ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
Field: Ritchie
Facility: Jackson Pad
Slot: Slot F
Well: Hazelbaker Unit 1H
Wellbore: Hazelbaker Unit 1H PWB

Plot reference wellpath is Hazelbaker Unit 1H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 519 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 519 (RKB)	Scale: True distance
H&P 519 (RKB) to Mean Sea Level: 1065 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot F): -1035 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: edsaryar on 2023-08-04; Database: WA_MPL_EASTERNUS_Defn

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Jackson Pad			1645046.400	14267246.330	39°17'21.2374"N	80°59'1.0934"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot F	-29.99	0.91	1645047.310	14267216.350	39°17'20.9410"N	80°59'1.0819"W
Comment	Hazelbaker Unit 1H					
H&P 519 (RKB) to Ground level (At Slot: Slot F)				30ft		
Mean Sea Level to Ground level (At Slot: Slot F)				-1035ft		
H&P 519 (RKB) to Mean Sea Level				1065ft		

Well Data

Slot	Well	Wellbore	Wellpath
Slot F	Hazelbaker Unit 1H	Hazelbaker Unit 1H AWB	Hazelbaker Unit 1H AWP Proj: 13264'
Slot F	Hazelbaker Unit 1H	Hazelbaker Unit 1H PWB	Hazelbaker Unit 1H PWP Rev-A.0

Gyrodata MS Gyro <17-1/2"> (100'-264') : 0.13° Inc, 100.00ft MD, 100.00ft TVD, -0.02ft VS

APS EM 12-1/4"> (264')(507'-3311') : 2.15° Inc, 507.00ft MD, 506.94ft TVD, 4.78ft VS

APS EM <8-3/4"> (3311')(3405'-6047') : 17.67° Inc, 3405.00ft MD, 3231.23ft TVD, 883.49ft VS

BH AT Curve+Axial <8-1/2"> (6047')(6164'-13239') : 17.72° Inc, 6164.00ft MD, 5778.22ft TVD, 1841.35ft VS

Marcellus POE: 6947' MD : 76.17° Inc, 6947.00ft MD, 6295.15ft TVD, 2372.93ft VS

Projected MD at TD: 13264' : 90.12° Inc, 13264.00ft MD, 6334.53ft TVD, 8686.39ft VS

API: 47-085-10483-0000
BH Job #: 111872740
Rig: H&P 519
Duration: 7/16/2023-7/21/2023

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	30.00	0.000	184.479	30.00	0.00	0.00	0.00	0.00
KOP 1	450.00	0.000	184.479	450.00	0.00	0.00	0.00	0.00
End of Build	1173.74	21.712	184.479	1156.55	-135.08	-10.58	3.00	124.48
Curve KOP	6214.29	21.712	184.479	5839.48	-1994.12	-156.19	0.00	1837.54
POE	6903.76	74.817	161.208	6285.00	-2473.87	-50.70	8.00	2325.70
Landing Pt.	7093.55	90.000	161.208	6310.00	-2651.45	9.72	8.00	2513.28
BHL	13287.00	90.000	161.208	6310.00	-8514.76	2004.81	0.00	8706.72

Azimuth 161.21° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500

Scale 1 inch = 2000

Gyrodata MS Gyro <17-1/2"> (100'-264') : 100.00ft TVD, 0.04ft N, 0.07ft E
APS EM 12-1/4"> (264')(507'-3311') : 506.94ft TVD, 4.35ft S, 2.04ft E

APS EM <8-3/4"> (3311')(3405'-6047') : 3231.23ft TVD, 953.22ft S, 58.76ft W

BH AT Curve+Axial <8-1/2"> (6047')(6164'-13239') : 5778.22ft TVD, 1999.64ft S, 160.57ft W

Marcellus POE: 6947' MD : 6295.15ft TVD, 2519.60ft S, 38.47ft W

Projected MD at TD: 13264' : 6334.53ft TVD, 8499.94ft S, 1985.23ft E

Slot F

POE

BHL

Hazelbaker Unit 1H 50' LR Hard Line R-2

User specified (HDGM) Dip: 65.87° Field: 51202 nT
Magnetic North is 7.67 degrees West of True North (at 7/15/2023)
Grid North is 0.01 degrees East of True North
To correct azimuth from True to Grid subtract 0.01 degrees
To correct azimuth from Magnetic to Grid subtract 7.68 degrees

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Edsaryar
Scale	0.999600	Report Generated	8/4/2023 at 2:51:28 PM
Convergence at slot	0.01° East	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-29.99	0.91	1645047.31	14267216.35	39°17'20.9410"N	80°59'1.0819"W
Facility Reference Pt			1645046.40	14267246.33	39°17'21.2374"N	80°59'1.0934"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.3013"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 519 (RKB) to Facility Vertical Datum	1065.00ft
Horizontal Reference Pt	Slot	H&P 519 (RKB) to Mean Sea Level	1065.00ft
Vertical Reference Pt	H&P 519 (RKB)	H&P 519 (RKB) to Ground Level at Slot (Slot F)	30.00ft
MD Reference Pt	H&P 519 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	161.21°

