



Actual Wellpath Report

Perna Unit 1H AWP Proj: 19983'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Perna Unit 1H
Field	Doddridge	API	47-017-06982-0000
Facility	Crimson Pad	Wellbore	Perna Unit 1H AWB
Slot	Slot E		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Edsaryar
Scale	0.999609	Report Generated	8/29/2024 at 10:10:08 PM
Convergence at slot	0.20° 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	11.25	9.91	1729202.90	14302148.39	39°23'4.8123"N	80°41'8.7891"W
Facility Reference Pt			1729192.99	14302137.14	39°23'4.7014"N	80°41'8.9159"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	1247.50ft
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level	1247.50ft
Vertical Reference Pt	H&P 317 (RKB)	H&P 317 (RKB) to Ground Level at Slot (Slot E)	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	161.20°

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WELLPATH DATA (222 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	212.850	0.00	0.00	0.00	0.00	1729202.90	14302148.39	39°23'4.8123"N	80°41'8.7891"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	212.850	25.50	0.00	0.00	0.00	1729202.90	14302148.39	39°23'4.8123"N	80°41'8.7891"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.340	212.850	100.00	0.14	-0.19	-0.12	1729202.78	14302148.20	39°23'4.8104"N	80°41'8.7907"W	0.22	212.850	0.46	0.46	0.00	Gyrodata MS Gyro <17-1/2"> (100'-1000')
200.00	0.380	215.090	200.00	0.52	-0.71	-0.47	1729202.43	14302147.68	39°23'4.8053"N	80°41'8.7952"W	0.85	213.725	0.04	0.04	2.24	
300.00	0.240	188.390	300.00	0.90	-1.18	-0.69	1729202.21	14302147.21	39°23'4.8006"N	80°41'8.7980"W	1.37	210.311	0.20	-0.14	-26.70	
400.00	0.110	175.690	400.00	1.18	-1.49	-0.72	1729202.18	14302146.90	39°23'4.7976"N	80°41'8.7983"W	1.65	205.700	0.13	-0.13	-12.70	
500.00	0.130	170.440	500.00	1.38	-1.70	-0.69	1729202.21	14302146.70	39°23'4.7955"N	80°41'8.7980"W	1.83	202.145	0.02	0.02	-5.25	
600.00	0.240	183.280	599.99	1.69	-2.02	-0.68	1729202.22	14302146.37	39°23'4.7924"N	80°41'8.7979"W	2.13	198.716	0.12	0.11	12.84	
700.00	0.260	182.910	699.99	2.09	-2.45	-0.71	1729202.19	14302145.94	39°23'4.7881"N	80°41'8.7982"W	2.55	196.076	0.02	0.02	-0.37	
800.00	0.330	175.280	799.99	2.58	-2.97	-0.69	1729202.21	14302145.43	39°23'4.7830"N	80°41'8.7981"W	3.05	193.179	0.08	0.07	-7.63	
900.00	0.220	171.810	899.99	3.05	-3.44	-0.64	1729202.26	14302144.95	39°23'4.7783"N	80°41'8.7975"W	3.50	190.586	0.11	-0.11	-3.47	
1000.00	0.200	200.560	999.99	3.38	-3.80	-0.68	1729202.22	14302144.60	39°23'4.7748"N	80°41'8.7979"W	3.86	190.117	0.11	-0.02	28.75	
1100.00	0.290	227.510	1099.99	3.61	-4.13	-0.93	1729201.98	14302144.26	39°23'4.7715"N	80°41'8.8011"W	4.23	192.626	0.14	0.09	26.95	Gyrodata MS Gyro <12-3/8"> (1000')(1100'-1224')
1200.00	0.360	228.030	1199.99	3.84	-4.51	-1.35	1729201.56	14302143.88	39°23'4.7677"N	80°41'8.8065"W	4.71	196.606	0.07	0.07	0.52	
1224.00	0.330	224.280	1223.99	3.90	-4.61	-1.45	1729201.45	14302143.78	39°23'4.7667"N	80°41'8.8078"W	4.83	197.452	0.16	-0.12	-15.62	
1264.00	0.160	230.520	1263.99	3.97	-4.73	-1.57	1729201.33	14302143.66	39°23'4.7656"N	80°41'8.8094"W	4.98	198.400	0.43	-0.42	15.60	APS EM <12-3/8"> (1224')(1264'-3153')
1359.00	1.730	273.300	1358.97	3.48	-4.73	-3.11	1729199.79	14302143.66	39°23'4.7656"N	80°41'8.8289"W	5.66	213.297	1.70	1.65	45.03	
1454.00	3.860	275.120	1453.85	1.64	-4.36	-7.72	1729195.18	14302144.03	39°23'4.7694"N	80°41'8.8877"W	8.87	240.540	2.24	2.24	1.92	
1548.00	5.230	274.270	1547.56	-1.32	-3.76	-15.15	1729187.76	14302144.63	39°23'4.7756"N	80°41'8.9822"W	15.61	256.054	1.46	1.46	-0.90	
1642.00	5.620	274.030	1641.13	-4.79	-3.12	-24.01	1729178.90	14302145.27	39°23'4.7823"N	80°41'9.0951"W	24.21	262.598	0.42	0.41	-0.26	
1736.00	6.200	274.580	1734.63	-8.59	-2.39	-33.66	1729169.25	14302146.00	39°23'4.7898"N	80°41'9.2180"W	33.75	265.938	0.62	0.62	0.59	
1830.00	8.190	276.350	1827.89	-13.45	-1.24	-45.38	1729157.54	14302147.15	39°23'4.8015"N	80°41'9.3671"W	45.40	268.429	2.13	2.12	1.88	
1925.00	10.480	280.240	1921.63	-20.52	1.04	-60.61	1729142.32	14302149.43	39°23'4.8246"N	80°41'9.5610"W	60.62	270.983	2.50	2.41	4.09	
2019.00	11.630	277.870	2013.88	-28.92	3.86	-78.41	1729124.52	14302152.25	39°23'4.8531"N	80°41'9.7875"W	78.50	272.816	1.32	1.22	-2.52	
2114.00	11.590	273.570	2106.94	-36.85	5.76	-97.42	1729105.52	14302154.15	39°23'4.8726"N	80°41'10.0295"W	97.59	273.385	0.91	-0.04	-4.53	
2208.00	10.850	272.770	2199.14	-43.70	6.78	-115.68	1729087.27	14302155.17	39°23'4.8832"N	80°41'10.2621"W	115.88	273.353	0.80	-0.79	-0.85	
2302.00	12.090	276.020	2291.26	-51.08	8.24	-134.31	1729068.65	14302156.63	39°23'4.8983"N	80°41'10.4992"W	134.56	273.510	1.49	1.32	3.46	
2397.00	15.230	278.270	2383.57	-60.94	11.08	-156.55	1729046.41	14302159.46	39°23'4.9271"N	80°41'10.7825"W	156.95	274.047	3.35	3.31	2.37	
2491.00	16.790	278.390	2473.92	-72.76	14.83	-182.21	1729020.77	14302163.22	39°23'4.9651"N	80°41'11.1090"W	182.81	274.654	1.66	1.66	0.13	
2586.00	18.160	277.980	2564.53	-85.70	18.89	-210.44	1728992.54	14302167.27	39°23'5.0062"N	80°41'11.4684"W	211.29	275.130	1.45	1.44	-0.43	

