



# ANTERO RESOURCES CORPORATION

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

Slot: Slot #12  
 Well: Hex Unit 3H  
 Wellbore: Hex Unit 3H PWB

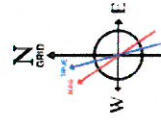
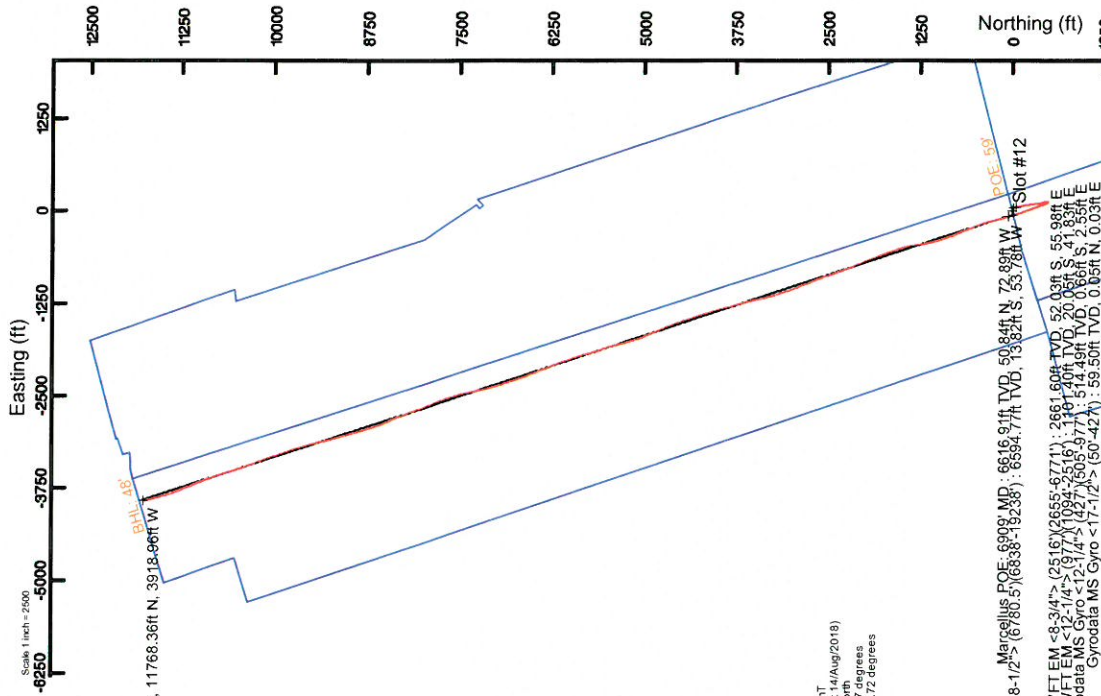
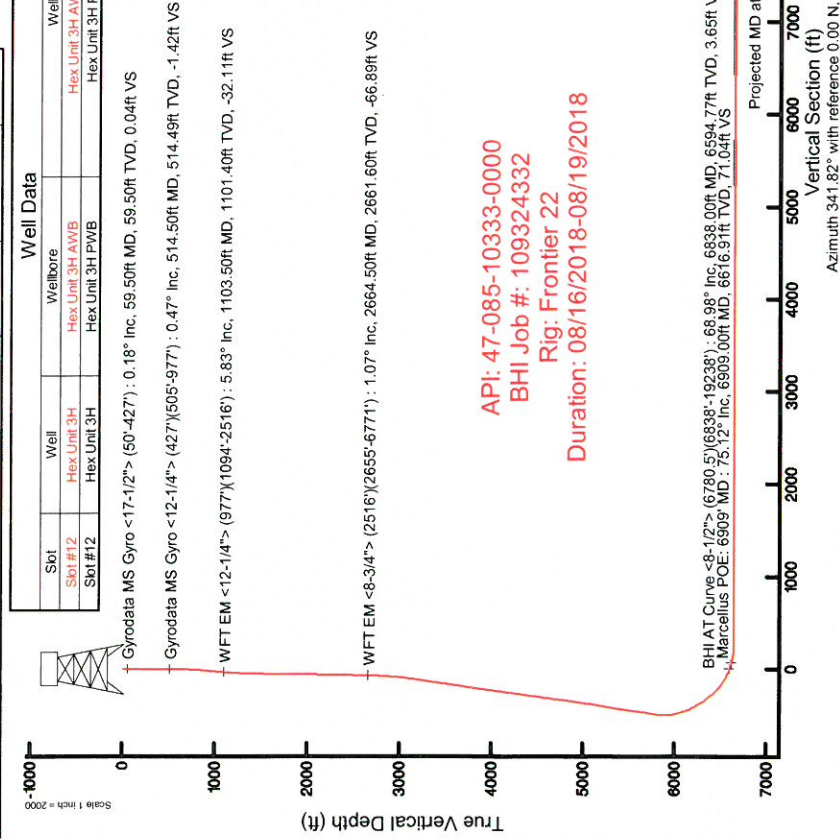


Plot reference wellpath is Hex Unit 3H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 1274.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot, Slot #12): -1250 feet	Created by: dslaset on 2018-08-22
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Defn

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Hichman Pad	1673097.617	14285267.289	80°53'03.890"W
Slot	Local E (ft)	Local N (ft)	Longitude
Slot #12	-106.27	-28.15	80°53'04.250"W
Frontier 22 (RKB) to Ground level (At Slot, Slot #12)	24.5 ft		
Mean Sea Level to Ground level (At Slot, Slot #12)	-1250 ft		
Frontier 22 (RKB) to Mean Sea Level	1274.5 ft		

Well Profile Data						
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local E (ft)	Local N (ft)
Tie On	6780.50	65.690	341.100	6572.61	-37.45	6.98
Proj. To Bottom	6854.50	70.830	342.710	6600.01	-56.77	7.23
POE	6908.86	74.860	344.882	6616.00	-73.26	8.50
Landing Pt.	7085.11	90.000	344.882	6639.00	-118.70	8.53
On Admitt	7196.39	90.000	341.819	6639.00	-150.58	2.75
BHL	19241.80	90.000	341.819	6639.00	-3909.01	0.00
						12401.84

Slot	Well	Wellbore	Wellpath
Slot #12	Hex Unit 3H	Hex Unit 3H AWP	Hex Unit 3H AWP Proj: 19262
Slot #12	Hex Unit 3H	Hex Unit 3H PWB	Hex Unit 3H PWP Rev-A.0



User specified Dip: 66.49° Field: 51892 nT  
 Magnetic North is 7.65 degrees West of True North (at 14/Aug/2018)  
 To correct azimuth from Magnetic to Grid subtract 7.2 degrees

API: 47-085-10333-0000  
 BHI Job #: 109324332  
 Rig: Frontier 22  
 Duration: 08/16/2018-08/19/2018

BHI AT Curve <8-1/2"> (6780.5)'(6838'-19238') : 66.98° Inc, 6838.00ft MD, 6594.77ft TVD, 3.65ft VS  
 Marcellus POE: 6909' MD : 75.12° Inc, 6909.00ft MD, 6616.91ft TVD, 71.04ft VS

WFT EM <8-3/4"> (2516')(2655-6771) : 1.07° Inc, 2664.50ft MD, 2661.60ft TVD, -66.89ft VS

Gyrodata MS Gyro <17-1/2"> (50-42') : 0.18° Inc, 59.50ft MD, 59.50ft TVD, 0.04ft VS

Gyrodata MS Gyro <12-1/4"> (427')(505-977') : 0.47° Inc, 514.50ft MD, 514.49ft TVD, -1.42ft VS

WFT EM <12-1/4"> (977')(1094-2516') : 5.83° Inc, 1103.50ft MD, 1101.40ft TVD, -32.11ft VS

BHI AT Curve <8-1/2"> (6780.5)'(6838'-19238') : 66.98° Inc, 6838.00ft MD, 6594.77ft TVD, 3.65ft VS  
 Marcellus POE: 6909' MD : 75.12° Inc, 6909.00ft MD, 6616.91ft TVD, 71.04ft VS

WFT EM <8-3/4"> (2516')(2655-6771) : 2661.60ft TVD, 52.03ft S, 55.98ft E  
 Gyrodata MS <12-1/4"> (427')(505-977') : 514.49ft TVD, 20.06ft S, 1.83ft E  
 Gyrodata MS Gyro <17-1/2"> (50-42') : 59.50ft TVD, 0.04ft N, 0.03ft E



# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Hex Unit 3H
Field	Ritchie	Wellbore	Hex Unit 3H AWB
Facility	Hichman Pad		

