.95	8819.98	-2323.29	1663391.77	14303603.47	39°23'20.625"N	80°55'07.259"W	9120.84	345.243	1.00	0.33	0.95	
15876.00	89.780	340.310	6346.57	9180.93	8908.82	-2356.92	1663358.16	14303692.28	39°23'21.503"N	80°55'07.687"W	9215.32	345.181	2.19	-0.13	2.19	
15971.00	90.250	340.070	6346.51	9275.93	8998.20	-2389.11	1663325.98	14303781.62	39°23'22.387"N	80°55'08.096"W	9309.96	345.130	0.52	0.45	-0.29	
16066.00	89.750	340.030	6346.51	9370.93	9087.50	-2421.53	1663293.58	14303870.88	39°23'23.270"N	80°55'08.507"W	9400.26	345.079	0.53	-0.53	-0.04	
16161.00	89.690	340.310	6346.97	9465.93	9176.86	-2453.75	1663261.36	14303960.21	39°23'24.153"N	80°55'08.917"W	9499.25	345.030	0.30	-0.06	0.29	
16256.00	89.780	343.160	6347.41	9560.89	9267.07	-2483.52	1663231.61	14304050.38	39°23'25.045"N	80°55'09.295"W	9594.08	344.998	3.00	0.09	3.00	
16351.00	89.970	344.290	6347.62	9655.71	9358.26	-2510.15	1663204.99	14304141.53	39°23'25.946"N	80°55'09.633"W	9689.06	344.985	1.21	0.20	1.19	
16445.00	90.060	344.030	6347.60	9749.49	9448.69	-2535.80	1663179.35	14304231.93	39°23'26.840"N	80°55'09.959"W	9783.05	344.977	0.29	0.10	-0.28	
16540.00	90.250	343.450	6347.34	9844.31	9539.89	-2562.40	1663152.76	14304323.09	39°23'27.742"N	80°55'10.297"W	9878.03	344.965	0.64	0.20	-0.61	
16635.00	90.090	343.160	6347.06	9939.17	9630.88	-2589.69	1663125.48	14304414.05	39°23'28.642"N	80°55'10.643"W	9972.99	344.949	0.35	-0.17	-0.31	
16730.00	90.400	340.670	6346.65	10034.12	9721.18	-2619.18	1663096.00	14304504.31	39°23'29.534"N	80°55'11.018"W	10067.84	344.921	2.64	0.33	-2.62	
16824.00	90.620	340.370	6345.81	10128.12	9809.80	-2650.53	1663064.67	14304592.89	39°23'30.410"N	80°55'11.416"W	10161.57	344.880	0.40	0.23	-0.32	
16919.00	90.460	338.590	6344.92	10223.10	9896.76	-2683.83	1663031.38	14304681.82	39°23'31.290"N	80°55'11.839"W	10256.14	344.830	1.88	-0.17	-1.87	
17014.00	90.060	338.600	6344.49	10318.06	9987.21	-2718.50	1662996.73	14304770.23	39°23'32.164"N	80°55'12.280"W	10350.58	344.773	0.42	-0.42	0.01	
17108.00	89.850	339.770	6344.56	10412.04	10075.07	-2751.90	1662963.34	14304858.06	39°23'33.033"N	80°55'12.704"W	10444.14	344.723	1.26	-0.22	1.24	
17203.00	90.090	341.150	6344.61	10507.04	10164.60	-2783.67	1662931.58	14304947.55	39°23'33.918"N	80°55'13.108"W	10538.88	344.685	1.47	0.25	1.45	
17298.00	90.340	341.130	6344.25	10602.03	10254.50	-2814.38	1662900.88	14305037.41	39°23'34.807"N	80°55'13.498"W	10633.69	344.653	0.26	-0.02	-0.02	
17393.00	89.780	340.910	6344.15	10697.02	10344.33	-2845.28	1662870.00	14305127.21	39°23'35.695"N	80°55'13.891"W	10728.50	344.621	0.63	-0.59	-0.23	
17487.00	90.400	341.340	6344.01	10791.01	10433.28	-2875.69	1662839.60	14305216.12	39°23'36.575"N	80°55'14.277"W	10822.33	344.590	0.80	0.66	0.46	
17516.00	89.880	341.900	6343.94	10820.00	10460.80	-2884.83	1662830.46	14305243.63	39°23'36.847"N	80°55'14.393"W	10851.29	344.582	2.64	-1.79	1.93	
17541.00	89.880	341.900	6343.99	10844.99	10484.56	-2892.60	1662822.69	14305267.38	39°23'37.082"N	80°55'14.492"W	10876.26	344.576	0.00	0.00	0.00	Projected MD at TD: 17541'

