ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
Field: Ritchie
Facility: Minear Pad
Slot: Slot A
Well: Keel Unit 1H
Wellbore: Keel Unit 1H PWB

Plot reference wellpath is Keel Unit 1H PWP Rev-B.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 317 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 317 (RKB)	Scale: True distance
H&P 317 (RKB) to Mean Sea Level: 1122.5 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot A): -1097 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: edmaryar on 2025-06-06; Database: WA_MPL_EASTERNUS_Defn

Location Information

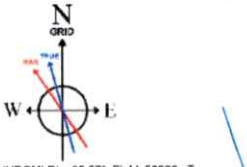
Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Minear Pad			1652230.170	14234535.980	39°11'57.7821"N	80°57'29.8821"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot A	0.00	0.00	1652230.170	14234535.980	39°11'57.7821"N	80°57'29.8821"W
Comment	Keel Unit 1H					
H&P 317 (RKB) to Ground level (At Slot: Slot A)					25.5ft	
Mean Sea Level to Ground level (At Slot: Slot A)					-1097ft	
H&P 317 (RKB) to Mean Sea Level					1122.5ft	

Well Profile Data

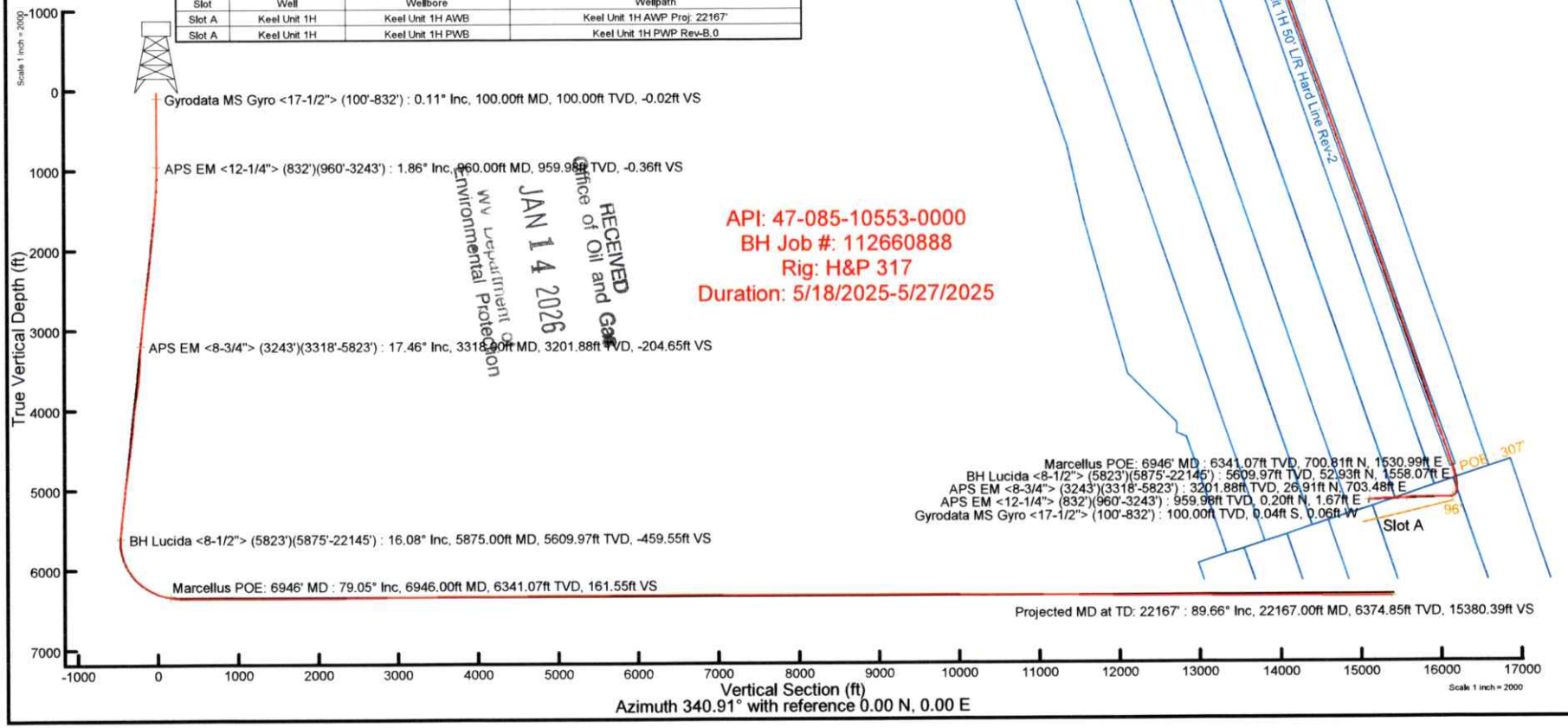
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	25.50	0.000	88.287	25.50	0.00	0.00	0.00	0.00
KOP 1	920.00	0.000	88.287	920.00	0.00	0.00	0.00	0.00
End of Build	1576.23	19.687	88.287	1563.39	3.34	111.59	3.00	-33.34
Curve KOP	5842.02	19.687	88.287	5579.83	46.29	1548.00	0.00	-462.54
POE	6870.70	75.762	340.914	6323.00	625.84	1560.39	8.00	81.09
Landing Pt.	7048.68	90.000	340.914	6345.00	792.31	1502.79	8.00	257.24
BHL	22195.00	90.000	340.914	6345.00	15106.03	-3449.82	0.00	15403.57

Well Data

Slot	Well	Wellbore	Wellpath
Slot A	Keel Unit 1H	Keel Unit 1H AWB	Keel Unit 1H AWP Proj: 22167'
Slot A	Keel Unit 1H	Keel Unit 1H PWB	Keel Unit 1H PWP Rev-B.0



User specified (HDGM) Dip: 65.57° Field: 50929 nT
Magnetic North is 7.65 degrees West of True North (at 5/17/2025)
Grid North is 0.03 degrees East of True North
To correct azimuth from True to Grid subtract 0.03 degrees
To correct azimuth from Magnetic to Grid subtract 7.68 degrees



API: 47-085-10553-0000
BH Job #: 112660888
Rig: H&P 317
Duration: 5/18/2025-5/27/2025

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Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

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	6/6/2025 at 10:54:19 PM
Convergence at slot	0.03° 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	0.00	0.00	1652230.17	14234535.98	39°11'57.7821"N	80°57'29.8821"W
Facility Reference Pt			1652230.17	14234535.98	39°11'57.7821"N	80°57'29.8821"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 317 (RKB) to Facility Vertical Datum	1122.50ft
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level	1122.50ft
Vertical Reference Pt	H&P 317 (RKB)	H&P 317 (RKB) to Ground Level at Slot (Slot A)	25.50ft
MD Reference Pt	H&P 317 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	340.91°

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Keel Unit 1H AWP Proj: 22167'