REPORT SETUP INFORMATION			
Projection System	MAD27 / 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 16:45
Convergence at slot	0.07° East	Database/Source file	WA_MPL_EasternUS_Defn/Hex_Unit_3H_AWP_Proj_19262_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-106.27	-28.15	1673069.48	14285161.06	39°20'18.170"N	80°53'04.250"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
Horizontal Reference Pt	Slot
Vertical Reference Pt	Frontier 22 (RKB)
MD Reference Pt	Frontier 22 (RKB)
Field Vertical Reference	Mean Sea Level
	Frontier 22 (RKB) to Facility Vertical Datum
	Frontier 22 (RKB) to Mean Sea Level
	Frontier 22 (RKB) to Ground Level at Slot (Slot #12)
	Section Origin
	Section Azimuth
	24.50ft
	1274.50ft
	24.50ft
	N 0.00, E 0.00 ft
	341.82°





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Hex Unit 3H
Field	Ritchie	Wellbore	Hex Unit 3H AWB
Facility	Hichman Pad		

WELLPATH DATA (246 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	30.220	0.00	0.00	0.00	0.00	1673069.48	14285161.06	39°20'18.170"N	80°53'04.250"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	30.220	24.50	0.00	0.00	0.00	1673069.48	14285161.06	39°20'18.170"N	80°53'04.250"W	0.00	0.000	0.00	0.00	0.00	
59.50	0.180	30.220	59.50	0.04	0.05	0.03	1673069.51	14285161.11	39°20'18.170"N	80°53'04.250"W	0.05	30.220	0.51	0.51	86.34	Gyrodatta MS Gyro <17-1/2"> (50-427')
84.50	0.230	77.570	84.50	0.06	0.09	0.10	1673069.58	14285161.15	39°20'18.171"N	80°53'04.249"W	0.13	46.275	0.68	0.20	189.40	
109.50	0.270	86.850	109.50	0.04	0.11	0.20	1673069.68	14285161.17	39°20'18.171"N	80°53'04.247"W	0.23	62.511	0.23	0.16	37.12	
134.50	0.280	64.280	134.50	0.03	0.14	0.32	1673069.80	14285161.20	39°20'18.171"N	80°53'04.246"W	0.35	68.848	0.43	0.04	90.28	
159.50	0.340	84.070	159.50	0.02	0.17	0.45	1673069.93	14285161.22	39°20'18.172"N	80°53'04.244"W	0.48	69.152	0.49	0.24	79.16	
184.50	0.380	98.730	184.50	-0.03	0.17	0.60	1673070.08	14285161.23	39°20'18.172"N	80°53'04.242"W	0.62	74.663	0.40	0.16	58.64	
209.50	0.360	102.460	209.50	-0.11	0.14	0.76	1673070.24	14285161.19	39°20'18.171"N	80°53'04.240"W	0.77	79.889	0.13	-0.08	14.92	
234.50	0.600	91.330	234.50	-0.19	0.12	0.97	1673070.45	14285161.17	39°20'18.171"N	80°53'04.238"W	0.98	83.186	1.03	0.96	-44.52	
259.50	0.320	114.030	259.50	-0.28	0.08	1.16	1673070.64	14285161.14	39°20'18.171"N	80°53'04.235"W	1.17	88.856	1.32	-1.12	90.80	
284.50	0.400	106.760	284.50	-0.38	0.03	1.31	1673070.79	14285161.09	39°20'18.170"N	80°53'04.233"W	1.31	88.658	0.37	0.32	-29.08	
309.50	0.330	116.440	309.50	-0.48	-0.03	1.46	1673070.94	14285161.03	39°20'18.170"N	80°53'04.231"W	1.46	91.041	0.37	-0.28	38.72	
334.50	0.330	133.840	334.49	-0.59	-0.11	1.58	1673071.05	14285160.95	39°20'18.169"N	80°53'04.230"W	1.58	93.938	0.40	0.00	69.60	
359.50	0.290	125.790	359.49	-0.71	-0.20	1.68	1673071.16	14285160.86	39°20'18.168"N	80°53'04.229"W	1.69	98.637	0.24	-0.16	-32.20	
384.50	0.350	123.840	384.49	-0.82	-0.27	1.79	1673071.27	14285160.78	39°20'18.167"N	80°53'04.227"W	1.81	98.713	0.24	0.24	-7.80	
409.50	0.370	125.020	409.49	-0.95	-0.36	1.92	1673071.40	14285160.70	39°20'18.166"N	80°53'04.226"W	1.96	100.711	0.09	0.08	4.72	
434.50	0.350	140.980	434.49	-1.08	-0.47	2.04	1673071.52	14285160.59	39°20'18.165"N	80°53'04.224"W	2.09	102.975	0.41	-0.08	63.84	
436.50	0.390	135.180	436.49	-1.09	-0.48	2.05	1673071.52	14285160.58	39°20'18.165"N	80°53'04.224"W	2.10	103.177	2.74	2.00	-290.00	
514.50	0.470	87.970	514.49	-1.42	-0.66	2.55	1673072.03	14285160.40	39°20'18.163"N	80°53'04.218"W	2.64	104.411	0.45	0.10	-60.53	Gyrodatta MS Gyro <12-1/4"> (427')(505'-977')
606.50	1.490	100.580	606.48	-2.10	-0.86	4.11	1673073.58	14285160.20	39°20'18.161"N	80°53'04.198"W	4.19	101.860	1.13	1.11	13.71	
703.50	2.710	103.860	703.41	-3.92	-1.64	7.57	1673077.05	14285159.42	39°20'18.154"N	80°53'04.154"W	7.75	102.243	1.26	1.26	3.38	
796.50	4.520	112.220	796.22	-7.47	-3.56	13.10	1673082.57	14285157.50	39°20'18.135"N	80°53'04.083"W	13.57	105.187	2.02	1.95	8.99	
892.50	6.500	117.370	891.77	-13.80	-7.48	21.43	1673090.90	14285153.58	39°20'18.096"N	80°53'03.977"W	22.70	109.255	2.12	2.06	5.36	
986.50	6.940	120.810	985.13	-21.88	-12.84	31.03	1673100.50	14285148.22	39°20'18.043"N	80°53'03.855"W	33.58	112.479	0.63	0.47	3.66	
1103.50	5.830	127.220	1101.40	-32.11	-20.05	41.83	1673111.30	14285141.01	39°20'17.971"N	80°53'03.718"W	46.39	115.613	1.13	-0.95	5.48	WFT EM <12-1/4"> (977')(1094'-2516')
1198.50	4.330	132.750	1196.03	-39.21	-25.41	48.31	1673117.77	14285135.66	39°20'17.918"N	80°53'03.636"W	54.58	117.742	1.66	-1.58	5.82	
1293.50	2.960	144.460	1290.83	-44.69	-29.84	62.37	1673121.83	14285131.23	39°20'17.874"N	80°53'03.584"W	60.27	119.673	1.63	-1.44	12.33	
1387.50	1.430	150.040	1384.76	-48.15	-32.83	64.37	1673123.82	14285128.24	39°20'17.845"N	80°53'03.559"W	63.51	121.127	1.64	-1.63	5.94	
1482.50	0.760	156.260	1479.74	-49.94	-34.43	65.21	1673124.67	14285126.64	39°20'17.828"N	80°53'03.548"W	65.07	121.951	0.72	-0.71	6.55	





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'  
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #12
Operator	ANTERO RESOURCES CORPORATION	Well	Hex Unit 3H
Area	Ritchie County, WV	Wellbore	Hex Unit 3H AWB
Field	Ritchie		
Facility	Hichman Pad		