HOLE & CASING SECTIONS - Ref Wellbore: Master Unit 3H AWB Ref Wellpath: Master Unit 3H AWP Proj: 17541'

String/Diameter	Start MD (ft)	End MD (ft)	Interval (ft)	Start TVD (ft)	End TVD (ft)	Start N/S (ft)	Start E/W (ft)	End N/S (ft)	End E/W (ft)
20in Conductor	25.50	105.50	80.00	25.50	105.50	0.00	0.00	-0.12	0.04
17.5in Open Hole	105.50	523.50	418.00	105.50	523.48	-0.12	0.04	-3.39	-0.97
13.375in Casing Surface	25.50	523.50	498.00	25.50	523.48	0.00	0.00	-3.39	-0.97
12.25in Open Hole	523.50	2598.40	2074.90	523.48	2569.65	-3.39	-0.97	-91.27	305.55
9.625in Casing Intermediate	25.50	2598.40	2572.90	25.50	2569.65	0.00	0.00	-91.27	305.55
8.75in Open Hole	2598.40	6070.50	3472.10	2569.65	5961.94	-91.27	305.55	-149.19	891.34
8.5in Open Hole	6070.50	17541.00	11470.50	5961.94	6343.99	-149.19	891.34	10484.56	-2892.60
5.5in Casing Production	25.50	17541.00	17515.50	25.50	6343.99	0.00	0.00	10484.56	-2892.60

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Master Unit 3H - POE - Rev-2	6340.00	286.44	793.80	1666507.61	14295073.36	39°21'56.253"N	80°54'27.670"W	point
Master Unit 3H - BHL - Rev-2	6363.00	10507.29	-2879.96	1662835.33	14305290.10	39°23'37.306"N	80°55'14.330"W	point
Master Unit 3H - LP - Rev-2	6363.00	446.02	736.44	1666450.28	14295232.87	39°21'57.831"N	80°54'28.398"W	point

WELLPATH COMPOSITION - Ref Wellbore: Master Unit 3H AWB Ref Wellpath: Master Unit 3H AWP Proj: 17541'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.50	2500.50	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <12-1/4">(100'-2490')	Master Unit 3H AWB
2500.50	5998.50	ISCWSA MWD, Rev. 4 (Standard)	02 WFT EM <-8-3/4">(2490')<2649'-5988')	Master Unit 3H AWB
5998.50	17516.00	BHI AutoTrak Curve (Short)	03 BH AT Curve <8-1/2">(5998.5')<6047'-17516')	Master Unit 3H AWB
17516.00	17541.00	Blind Drilling (std)	Projection to bit	Master Unit 3H AWB

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #06
ANTERO RESOURCES CORPORATION	Well	Master Unit 3H
Ritchie County, WV	Wellbore	Master Unit 3H AWB
Ritchie		
Lettie Pad		

COMMENTS

Wellpath general comments

API: 47-085-10361-0000

BHI Job #: 109555227

Rig: H&P 317

Duration: 12/14/2018-12/18/2018

Gyrodota MS Gyro <12-1/4">(100'-2490')

WFT EM <8-3/4">(2490')(2649'-5988')

BH AT Curve <8-1/2">(5998.5')(6047'-17516')

Middlesex: 6342' MD

Burkett: 6528' MD

Tully: 6609' MD

Marcellus POE: 6703' MD

Projected MD at TD: 17541'

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