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Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (243 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	231.100	0.00	0.00	0.00	0.00	1652230.17	14234535.98	39°11'57.7821"N	80°57'29.8821"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	231.100	25.50	0.00	0.00	0.00	1652230.17	14234535.98	39°11'57.7821"N	80°57'29.8821"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.110	231.100	100.00	-0.02	-0.04	-0.06	1652230.11	14234535.94	39°11'57.7817"N	80°57'29.8828"W	0.07	231.100	0.15	0.15	0.00	Gyrodata MS Gyro <17-1/2"> (100'-832')
200.00	0.070	294.680	200.00	-0.01	-0.08	-0.19	1652229.98	14234535.90	39°11'57.7813"N	80°57'29.8844"W	0.20	246.795	0.10	-0.04	63.58	
300.00	0.040	35.880	300.00	0.05	-0.03	-0.22	1652229.95	14234535.95	39°11'57.7818"N	80°57'29.8849"W	0.22	263.315	0.09	-0.03	101.20	
400.00	0.110	304.430	400.00	0.15	0.06	-0.28	1652229.89	14234536.04	39°11'57.7827"N	80°57'29.8856"W	0.29	281.455	0.12	0.07	-91.45	
500.00	0.070	328.500	500.00	0.28	0.16	-0.39	1652229.78	14234536.14	39°11'57.7837"N	80°57'29.8870"W	0.42	292.647	0.05	-0.04	24.07	
600.00	0.080	292.310	600.00	0.39	0.24	-0.49	1652229.68	14234536.22	39°11'57.7845"N	80°57'29.8883"W	0.54	296.376	0.05	0.01	-36.19	
700.00	0.120	57.220	700.00	0.46	0.32	-0.46	1652229.71	14234536.30	39°11'57.7853"N	80°57'29.8880"W	0.57	305.006	0.18	0.04	124.91	
800.00	0.090	176.290	800.00	0.41	0.30	-0.37	1652229.80	14234536.28	39°11'57.7851"N	80°57'29.8868"W	0.48	309.277	0.18	-0.03	119.07	
832.00	0.040	217.680	832.00	0.38	0.27	-0.38	1652229.79	14234536.25	39°11'57.7848"N	80°57'29.8869"W	0.46	305.613	0.20	-0.16	129.34	
960.00	1.860	91.060	959.98	-0.36	0.20	1.67	1652231.84	14234536.18	39°11'57.7840"N	80°57'29.8608"W	1.69	83.341	1.47	1.42	-98.92	APS EM <12-1/4"> (832')(960'-3243')
1050.00	4.570	88.530	1049.83	-1.95	0.26	6.72	1652236.89	14234536.24	39°11'57.7846"N	80°57'29.7967"W	6.72	87.781	3.01	3.01	-2.81	
1145.00	7.290	90.230	1144.31	-5.09	0.33	16.53	1652246.70	14234536.31	39°11'57.7853"N	80°57'29.6721"W	16.54	88.845	2.87	2.86	1.79	
1239.00	9.490	92.020	1237.30	-9.86	0.04	30.24	1652260.40	14234536.02	39°11'57.7823"N	80°57'29.4979"W	30.24	89.931	2.36	2.34	1.90	
1334.00	12.530	85.650	1330.54	-15.30	0.54	48.35	1652278.50	14234536.52	39°11'57.7872"N	80°57'29.2679"W	48.35	89.358	3.44	3.20	-6.71	
1429.00	15.460	83.900	1422.71	-20.77	2.67	71.22	1652301.36	14234538.65	39°11'57.8082"N	80°57'28.9774"W	71.27	87.853	3.12	3.08	-1.84	
1523.00	18.270	84.540	1512.66	-27.06	5.40	98.35	1652328.48	14234541.38	39°11'57.8351"N	80°57'28.6328"W	98.50	86.855	3.00	2.99	0.68	
1618.00	19.490	84.160	1602.55	-34.20	8.43	128.94	1652359.06	14234544.41	39°11'57.8649"N	80°57'28.2442"W	129.22	86.258	1.29	1.28	-0.40	
1712.00	20.430	86.160	1690.90	-42.11	11.13	160.91	1652391.02	14234547.10	39°11'57.8913"N	80°57'27.8381"W	161.30	86.044	1.24	1.00	2.13	
1807.00	20.550	87.220	1779.89	-51.15	13.05	194.11	1652424.20	14234549.02	39°11'57.9102"N	80°57'27.4164"W	194.55	86.155	0.41	0.13	1.12	
1901.00	20.440	86.610	1867.94	-60.23	14.82	226.97	1652457.05	14234550.79	39°11'57.9275"N	80°57'26.9989"W	227.46	86.265	0.26	-0.12	-0.65	
1996.00	20.620	85.570	1956.91	-68.95	17.09	260.21	1652490.27	14234553.06	39°11'57.9498"N	80°57'26.5767"W	260.77	86.242	0.43	0.19	-1.09	
2091.00	21.000	86.120	2045.71	-77.65	19.53	293.87	1652523.92	14234555.51	39°11'57.9738"N	80°57'26.1492"W	294.52	86.197	0.45	0.40	0.58	
2185.00	21.470	86.770	2133.33	-86.77	21.64	327.85	1652557.89	14234557.61	39°11'57.9945"N	80°57'25.7175"W	328.56	86.223	0.56	0.50	0.69	
2280.00	21.430	86.040	2221.75	-96.05	23.82	362.52	1652592.55	14234559.79	39°11'58.0159"N	80°57'25.2771"W	363.30	86.241	0.28	-0.04	-0.77	
2375.00	20.680	89.490	2310.41	-105.93	25.17	396.61	1652626.62	14234561.14	39°11'58.0290"N	80°57'24.8441"W	397.41	86.369	1.52	-0.79	3.63	
2469.00	20.610	90.510	2398.37	-116.77	25.17	429.75	1652659.75	14234561.14	39°11'58.0289"N	80°57'24.4231"W	430.49	86.648	0.39	-0.07	1.09	
2564.00	20.370	90.420	2487.36	-127.90	24.90	463.01	1652692.99	14234560.87	39°11'58.0261"N	80°57'24.0007"W	463.67	86.922	0.25	-0.25	-0.09	
2659.00	19.450	91.350	2576.68	-138.94	24.41	495.35	1652725.32	14234560.38	39°11'58.0210"N	80°57'23.5899"W	495.95	87.179	1.02	-0.97	0.98	