WELLPATH DATA (246 stations)															
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dir (ft)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
1577.50	0.400	156.510	1574.74	-50.90	-35.31	55.60	1673125.05	14285125.76	39°20'17.820"N	80°53'03.543"W	65.86	122.423	0.38	-0.38	0.26
1672.50	0.480	153.210	1669.74	-51.62	-35.97	55.91	1673125.36	14285125.10	39°20'17.814"N	80°53'03.539"W	66.48	122.759	0.09	0.08	-3.47
1767.50	0.580	188.800	1764.73	-52.44	-36.80	56.01	1673125.47	14285124.27	39°20'17.806"N	80°53'03.538"W	67.02	123.307	0.36	0.11	37.46
1862.50	0.850	174.020	1859.72	-53.56	-37.98	56.01	1673125.47	14285123.09	39°20'17.794"N	80°53'03.538"W	67.68	124.139	0.34	0.28	-15.56
1957.50	0.910	178.790	1954.71	-54.98	-39.43	56.13	1673125.59	14285121.64	39°20'17.780"N	80°53'03.536"W	68.60	125.090	0.08	0.06	2.92
2052.50	0.830	174.840	2049.70	-56.38	-40.87	56.23	1673125.69	14285120.20	39°20'17.765"N	80°53'03.535"W	69.52	126.011	0.09	-0.08	-2.05
2146.50	1.040	184.770	2143.69	-57.83	-42.40	56.22	1673125.68	14285118.68	39°20'17.750"N	80°53'03.535"W	70.42	127.021	0.28	0.22	10.56
2241.50	0.940	173.840	2238.68	-59.38	-44.03	56.24	1673125.69	14285117.04	39°20'17.734"N	80°53'03.535"W	71.42	128.062	0.22	-0.11	-11.51
2336.50	1.130	178.720	2333.66	-61.04	-45.75	56.34	1673125.80	14285115.33	39°20'17.717"N	80°53'03.534"W	72.57	129.075	0.22	0.20	5.14
2431.50	1.230	182.040	2428.64	-62.89	-47.70	56.33	1673125.78	14285113.38	39°20'17.698"N	80°53'03.534"W	73.81	130.261	0.13	0.11	3.49
2525.50	1.000	185.230	2522.62	-64.59	-49.53	56.21	1673125.67	14285111.55	39°20'17.680"N	80°53'03.535"W	74.92	131.381	0.25	-0.24	3.39
2664.50	1.070	185.660	2661.60	-66.89	-52.03	55.98	1673125.43	14285109.05	39°20'17.655"N	80°53'03.538"W	76.42	132.905	0.05	0.05	0.31
2759.50	2.720	170.200	2756.55	-69.93	-65.13	56.27	1673125.73	14285105.95	39°20'17.624"N	80°53'03.535"W	78.78	134.413	1.80	1.74	-16.27
2854.50	2.940	167.910	2851.43	-74.59	-69.73	57.17	1673126.62	14285101.35	39°20'17.579"N	80°53'03.523"W	82.68	136.258	0.26	0.23	-2.41
2949.50	4.380	167.200	2946.23	-80.63	-65.66	58.48	1673127.94	14285095.42	39°20'17.520"N	80°53'03.507"W	87.93	138.310	1.53	1.53	-0.75
3044.50	6.900	173.820	3040.77	-89.83	-74.88	59.90	1673129.36	14285086.21	39°20'17.429"N	80°53'03.489"W	95.89	141.342	2.73	2.64	6.97
3139.50	9.030	171.460	3134.84	-102.77	-87.93	61.62	1673131.08	14285073.17	39°20'17.300"N	80°53'03.467"W	107.37	144.976	2.27	2.24	-2.48
3234.50	9.220	168.220	3228.84	-117.68	-102.75	64.28	1673133.74	14285058.35	39°20'17.154"N	80°53'03.434"W	121.20	147.969	0.58	0.20	-3.41
3328.50	8.580	167.430	3321.51	-132.14	-116.97	67.35	1673136.80	14285044.14	39°20'17.013"N	80°53'03.395"W	134.97	150.068	0.69	-0.68	-0.84
3423.50	8.100	163.090	3415.51	-145.89	-130.29	70.84	1673140.29	14285030.82	39°20'16.881"N	80°53'03.351"W	148.30	151.467	0.83	-0.51	-4.57
3523.50	7.570	160.220	3514.57	-159.51	-143.23	75.12	1673144.56	14285017.89	39°20'16.753"N	80°53'03.296"W	161.73	152.325	0.66	-0.53	-2.87
3618.50	8.150	165.140	3608.68	-172.49	-155.62	78.96	1673148.41	14285005.50	39°20'16.631"N	80°53'03.248"W	174.51	153.098	0.93	0.61	5.18
3713.50	8.200	164.460	3702.71	-185.98	-168.66	82.50	1673151.95	14284992.47	39°20'16.502"N	80°53'03.203"W	187.76	153.934	0.11	0.05	-0.72
3808.50	8.560	175.260	3796.71	-199.63	-182.23	84.90	1673154.35	14284978.90	39°20'16.368"N	80°53'03.172"W	201.04	155.020	1.70	0.38	11.37
3903.50	8.350	174.620	3890.67	-213.23	-196.15	86.13	1673155.58	14284964.99	39°20'16.230"N	80°53'03.157"W	214.23	156.293	0.24	-0.22	-0.67
3998.50	7.890	172.300	3984.72	-226.37	-209.48	87.65	1673157.10	14284951.67	39°20'16.098"N	80°53'03.138"W	227.08	157.294	0.59	-0.48	-2.44
4093.50	7.480	168.370	4078.87	-238.92	-222.00	89.77	1673159.22	14284939.15	39°20'15.975"N	80°53'03.111"W	239.46	157.982	0.70	-0.43	-4.14
4187.50	8.040	171.530	4172.01	-251.48	-234.49	91.97	1673161.42	14284926.66	39°20'15.851"N	80°53'03.083"W	251.88	158.583	0.75	0.60	3.36
4282.50	7.840	170.410	4266.10	-264.44	-247.45	94.03	1673163.47	14284913.71	39°20'15.723"N	80°53'03.057"W	264.71	159.193	0.27	-0.21	-1.18
4377.50	8.710	174.590	4360.11	-277.86	-261.00	95.79	1673165.23	14284900.16	39°20'15.589"N	80°53'03.035"W	278.02	159.846	1.11	0.92	4.40





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Hex Unit 3H
Field	Ritchie	Wellbore	Hex Unit 3H AWB
Facility	Hichman Pad		