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

WELLPATH DATA (147 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00†	0.000	58.740	0.00	0.00	0.00	0.00	1645047.31	14267216.35	39°17'20.9410"N	80°59'1.0819"W	0.00	0.000	0.00	0.00	0.00	
30.00	0.000	58.740	30.00	0.00	0.00	0.00	1645047.31	14267216.35	39°17'20.9410"N	80°59'1.0819"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.130	58.740	100.00	-0.02	0.04	0.07	1645047.38	14267216.39	39°17'20.9414"N	80°59'1.0810"W	0.08	58.740	0.19	0.19	0.00	Gyrodata MS Gyro <17-1/2"> (100'-264')
200.00	0.110	78.340	200.00	-0.03	0.12	0.26	1645047.57	14267216.47	39°17'20.9422"N	80°59'1.0786"W	0.29	65.225	0.05	-0.02	19.60	
264.00	0.180	102.080	264.00	0.03	0.11	0.42	1645047.73	14267216.46	39°17'20.9421"N	80°59'1.0766"W	0.43	75.124	0.14	0.11	37.09	
507.00	2.150	164.050	506.94	4.78	-4.35	2.04	1645049.35	14267212.00	39°17'20.8980"N	80°59'1.0559"W	4.81	154.850	0.85	0.81	25.50	APS EM 12-1/4"> (264')(507'-3311')
596.00	5.170	166.410	595.75	10.44	-9.86	3.44	1645050.75	14267206.50	39°17'20.8436"N	80°59'1.0381"W	10.44	160.736	3.40	3.39	2.65	
686.00	7.520	180.600	685.20	20.04	-19.69	4.34	1645051.64	14267196.67	39°17'20.7464"N	80°59'1.0268"W	20.16	167.580	3.12	2.61	15.77	
776.00	9.770	186.890	774.17	32.48	-33.16	3.36	1645050.67	14267183.20	39°17'20.6132"N	80°59'1.0393"W	33.33	174.218	2.71	2.50	6.99	
865.00	12.060	189.570	861.55	47.46	-49.83	0.91	1645048.22	14267166.54	39°17'20.4485"N	80°59'1.0705"W	49.84	178.958	2.63	2.57	3.01	
954.00	15.140	189.420	948.05	65.89	-70.47	-2.54	1645044.77	14267145.91	39°17'20.2445"N	80°59'1.1144"W	70.51	182.067	3.46	3.46	-0.17	
1045.00	17.720	188.850	1035.33	88.64	-95.88	-6.62	1645040.69	14267120.51	39°17'19.9934"N	80°59'1.1663"W	96.11	183.949	2.84	2.84	-0.63	
1139.00	20.540	188.610	1124.13	115.96	-126.32	-11.29	1645036.03	14267090.08	39°17'19.6925"N	80°59'1.2258"W	126.83	185.107	3.00	3.00	-0.26	
1233.00	23.190	189.000	1211.36	146.97	-160.91	-16.65	1645030.66	14267055.50	39°17'19.3506"N	80°59'1.2941"W	161.77	185.909	2.82	2.82	0.41	
1328.00	23.640	188.620	1298.53	180.43	-198.22	-22.44	1645024.88	14267018.21	39°17'18.9819"N	80°59'1.3677"W	199.49	186.457	0.50	0.47	-0.40	
1423.00	24.000	187.340	1385.44	214.69	-236.22	-27.76	1645019.56	14266980.23	39°17'18.6064"N	80°59'1.4355"W	237.84	186.702	0.66	0.38	-1.35	
1517.00	24.400	185.300	1471.18	249.57	-274.51	-31.99	1645015.33	14266941.95	39°17'18.2279"N	80°59'1.4894"W	276.37	186.648	0.99	0.43	-2.17	
1611.00	25.010	183.800	1556.58	285.65	-313.67	-35.10	1645012.22	14266902.81	39°17'17.8408"N	80°59'1.5291"W	315.63	186.386	0.93	0.65	-1.60	
1705.00	22.830	184.160	1642.50	320.79	-351.69	-37.74	1645009.58	14266864.80	39°17'17.4651"N	80°59'1.5628"W	353.71	186.126	2.32	-2.32	0.38	
1800.00	22.200	184.370	1730.26	354.26	-387.97	-40.45	1645006.88	14266828.54	39°17'17.1065"N	80°59'1.5972"W	390.07	185.952	0.67	-0.66	0.22	
1894.00	22.610	182.280	1817.16	387.45	-423.73	-42.52	1645004.81	14266792.79	39°17'16.7531"N	80°59'1.6237"W	425.86	185.730	0.95	0.44	-2.22	
1989.00	22.590	180.320	1904.87	421.73	-460.22	-43.35	1645003.98	14266756.31	39°17'16.3924"N	80°59'1.6343"W	462.26	185.381	0.79	-0.02	-2.06	
2084.00	23.030	179.990	1992.44	456.57	-497.05	-43.45	1645003.88	14266719.50	39°17'16.0284"N	80°59'1.6356"W	498.95	184.996	0.48	0.46	-0.35	
2179.00	23.290	179.450	2079.78	492.00	-534.41	-43.26	1645004.06	14266682.15	39°17'15.6591"N	80°59'1.6334"W	536.16	184.628	0.35	0.27	-0.57	
2273.00	22.950	177.960	2166.23	527.20	-571.31	-42.43	1645004.89	14266645.27	39°17'15.2944"N	80°59'1.6229"W	572.89	184.248	0.72	-0.36	-1.59	
2368.00	22.440	176.380	2253.88	562.43	-607.92	-40.63	1645006.70	14266608.68	39°17'14.9326"N	80°59'1.6000"W	609.27	183.824	0.84	-0.54	-1.66	
2462.00	21.030	180.040	2341.20	595.71	-642.69	-39.51	1645007.82	14266573.92	39°17'14.5889"N	80°59'1.5859"W	643.90	183.518	2.08	-1.50	3.89	
2556.00	20.380	182.120	2429.13	626.97	-675.91	-40.13	1645007.20	14266540.71	39°17'14.2605"N	80°59'1.5938"W	677.10	183.397	1.04	-0.69	2.21	
2651.00	19.770	179.860	2518.36	657.64	-708.51	-40.70	1645006.63	14266508.12	39°17'13.9383"N	80°59'1.6011"W	709.68	183.288	1.04	-0.64	-2.38	
2746.00	19.380	184.300	2607.87	687.37	-740.30	-41.84	1645005.49	14266476.35	39°17'13.6242"N	80°59'1.6157"W	741.48	183.235	1.62	-0.41	4.67	