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (243 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
2753.00	19.210	91.580	2665.38	-149.87	23.61	526.46	1652756.42	14234559.58	39°11'58.0130"N	80°57'23.1948"W	526.99	87.432	0.27	-0.26	0.24	
2848.00	18.260	92.330	2755.35	-160.82	22.57	556.95	1652786.90	14234558.55	39°11'58.0026"N	80°57'22.8074"W	557.41	87.679	1.03	-1.00	0.79	
2943.00	18.320	89.220	2845.55	-170.95	22.17	586.75	1652816.69	14234558.14	39°11'57.9985"N	80°57'22.4289"W	587.17	87.836	1.03	0.06	-3.27	
3037.00	17.540	88.910	2934.99	-179.96	22.64	615.69	1652845.61	14234558.61	39°11'58.0030"N	80°57'22.0614"W	616.10	87.894	0.84	-0.83	-0.33	
3132.00	18.610	87.470	3025.30	-188.71	23.58	645.14	1652875.05	14234559.56	39°11'58.0122"N	80°57'21.6872"W	645.57	87.906	1.22	1.13	-1.52	
3227.00	18.380	86.900	3115.39	-197.15	25.06	675.24	1652905.14	14234561.03	39°11'58.0267"N	80°57'21.3049"W	675.71	87.874	0.31	-0.24	-0.60	
3243.00	18.620	86.820	3130.56	-198.55	25.34	680.31	1652910.21	14234561.31	39°11'58.0294"N	80°57'21.2405"W	680.78	87.867	1.51	1.50	-0.50	
3318.00	17.460	85.400	3201.88	-204.65	26.91	703.48	1652933.37	14234562.88	39°11'58.0448"N	80°57'20.9461"W	704.00	87.809	1.65	-1.55	-1.89	APS EM <8-3/4"> (3243')(3318'-5823')
3511.00	18.820	75.100	3385.33	-214.17	37.24	762.45	1652992.31	14234573.20	39°11'58.1466"N	80°57'20.1971"W	763.35	87.204	1.80	0.70	-5.34	
3606.00	18.720	78.450	3475.28	-217.29	44.23	792.19	1653022.04	14234580.19	39°11'58.2155"N	80°57'19.8192"W	793.42	86.804	1.14	-0.11	3.53	
3701.00	17.370	85.410	3565.61	-222.84	48.42	821.27	1653051.11	14234584.38	39°11'58.2568"N	80°57'19.4499"W	822.69	86.626	2.68	-1.42	7.33	
3795.00	17.530	92.370	3655.30	-231.53	48.96	849.40	1653079.23	14234584.92	39°11'58.2620"N	80°57'19.0925"W	850.81	86.701	2.23	0.17	7.40	
3890.00	19.370	96.080	3745.41	-243.47	46.70	879.37	1653109.18	14234582.66	39°11'58.2395"N	80°57'18.7119"W	880.60	86.960	2.30	1.94	3.91	
3985.00	21.860	95.880	3834.32	-257.64	43.22	912.63	1653142.43	14234579.18	39°11'58.2049"N	80°57'18.2894"W	913.65	87.289	2.62	2.62	-0.21	
4079.00	21.990	93.040	3921.53	-271.66	40.49	947.61	1653177.40	14234576.45	39°11'58.1778"N	80°57'17.8451"W	948.48	87.553	1.14	0.14	-3.02	
4174.00	21.020	89.610	4009.92	-283.82	39.66	982.41	1653212.19	14234575.63	39°11'58.1695"N	80°57'17.4030"W	983.21	87.688	1.67	-1.02	-3.61	
4269.00	19.920	85.440	4098.92	-293.34	41.06	1015.59	1653245.35	14234577.03	39°11'58.1832"N	80°57'16.9816"W	1016.42	87.685	1.92	-1.16	-4.39	
4364.00	19.210	83.330	4188.44	-300.77	44.17	1047.24	1653276.99	14234580.13	39°11'58.2137"N	80°57'16.5795"W	1048.17	87.585	1.05	-0.75	-2.22	
4458.00	19.140	87.390	4277.23	-308.46	46.66	1078.00	1653307.73	14234582.63	39°11'58.2382"N	80°57'16.1888"W	1079.01	87.521	1.42	-0.07	4.32	
4553.00	19.590	89.550	4366.85	-317.97	47.50	1109.48	1653339.21	14234583.46	39°11'58.2463"N	80°57'15.7889"W	1110.50	87.549	0.89	0.47	2.27	
4648.00	20.390	88.460	4456.13	-328.05	48.07	1141.95	1653371.66	14234584.03	39°11'58.2518"N	80°57'15.3765"W	1142.96	87.590	0.93	0.84	-1.15	
4743.00	21.250	90.530	4544.93	-338.82	48.35	1175.71	1653405.41	14234584.31	39°11'58.2544"N	80°57'14.9476"W	1176.71	87.645	1.19	0.91	2.18	
4837.00	21.050	92.890	4632.59	-350.86	47.35	1209.61	1653439.29	14234583.31	39°11'58.2443"N	80°57'14.5171"W	1210.53	87.759	0.93	-0.21	2.51	
4932.00	20.090	91.630	4721.54	-363.02	46.02	1242.96	1653472.63	14234581.98	39°11'58.2310"N	80°57'14.0935"W	1243.81	87.880	1.11	-1.01	-1.33	
5027.00	19.720	91.200	4810.86	-374.35	45.22	1275.29	1653504.95	14234581.18	39°11'58.2229"N	80°57'13.6828"W	1276.09	87.969	0.42	-0.39	-0.45	
5122.00	20.860	92.540	4899.97	-386.15	44.14	1308.21	1653537.86	14234580.10	39°11'58.2121"N	80°57'13.2646"W	1308.96	88.068	1.30	1.20	1.41	
5219.00	19.720	88.500	4990.95	-397.46	43.80	1341.83	1653571.46	14234579.76	39°11'58.2086"N	80°57'12.8376"W	1342.54	88.130	1.86	-1.18	-4.16	
5314.00	19.340	87.410	5080.48	-406.77	44.93	1373.56	1653603.18	14234580.89	39°11'58.2196"N	80°57'12.4345"W	1374.30	88.127	0.55	-0.40	-1.15	
5409.00	19.410	91.440	5170.11	-416.77	45.24	1405.06	1653634.67	14234581.21	39°11'58.2225"N	80°57'12.0344"W	1405.79	88.156	1.41	0.07	4.24	
5504.00	20.390	90.920	5259.43	-427.97	44.58	1437.39	1653666.98	14234580.54	39°11'58.2158"N	80°57'11.6238"W	1438.08	88.224	1.05	1.03	-0.55	

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

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5598.00	20.480	89.720	5347.52	-438.88	44.40	1470.21	1653699.79	14234580.36	39°11'58.2138"N	80°57'11.2069"W	1470.88	88.270	0.46	0.10	-1.28	
5693.00	19.500	85.260	5436.80	-448.17	45.79	1502.63	1653732.20	14234581.75	39°11'58.2274"N	80°57'10.7951"W	1503.33	88.255	1.91	-1.03	-4.69	
5787.00	17.940	82.430	5525.83	-454.95	48.99	1532.62	1653762.17	14234584.95	39°11'58.2589"N	80°57'10.4141"W	1533.40	88.169	1.92	-1.66	-3.01	
5823.00	17.210	82.160	5560.15	-457.09	50.45	1543.39	1653772.94	14234586.41	39°11'58.2733"N	80°57'10.2773"W	1544.22	88.128	2.04	-2.03	-0.75	
5875.00	16.080	78.550	5609.97	-459.55	52.93	1558.07	1653787.62	14234588.89	39°11'58.2977"N	80°57'10.0908"W	1558.97	88.054	2.94	-2.17	-6.94	BH Lucida <8-1/2"> (5823')(5875'-22145')
5904.00	15.750	75.250	5637.86	-460.38	54.73	1565.81	1653795.35	14234590.69	39°11'58.3154"N	80°57'9.9924"W	1566.77	87.998	3.32	-1.14	-11.38	
5998.00	18.810	48.130	5727.75	-455.47	68.12	1589.48	1653819.01	14234604.07	39°11'58.4476"N	80°57'9.6917"W	1590.94	87.546	9.07	3.26	-28.85	
6093.00	22.020	28.930	5816.87	-437.61	93.96	1609.53	1653839.05	14234629.90	39°11'58.7030"N	80°57'9.4369"W	1612.27	86.659	7.77	3.38	-20.21	
6188.00	26.740	16.870	5903.43	-408.36	130.04	1624.36	1653853.88	14234665.97	39°11'59.0595"N	80°57'9.2482"W	1629.56	85.423	7.20	4.97	-12.69	
6282.00	33.200	6.300	5984.87	-367.92	175.94	1633.34	1653862.85	14234711.85	39°11'59.5131"N	80°57'9.1339"W	1642.79	83.852	8.85	6.87	-11.24	
6344.00†	36.823	0.564	6035.66	-335.07	211.41	1635.39	1653864.90	14234747.31	39°11'59.8637"N	80°57'9.1077"W	1648.99	82.634	7.89	5.84	-9.25	Sycamore: 6344' MD
6377.00	38.850	357.900	6061.72	-315.86	231.65	1635.10	1653864.62	14234767.54	39°12'0.0637"N	80°57'9.1111"W	1651.43	81.936	7.89	6.14	-8.07	
6471.00	46.570	353.910	6130.75	-254.30	295.16	1630.39	1653859.91	14234831.02	39°12'0.6915"N	80°57'9.1705"W	1656.90	79.739	8.70	8.21	-4.24	
6562.00†	52.418	348.488	6189.86	-186.27	363.44	1619.68	1653849.20	14234899.27	39°12'1.3664"N	80°57'9.3062"W	1659.95	77.353	7.86	6.43	-5.96	Middlesex: 6562' MD
6566.00	52.680	348.270	6192.29	-183.12	366.55	1619.04	1653848.56	14234902.38	39°12'1.3971"N	80°57'9.3143"W	1660.01	77.243	7.86	6.56	-5.45	
6661.00	60.000	347.460	6244.91	-104.68	443.79	1602.40	1653831.93	14234979.60	39°12'2.1607"N	80°57'9.5251"W	1662.73	74.520	7.74	7.71	-0.85	
6756.00	67.140	345.420	6287.17	-20.07	526.42	1582.43	1653811.96	14235062.19	39°12'2.9775"N	80°57'9.7783"W	1667.69	71.599	7.76	7.52	-2.15	
6767.00†	67.920	345.170	6291.38	-9.93	536.25	1579.85	1653809.38	14235072.02	39°12'3.0747"N	80°57'9.8110"W	1668.38	71.251	7.40	7.09	-2.28	Burkett: 6767' MD
6850.00	73.820	343.360	6318.57	68.31	611.69	1558.57	1653788.11	14235147.42	39°12'3.8204"N	80°57'10.0807"W	1674.31	68.572	7.40	7.11	-2.18	
6863.00†	74.529	343.208	6322.11	80.81	623.67	1554.97	1653784.52	14235159.40	39°12'3.9388"N	80°57'10.1264"W	1675.38	68.145	5.57	5.45	-1.17	Tully: 6863' MD
6945.00	79.000	342.270	6340.88	160.57	699.87	1531.29	1653760.84	14235235.57	39°12'4.6921"N	80°57'10.4267"W	1683.65	65.437	5.57	5.45	-1.14	
6946.00†	79.051	342.272	6341.07	161.55	700.81	1530.99	1653760.54	14235236.51	39°12'4.7014"N	80°57'10.4305"W	1683.76	65.404	5.08	5.07	0.22	Marcellus POE: 6946' MD
7039.00	83.770	342.470	6354.96	253.45	788.42	1503.15	1653732.72	14235324.08	39°12'5.5675"N	80°57'10.7836"W	1697.37	62.322	5.08	5.07	0.21	
7134.00	90.000	341.450	6360.12	348.25	878.57	1473.79	1653703.36	14235414.20	39°12'6.4587"N	80°57'11.1560"W	1715.79	59.199	6.64	6.56	-1.07	
7229.00	89.880	341.660	6360.22	443.24	968.69	1443.73	1653673.32	14235504.28	39°12'7.3495"N	80°57'11.5372"W	1738.60	56.140	0.25	-0.13	0.22	
7323.00	89.910	341.650	6360.39	537.23	1057.91	1414.14	1653643.74	14235593.47	39°12'8.2316"N	80°57'11.9124"W	1766.06	53.200	0.03	0.03	-0.01	
7418.00	89.750	341.420	6360.67	632.23	1148.02	1384.05	1653613.67	14235683.54	39°12'9.1223"N	80°57'12.2940"W	1798.21	50.326	0.29	-0.17	-0.24	
7513.00	90.220	341.730	6360.70	727.22	1238.15	1354.03	1653583.65	14235773.63	39°12'10.0133"N	80°57'12.6749"W	1834.78	47.560	0.59	0.49	0.33	
7607.00	89.780	340.990	6360.70	821.22	1327.22	1323.98	1653553.62	14235862.67	39°12'10.8938"N	80°57'13.0559"W	1874.69	44.930	0.92	-0.47	-0.79	
7702.00	89.850	341.390	6361.00	916.22	1417.15	1293.35	1653523.00	14235952.56	39°12'11.7828"N	80°57'13.4445"W	1918.61	42.385	0.43	0.07	0.42	