## WELLPATH DATA (246 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
4472.50	8.540	175.100	4454.03	-291.74	-275.19	97.07	1673186.51	14284885.98	39°20'15.449"N	80°53'03.019"W	291.81	160.570	0.20	-0.18	0.54	
4567.50	8.150	175.010	4548.03	-305.16	-288.93	98.26	1673187.70	14284872.25	39°20'15.313"N	80°53'03.004"W	305.18	161.218	0.41	-0.41	-0.09	
4662.50	7.840	173.720	4642.10	-318.06	-302.08	99.55	1673188.99	14284859.11	39°20'15.183"N	80°53'02.988"W	318.06	161.760	0.38	-0.33	-1.36	
4757.50	7.390	173.300	4736.27	-330.38	-314.58	100.98	1673170.41	14284846.60	39°20'15.059"N	80°53'02.970"W	330.39	162.204	0.48	-0.47	-0.44	
4851.50	7.370	175.200	4829.49	-342.17	-326.60	102.19	1673171.62	14284834.59	39°20'14.941"N	80°53'02.955"W	342.21	162.626	0.26	-0.02	2.02	
4946.50	8.750	173.390	4923.55	-355.18	-339.85	103.50	1673172.94	14284821.35	39°20'14.810"N	80°53'02.938"W	355.26	163.062	1.47	1.45	-1.69	
5041.50	9.170	173.210	5017.39	-369.67	-354.55	105.20	1673174.64	14284806.66	39°20'14.664"N	80°53'02.917"W	369.83	163.473	0.45	0.44	-0.40	
5136.50	9.330	167.580	5111.15	-384.75	-369.58	107.75	1673177.19	14284791.62	39°20'14.516"N	80°53'02.885"W	384.97	163.746	0.97	0.17	-5.93	
5231.50	9.690	167.870	5204.95	-400.37	-384.92	111.09	1673180.53	14284776.29	39°20'14.364"N	80°53'02.842"W	400.63	163.901	0.38	0.38	0.31	
5326.50	9.080	166.560	5298.58	-415.79	-400.03	114.51	1673183.95	14284761.19	39°20'14.215"N	80°53'02.799"W	416.10	164.026	0.68	-0.64	-1.38	
5420.50	7.970	165.000	5391.54	-429.69	-413.54	117.92	1673187.36	14284747.69	39°20'14.081"N	80°53'02.756"W	430.02	164.084	1.21	-1.18	-1.66	
5515.50	7.790	163.820	5485.64	-442.70	-426.08	121.42	1673190.85	14284735.15	39°20'13.957"N	80°53'02.712"W	443.05	164.094	0.25	-0.19	-1.24	
5610.50	8.050	171.020	5579.74	-455.70	-438.84	124.26	1673193.68	14284722.40	39°20'13.831"N	80°53'02.676"W	456.09	164.191	1.08	0.27	7.58	
5705.50	8.600	171.970	5673.73	-469.26	-452.44	126.29	1673195.71	14284708.80	39°20'13.697"N	80°53'02.650"W	469.73	164.404	0.60	0.58	1.00	
5800.50	9.580	173.410	5767.54	-483.99	-467.33	128.19	1673197.61	14284693.92	39°20'13.549"N	80°53'02.626"W	484.59	164.661	1.06	1.03	1.52	
5863.50	6.970	180.470	5829.88	-492.75	-476.36	128.76	1673198.18	14284684.89	39°20'13.460"N	80°53'02.619"W	493.45	164.875	4.44	-4.14	11.21	
5895.50	4.470	202.400	5861.72	-495.54	-479.45	128.26	1673197.69	14284681.80	39°20'13.430"N	80°53'02.625"W	496.31	165.023	10.24	-7.81	68.53	
5926.50	3.650	250.830	5892.95	-496.47	-480.89	126.87	1673196.30	14284680.36	39°20'13.417"N	80°53'02.643"W	497.35	165.221	11.00	-2.65	156.23	
5958.50	5.610	288.790	5924.55	-495.55	-480.73	124.43	1673193.86	14284680.53	39°20'13.417"N	80°53'02.674"W	496.57	165.488	11.04	6.12	118.62	
5990.50	8.480	301.810	5956.31	-492.80	-478.98	120.94	1673190.37	14284682.27	39°20'13.434"N	80°53'02.719"W	494.01	165.829	10.21	8.97	40.69	
6021.50	11.270	310.270	5986.95	-488.47	-475.81	116.69	1673186.12	14284685.44	39°20'13.466"N	80°53'02.773"W	489.91	166.221	10.12	9.00	27.29	
6053.50	13.620	320.450	6018.10	-482.29	-470.89	111.90	1673181.33	14284690.36	39°20'13.515"N	80°53'02.833"W	484.00	166.632	10.02	7.34	31.81	
6084.50	15.510	330.910	6048.11	-474.82	-464.45	107.56	1673177.00	14284696.80	39°20'13.578"N	80°53'02.899"W	476.74	166.961	10.43	6.10	33.74	
6116.50	17.880	335.840	6078.76	-465.73	-456.23	103.47	1673172.91	14284705.02	39°20'13.660"N	80°53'02.941"W	467.81	167.222	8.62	7.41	15.41	
6147.50	20.390	337.520	6108.04	-465.61	-446.89	99.45	1673168.89	14284714.35	39°20'13.752"N	80°53'02.991"W	457.83	167.453	8.29	8.10	5.42	
6179.50	22.880	338.700	6137.79	-443.84	-435.94	95.06	1673164.50	14284725.29	39°20'13.860"N	80°53'03.047"W	446.19	167.699	7.90	7.78	3.69	
6211.50	25.770	339.080	6166.94	-430.68	-423.65	90.32	1673159.76	14284737.58	39°20'13.982"N	80°53'03.107"W	433.17	167.965	9.04	9.03	1.19	
6242.50	28.350	339.850	6194.55	-416.59	-410.44	85.38	1673154.82	14284750.78	39°20'14.112"N	80°53'03.170"W	419.23	168.249	8.40	8.32	2.48	
6274.50	30.260	339.900	6222.45	-400.94	-395.74	79.99	1673149.43	14284765.48	39°20'14.258"N	80°53'03.238"W	403.74	168.573	5.97	5.97	0.16	
6305.50	30.860	339.350	6249.14	-385.18	-380.96	74.50	1673143.95	14284780.26	39°20'14.404"N	80°53'03.308"W	388.17	168.935	2.19	2.00	-1.77	





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #12
Operator	ANTERO RESOURCES CORPORATION	Well	Hex Unit 3H
Area	Ritchie County, WV	Wellbore	Hex Unit 3H AWB
Field	Ritchie		
Facility	Hichman Pad		

WELLPATH DATA (246 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
6337.50	31.580	339.770	6276.50	-368.60	-365.41	68.70	1673138.16	14284795.80	39°20'14.558"N	80°53'03.382"W	371.81	169.352	2.29	2.19	1.31	
6369.50	32.350	340.410	6303.65	-351.66	-349.47	62.93	1673132.39	14284811.73	39°20'14.715"N	80°53'03.455"W	355.09	169.792	2.74	2.53	2.00	
6400.50	34.580	341.090	6329.50	-334.56	-333.33	57.30	1673126.75	14284827.87	39°20'14.875"N	80°53'03.526"W	338.21	170.246	7.17	7.06	2.19	
6432.50	37.070	341.090	6355.45	-315.85	-315.62	51.23	1673120.69	14284845.57	39°20'15.050"N	80°53'03.603"W	319.75	170.780	7.62	7.62	0.00	
6464.50	38.960	341.500	6380.87	-296.15	-296.96	44.92	1673114.38	14284864.22	39°20'15.234"N	80°53'03.683"W	300.34	171.399	6.11	6.06	1.28	
6496.50	40.800	341.050	6405.23	-275.64	-277.53	38.33	1673107.79	14284883.64	39°20'15.426"N	80°53'03.767"W	280.17	172.137	5.82	5.75	-1.41	
6527.50	42.790	340.710	6428.34	-254.98	-258.01	31.56	1673101.03	14284903.15	39°20'15.620"N	80°53'03.853"W	259.94	173.026	6.46	6.42	-1.10	
6541.00†	43.978	340.493	6438.15	-245.71	-249.27	28.48	1673097.95	14284918.99	39°20'15.706"N	80°53'03.892"W	250.89	173.482	8.88	8.81	-1.61	Middlesex: 6541' MD
6559.50	45.610	340.210	6451.28	-232.68	-236.99	24.10	1673093.57	14284924.16	39°20'15.827"N	80°53'03.947"W	238.21	174.194	8.88	8.81	-1.53	
6590.50	48.860	340.320	6472.32	-209.93	-215.57	16.41	1673085.89	14284945.57	39°20'16.039"N	80°53'04.045"W	216.20	175.646	10.49	10.48	0.35	
6622.50	52.450	340.340	6492.61	-185.20	-192.27	8.09	1673077.56	14284968.86	39°20'16.270"N	80°53'04.150"W	192.44	177.592	11.22	11.22	0.06	
6654.50	55.660	340.550	6511.39	-159.30	-167.86	-0.58	1673069.90	14284993.26	39°20'16.511"N	80°53'04.260"W	167.86	180.199	10.05	10.03	0.66	
6685.50	58.290	340.090	6528.28	-133.32	-143.39	-9.34	1673060.15	14285017.72	39°20'16.753"N	80°53'04.371"W	143.70	183.726	8.57	8.48	-1.48	
6717.50	60.950	340.300	6544.46	-105.73	-117.42	-18.69	1673050.80	14285043.68	39°20'17.010"N	80°53'04.490"W	118.90	189.043	8.33	8.31	0.66	
6739.00†	62.753	340.363	6554.61	-86.78	-99.57	-25.07	1673044.42	14285061.53	39°20'17.186"N	80°53'04.571"W	102.68	194.132	8.39	8.39	0.29	Burkett: 6739' MD
6748.50	63.550	340.390	6558.90	-78.31	-91.59	-27.92	1673041.57	14285069.51	39°20'17.265"N	80°53'04.607"W	95.75	196.951	8.39	8.39	0.29	
6780.50	65.690	341.100	6572.61	-49.40	-64.30	-37.45	1673032.05	14285096.79	39°20'17.535"N	80°53'04.728"W	74.41	210.218	6.98	6.69	2.22	
6816.00†	67.719	342.296	6586.65	-16.80	-33.34	-47.68	1673021.81	14285127.73	39°20'17.841"N	80°53'04.857"W	58.18	235.039	6.50	5.71	3.37	Tully: 6816' MD
6838.00	68.980	343.020	6594.77	3.65	-13.82	-53.78	1673015.72	14285147.24	39°20'18.034"N	80°53'04.935"W	55.53	255.586	6.50	5.73	3.29	BHAT Curve <-8.1/2'> (6780.5)-(6838'-19238')
6872.00	71.460	343.560	6606.27	35.63	16.82	-62.98	1673006.53	14285177.87	39°20'18.337"N	80°53'05.051"W	65.18	284.953	7.45	7.29	1.59	
6909.00†	75.121	343.948	6616.91	71.04	50.84	-72.89	1672996.62	14285211.87	39°20'18.673"N	80°53'05.177"W	88.86	304.894	9.94	9.89	1.05	Marcellus POE: 6909' MD
6919.00	76.110	344.050	6619.39	80.72	60.15	-75.56	1672993.95	14285221.18	39°20'18.765"N	80°53'05.211"W	96.57	308.521	9.94	9.89	1.02	
6967.00	80.670	344.900	6629.05	127.67	105.44	-88.14	1672981.38	14285266.45	39°20'19.213"N	80°53'05.370"W	137.42	320.108	9.66	9.50	1.77	
7014.00	85.560	345.730	6634.68	174.23	150.56	-99.96	1672969.56	14285311.56	39°20'19.659"N	80°53'05.520"W	180.72	326.419	10.55	10.40	1.77	
7061.00	87.450	345.640	6637.55	221.04	196.01	-111.56	1672957.97	14285357.00	39°20'20.109"N	80°53'05.667"W	225.54	330.355	4.03	4.02	-0.19	
7100.00	89.970	345.040	6638.43	259.95	233.73	-121.42	1672948.10	14285394.70	39°20'20.482"N	80°53'05.792"W	263.39	332.548	6.64	6.46	-1.54	
7155.00	89.970	344.340	6638.45	314.88	286.78	-135.95	1672933.59	14285447.72	39°20'21.006"N	80°53'05.976"W	317.37	334.637	1.27	0.00	-1.27	
7250.00	89.750	342.560	6638.69	409.84	377.84	-163.01	1672906.54	14285538.75	39°20'21.906"N	80°53'06.319"W	411.50	336.664	1.89	-0.23	-1.87	
7345.00	89.940	340.140	6638.94	504.83	467.84	-193.38	1672876.17	14285628.72	39°20'22.796"N	80°53'06.704"W	506.24	337.542	2.66	0.20	-2.55	
7442.00	90.030	338.540	6638.97	601.73	558.60	-227.61	1672841.96	14285719.44	39°20'23.694"N	80°53'07.138"W	603.19	337.831	1.65	0.09	-1.65	