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

WELLPATH DATA (147 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
2840.00	19.090	186.030	2696.62	715.67	-771.14	-44.63	1645002.70	14266445.52	39°17'13.3194"N	80°59'1.6512"W	772.43	183.312	0.68	-0.31	1.84	
2935.00	18.220	183.590	2786.63	743.50	-801.41	-47.19	1645000.14	14266415.26	39°17'13.0202"N	80°59'1.6839"W	802.80	183.370	1.23	-0.92	-2.57	
3029.00	19.560	185.490	2875.57	771.43	-831.74	-49.61	1644997.72	14266384.94	39°17'12.7204"N	80°59'1.7148"W	833.22	183.414	1.57	1.43	2.02	
3124.00	19.800	187.070	2965.02	800.41	-863.54	-53.12	1644994.22	14266353.16	39°17'12.4061"N	80°59'1.7594"W	865.17	183.520	0.61	0.25	1.66	
3218.00	18.930	184.980	3053.70	828.69	-894.53	-56.40	1644990.93	14266322.18	39°17'12.0998"N	80°59'1.8012"W	896.31	183.608	1.18	-0.93	-2.22	
3311.00	18.340	182.310	3141.83	856.15	-924.18	-58.30	1644989.04	14266292.54	39°17'11.8068"N	80°59'1.8255"W	926.02	183.609	1.12	-0.63	-2.87	
3405.00	17.670	179.450	3231.23	883.49	-953.22	-58.76	1644988.58	14266263.51	39°17'11.5197"N	80°59'1.8314"W	955.03	183.527	1.18	-0.71	-3.04	APS EM <8-3/4"> (3311')(3405'-6047')
3500.00	20.560	178.470	3320.98	913.12	-984.32	-58.17	1644989.16	14266232.42	39°17'11.2123"N	80°59'1.8240"W	986.04	183.382	3.06	3.04	-1.03	
3594.00	25.430	182.280	3407.49	947.74	-1021.01	-58.54	1644988.80	14266195.75	39°17'10.8497"N	80°59'1.8287"W	1022.69	183.281	5.41	5.18	4.05	
3688.00	27.680	183.650	3491.57	986.76	-1062.97	-60.73	1644986.61	14266153.81	39°17'10.4350"N	80°59'1.8567"W	1064.71	183.270	2.48	2.39	1.46	
3782.00	26.560	186.380	3575.24	1025.96	-1105.65	-64.45	1644982.88	14266111.15	39°17'10.0132"N	80°59'1.9042"W	1107.53	183.336	1.78	-1.19	2.90	
3877.00	26.570	186.310	3660.21	1064.43	-1147.87	-69.15	1644978.19	14266068.94	39°17'9.5958"N	80°59'1.9640"W	1149.95	183.447	0.03	0.01	-0.07	
3971.00	26.400	188.950	3744.34	1101.96	-1189.41	-74.71	1644972.63	14266027.41	39°17'9.1853"N	80°59'2.0348"W	1191.76	183.594	1.27	-0.18	2.81	
4065.00	26.510	187.930	3828.50	1139.20	-1230.84	-80.86	1644966.49	14265986.01	39°17'8.7759"N	80°59'2.1131"W	1233.49	183.758	0.50	0.12	-1.09	
4159.00	24.690	185.170	3913.27	1175.88	-1271.17	-85.52	1644961.82	14265945.69	39°17'8.3772"N	80°59'2.1725"W	1274.04	183.849	2.31	-1.94	-2.94	
4253.00	21.370	192.430	3999.79	1208.48	-1307.47	-90.98	1644956.37	14265909.41	39°17'8.0185"N	80°59'2.2420"W	1310.63	183.980	4.64	-3.53	7.72	
4348.00	20.730	192.100	4088.45	1237.71	-1340.81	-98.23	1644949.12	14265876.08	39°17'7.6890"N	80°59'2.3342"W	1344.40	184.190	0.69	-0.67	-0.35	
4442.00	20.330	188.830	4176.48	1266.46	-1373.21	-104.22	1644943.13	14265843.69	39°17'7.3687"N	80°59'2.4105"W	1377.16	184.340	1.29	-0.43	-3.48	
4536.00	20.400	186.520	4264.61	1295.74	-1405.63	-108.59	1644938.76	14265811.29	39°17'7.0484"N	80°59'2.4661"W	1409.81	184.418	0.86	0.07	-2.46	
4630.00	19.590	183.030	4352.94	1325.18	-1437.64	-111.28	1644936.07	14265779.29	39°17'6.7319"N	80°59'2.5005"W	1441.94	184.426	1.53	-0.86	-3.71	
4724.00	20.360	186.800	4441.29	1354.56	-1469.62	-114.05	1644933.30	14265747.32	39°17'6.4159"N	80°59'2.5358"W	1474.03	184.438	1.60	0.82	4.01	
4819.00	21.240	189.400	4530.10	1384.63	-1503.00	-118.82	1644928.54	14265713.95	39°17'6.0859"N	80°59'2.5965"W	1507.69	184.520	1.34	0.93	2.74	
4912.00	20.710	186.680	4616.94	1414.32	-1535.96	-123.48	1644923.88	14265681.01	39°17'5.7602"N	80°59'2.6559"W	1540.91	184.596	1.19	-0.57	-2.92	
5007.00	22.460	189.580	4705.28	1445.46	-1570.54	-128.46	1644918.90	14265646.44	39°17'5.4185"N	80°59'2.7192"W	1575.78	184.676	2.16	1.84	3.05	
5103.00	23.580	192.330	4793.63	1478.04	-1607.38	-135.61	1644911.75	14265609.61	39°17'5.0543"N	80°59'2.8103"W	1613.09	184.823	1.62	1.17	2.86	
5197.00	22.910	189.080	4880.01	1510.31	-1643.82	-142.51	1644904.85	14265573.19	39°17'4.6942"N	80°59'2.8981"W	1649.98	184.955	1.54	-0.71	-3.46	
5292.00	22.480	186.220	4967.65	1543.11	-1680.13	-147.40	1644899.97	14265536.89	39°17'4.3353"N	80°59'2.9603"W	1686.59	185.014	1.25	-0.45	-3.01	
5386.00	21.710	182.550	5054.75	1575.60	-1715.37	-150.12	1644897.25	14265501.67	39°17'3.9870"N	80°59'2.9950"W	1721.93	185.002	1.68	-0.82	-3.90	
5480.00	21.000	179.520	5142.30	1607.78	-1749.58	-150.75	1644896.62	14265467.47	39°17'3.6489"N	80°59'3.0031"W	1756.07	184.925	1.40	-0.76	-3.22	
5575.00	22.390	183.380	5230.57	1640.70	-1784.67	-151.68	1644895.69	14265432.40	39°17'3.3021"N	80°59'3.0150"W	1791.10	184.858	2.10	1.46	4.06	