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (243 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
7796.00	90.340	341.940	6360.85	1010.21	1506.37	1263.78	1653493.45	14236041.75	39°12'12.6648"N	80°57'13.8195"W	1966.29	39.995	0.78	0.52	0.59	
7891.00	90.060	342.040	6360.52	1105.19	1596.72	1234.41	1653464.09	14236132.06	39°12'13.5579"N	80°57'14.1920"W	2018.24	37.707	0.31	-0.29	0.11	
7986.00	89.320	341.730	6361.03	1200.17	1687.01	1204.87	1653434.56	14236222.31	39°12'14.4505"N	80°57'14.5667"W	2073.09	35.535	0.84	-0.78	-0.33	
8080.00	89.970	341.730	6361.61	1294.16	1776.27	1175.41	1653405.10	14236311.53	39°12'15.3329"N	80°57'14.9404"W	2129.95	33.494	0.69	0.69	0.00	
8175.00	90.060	341.580	6361.59	1389.15	1866.44	1145.51	1653375.22	14236401.67	39°12'16.2243"N	80°57'15.3197"W	2189.93	31.539	0.18	0.09	-0.16	
8269.00	90.090	341.660	6361.46	1483.15	1955.64	1115.87	1653345.59	14236490.84	39°12'17.1061"N	80°57'15.6956"W	2251.60	29.709	0.09	0.03	0.09	
8364.00	90.090	341.630	6361.32	1578.14	2045.81	1085.95	1653315.68	14236580.97	39°12'17.9974"N	80°57'16.0751"W	2316.17	27.960	0.03	0.00	-0.03	
8458.00	90.030	341.690	6361.22	1672.13	2135.03	1056.37	1653286.12	14236670.16	39°12'18.8795"N	80°57'16.4502"W	2382.08	26.325	0.09	-0.06	0.06	
8553.00	90.120	341.770	6361.09	1767.12	2225.25	1026.59	1653256.35	14236760.33	39°12'19.7713"N	80°57'16.8280"W	2450.63	24.766	0.13	0.09	0.08	
8647.00	90.180	341.510	6360.85	1861.11	2314.46	996.98	1653226.75	14236849.51	39°12'20.6532"N	80°57'17.2035"W	2520.06	23.305	0.28	0.06	-0.28	
8742.00	89.750	340.230	6360.90	1956.11	2404.21	965.85	1653195.63	14236939.23	39°12'21.5404"N	80°57'17.5984"W	2590.97	21.887	1.42	-0.45	-1.35	
8837.00	90.220	340.630	6360.93	2051.11	2493.72	934.03	1653163.82	14237028.70	39°12'22.4253"N	80°57'18.0021"W	2662.91	20.534	0.65	0.49	0.42	
8931.00	90.890	340.790	6360.02	2145.10	2582.44	902.98	1653132.79	14237117.38	39°12'23.3024"N	80°57'18.3960"W	2735.76	19.273	0.73	0.71	0.17	
9025.00	90.710	340.600	6358.71	2239.09	2671.15	871.91	1653101.73	14237206.05	39°12'24.1793"N	80°57'18.7902"W	2809.85	18.078	0.28	-0.19	-0.20	
9120.00	90.800	340.600	6357.45	2334.08	2760.75	840.35	1653070.19	14237295.62	39°12'25.0650"N	80°57'19.1905"W	2885.81	16.930	0.09	0.09	0.00	
9214.00	90.740	340.730	6356.19	2428.07	2849.44	809.23	1653039.08	14237384.27	39°12'25.9417"N	80°57'19.5852"W	2962.12	15.854	0.15	-0.06	0.14	
9309.00	90.740	340.580	6354.96	2523.06	2939.07	777.77	1653007.62	14237473.86	39°12'26.8278"N	80°57'19.9844"W	3040.23	14.822	0.16	0.00	-0.16	
9404.00	90.800	340.880	6353.69	2618.05	3028.73	746.42	1652976.29	14237563.50	39°12'27.7142"N	80°57'20.3821"W	3119.35	13.844	0.32	0.06	0.32	
9499.00	90.680	340.640	6352.46	2713.05	3118.42	715.12	1652945.00	14237653.15	39°12'28.6008"N	80°57'20.7792"W	3199.37	12.916	0.28	-0.13	-0.25	
9593.00	90.830	340.620	6351.22	2807.04	3207.09	683.94	1652913.84	14237741.78	39°12'29.4774"N	80°57'21.1747"W	3279.21	12.039	0.16	0.16	-0.02	
9688.00	90.650	340.580	6350.00	2902.03	3296.69	652.39	1652882.30	14237831.35	39°12'30.3631"N	80°57'21.5750"W	3360.62	11.194	0.19	-0.19	-0.04	
9782.00	90.860	340.730	6348.76	2996.02	3385.38	621.25	1652851.17	14237920.00	39°12'31.2398"N	80°57'21.9700"W	3441.91	10.399	0.27	0.22	0.16	
9877.00	90.860	341.000	6347.33	3091.01	3475.12	590.12	1652820.05	14238009.70	39°12'32.1269"N	80°57'22.3650"W	3524.87	9.638	0.28	0.00	0.28	
9972.00	90.770	340.800	6345.98	3186.00	3564.88	559.03	1652788.98	14238099.43	39°12'33.0143"N	80°57'22.7593"W	3608.44	8.912	0.23	-0.09	-0.21	
10066.00	90.890	341.040	6344.62	3279.99	3653.70	528.31	1652758.27	14238188.22	39°12'33.8924"N	80°57'23.1491"W	3691.70	8.228	0.29	0.13	0.26	
10161.00	89.880	340.830	6343.98	3374.98	3743.49	497.28	1652727.25	14238277.97	39°12'34.7800"N	80°57'23.5427"W	3776.37	7.567	1.09	-1.06	-0.22	
10256.00	90.280	340.410	6343.85	3469.98	3833.11	465.76	1652695.74	14238367.55	39°12'35.6659"N	80°57'23.9427"W	3861.30	6.928	0.61	0.42	-0.44	
10351.00	90.280	340.480	6343.38	3564.98	3922.63	433.96	1652663.95	14238457.03	39°12'36.5508"N	80°57'24.3461"W	3946.56	6.313	0.07	0.00	0.07	
10445.00	90.280	340.910	6342.92	3658.98	4011.34	402.88	1652632.89	14238545.71	39°12'37.4278"N	80°57'24.7403"W	4031.52	5.735	0.46	0.00	0.46	
10540.00	90.370	340.850	6342.38	3753.97	4101.10	371.77	1652601.79	14238635.43	39°12'38.3151"N	80°57'25.1351"W	4117.91	5.180	0.11	0.09	-0.06	