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Hex Unit 3H
Field	Ritchie	Wellbore	Hex Unit 3H AWB
Facility	Hichman Pad		

## WELLPATH DATA (246 stations)

MD ft	Inclination °	Azimuth °	TVD ft	Vert Sect ft	North ft	East ft	Grid East ft	Grid North ft	Latitude	Longitude	Closure Dist ft	Closure Dir °	DLS ft/100ft	Build Rate ft/100ft	Turn Rate ft/100ft	Comments
7536.00	90.060	337.740	6638.90	695.54	645.84	-262.61	1672806.98	14285806.64	39°20'24.557"N	80°53'07.582"W	697.19	337.873	0.85	0.03	-0.85	
7631.00	89.940	337.030	6638.90	790.25	733.54	-299.14	1672770.46	14285894.30	39°20'25.424"N	80°53'08.045"W	792.19	337.814	0.76	-0.13	-0.75	
7726.00	89.910	338.810	6639.02	885.03	821.57	-334.85	1672734.77	14285982.30	39°20'26.294"N	80°53'08.498"W	887.18	337.826	1.87	-0.03	1.87	
7821.00	89.910	341.780	6639.17	979.98	910.99	-366.87	1672702.75	14286071.69	39°20'27.179"N	80°53'08.905"W	982.09	338.064	3.13	0.00	3.13	
7916.00	89.910	344.860	6639.32	1074.94	1001.99	-394.14	1672675.50	14286162.64	39°20'28.078"N	80°53'09.250"W	1076.72	338.527	3.24	0.00	3.24	
8010.00	90.310	345.770	6639.14	1168.76	1092.91	-417.97	1672651.68	14286253.54	39°20'28.977"N	80°53'09.552"W	1170.11	339.071	1.06	0.43	0.97	
8104.00	90.310	348.640	6638.63	1262.34	1184.57	-438.78	1672630.87	14286348.50	39°20'29.883"N	80°53'10.036"W	1263.22	339.675	3.05	0.00	3.05	
8199.00	90.460	350.220	6637.99	1356.50	1277.95	-456.21	1672598.15	14286438.50	39°20'30.807"N	80°53'10.772"W	1356.94	340.354	1.67	0.16	1.66	
8293.00	90.800	351.030	6636.96	1449.38	1370.69	-471.52	1672568.27	14286531.20	39°20'31.723"N	80°53'10.229"W	1449.52	341.017	0.93	0.36	0.86	
8387.00	90.770	347.020	6635.67	1542.61	1462.94	-489.41	1672535.31	14286623.42	39°20'32.635"N	80°53'10.455"W	1542.64	341.503	4.27	-0.03	-4.27	
8482.00	90.180	342.500	6634.88	1637.46	1554.58	-514.37	1672505.51	14286715.01	39°20'33.541"N	80°53'10.772"W	1637.46	341.692	4.80	-0.62	-4.76	
8576.00	90.090	340.090	6634.66	1731.45	1643.60	-544.52	1672525.18	14286804.00	39°20'34.422"N	80°53'11.154"W	1731.45	341.670	2.57	-0.10	-2.56	
8671.00	90.000	338.580	6634.58	1826.36	1732.49	-578.04	1672491.67	14286892.85	39°20'35.301"N	80°53'11.579"W	1826.38	341.549	1.59	-0.09	-1.59	
8767.00	90.030	338.700	6634.56	1922.21	1821.89	-613.01	1672456.72	14286982.22	39°20'36.185"N	80°53'12.023"W	1922.26	341.404	0.13	0.03	0.13	
8861.00	90.060	338.590	6634.49	2016.06	1909.44	-647.24	1672422.50	14287069.73	39°20'37.060"N	80°53'12.457"W	2016.15	341.275	0.12	0.03	-0.12	
8955.00	89.910	337.700	6634.51	2109.87	1986.68	-682.23	1672387.52	14287156.94	39°20'37.913"N	80°53'12.901"W	2110.02	341.136	0.96	-0.16	-0.95	
9050.00	89.940	337.550	6634.63	2204.61	2084.53	-718.39	1672351.37	14287244.76	39°20'38.782"N	80°53'13.360"W	2204.85	340.984	0.16	0.03	-0.16	
9146.00	89.780	338.240	6634.87	2300.39	2173.47	-754.52	1672315.26	14287333.66	39°20'39.661"N	80°53'13.818"W	2300.71	340.856	0.74	-0.17	0.72	
9240.00	90.120	339.710	6634.95	2394.27	2261.21	-788.24	1672281.55	14287421.37	39°20'40.529"N	80°53'14.246"W	2394.66	340.782	1.61	0.36	1.56	
9335.00	89.660	340.800	6635.13	2489.23	2350.63	-820.34	1672249.47	14287510.74	39°20'41.413"N	80°53'14.653"W	2489.66	340.762	1.25	-0.48	1.15	
9430.00	89.940	341.770	6635.47	2584.23	2440.60	-850.82	1672219.00	14287600.68	39°20'42.303"N	80°53'15.040"W	2584.65	340.781	1.06	0.29	1.02	
9524.00	90.120	339.920	6635.42	2678.21	2529.39	-881.66	1672188.17	14287689.44	39°20'43.181"N	80°53'15.431"W	2678.65	340.783	1.98	0.19	-1.97	
9620.00	90.030	339.250	6635.29	2774.14	2619.36	-915.15	1672154.70	14287779.37	39°20'44.070"N	80°53'15.856"W	2774.63	340.742	0.70	-0.09	-0.70	
9714.00	90.030	337.870	6635.24	2867.98	2706.86	-949.50	1672120.36	14287866.83	39°20'44.935"N	80°53'16.292"W	2868.56	340.670	1.47	0.00	-1.47	
9807.00	89.940	338.240	6635.27	2960.78	2793.12	-984.26	1672085.61	14287953.06	39°20'45.788"N	80°53'16.733"W	2961.46	340.588	0.41	-0.10	0.40	
9901.00	89.850	339.130	6635.44	3054.64	2880.69	-1018.43	1672051.46	14288040.59	39°20'46.654"N	80°53'17.166"W	3055.41	340.530	0.95	-0.10	0.95	
9996.00	89.850	340.130	6635.69	3149.57	2969.74	-1051.49	1672018.41	14288129.61	39°20'47.535"N	80°53'17.586"W	3150.40	340.503	1.05	0.00	1.05	
10091.00	90.090	340.400	6635.74	3244.53	3059.16	-1083.57	1671986.34	14288219.00	39°20'48.419"N	80°53'17.993"W	3245.40	340.496	0.38	0.25	0.28	
10185.00	90.000	342.440	6635.66	3338.52	3148.26	-1113.52	1671956.40	14288308.06	39°20'49.300"N	80°53'18.373"W	3339.38	340.522	2.17	-0.10	2.17	
10280.00	89.970	344.790	6635.69	3433.47	3239.40	-1140.32	1671929.62	14288399.16	39°20'50.201"N	80°53'18.712"W	3434.24	340.607	2.47	-0.03	2.47	





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'  
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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Ritchie County, WV
Field	Ritchie
Facility	Hichman Pad
Slot	Slot #12
Well	Hex Unit 3H
Wellbore	Hex Unit 3H AWB