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

WELLPATH DATA (147 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
5669.00	24.500	188.340	5316.82	1674.63	-1821.83	-155.56	1644891.81	14265395.25	39°17'2.9348"N	80°59'3.0644"W	1828.46	184.880	3.07	2.24	5.28	
5764.00	23.530	185.380	5403.60	1709.47	-1860.21	-160.20	1644887.18	14265356.89	39°17'2.5555"N	80°59'3.1235"W	1867.09	184.922	1.63	-1.02	-3.12	
5858.00	22.240	183.090	5490.20	1743.10	-1896.65	-162.91	1644884.46	14265320.46	39°17'2.1953"N	80°59'3.1581"W	1903.64	184.909	1.67	-1.37	-2.44	
5952.00	20.520	179.770	5577.73	1775.23	-1930.89	-163.81	1644883.57	14265286.23	39°17'1.8569"N	80°59'3.1696"W	1937.83	184.849	2.24	-1.83	-3.53	
6047.00	18.930	176.990	5667.15	1805.84	-1962.93	-162.93	1644884.44	14265254.20	39°17'1.5402"N	80°59'3.1585"W	1969.69	184.745	1.94	-1.67	-2.93	
6164.00	17.720	175.590	5778.22	1841.35	-1999.64	-160.57	1644886.81	14265217.51	39°17'1.1774"N	80°59'3.1285"W	2006.08	184.591	1.10	-1.03	-1.20	BH AT Curve+Axial <8-1/2"> (6047')(6164'-13239')
6259.00	21.650	174.880	5867.65	1872.40	-2031.52	-157.89	1644889.48	14265185.64	39°17'0.8623"N	80°59'3.0945"W	2037.65	184.444	4.14	4.14	-0.75	
6353.00	28.560	172.030	5952.72	1911.37	-2071.10	-153.22	1644894.15	14265146.09	39°17'0.4711"N	80°59'3.0352"W	2076.76	184.231	7.46	7.35	-3.03	
6448.00	36.580	167.450	6032.73	1961.90	-2121.31	-143.90	1644903.46	14265095.90	39°16'59.9748"N	80°59'2.9169"W	2126.18	183.881	8.83	8.44	-4.82	
6482.00†	39.408	166.773	6059.52	1982.72	-2141.70	-139.23	1644908.13	14265075.51	39°16'59.7732"N	80°59'2.8575"W	2146.23	183.720	8.41	8.32	-1.99	Sycamore: 6482' MD
6543.00	44.490	165.740	6104.87	2023.32	-2181.30	-129.53	1644917.83	14265035.93	39°16'59.3819"N	80°59'2.7342"W	2185.14	183.398	8.41	8.33	-1.69	
6615.00†	50.779	165.732	6153.37	2076.33	-2232.83	-116.43	1644930.93	14264984.42	39°16'58.8725"N	80°59'2.5677"W	2235.86	182.985	8.73	8.73	-0.01	Middlesex: 6615' MD
6637.00	52.700	165.730	6166.99	2093.55	-2249.57	-112.17	1644935.18	14264967.69	39°16'58.7071"N	80°59'2.5136"W	2252.36	182.855	8.73	8.73	-0.01	
6731.00	61.690	166.700	6217.86	2172.17	-2326.23	-93.40	1644953.95	14264891.06	39°16'57.9493"N	80°59'2.2750"W	2328.10	182.299	9.60	9.56	1.03	