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (243 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
10635.00	90.310	340.660	6341.82	3848.97	4190.79	340.45	1652570.49	14238725.08	39°12'39.2017"N	80°57'25.5324"W	4204.59	4.644	0.21	-0.06	-0.20	
10729.00	90.340	340.610	6341.29	3942.97	4279.47	309.29	1652539.33	14238813.73	39°12'40.0784"N	80°57'25.9278"W	4290.63	4.134	0.06	0.03	-0.05	
10824.00	90.280	340.580	6340.77	4037.97	4369.07	277.72	1652507.78	14238903.29	39°12'40.9641"N	80°57'26.3282"W	4377.89	3.637	0.07	-0.06	-0.03	
10919.00	90.400	340.700	6340.21	4132.96	4458.70	246.23	1652476.30	14238992.88	39°12'41.8501"N	80°57'26.7278"W	4465.49	3.161	0.18	0.13	0.13	
11013.00	90.340	340.860	6339.60	4226.96	4547.46	215.29	1652445.37	14239081.61	39°12'42.7275"N	80°57'27.1204"W	4552.55	2.710	0.18	-0.06	0.17	
11108.00	90.400	340.670	6338.99	4321.96	4637.15	183.99	1652414.09	14239171.27	39°12'43.6142"N	80°57'27.5175"W	4640.80	2.272	0.21	0.06	-0.20	
11203.00	90.310	340.780	6338.40	4416.96	4726.82	152.63	1652382.74	14239260.90	39°12'44.5007"N	80°57'27.9153"W	4729.29	1.849	0.15	-0.09	0.12	
11297.00	90.430	340.620	6337.79	4510.95	4815.54	121.56	1652351.69	14239349.58	39°12'45.3777"N	80°57'28.3095"W	4817.07	1.446	0.21	0.13	-0.17	
11392.00	90.340	340.740	6337.16	4605.95	4905.19	90.13	1652320.27	14239439.20	39°12'46.2639"N	80°57'28.7083"W	4906.01	1.053	0.16	-0.09	0.13	
11487.00	90.400	340.590	6336.54	4700.95	4994.83	58.68	1652288.83	14239528.80	39°12'47.1500"N	80°57'29.1074"W	4995.17	0.673	0.17	0.06	-0.16	
11581.00	90.400	340.760	6335.89	4794.95	5083.53	27.58	1652257.73	14239617.47	39°12'48.0269"N	80°57'29.5020"W	5083.60	0.311	0.18	0.00	0.18	
11676.00	90.310	340.770	6335.30	4889.94	5173.22	-3.72	1652226.45	14239707.12	39°12'48.9135"N	80°57'29.8991"W	5173.22	359.959	0.10	-0.09	0.01	
11771.00	90.310	340.580	6334.78	4984.94	5262.87	-35.16	1652195.03	14239796.73	39°12'49.7997"N	80°57'30.2980"W	5262.99	359.617	0.20	0.00	-0.20	
11865.00	90.340	340.620	6334.25	5078.94	5351.53	-66.38	1652163.82	14239885.36	39°12'50.6762"N	80°57'30.6942"W	5351.94	359.289	0.05	0.03	0.04	
11960.00	90.740	340.370	6333.35	5173.93	5441.07	-98.10	1652132.11	14239974.87	39°12'51.5614"N	80°57'31.0966"W	5441.96	358.967	0.50	0.42	-0.26	
12055.00	90.400	340.520	6332.41	5268.92	5530.59	-129.90	1652100.33	14240064.35	39°12'52.4463"N	80°57'31.5001"W	5532.12	358.655	0.39	-0.36	0.16	
12149.00	90.310	340.830	6331.83	5362.92	5619.29	-161.00	1652069.23	14240153.01	39°12'53.3231"N	80°57'31.8948"W	5621.60	358.359	0.34	-0.10	0.33	
12244.00	90.310	340.780	6331.31	5457.92	5709.01	-192.24	1652038.01	14240242.70	39°12'54.2100"N	80°57'32.2911"W	5712.24	358.071	0.05	0.00	-0.05	
12338.00	90.280	340.800	6330.83	5551.92	5797.77	-223.16	1652007.10	14240331.42	39°12'55.0875"N	80°57'32.6835"W	5802.07	357.796	0.04	-0.03	0.02	
12433.00	90.220	340.790	6330.41	5646.92	5887.49	-254.41	1651975.86	14240421.10	39°12'55.9743"N	80°57'33.0800"W	5892.98	357.526	0.06	-0.06	-0.01	
12528.00	90.340	340.850	6329.95	5741.92	5977.21	-285.62	1651944.66	14240510.79	39°12'56.8613"N	80°57'33.4761"W	5984.03	357.264	0.14	0.13	0.06	
12622.00	90.340	340.860	6329.39	5835.91	6066.01	-316.45	1651913.84	14240599.55	39°12'57.7391"N	80°57'33.8672"W	6074.26	357.014	0.01	0.00	0.01	
12717.00	90.340	340.730	6328.83	5930.91	6155.72	-347.70	1651882.61	14240689.23	39°12'58.6260"N	80°57'34.2637"W	6165.53	356.767	0.14	0.00	-0.14	
12811.00	90.250	340.880	6328.34	6024.91	6244.50	-378.61	1651851.71	14240777.97	39°12'59.5035"N	80°57'34.6559"W	6255.96	356.530	0.19	-0.10	0.16	
12906.00	90.400	340.830	6327.81	6119.91	6334.24	-409.76	1651820.57	14240867.67	39°13'0.3907"N	80°57'35.0512"W	6347.48	356.299	0.17	0.16	-0.05	
13001.00	90.220	340.800	6327.29	6214.91	6423.96	-440.98	1651789.37	14240957.36	39°13'1.2776"N	80°57'35.4474"W	6439.08	356.073	0.19	-0.19	-0.03	
13095.00	89.630	340.560	6327.42	6308.91	6512.67	-472.08	1651758.28	14241046.03	39°13'2.1545"N	80°57'35.8420"W	6529.76	355.854	0.68	-0.63	-0.26	
13190.00	89.750	340.760	6327.93	6403.90	6602.31	-503.54	1651726.83	14241135.63	39°13'3.0406"N	80°57'36.2412"W	6621.48	355.639	0.25	0.13	0.21	
13284.00	89.660	340.610	6328.41	6497.90	6691.01	-534.63	1651695.75	14241224.31	39°13'3.9175"N	80°57'36.6358"W	6712.34	355.432	0.19	-0.10	-0.16	
13379.00	89.750	340.910	6328.90	6592.90	6780.71	-565.94	1651664.46	14241313.96	39°13'4.8042"N	80°57'37.0330"W	6804.28	355.229	0.33	0.09	0.32	