WELLPATH DATA (246 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
10374.00	90.060	345.740	6635.66	3527.30	3330.30	-1164.23	1671905.72	14288490.03	39°20'51.100"N	80°53'19.015"W	3527.94	340.731	1.02	0.10	1.01	
10469.00	90.030	347.250	6635.59	3621.98	3422.67	-1186.41	1671883.54	14288582.36	39°20'52.013"N	80°53'19.296"W	3622.47	340.882	1.59	-0.03	1.59	
10563.00	89.970	346.890	6635.59	3715.59	3514.29	-1207.45	1671862.52	14288673.94	39°20'52.919"N	80°53'19.563"W	3715.93	341.038	0.39	-0.06	-0.38	
10658.00	89.880	344.760	6635.71	3810.35	3606.39	-1230.71	1671839.26	14288766.01	39°20'53.829"N	80°53'19.857"W	3810.60	341.157	2.24	-0.09	-2.24	
10754.00	90.000	343.820	6635.81	3906.28	3698.80	-1256.70	1671813.28	14288858.38	39°20'54.743"N	80°53'20.187"W	3906.46	341.234	0.99	0.13	-0.98	
10849.00	90.000	343.330	6635.81	4001.21	3789.93	-1283.56	1671786.43	14288949.47	39°20'55.644"N	80°53'20.527"W	4001.39	341.290	0.52	0.00	-0.52	
10944.00	89.850	344.870	6635.94	4096.14	3881.29	-1309.59	1671760.41	14289040.79	39°20'56.547"N	80°53'20.857"W	4096.27	341.355	1.63	-0.16	1.62	
11039.00	89.940	345.280	6636.11	4190.98	3973.08	-1334.06	1671734.06	14289132.55	39°20'57.455"N	80°53'21.167"W	4191.08	341.439	0.44	0.09	0.43	
11133.00	89.780	344.900	6636.34	4284.83	4063.92	-1358.24	1671711.78	14289223.35	39°20'58.353"N	80°53'21.473"W	4284.89	341.519	0.44	-0.17	-0.40	
11228.00	89.880	342.240	6636.62	4379.78	4155.03	-1385.11	1671684.92	14289314.43	39°20'59.254"N	80°53'21.814"W	4379.82	341.564	2.80	0.11	-2.80	
11322.00	89.750	342.520	6637.13	4568.77	4244.47	-1414.03	1671656.01	14289403.83	39°21'00.138"N	80°53'22.181"W	4473.82	341.575	0.34	0.00	-0.34	
11417.00	89.880	342.440	6637.43	4663.76	4334.93	-1443.04	1671627.01	14289494.25	39°21'01.033"N	80°53'22.549"W	4568.81	341.588	0.65	-0.14	0.63	
11512.00	89.880	342.440	6637.43	4663.76	4425.53	-1471.64	1671598.43	14289584.81	39°21'01.928"N	80°53'22.911"W	4663.80	341.606	0.16	0.14	-0.08	
11607.00	89.940	340.730	6637.58	4758.76	4515.66	-1501.65	1671568.43	14289674.91	39°21'02.820"N	80°53'23.292"W	4758.79	341.606	1.80	0.06	-1.80	
11702.00	89.750	339.400	6637.84	4853.71	4604.96	-1534.04	1671536.05	14289764.18	39°21'03.703"N	80°53'23.703"W	4853.76	341.576	1.41	-0.20	-1.40	
11796.00	89.600	338.170	6638.37	4947.58	4692.59	-1568.05	1671502.05	14289851.77	39°21'04.569"N	80°53'24.134"W	4947.64	341.523	1.32	-0.16	-1.31	
11891.00	89.750	337.210	6638.91	5042.33	4780.48	-1604.12	1671466.00	14289939.62	39°21'05.438"N	80°53'24.592"W	5042.43	341.451	1.02	0.16	-1.01	
11985.00	89.480	336.920	6639.54	5136.00	4867.04	-1640.75	1671429.39	14290026.15	39°21'06.294"N	80°53'25.057"W	5136.16	341.370	0.42	-0.29	-0.31	
12079.00	89.690	336.000	6640.22	5229.59	4953.22	-1678.29	1671391.86	14290112.29	39°21'07.146"N	80°53'25.534"W	5229.82	341.282	1.00	0.22	-0.98	
12173.00	89.630	338.810	6640.78	5323.30	5039.99	-1714.40	1671355.77	14290199.03	39°21'08.004"N	80°53'25.992"W	5323.60	341.214	2.99	-0.06	2.99	
12267.00	90.090	342.710	6641.01	5417.26	5128.72	-1745.37	1671324.81	14290287.73	39°21'08.882"N	80°53'26.385"W	5417.57	341.206	4.18	0.49	4.15	
12361.00	90.180	345.350	6640.79	5511.18	5219.09	-1771.23	1671298.96	14290378.05	39°21'09.775"N	80°53'26.713"W	5511.45	341.254	2.81	0.10	2.81	
12456.00	90.220	346.510	6640.46	5605.94	5311.23	-1794.32	1671275.87	14290470.17	39°21'10.668"N	80°53'27.005"W	5606.14	341.333	1.22	0.04	1.22	
12552.00	90.120	344.870	6640.17	5701.72	5404.25	-1818.05	1671252.16	14290563.15	39°21'11.606"N	80°53'27.306"W	5701.86	341.406	1.71	-0.10	-1.71	
12646.00	90.000	341.730	6640.08	5795.67	5494.28	-1845.06	1671225.16	14290653.13	39°21'12.496"N	80°53'27.648"W	5795.80	341.437	3.34	-0.13	-3.34	
12741.00	90.090	340.540	6640.00	5890.66	5584.17	-1875.78	1671194.45	14290742.99	39°21'13.385"N	80°53'28.038"W	5890.80	341.432	1.26	0.09	-1.25	
12836.00	90.030	343.520	6639.90	5985.65	5674.53	-1905.08	1671165.16	14290833.31	39°21'14.278"N	80°53'28.410"W	5985.78	341.442	3.14	-0.06	3.14	
12931.00	90.150	343.700	6639.75	6080.61	5765.67	-1931.89	1671138.36	14290924.42	39°21'15.179"N	80°53'28.750"W	6080.72	341.476	0.23	0.13	0.19	
13026.00	90.090	342.380	6639.55	6175.58	5856.53	-1959.60	1671110.66	14291015.24	39°21'16.078"N	80°53'29.101"W	6175.68	341.500	1.39	-0.06	-1.39	
13120.00	90.000	343.130	6639.48	6269.57	5946.31	-1987.47	1671082.81	14291104.98	39°21'16.965"N	80°53'29.454"W	6269.66	341.519	0.80	-0.10	0.80	





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'  
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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Ritche County, WV
Field	Ritchie
Facility	Hichman Pad
Slot	Slot #12
Well	Hex Unit 3H
Wellbore	Hex Unit 3H AWB