6824.00†	68.259	165.063	6257.19	2256.11	-2407.90	-72.82	1644974.52	14264809.42	39°16'57.1421"N	80°59'2.0136"W	2409.00	181.732	7.24	7.06	-1.76	Burkett: 6824' MD
6826.00	68.400	165.030	6257.93	2257.97	-2409.69	-72.34	1644974.99	14264807.63	39°16'57.1244"N	80°59'2.0075"W	2410.78	181.720	7.24	7.07	-1.67	
6897.00†	72.632	162.457	6281.61	2324.81	-2473.92	-53.59	1644993.74	14264743.42	39°16'56.4895"N	80°59'1.7692"W	2474.50	181.241	6.87	5.96	-3.62	Tully: 6897' MD
6920.00	74.010	161.650	6288.21	2346.84	-2494.88	-46.81	1645000.52	14264722.47	39°16'56.2823"N	80°59'1.6829"W	2495.32	181.075	6.87	5.99	-3.51	
6947.00†	76.166	161.078	6295.15	2372.93	-2519.60	-38.47	1645008.86	14264697.76	39°16'56.0380"N	80°59'1.5769"W	2519.90	180.875	8.24	7.98	-2.12	Marcellus POE: 6947' MD
7015.00	81.600	159.680	6308.26	2439.62	-2582.43	-16.06	1645031.25	14264634.96	39°16'55.4170"N	80°59'1.2921"W	2582.48	180.356	8.24	7.99	-2.06	
7109.00	89.350	160.030	6315.67	2533.23	-2670.33	16.18	1645063.49	14264547.09	39°16'54.5481"N	80°59'0.8822"W	2670.38	179.653	8.25	8.24	0.37	
7204.00	89.260	159.740	6316.82	2628.20	-2759.53	48.85	1645096.14	14264457.93	39°16'53.6664"N	80°59'0.4670"W	2759.96	178.986	0.32	-0.09	-0.31	
7298.00	89.510	160.940	6317.83	2722.18	-2848.05	80.47	1645127.75	14264369.45	39°16'52.7915"N	80°59'0.0651"W	2849.18	178.381	1.30	0.27	1.28	
7392.00	91.720	162.450	6316.82	2816.16	-2937.28	109.99	1645157.26	14264280.26	39°16'51.9096"N	80°58'59.6899"W	2939.33	177.855	2.85	2.35	1.61	
7487.00	89.850	160.320	6315.52	2911.14	-3027.29	140.31	1645187.57	14264190.28	39°16'51.0198"N	80°58'59.3045"W	3030.54	177.346	2.98	-1.97	-2.24	
7581.00	89.780	161.260	6315.83	3005.14	-3116.05	171.24	1645218.48	14264101.55	39°16'50.1425"N	80°58'58.9114"W	3120.75	176.855	1.00	-0.07	1.00	
7675.00	89.880	160.990	6316.10	3099.14	-3205.00	201.65	1645248.88	14264012.64	39°16'49.2633"N	80°58'58.5249"W	3211.33	176.400	0.31	0.11	-0.29	
7770.00	88.890	160.770	6317.12	3194.13	-3294.75	232.76	1645279.98	14263922.92	39°16'48.3761"N	80°58'58.1295"W	3302.96	175.959	1.07	-1.04	-0.23	
7864.00	89.720	160.690	6318.26	3288.12	-3383.48	263.78	1645310.99	14263834.23	39°16'47.4991"N	80°58'57.7352"W	3393.74	175.542	0.89	0.88	-0.09	
7959.00	90.000	161.300	6318.50	3383.12	-3473.30	294.72	1645341.91	14263744.45	39°16'46.6113"N	80°58'57.3420"W	3485.78	175.150	0.71	0.29	0.64	