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (243 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
13474.00	89.690	340.840	6329.37	6687.90	6870.46	-597.06	1651633.35	14241403.68	39°13'5.6914"N	80°57'37.4279"W	6896.36	355.033	0.10	-0.06	-0.07	
13568.00	89.780	341.060	6329.80	6781.90	6959.31	-627.74	1651602.68	14241492.50	39°13'6.5698"N	80°57'37.8173"W	6987.57	354.846	0.25	0.10	0.23	
13663.00	89.750	341.020	6330.19	6876.90	7049.16	-658.61	1651571.83	14241582.31	39°13'7.4579"N	80°57'38.2089"W	7079.86	354.662	0.05	-0.03	-0.04	
13757.00	90.030	341.090	6330.37	6970.90	7138.07	-689.13	1651541.32	14241671.18	39°13'8.3368"N	80°57'38.5962"W	7171.25	354.486	0.31	0.30	0.07	
13852.00	89.880	340.920	6330.45	7065.90	7227.89	-720.05	1651510.41	14241760.97	39°13'9.2248"N	80°57'38.9886"W	7263.67	354.311	0.24	-0.16	-0.18	
13946.00	90.000	341.960	6330.54	7159.89	7317.00	-749.97	1651480.50	14241850.04	39°13'10.1056"N	80°57'39.3683"W	7355.34	354.148	1.11	0.13	1.11	
14041.00	90.030	340.860	6330.52	7254.89	7407.04	-780.25	1651450.23	14241940.05	39°13'10.9957"N	80°57'39.7526"W	7448.03	353.987	1.16	0.03	-1.16	
14136.00	89.940	341.120	6330.54	7349.89	7496.86	-811.20	1651419.30	14242029.83	39°13'11.8836"N	80°57'40.1452"W	7540.62	353.824	0.29	-0.09	0.27	
14325.00	89.940	340.920	6330.74	7538.88	7675.59	-872.67	1651357.85	14242208.48	39°13'13.6503"N	80°57'40.9253"W	7725.04	353.514	0.11	0.00	-0.11	
14419.00	90.030	340.820	6330.77	7632.88	7764.40	-903.47	1651327.06	14242297.26	39°13'14.5283"N	80°57'41.3162"W	7816.78	353.363	0.14	0.10	-0.11	
14514.00	89.970	341.130	6330.77	7727.88	7854.21	-934.44	1651296.11	14242387.03	39°13'15.4161"N	80°57'41.7092"W	7909.60	353.215	0.33	-0.06	0.33	
14609.00	90.120	340.910	6330.69	7822.88	7944.04	-965.34	1651265.22	14242476.83	39°13'16.3041"N	80°57'42.1013"W	8002.48	353.072	0.28	0.16	-0.23	
14703.00	89.910	341.140	6330.67	7916.88	8032.93	-995.90	1651234.67	14242565.69	39°13'17.1828"N	80°57'42.4892"W	8094.43	352.933	0.33	-0.22	0.24	
14798.00	89.970	341.350	6330.77	8011.88	8122.89	-1026.45	1651204.14	14242655.61	39°13'18.0721"N	80°57'42.8769"W	8187.49	352.798	0.23	0.06	0.22	
14893.00	89.970	340.880	6330.82	8106.88	8212.78	-1057.19	1651173.40	14242745.46	39°13'18.9606"N	80°57'43.2671"W	8280.54	352.665	0.49	0.00	-0.49	
14987.00	90.150	340.880	6330.72	8200.88	8301.59	-1087.98	1651142.62	14242834.23	39°13'19.8386"N	80°57'43.6578"W	8372.58	352.534	0.19	0.19	0.00	
15082.00	89.880	340.980	6330.69	8295.88	8391.38	-1119.02	1651111.60	14242923.98	39°13'20.7261"N	80°57'44.0517"W	8465.66	352.404	0.30	-0.28	0.11	
15177.00	90.030	340.990	6330.77	8390.88	8481.19	-1149.98	1651080.66	14243013.76	39°13'21.6140"N	80°57'44.4445"W	8558.80	352.278	0.16	0.16	0.01	
15271.00	90.000	340.760	6330.74	8484.88	8570.00	-1180.77	1651049.87	14243102.54	39°13'22.4919"N	80°57'44.8354"W	8650.97	352.155	0.25	-0.03	-0.24	
15366.00	89.970	340.800	6330.77	8579.88	8659.71	-1212.05	1651018.61	14243192.21	39°13'23.3787"N	80°57'45.2323"W	8744.12	352.032	0.05	-0.03	0.04	
15461.00	90.030	340.930	6330.77	8674.88	8749.46	-1243.19	1650987.48	14243281.92	39°13'24.2659"N	80°57'45.6275"W	8837.34	351.913	0.15	0.06	0.14	
15556.00	90.000	340.970	6330.74	8769.88	8839.26	-1274.19	1650956.49	14243371.69	39°13'25.1535"N	80°57'46.0211"W	8930.62	351.797	0.05	-0.03	0.04	
15650.00	89.880	340.910	6330.84	8863.88	8928.10	-1304.89	1650925.80	14243460.50	39°13'26.0318"N	80°57'46.4106"W	9022.96	351.685	0.14	-0.13	-0.06	
15745.00	89.910	340.720	6331.02	8958.88	9017.83	-1336.11	1650894.60	14243550.18	39°13'26.9187"N	80°57'46.8069"W	9116.27	351.572	0.20	0.03	-0.20	
15839.00	89.940	341.260	6331.14	9052.88	9106.70	-1366.73	1650863.99	14243639.02	39°13'27.7973"N	80°57'47.1955"W	9208.69	351.465	0.58	0.03	0.57	
15934.00	89.820	340.990	6331.34	9147.88	9196.59	-1397.46	1650833.27	14243728.88	39°13'28.6859"N	80°57'47.5855"W	9302.16	351.360	0.31	-0.13	-0.28	
16028.00	89.690	340.860	6331.74	9241.88	9285.43	-1428.18	1650802.56	14243817.68	39°13'29.5640"N	80°57'47.9754"W	9394.62	351.256	0.20	-0.14	-0.14	
16123.00	89.850	341.350	6332.12	9336.88	9375.31	-1458.94	1650771.81	14243907.52	39°13'30.4525"N	80°57'48.3658"W	9488.15	351.155	0.54	0.17	0.52	
16218.00	89.200	340.020	6332.91	9431.87	9464.96	-1490.36	1650740.40	14243997.13	39°13'31.3387"N	80°57'48.7646"W	9581.58	351.052	1.56	-0.68	-1.40	
16312.00	89.750	341.130	6333.77	9525.86	9553.60	-1521.62	1650709.16	14244085.74	39°13'32.2150"N	80°57'49.1614"W	9674.02	350.950	1.32	0.59	1.18	