WELLPATH DATA (246 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
13215.00	89.780	341.350	6639.66	6364.56	6036.77	-2016.44	1671053.84	14291195.41	39°21'17.860"N	80°53'29.822"W	6364.64	341.529	1.89	-0.23	-1.87	
13310.00	89.290	340.060	6640.43	6459.54	6126.43	-2047.83	1671022.47	14291285.04	39°21'18.746"N	80°53'30.220"W	6459.63	341.517	1.45	-0.52	-1.36	
13405.00	89.510	338.930	6641.43	6554.45	6215.41	-2081.11	1670989.20	14291373.98	39°21'19.626"N	80°53'30.642"W	6554.56	341.488	1.21	0.23	-1.19	
13500.00	89.660	338.800	6642.12	6649.33	6304.02	-2115.36	1670954.97	14291462.55	39°21'20.502"N	80°53'31.077"W	6649.46	341.450	0.21	0.16	-0.14	
13594.00	89.660	338.380	6642.67	6743.17	6391.53	-2149.67	1670920.67	14291550.02	39°21'21.368"N	80°53'31.512"W	6743.35	341.411	0.45	0.00	-0.45	
13689.00	89.750	338.780	6643.16	6838.02	6479.96	-2184.37	1670885.99	14291638.43	39°21'22.242"N	80°53'31.953"W	6838.23	341.371	0.43	0.09	0.42	
13783.00	89.690	339.350	6643.62	6931.91	6567.76	-2217.95	1670852.41	14291726.18	39°21'23.110"N	80°53'32.379"W	6932.15	341.340	0.61	-0.06	0.61	
13878.00	89.380	339.970	6644.39	7026.84	6656.83	-2250.97	1670819.22	14291815.22	39°21'23.991"N	80°53'32.798"W	7027.11	341.317	0.73	-0.33	0.65	
13973.00	89.720	342.400	6645.14	7121.82	6746.74	-2281.61	1670788.78	14291905.10	39°21'24.880"N	80°53'33.187"W	7122.10	341.316	2.58	0.36	2.56	
14067.00	89.600	342.090	6645.70	7215.82	6836.27	-2310.27	1670760.13	14291994.58	39°21'25.765"N	80°53'33.550"W	7216.09	341.328	0.35	-0.13	-0.33	
14162.00	89.600	340.960	6646.36	7310.81	6926.37	-2340.38	1670730.04	14292084.65	39°21'26.656"N	80°53'33.932"W	7311.08	341.330	1.19	0.00	-1.19	
14257.00	89.260	342.430	6647.31	7405.81	7016.55	-2370.21	1670700.22	14292174.80	39°21'27.548"N	80°53'34.311"W	7406.07	341.335	1.59	-0.36	1.55	
14351.00	89.420	347.120	6648.39	7499.65	7107.22	-2394.89	1670675.55	14292265.43	39°21'28.444"N	80°53'34.623"W	7499.87	341.378	4.99	0.17	4.99	
14446.00	89.540	348.560	6649.25	7594.12	7200.08	-2414.90	1670655.55	14292358.26	39°21'29.362"N	80°53'34.877"W	7594.27	341.459	1.52	0.13	1.52	
14541.00	89.200	347.860	6650.30	7688.52	7293.07	-2434.31	1670636.15	14292451.21	39°21'30.282"N	80°53'35.122"W	7688.61	341.542	0.82	-0.36	-0.74	
14636.00	89.510	345.810	6651.37	7783.15	7385.56	-2455.94	1670614.52	14292543.66	39°21'31.196"N	80°53'35.396"W	7783.20	341.606	2.18	0.33	-2.16	
14731.00	89.660	345.760	6652.05	7877.92	7477.65	-2479.27	1670591.20	14292635.72	39°21'32.106"N	80°53'35.692"W	7877.95	341.657	0.17	0.16	-0.05	
14826.00	89.690	344.100	6652.59	7972.77	7569.38	-2503.97	1670566.51	14292727.41	39°21'33.013"N	80°53'36.005"W	7972.79	341.696	1.75	0.03	-1.75	
14921.00	89.820	343.050	6653.00	8067.73	7660.50	-2530.83	1670539.66	14292818.49	39°21'33.914"N	80°53'36.346"W	8067.74	341.718	1.11	0.14	-1.11	
15016.00	89.690	340.710	6653.40	8162.72	7750.78	-2560.37	1670510.13	14292908.74	39°21'34.807"N	80°53'36.720"W	8162.73	341.720	2.47	-0.14	-2.46	
15110.00	89.750	337.950	6653.86	8256.62	7838.72	-2593.55	1670476.97	14292996.64	39°21'35.676"N	80°53'37.142"W	8256.64	341.692	2.94	0.06	-2.94	
15204.00	89.720	336.920	6654.30	8350.34	7925.53	-2629.62	1670440.91	14293083.41	39°21'36.535"N	80°53'37.599"W	8350.38	341.645	1.10	-0.03	-1.10	
15299.00	89.420	339.350	6655.01	8445.14	8013.68	-2665.00	1670405.55	14293171.53	39°21'37.406"N	80°53'38.049"W	8445.19	341.605	2.58	-0.32	2.56	
15394.00	89.720	340.570	6655.72	8540.08	8102.93	-2697.55	1670373.01	14293260.74	39°21'38.289"N	80°53'38.462"W	8540.15	341.587	1.32	0.32	1.28	
15488.00	89.660	339.360	6656.23	8634.03	8191.23	-2729.75	1670340.82	14293349.01	39°21'39.162"N	80°53'38.870"W	8634.11	341.589	1.29	-0.06	-1.29	
15582.00	89.600	338.170	6656.84	8727.89	8278.85	-2763.80	1670306.79	14293436.59	39°21'40.028"N	80°53'39.302"W	8728.00	341.539	1.27	-0.06	-1.27	
15677.00	89.720	337.160	6657.40	8822.64	8366.72	-2799.90	1670270.70	14293524.42	39°21'40.897"N	80°53'39.761"W	8822.78	341.497	1.07	0.13	-1.06	
15771.00	89.630	335.750	6657.94	8916.22	8452.89	-2837.45	1670233.17	14293610.56	39°21'41.749"N	80°53'40.237"W	8916.41	341.444	1.50	-0.10	-1.50	
15865.00	89.510	337.280	6658.64	9009.81	8539.10	-2874.90	1670195.73	14293696.73	39°21'42.602"N	80°53'40.713"W	9009.81	341.393	1.63	-0.13	1.63	
15960.00	89.720	341.590	6659.28	9104.71	8628.02	-2908.27	1670162.38	14293785.62	39°21'43.481"N	80°53'41.137"W	9104.99	341.372	4.54	0.22	4.54	





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Hex Unit 3H
Field	Ritchie	Wellbore	Hex Unit 3H AWB
Facility	Hichman Pad		

## WELLPATH DATA (246 stations)

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
16054.00	89.910	342.780	6659.59	9198.70	8717.51	-2937.02	1670133.63	14293875.08	39°21'44.366"N	80°53'41.501"W	9198.97	341.381	1.28	0.20	1.27	
16149.00	89.910	343.940	6659.73	9293.67	8808.53	-2964.23	1670106.44	14293966.06	39°21'45.266"N	80°53'41.846"W	9293.92	341.401	1.22	0.00	1.22	
16244.00	89.970	343.710	6659.83	9388.61	8899.77	-2990.69	1670079.99	14294057.26	39°21'46.168"N	80°53'42.182"W	9388.83	341.426	0.25	0.06	-0.24	
16338.00	89.910	343.760	6659.93	9482.56	8990.01	-3017.02	1670053.67	14294147.46	39°21'47.060"N	80°53'42.516"W	9482.76	341.448	0.08	-0.06	0.05	
16433.00	89.880	344.430	6660.11	9577.48	9081.37	-3043.05	1670027.64	14294238.79	39°21'47.963"N	80°53'42.846"W	9577.66	341.475	0.71	-0.03	0.71	
16528.00	90.000	344.670	6660.21	9672.37	9172.94	-3068.36	1670002.35	14294330.32	39°21'48.869"N	80°53'43.167"W	9672.52	341.505	0.28	0.13	0.25	
16623.00	89.780	345.060	6660.39	9767.24	9264.64	-3093.17	1669977.55	14294421.99	39°21'49.775"N	80°53'43.481"W	9767.36	341.537	0.47	-0.23	0.41	
16718.00	90.060	346.190	6660.52	9862.03	9356.67	-3116.75	1669953.98	14294513.98	39°21'50.665"N	80°53'43.780"W	9862.12	341.577	1.23	0.29	1.19	
16813.00	89.970	346.260	6660.50	9956.75	9448.93	-3139.37	1669931.37	14294606.21	39°21'51.597"N	80°53'44.067"W	9956.81	341.621	0.12	-0.09	0.07	
16908.00	89.910	344.050	6660.60	10051.58	9540.76	-3163.71	1669907.04	14294697.99	39°21'52.505"N	80°53'44.375"W	10051.62	341.655	2.33	-0.06	-2.33	
17002.00	90.000	342.730	6660.67	10145.54	9630.83	-3190.58	1669880.18	14294788.03	39°21'53.396"N	80°53'44.716"W	10145.58	341.671	1.41	0.10	-1.40	
17097.00	89.970	341.020	6660.69	10240.54	9721.12	-3220.13	1669850.64	14294878.28	39°21'54.288"N	80°53'45.091"W	10240.57	341.672	1.80	-0.03	-1.80	
17192.00	89.970	341.020	6660.74	10335.53	9810.95	-3251.03	1669819.75	14294968.08	39°21'55.177"N	80°53'45.483"W	10335.57	341.666	0.00	0.00	0.00	
17287.00	90.090	341.440	6660.69	10430.52	9900.90	-3281.60	1669789.20	14295057.99	39°21'56.066"N	80°53'45.871"W	10430.56	341.663	0.46	0.13	0.44	
17381.00	89.850	341.300	6660.74	10524.52	9989.97	-3311.63	1669759.18	14295147.03	39°21'56.947"N	80°53'46.252"W	10524.56	341.660	0.30	-0.26	-0.15	
17476.00	89.940	341.260	6660.92	10619.52	10079.95	-3342.12	1669728.70	14295236.97	39°21'57.836"N	80°53'46.639"W	10619.56	341.657	0.10	0.09	-0.04	
17571.00	89.850	338.760	6661.09	10714.46	10169.22	-3374.59	1669696.24	14295326.20	39°21'58.719"N	80°53'47.051"W	10714.51	341.642	2.63	-0.09	-2.63	
17666.00	89.850	338.600	6661.34	10809.32	10257.71	-3409.13	1669661.72	14295414.66	39°21'59.594"N	80°53'47.490"W	10809.39	341.616	0.17	0.00	-0.17	
17761.00	89.910	340.120	6661.54	10904.23	10346.61	-3442.61	1669628.24	14295503.53	39°22'00.473"N	80°53'47.915"W	10904.31	341.596	1.60	0.06	1.60	
17856.00	90.000	342.860	6661.61	10999.22	10436.69	-3472.77	1669598.10	14295593.57	39°22'01.364"N	80°53'48.297"W	10999.30	341.595	2.89	0.09	2.88	
17950.00	89.970	343.130	6661.64	11093.20	10526.58	-3500.26	1669570.62	14295683.42	39°22'02.252"N	80°53'48.646"W	11093.27	341.607	0.29	-0.03	0.29	
18045.00	90.120	342.740	6661.56	11188.18	10617.40	-3528.14	1669542.75	14295774.20	39°22'03.150"N	80°53'49.000"W	11188.25	341.618	0.44	0.16	-0.41	
18139.00	90.060	341.430	6661.42	11282.18	10706.84	-3557.05	1669513.85	14295863.61	39°22'04.035"N	80°53'49.367"W	11282.24	341.622	1.40	-0.06	-1.39	
18234.00	89.910	340.050	6661.44	11377.16	10796.52	-3588.39	1669482.53	14295953.25	39°22'04.921"N	80°53'49.764"W	11377.23	341.615	1.46	-0.16	-1.45	
18328.00	89.880	339.400	6661.61	11471.09	10884.69	-3620.96	1669449.97	14296041.39	39°22'05.793"N	80°53'50.178"W	11471.18	341.599	0.69	-0.03	-0.69	
18423.00	89.970	339.020	6661.74	11566.00	10973.51	-3654.68	1669416.26	14296130.17	39°22'06.671"N	80°53'50.606"W	11566.10	341.580	0.41	0.09	-0.40	
18518.00	89.850	338.460	6661.89	11660.86	11062.04	-3689.13	1669381.83	14296218.67	39°22'07.547"N	80°53'51.043"W	11660.98	341.557	0.60	-0.13	-0.59	
18612.00	89.780	338.680	6662.19	11754.71	11149.54	-3723.47	1669347.50	14296306.13	39°22'08.412"N	80°53'51.479"W	11754.85	341.533	0.25	-0.07	0.23	
18706.00	89.880	338.840	6662.47	11848.57	11237.16	-3757.53	1669313.46	14296393.71	39°22'09.278"N	80°53'51.911"W	11848.74	341.511	0.20	0.11	0.17	
18800.00	89.880	339.170	6662.67	11942.46	11324.92	-3791.21	1669279.78	14296481.44	39°22'10.146"N	80°53'52.339"W	11942.65	341.491	0.35	0.00	0.35	