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

WELLPATH DATA (147 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
8053.00	88.800	160.370	6319.48	3477.11	-3562.08	325.58	1645372.76	14263655.70	39°16'45.7338"N	80°58'56.9499"W	3576.93	174.778	1.62	-1.28	-0.99	
8148.00	88.460	160.930	6321.75	3572.08	-3651.69	357.04	1645404.21	14263566.13	39°16'44.8480"N	80°58'56.5499"W	3669.10	174.416	0.69	-0.36	0.59	
8242.00	88.890	160.720	6323.93	3666.05	-3740.45	387.91	1645435.07	14263477.41	39°16'43.9707"N	80°58'56.1576"W	3760.51	174.079	0.51	0.46	-0.22	
8336.00	89.140	160.220	6325.54	3760.03	-3829.03	419.33	1645466.47	14263388.86	39°16'43.0951"N	80°58'55.7583"W	3851.92	173.750	0.59	0.27	-0.53	
8431.00	89.480	161.750	6326.69	3855.02	-3918.83	450.28	1645497.41	14263299.09	39°16'42.2074"N	80°58'55.3649"W	3944.62	173.445	1.65	0.36	1.61	
8526.00	88.000	159.990	6328.78	3949.99	-4008.56	481.40	1645528.52	14263209.40	39°16'41.3206"N	80°58'54.9694"W	4037.36	173.152	2.42	-1.56	-1.85	
8620.00	89.320	158.540	6330.97	4043.90	-4096.44	514.67	1645561.78	14263121.55	39°16'40.4519"N	80°58'54.5466"W	4128.65	172.839	2.09	1.40	-1.54	
8715.00	89.420	161.520	6332.02	4138.86	-4185.72	547.11	1645594.20	14263032.32	39°16'39.5695"N	80°58'54.1343"W	4221.32	172.553	3.14	0.11	3.14	
8809.00	92.680	160.970	6330.30	4232.84	-4274.70	577.33	1645624.40	14262943.37	39°16'38.6899"N	80°58'53.7503"W	4313.51	172.308	3.52	3.47	-0.59	
8904.00	88.920	161.650	6328.97	4327.81	-4364.66	607.76	1645654.83	14262853.44	39°16'37.8007"N	80°58'53.3635"W	4406.77	172.073	4.02	-3.96	0.72	
8998.00	88.220	160.230	6331.32	4421.78	-4453.48	638.45	1645685.50	14262764.66	39°16'36.9228"N	80°58'52.9736"W	4499.01	171.842	1.68	-0.74	-1.51	
9092.00	90.650	161.980	6332.24	4515.76	-4542.40	668.88	1645715.92	14262675.78	39°16'36.0439"N	80°58'52.5868"W	4591.38	171.623	3.19	2.59	1.86	
9187.00	90.220	159.870	6331.52	4610.75	-4632.17	699.92	1645746.95	14262586.04	39°16'35.1565"N	80°58'52.1922"W	4684.76	171.408	2.27	-0.45	-2.22	
9281.00	91.450	161.290	6330.15	4704.73	-4720.81	731.17	1645778.19	14262497.43	39°16'34.2803"N	80°58'51.7951"W	4777.10	171.196	2.00	1.31	1.51	
9375.00	90.740	162.130	6328.36	4798.71	-4810.05	760.67	1645807.67	14262408.24	39°16'33.3983"N	80°58'51.4203"W	4869.82	171.014	1.17	-0.76	0.89	
9470.00	89.780	159.880	6327.92	4893.70	-4899.87	791.59	1645838.58	14262318.45	39°16'32.5105"N	80°58'51.0274"W	4963.39	170.823	2.57	-1.01	-2.37	
9564.00	91.450	161.610	6326.92	4987.68	-4988.60	822.58	1645869.56	14262229.76	39°16'31.6334"N	80°58'50.6335"W	5055.96	170.637	2.56	1.78	1.84	
9658.00	88.950	157.880	6326.59	5081.63	-5076.76	855.12	1645902.08	14262141.63	39°16'30.7620"N	80°58'50.2200"W	5148.27	170.439	4.78	-2.66	-3.97	
9753.00	91.880	159.830	6325.90	5176.53	-5165.35	889.38	1645936.33	14262053.08	39°16'29.8863"N	80°58'49.7846"W	5241.35	170.231	3.70	3.08	2.05	
9847.00	91.450	160.630	6323.17	5270.48	-5253.77	921.16	1645968.10	14261964.69	39°16'29.0123"N	80°58'49.3807"W	5333.91	170.055	0.97	-0.46	0.85	
9942.00	89.820	158.760	6322.11	5365.43	-5342.85	954.12	1646001.05	14261875.65	39°16'28.1318"N	80°58'48.9618"W	5427.38	169.875	2.61	-1.72	-1.97	
10036.00	89.600	162.520	6322.59	5459.41	-5431.52	985.28	1646032.19	14261787.01	39°16'27.2553"N	80°58'48.5659"W	5520.16	169.718	4.01	-0.23	4.00	
10130.00	90.090	163.580	6322.84	5553.36	-5521.43	1012.68	1646059.58	14261697.14	39°16'26.3666"N	80°58'48.2177"W	5613.53	169.607	1.24	0.52	1.13	
10225.00	90.030	163.250	6322.75	5648.29	-5612.48	1039.80	1646086.69	14261606.12	39°16'25.4666"N	80°58'47.8731"W	5707.99	169.504	0.35	-0.06	-0.35	
10319.00	88.800	162.360	6323.71	5742.24	-5702.27	1067.58	1646114.47	14261516.37	39°16'24.5791"N	80°58'47.5201"W	5801.35	169.396	1.62	-1.31	-0.95	
10414.00	88.740	161.770	6325.74	5837.21	-5792.64	1096.83	1646143.70	14261426.04	39°16'23.6859"N	80°58'47.1484"W	5895.56	169.278	0.62	-0.06	-0.62	
10508.00	91.080	163.160	6325.89	5931.18	-5882.26	1125.15	1646172.01	14261336.46	39°16'22.8000"N	80°58'46.7886"W	5988.90	169.171	2.90	2.49	1.48	
10603.00	88.590	162.380	6326.17	6026.13	-5972.99	1153.29	1646200.13	14261245.76	39°16'21.9032"N	80°58'46.4311"W	6083.31	169.072	2.75	-2.62	-0.82	
10697.00	91.170	163.570	6326.36	6120.08	-6062.86	1180.81	1646227.64	14261155.93	39°16'21.0149"N	80°58'46.0814"W	6176.78	168.979	3.02	2.74	1.27	
10791.00	88.860	162.740	6326.34	6214.02	-6152.82	1208.04	1646254.87	14261066.00	39°16'20.1257"N	80°58'45.7353"W	6270.29	168.892	2.61	-2.46	-0.88	