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (243 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
16407.00	89.630	340.800	6334.28	9620.86	9643.40	-1552.61	1650678.19	14244175.51	39°13'33.1027"N	80°57'49.5547"W	9767.59	350.854	0.37	-0.13	-0.35	
16501.00	89.780	341.080	6334.77	9714.86	9732.25	-1583.30	1650647.50	14244264.32	39°13'33.9810"N	80°57'49.9443"W	9860.20	350.760	0.34	0.16	0.30	
16596.00	89.350	340.820	6335.49	9809.86	9822.04	-1614.31	1650616.51	14244354.08	39°13'34.8686"N	80°57'50.3378"W	9953.82	350.667	0.53	-0.45	-0.27	
16691.00	89.630	341.070	6336.34	9904.85	9911.84	-1645.32	1650585.51	14244443.83	39°13'35.7562"N	80°57'50.7314"W	10047.47	350.575	0.40	0.29	0.26	
16785.00	89.540	340.610	6337.02	9998.85	10000.63	-1676.17	1650554.67	14244532.59	39°13'36.6339"N	80°57'51.1230"W	10140.12	350.485	0.50	-0.10	-0.49	
16880.00	89.540	341.060	6337.78	10093.85	10090.36	-1707.36	1650523.49	14244622.28	39°13'37.5209"N	80°57'51.5189"W	10233.79	350.396	0.47	0.00	0.47	
16975.00	89.780	341.060	6338.34	10188.84	10180.21	-1738.20	1650492.67	14244712.10	39°13'38.4091"N	80°57'51.9102"W	10327.54	350.311	0.25	0.25	0.00	
17069.00	89.540	340.830	6338.90	10282.84	10269.06	-1768.88	1650462.00	14244800.91	39°13'39.2874"N	80°57'52.2998"W	10420.29	350.227	0.35	-0.26	-0.24	
17164.00	90.580	341.630	6338.80	10377.84	10359.01	-1799.45	1650431.44	14244890.82	39°13'40.1765"N	80°57'52.6877"W	10514.13	350.146	1.38	1.09	0.84	
17258.00	89.510	341.130	6338.73	10471.83	10448.08	-1829.46	1650401.44	14244979.87	39°13'41.0571"N	80°57'53.0687"W	10607.04	350.068	1.26	-1.14	-0.53	
17353.00	90.250	341.300	6338.93	10566.83	10538.02	-1860.06	1650370.86	14245069.77	39°13'41.9462"N	80°57'53.4570"W	10700.92	349.990	0.80	0.78	0.18	
17447.00	88.770	340.510	6339.73	10660.82	10626.84	-1890.80	1650340.13	14245158.55	39°13'42.8242"N	80°57'53.8473"W	10793.75	349.911	1.78	-1.57	-0.84	
17541.00	89.850	341.150	6340.86	10754.82	10715.62	-1921.67	1650309.27	14245247.30	39°13'43.7018"N	80°57'54.2390"W	10886.57	349.833	1.34	1.15	0.68	
17636.00	89.320	341.160	6341.55	10849.81	10805.53	-1952.35	1650278.60	14245337.17	39°13'44.5905"N	80°57'54.6285"W	10980.49	349.758	0.56	-0.56	0.01	
17731.00	89.510	341.650	6342.52	10944.80	10895.56	-1982.64	1650248.32	14245427.17	39°13'45.4805"N	80°57'55.0130"W	11074.48	349.687	0.55	0.20	0.52	
17825.00	89.230	341.200	6343.55	11038.79	10984.66	-2012.59	1650218.39	14245516.23	39°13'46.3612"N	80°57'55.3931"W	11167.51	349.618	0.56	-0.30	-0.48	
17920.00	89.350	340.930	6344.73	11133.79	11074.51	-2043.41	1650187.58	14245606.04	39°13'47.2494"N	80°57'55.7843"W	11261.46	349.546	0.31	0.13	-0.28	
18014.00	89.020	341.250	6346.07	11227.78	11163.43	-2073.87	1650157.13	14245694.93	39°13'48.1284"N	80°57'56.1710"W	11354.43	349.476	0.49	-0.35	0.34	
18109.00	89.110	341.140	6347.62	11322.76	11253.35	-2104.49	1650126.53	14245784.81	39°13'49.0172"N	80°57'56.5597"W	11448.44	349.407	0.15	0.09	-0.12	
18204.00	89.050	341.190	6349.14	11417.75	11343.25	-2135.16	1650095.87	14245874.67	39°13'49.9059"N	80°57'56.9489"W	11542.45	349.340	0.08	-0.06	0.05	
18299.00	88.980	340.670	6350.78	11512.73	11433.02	-2166.19	1650064.85	14245964.41	39°13'50.7933"N	80°57'57.3429"W	11636.42	349.271	0.55	-0.07	-0.55	
18393.00	89.170	340.850	6352.29	11606.72	11521.76	-2197.16	1650033.89	14246053.11	39°13'51.6705"N	80°57'57.7360"W	11729.39	349.204	0.28	0.20	0.19	
18488.00	88.950	341.010	6353.85	11701.71	11611.53	-2228.20	1650002.87	14246142.85	39°13'52.5579"N	80°57'58.1300"W	11823.39	349.137	0.29	-0.23	0.17	
18583.00	89.080	341.270	6355.49	11796.69	11701.42	-2258.90	1649972.18	14246232.70	39°13'53.4465"N	80°57'58.5198"W	11917.46	349.074	0.31	0.14	0.27	
18677.00	89.200	341.180	6356.90	11890.68	11790.41	-2289.15	1649941.94	14246321.65	39°13'54.3261"N	80°57'58.9038"W	12010.58	349.013	0.16	0.13	-0.10	
18772.00	89.630	341.210	6357.87	11985.68	11880.33	-2319.77	1649911.33	14246411.54	39°13'55.2150"N	80°57'59.2925"W	12104.70	348.951	0.45	0.45	0.03	
18867.00	89.690	341.030	6358.43	12080.67	11970.22	-2350.51	1649880.60	14246501.39	39°13'56.1036"N	80°57'59.6827"W	12198.82	348.891	0.20	0.06	-0.19	
18961.00	89.720	341.650	6358.91	12174.67	12059.28	-2380.59	1649850.54	14246590.41	39°13'56.9839"N	80°58'0.0645"W	12292.00	348.833	0.66	0.03	0.66	
19056.00	89.780	340.920	6359.33	12269.66	12149.25	-2411.07	1649820.07	14246680.35	39°13'57.8733"N	80°58'0.4514"W	12386.19	348.775	0.77	0.06	-0.77	
19151.00	89.660	341.150	6359.79	12364.66	12239.10	-2441.94	1649789.21	14246770.16	39°13'58.7614"N	80°58'0.8434"W	12480.33	348.717	0.27	-0.13	0.24	

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (243 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
19245.00	89.690	341.020	6360.33	12458.66	12328.02	-2472.41	1649758.75	14246859.04	39°13'59.6404"N	80°58'1.2302"W	12573.50	348.660	0.14	0.03	-0.14	
19340.00	89.720	341.230	6360.82	12553.66	12417.91	-2503.15	1649728.03	14246948.90	39°14'0.5290"N	80°58'1.6203"W	12667.68	348.603	0.22	0.03	0.22	
19435.00	89.690	341.050	6361.30	12648.66	12507.81	-2533.86	1649697.33	14247038.76	39°14'1.4176"N	80°58'2.0102"W	12761.88	348.548	0.19	-0.03	-0.19	
19529.00	89.600	340.200	6361.89	12742.65	12596.48	-2565.04	1649666.16	14247127.40	39°14'2.2942"N	80°58'2.4061"W	12854.99	348.490	0.91	-0.10	-0.90	
19624.00	89.720	340.050	6362.45	12837.64	12685.82	-2597.34	1649633.88	14247216.70	39°14'3.1773"N	80°58'2.8161"W	12948.98	348.429	0.20	0.13	-0.16	
19719.00	89.780	339.930	6362.86	12932.63	12775.08	-2629.84	1649601.38	14247305.93	39°14'4.0597"N	80°58'3.2288"W	13042.96	348.368	0.14	0.06	-0.13	
19813.00	89.720	339.910	6363.28	13026.61	12863.37	-2662.12	1649569.12	14247394.18	39°14'4.9324"N	80°58'3.6385"W	13135.95	348.308	0.07	-0.06	-0.02	
19908.00	89.820	340.110	6363.66	13121.60	12952.65	-2694.59	1649536.66	14247483.42	39°14'5.8149"N	80°58'4.0509"W	13229.96	348.248	0.24	0.11	0.21	
20002.00	89.690	340.230	6364.06	13215.59	13041.07	-2726.48	1649504.79	14247571.81	39°14'6.6890"N	80°58'4.4557"W	13323.03	348.191	0.19	-0.14	0.13	
20097.00	89.660	340.140	6364.60	13310.58	13130.44	-2758.68	1649472.60	14247661.15	39°14'7.5725"N	80°58'4.8646"W	13417.11	348.135	0.10	-0.03	-0.09	
20191.00	89.690	340.150	6365.13	13404.57	13218.86	-2790.61	1649440.68	14247749.52	39°14'8.4464"N	80°58'5.2699"W	13510.20	348.079	0.03	0.03	0.01	
20286.00	89.690	339.950	6365.64	13499.56	13308.15	-2823.02	1649408.28	14247838.79	39°14'9.3291"N	80°58'5.6814"W	13604.28	348.024	0.21	0.00	-0.21	
20381.00	89.750	340.050	6366.11	13594.55	13397.42	-2855.51	1649375.80	14247928.02	39°14'10.2116"N	80°58'6.0940"W	13698.35	347.968	0.12	0.06	0.11	
20475.00	89.780	340.240	6366.49	13688.54	13485.83	-2887.44	1649343.89	14248016.40	39°14'11.0855"N	80°58'6.4993"W	13791.48	347.915	0.20	0.03	0.20	
20570.00	89.750	340.100	6366.88	13783.53	13575.20	-2919.67	1649311.68	14248105.73	39°14'11.9689"N	80°58'6.9085"W	13885.62	347.862	0.15	-0.03	-0.15	
20665.00	89.780	339.960	6367.27	13878.52	13664.49	-2952.11	1649279.25	14248194.98	39°14'12.8515"N	80°58'7.3204"W	13979.74	347.809	0.15	0.03	-0.15	
20759.00	89.750	340.220	6367.66	13972.51	13752.87	-2984.12	1649247.25	14248283.32	39°14'13.7252"N	80°58'7.7269"W	14072.89	347.758	0.28	-0.03	0.28	
20854.00	89.630	339.830	6368.17	14067.50	13842.15	-3016.57	1649214.81	14248372.57	39°14'14.6078"N	80°58'8.1389"W	14167.03	347.706	0.43	-0.13	-0.41	
20949.00	89.660	339.620	6368.76	14162.47	13931.26	-3049.49	1649181.90	14248461.65	39°14'15.4886"N	80°58'8.5569"W	14261.12	347.653	0.22	0.03	-0.22	
21043.00	89.780	340.170	6369.22	14256.46	14019.53	-3081.80	1649149.60	14248549.88	39°14'16.3612"N	80°58'8.9672"W	14354.26	347.602	0.60	0.13	0.59	
21138.00	89.570	339.740	6369.76	14351.44	14108.78	-3114.37	1649117.06	14248639.09	39°14'17.2434"N	80°58'9.3806"W	14448.42	347.552	0.50	-0.22	-0.45	
21233.00	89.850	340.240	6370.24	14446.43	14198.04	-3146.87	1649084.56	14248728.32	39°14'18.1257"N	80°58'9.7934"W	14542.60	347.503	0.60	0.29	0.53	
21327.00	89.660	340.900	6370.64	14540.43	14286.69	-3178.14	1649053.31	14248816.93	39°14'19.0020"N	80°58'10.1904"W	14635.91	347.458	0.73	-0.20	0.70	
21422.00	89.820	341.220	6371.07	14635.42	14376.54	-3208.98	1649022.48	14248906.75	39°14'19.8902"N	80°58'10.5819"W	14730.33	347.417	0.38	0.17	0.34	
21517.00	89.910	341.390	6371.30	14730.42	14466.53	-3239.43	1648992.05	14248996.70	39°14'20.7797"N	80°58'10.9685"W	14824.79	347.378	0.20	0.09	0.18	
21611.00	89.720	340.930	6371.60	14824.42	14555.49	-3269.78	1648961.70	14249085.62	39°14'21.6591"N	80°58'11.3539"W	14918.24	347.339	0.53	-0.20	-0.49	
21706.00	89.630	340.740	6372.14	14919.42	14645.23	-3300.97	1648930.53	14249175.32	39°14'22.5461"N	80°58'11.7499"W	15012.63	347.298	0.22	-0.09	-0.20	
21801.00	89.480	340.750	6372.88	15014.41	14734.91	-3332.30	1648899.21	14249264.97	39°14'23.4326"N	80°58'12.1477"W	15107.01	347.257	0.16	-0.16	0.01	
21895.00	89.540	340.630	6373.68	15108.41	14823.62	-3363.38	1648868.14	14249353.64	39°14'24.3095"N	80°58'12.5424"W	15200.39	347.216	0.14	0.06	-0.13	
21990.00	89.510	340.740	6374.47	15203.41	14913.27	-3394.80	1648836.73	14249443.25	39°14'25.1957"N	80°58'12.9414"W	15294.78	347.176	0.12	-0.03	0.12	