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot #12
ANTERO RESOURCES CORPORATION	Ritchie County, WV	Ritchie	Hichman Pad	Hex Unit 3H
				Hex Unit 3H AWB

## WELLPATH DATA (246 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
18895.00	89.850	340.420	6662.89	12037.40	11414.07	-3824.02	1669246.99	14296570.55	39°22'11.028"N	80°53'52.755"W	12037.61	341.478	1.32	-0.03	1.32	
18989.00	89.850	343.860	6663.14	12131.38	11503.53	-3852.84	1669218.18	14296659.97	39°22'11.912"N	80°53'53.121"W	12131.59	341.483	3.66	0.00	3.66	
19084.00	89.910	346.060	6663.34	12226.23	11595.26	-3877.49	1669193.54	14296751.68	39°22'12.819"N	80°53'53.434"W	12226.41	341.510	2.32	0.06	2.32	
19178.00	89.820	346.500	6663.56	12319.95	11686.58	-3899.79	1669171.26	14296842.96	39°22'13.722"N	80°53'53.716"W	12320.09	341.546	0.48	-0.10	0.47	
19268.00	89.910	346.970	6663.70	12379.73	11744.98	-3913.55	1669157.49	14296901.33	39°22'14.299"N	80°53'53.891"W	12379.84	341.571	0.80	0.15	0.78	
19262.00	89.910	346.970	6663.74	12403.63	11768.36	-3918.96	1669152.08	14296924.71	39°22'14.530"N	80°53'53.959"W	12403.74	341.582	0.00	0.00	0.00	Projected MD at TD: 19262'

## HOLE & CASING SECTIONS - Ref Wellbore: Hex Unit 3H AWB Ref Wellpath: Hex Unit 3H AWP Proj: 19262'

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	0.10	0.18
17.5in Open Hole	104.50	451.50	347.00	104.50	451.49	0.10	0.18	-0.54	2.12
13.375in Casing Surface	24.50	451.50	427.00	24.50	451.49	0.00	0.00	-0.54	2.12
12.25in Open Hole	451.50	2613.50	2162.00	451.49	2610.61	-0.54	2.12	-51.09	56.07
9.625in Casing Intermediate	24.50	2613.50	2589.00	24.50	2610.61	0.00	0.00	-51.09	56.07
8.75in Open Hole	2613.50	6854.50	4241.00	2610.61	6600.52	-51.09	56.07	0.98	-58.26
8.5in Open Hole	6854.50	19262.00	12407.50	6600.52	6663.74	0.98	-58.26	11768.36	-3918.96
5.5in Casing Production	24.50	19262.00	19237.50	24.50	6663.74	0.00	0.00	11768.36	-3918.96





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Hex Unit 3H
Field	Ritchie	Wellbore	Hex 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
Hex Unit 3H POE - Rev-3	6616.00	50.90	-73.26	1672996.25	14285211.94	39°20'18.674"N	80°53'05.182"W	point
Hex Unit 3H BHL - Rev-3	6639.00	11769.75	-3909.01	1669162.04	14296926.09	39°22'14.544"N	80°53'53.833"W	point
Hex Unit 3H LP - Rev-3	6639.00	219.11	-118.70	1672950.83	14285380.08	39°20'20.337"N	80°53'05.757"W	point

## WELLPATH COMPOSITION - Ref Wellbore: Hex Unit 3H AWB Ref Wellpath: Hex Unit 3H AWP Proj: 19262'

Start MID [ft]	End MID [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	436.50	Gyrodata standard - Drop gyro or Multi-shot	01_Gyrodata MS Gyro <17-1/2">(50'-427')	Hex Unit 3H AWB
436.50	986.50	Gyrodata relative depth - Drop gyro or Multi-shot	02_Gyrodata MS Gyro <12-1/4">(427')(505'-977')	Hex Unit 3H AWB
986.50	2525.50	ISCWSA MWD, Rev. 4 (Standard)	03_WFT EM <12-1/4">(977')(1094'-2516')	Hex Unit 3H AWB
2525.50	6780.50	ISCWSA MWD, Rev. 4 (Standard)	04_WFT EM <8-3/4">(2516')(2655'-6771')	Hex Unit 3H AWB
6780.50	19238.00	BHL AutoTrak Curve (Short)	05_BH AT Curve <8-1/2">(6780.5')(6838'-19238')	Hex Unit 3H AWB
19238.00	19262.00	Blind Drilling (std)	Projection to bit	Hex Unit 3H AWB





# Actual Wellpath Report

Hex Unit 3H AWP Proj: 19262'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Hex Unit 3H
Field	Ritchie	Wellbore	Hex Unit 3H AWB
Facility	Hichman Pad		

COMMENTS
<p><b>Wellpath general comments</b>            API: 47-085-10333-0000            BHI Job #: 109324332            Rig: Frontier 22            Duration: 08/16/2018-08/19/2018            Gyrodatta MS Gyro &lt;17-1/2"&gt; (50'-427')            Gyrodatta MS Gyro &lt;12-1/4"&gt; (427')(505'-977')            WFT EM &lt;12-1/4"&gt; (977')(1094'-2516')            WFT EM &lt;8-3/4"&gt; (2516')(2655'-6771')            BHI AT Curve &lt;8-1/2"&gt; (6780.5')(6838'-19238')            Middlesex: 6541' MD            Burkett: 6739' MD            Tully: 6816' MD            Marcellus POE: 6909' MD            Projected MD at TD: 19262'</p>