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

WELLPATH DATA (147 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
10886.00	89.660	162.750	6327.56	6308.98	-6243.53	1236.22	1646283.03	14260975.33	39°16'19.2290"N	80°58'45.3773"W	6364.74	168.800	0.84	0.84	0.01	
10980.00	89.050	163.000	6328.62	6402.93	-6333.36	1263.90	1646310.70	14260885.53	39°16'18.3411"N	80°58'45.0257"W	6458.24	168.714	0.70	-0.65	0.27	
11075.00	88.180	162.240	6330.92	6497.87	-6424.00	1292.27	1646339.06	14260794.94	39°16'17.4453"N	80°58'44.6652"W	6552.68	168.626	1.22	-0.92	-0.80	
11169.00	89.690	158.980	6332.67	6591.83	-6512.63	1323.46	1646370.24	14260706.33	39°16'16.5691"N	80°58'44.2688"W	6645.75	168.513	3.82	1.61	-3.47	
11263.00	89.140	160.030	6333.63	6685.79	-6600.68	1356.37	1646403.14	14260618.33	39°16'15.6988"N	80°58'43.8506"W	6738.60	168.388	1.26	-0.59	1.12	
11357.00	89.880	162.270	6334.43	6779.78	-6689.63	1386.74	1646433.49	14260529.41	39°16'14.8196"N	80°58'43.4648"W	6831.85	168.289	2.51	0.79	2.38	
11452.00	90.090	163.220	6334.46	6874.74	-6780.35	1414.92	1646461.66	14260438.73	39°16'13.9229"N	80°58'43.1067"W	6926.41	168.213	1.02	0.22	1.00	
11546.00	89.480	162.580	6334.81	6968.70	-6870.19	1442.56	1646489.29	14260348.92	39°16'13.0348"N	80°58'42.7556"W	7020.01	168.142	0.94	-0.65	-0.68	
11641.00	89.910	162.480	6335.31	7063.67	-6960.81	1471.08	1646517.80	14260258.34	39°16'12.1391"N	80°58'42.3932"W	7114.56	168.067	0.46	0.45	-0.11	
11736.00	89.260	159.960	6336.00	7158.66	-7050.74	1501.66	1646548.36	14260168.44	39°16'11.2502"N	80°58'42.0047"W	7208.88	167.977	2.74	-0.68	-2.65	
11830.00	90.520	162.660	6336.18	7252.65	-7139.78	1531.78	1646578.47	14260079.44	39°16'10.3701"N	80°58'41.6220"W	7302.24	167.891	3.17	1.34	2.87	
11925.00	90.000	162.500	6335.75	7347.62	-7230.42	1560.22	1646606.90	14259988.84	39°16'9.4742"N	80°58'41.2606"W	7396.84	167.823	0.57	-0.55	-0.17	
12019.00	89.320	160.590	6336.31	7441.61	-7319.58	1589.97	1646636.64	14259899.72	39°16'8.5929"N	80°58'40.8826"W	7490.27	167.744	2.16	-0.72	-2.03	
12114.00	89.290	160.320	6337.46	7536.60	-7409.10	1621.75	1646668.41	14259810.23	39°16'7.7080"N	80°58'40.4788"W	7584.51	167.653	0.29	-0.03	-0.28	
12208.00	90.220	160.030	6337.86	7630.58	-7497.52	1653.63	1646700.28	14259721.84	39°16'6.8339"N	80°58'40.0737"W	7677.72	167.562	1.04	0.99	-0.31	
12302.00	89.850	161.830	6337.81	7724.58	-7586.36	1684.34	1646730.97	14259633.04	39°16'5.9558"N	80°58'39.6836"W	7771.09	167.482	1.95	-0.39	1.91	
12397.00	89.380	162.190	6338.44	7819.56	-7676.71	1713.68	1646760.30	14259542.72	39°16'5.0627"N	80°58'39.3108"W	7865.66	167.416	0.62	-0.49	0.38	
12491.00	89.570	162.120	6339.31	7913.55	-7766.19	1742.49	1646789.10	14259453.28	39°16'4.1783"N	80°58'38.9448"W	7959.27	167.354	0.22	0.20	-0.07	
12585.00	91.050	163.270	6338.80	8007.51	-7855.93	1770.45	1646817.04	14259363.58	39°16'3.2913"N	80°58'38.5896"W	8052.95	167.300	1.99	1.57	1.22	
12680.00	91.140	163.260	6336.98	8102.43	-7946.89	1797.79	1646844.38	14259272.66	39°16'2.3922"N	80°58'38.2422"W	8147.70	167.253	0.10	0.09	-0.01	
12774.00	90.550	160.520	6335.60	8196.41	-8036.21	1827.01	1646873.58	14259183.37	39°16'1.5092"N	80°58'37.8710"W	8241.28	167.192	2.98	-0.63	-2.91	
12869.00	90.580	161.310	6334.66	8291.40	-8125.98	1858.07	1646904.63	14259093.63	39°16'0.6219"N	80°58'37.4764"W	8335.71	167.120	0.83	0.03	0.83	
12963.00	89.750	160.900	6334.39	8385.40	-8214.92	1888.51	1646935.06	14259004.73	39°15'59.7428"N	80°58'37.0897"W	8429.20	167.053	0.98	-0.88	-0.44	
13058.00	90.250	160.980	6334.39	8480.40	-8304.71	1919.53	1646966.07	14258914.98	39°15'58.8552"N	80°58'36.6955"W	8523.66	166.985	0.53	0.53	0.08	
13152.00	89.690	161.030	6334.44	8574.39	-8393.59	1950.13	1646996.65	14258826.13	39°15'57.9767"N	80°58'36.3068"W	8617.15	166.920	0.60	-0.60	0.05	
13239.00	90.120	162.180	6334.58	8661.39	-8476.14	1977.58	1647024.10	14258743.61	39°15'57.1607"N	80°58'35.9580"W	8703.78	166.867	1.41	0.49	1.32	
13264.00‡	90.120	162.180	6334.53	8686.39	-8499.94	1985.23	1647031.74	14258719.82	39°15'56.9254"N	80°58'35.8608"W	8728.70	166.854	0.00	0.00	0.00	Projected MD at TD: 13264'