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (243 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
22085.00	90.250	342.500	6374.67	15298.39	15003.42	-3424.75	1648806.79	14249533.37	39°14'26.0868"N	80°58'13.3217"W	15389.33	347.142	2.01	0.78	1.85	
22145.00	89.660	341.040	6374.72	15358.39	15060.40	-3443.52	1648788.03	14249590.33	39°14'26.6501"N	80°58'13.5600"W	15449.06	347.121	2.62	-0.98	-2.43	
22167.00‡	89.660	341.040	6374.85	15380.39	15081.21	-3450.67	1648780.89	14249611.13	39°14'26.8558"N	80°58'13.6508"W	15470.94	347.112	0.00	0.00	0.00	Projected MD at TD: 22167'

DIRECTIONAL DIFFICULTY INDEX

Directional Difficulty Index @ TD = **7.13**

Reference: IADC/SPE 59196

Values	Wellpath characterized as:
< 6.0	Relatively short or simple profiles with low tortuosity
< 6.0-6.4	Shorter with high tortuosity or longer with lower tortuosity
6.4-6.8	Longer with relatively tortuous well paths
> 6.8	Long tortuous profiles, high degree of difficulty

HOLE & CASING SECTIONS - Ref Wellbore: Keel Unit 1H AWB Ref Wellpath: Keel Unit 1H AWP Proj: 22167'

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	125.50	100.00	25.50	125.50	0.00	0.00	-0.07	-0.09
17.5in Open Hole	125.50	895.00	769.50	125.50	895.00	-0.07	-0.09	0.23	0.11
13.375in Casing Surface	25.50	875.00	849.50	25.50	875.00	0.00	0.00	0.25	-0.16
12.25in Open Hole	895.00	3323.00	2428.00	895.00	3206.65	0.23	0.11	27.03	704.98
9.625in Casing Intermediate	25.50	3293.00	3267.50	25.50	3178.05	0.00	0.00	26.33	695.92
8.75in Open Hole	3323.00	5900.00	2577.00	3206.65	5634.01	27.03	704.98	54.46	1564.76
8.5in Open Hole	5900.00	22167.00	16267.00	5634.01	6374.85	54.46	1564.76	15081.21	-3450.67
5.5in Casing Production	25.50	22147.00	22121.50	25.50	6374.73	0.00	0.00	15062.29	-3444.17

Actual Wellpath Report

Keel Unit 1H AWP Proj: 22167'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Keel Unit 1H
Field	Ritchie	API	47-085-10553-0000
Facility	Minear Pad	Wellbore	Keel Unit 1H AWB
Slot	Slot A		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Keel Unit 1H POE Rev-3	6323.00	625.84	1560.39	**1653789.93**	**14235161.57**	39°12'3.9603"N	80°57'10.0576"W	point
Keel Unit 1H BHL Rev-3	6345.00	15106.03	-3449.82	**1648781.74**	**14249635.94**	39°14'27.1012"N	80°58'13.6398"W	point
Keel Unit 1H LP Rev-3	6345.00	792.31	1502.79	**1653732.35**	**14235327.97**	39°12'5.6059"N	80°57'10.7881"W	point
Keel Unit 1H BHL Rev-2	6353.00	15290.41	-3513.61	**1648717.97**	**14249820.25**	39°14'28.9237"N	80°58'14.4499"W	point
Keel Unit 1H 50' L/R Hard Line Rev-2	6500.00	7865.94	-944.71	1651285.83	14242398.76	39°13'15.5320"N	80°57'41.8397"W	rectangle
	2D Rectangle 15322.5 x 100.							

WELLPATH COMPOSITION - Ref Wellbore: Keel Unit 1H AWB Ref Wellpath: Keel Unit 1H AWP Proj: 22167'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
25.50	832.00	Gyrodata 2015 - GC+WIR+DPIPE	01_Gyrodata MS Gyro <17-1/2"> (100'-832')	Keel Unit 1H AWB	5/17/2025
832.00	3243.00	BH NaviTrak (2019) (Axial Corr+HRGM)	02_APS EM <12-1/4"> (832')(960'-3243')	Keel Unit 1H AWB	5/17/2025
3243.00	5823.00	BH NaviTrak (2019) (Axial Corr+HRGM)	03_APS EM <8-3/4"> (3243')(3318'-5823')	Keel Unit 1H AWB	5/17/2025
5823.00	22167.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	04_BH Lucida <8-1/2"> (5823')(5875'-22145')	Keel Unit 1H AWB	5/17/2025

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REFERENCE WELLPATH IDENTIFICATION			
Operator	**ANTERO RESOURCES CORPORATION**	Well	**Keel Unit 1H**
Field	**Ritchie**	API	**47-085-10553-0000**
Facility	**Minear Pad**	Wellbore	**Keel Unit 1H AWB**
Slot	**Slot A**		

COMMENTS

Wellpath general comments
API: 47-085-10553-0000
BH Job #: 112660888
Rig: H&P 317
Duration: 5/18/2025-5/27/2025
Gyrodata MS Gyro <17-1/2"> (100'-832')
APS EM <12-1/4"> (832')(960'-3243')
APS EM <8-3/4"> (3243')(3318'-5823')
BH Lucida <8-1/2"> (5823')(5875'-22145')
Sycamore: 6344' MD
Middlesex: 6562' MD
Burkett: 6767' MD
Tully: 6863' MD
Marcellus POE: 6946' MD
Projected MD at TD: 22167'