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

HOLE & CASING SECTIONS - Ref Wellbore: Hazelbaker Unit 1H AWB Ref Wellpath: Hazelbaker Unit 1H AWP Proj: 13264'

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	30.00	130.00	100.00	30.00	130.00	0.00	0.00	0.07	0.13
17.5in Open Hole	130.00	379.00	249.00	130.00	378.99	0.07	0.13	-0.93	0.97
13.375in Casing Surface	30.00	359.00	329.00	30.00	359.00	0.00	0.00	-0.61	0.84
12.25in Open Hole	379.00	3378.00	2999.00	378.99	3205.52	-0.93	0.97	-944.98	-58.78
9.625in Casing Intermediate	30.00	3354.00	3324.00	30.00	3182.68	0.00	0.00	-937.59	-58.69
8.75in Open Hole	3378.00	6125.00	2747.00	3205.52	5741.11	-944.98	-58.78	-1987.67	-161.44
8.5in Open Hole	6125.00	13264.00	7139.00	5741.11	6334.53	-1987.67	-161.44	-8499.94	1985.23
5.5in Casing Production	30.00	13244.00	13214.00	30.00	6334.57	0.00	0.00	-8480.90	1979.11

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Hazelbaker Unit 1H POE Rev-1	6285.00	-2473.87	-50.70	1644996.63	14264743.47	39°16'56.4900"N	80°59'1.7324"W	point
Hazelbaker Unit 1H BHL Rev-1	6310.00	-8968.55	2159.22	1647205.66	14258251.41	39°15'52.2934"N	80°58'33.6503"W	point
Hazelbaker Unit 1H BHL Rev-2	6310.00	-8514.76	2004.81	1647051.31	14258705.01	39°15'56.7789"N	80°58'35.6120"W	point
Hazelbaker Unit 1H LP Rev-1	6310.00	-2651.45	9.72	1645057.03	14264565.96	39°16'54.7347"N	80°59'0.9644"W	point
Hazelbaker Unit 1H 50' L/R Hard Line R-2	6750.00	-5494.32	977.05	1646023.97	14261724.24	39°16'26.6347"N	80°58'48.6706"W	rectangle
	2D Rectangle 6381.02 x 100.							

WELLPATH COMPOSITION - Ref Wellbore: Hazelbaker Unit 1H AWB Ref Wellpath: Hazelbaker Unit 1H AWP Proj: 13264'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
30.00	264.00	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata MS Gyro <17-1/2"> (100'-264')	Hazelbaker Unit 1H AWB	7/15/2023
264.00	3311.00	BH NaviTrak (2019) (Axial Corr+HRGM)	02 APS EM <12-1/4"> (264')(507'-3311')	Hazelbaker Unit 1H AWB	7/15/2023
3311.00	6047.00	BH NaviTrak (2019) (Axial Corr+HRGM)	03 APS EM <8-3/4"> (3311')(3405'-6047')	Hazelbaker Unit 1H AWB	7/15/2023
6047.00	13264.00	BH AutoTrak Curve/eXpress (2019) (Axial Corr+HRGM)	04 BH AT Curve+Axial <8-1/2"> (6047')(6164'-13239')	Hazelbaker Unit 1H AWB	7/15/2023

Actual Wellpath Report

Hazelbaker Unit 1H AWP Proj: 13264'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Hazelbaker Unit 1H
Field	Ritchie	API	47-085-10483-0000
Facility	Jackson Pad	Wellbore	Hazelbaker Unit 1H AWB
Slot	Slot F		

COMMENTS

Wellpath general comments

API: 47-085-10483-0000
BH Job #: 111872740
Rig: H&P 519
Duration: 7/16/2023-7/21/2023
Gyrodata MS Gyro <17-1/2"> (100'-264')
APS EM <12-1/4"> (264')(507'-3311')
APS EM <8-3/4"> (3311')(3405'-6047')
BH AT Curve+Axial <8-1/2"> (6047')(6164'-13239')
Sycamore: 6482' MD
Middlesex: 6615' MD
Burkett: 6824' MD
Tully: 6897' MD
Marcellus POE: 6947' MD
Projected MD at TD: 13264'