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Field	Doddridge	API	47-017-06982-0000
Facility	Crimson Pad	Wellbore	Perna Unit 1H AWB
Slot	Slot E		

WELLPATH DATA (222 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
2680.00	18.590	277.710	2653.74	-98.99	22.94	-239.80	1728963.20	14302171.32	39°23'5.0472"N	80°41'11.8421"W	240.89	275.463	0.47	0.46	-0.29	
2775.00	17.990	277.210	2743.94	-112.18	26.81	-269.36	1728933.65	14302175.19	39°23'5.0865"N	80°41'12.2184"W	270.69	275.684	0.65	-0.63	-0.53	
2869.00	17.270	275.110	2833.52	-124.20	29.87	-297.66	1728905.36	14302178.25	39°23'5.1177"N	80°41'12.5787"W	299.15	275.731	1.02	-0.77	-2.23	
2963.00	17.980	271.320	2923.11	-134.85	31.45	-326.06	1728876.97	14302179.83	39°23'5.1343"N	80°41'12.9403"W	327.57	275.509	1.44	0.76	-4.03	
3058.00	17.480	270.760	3013.60	-144.67	31.98	-354.99	1728848.05	14302180.35	39°23'5.1405"N	80°41'13.3087"W	356.42	275.147	0.56	-0.53	-0.59	
3153.00	16.600	267.540	3104.43	-153.27	31.58	-382.81	1728820.24	14302179.96	39°23'5.1376"N	80°41'13.6631"W	384.11	274.717	1.36	-0.93	-3.39	
3239.00	15.870	265.500	3187.00	-159.63	30.13	-406.81	1728796.25	14302178.51	39°23'5.1241"N	80°41'13.9688"W	407.92	274.236	1.08	-0.85	-2.37	APS EM <8-3/4"> (3153')(3239'-6450')
3334.00	17.500	269.370	3278.00	-167.29	28.96	-434.04	1728769.03	14302177.34	39°23'5.1134"N	80°41'14.3157"W	435.01	273.817	2.08	1.72	4.07	
3428.00	19.870	273.100	3367.04	-177.66	29.67	-464.13	1728738.95	14302178.04	39°23'5.1214"N	80°41'14.6988"W	465.08	273.657	2.82	2.52	3.97	
3523.00	20.130	272.090	3456.32	-189.51	31.14	-496.59	1728706.51	14302179.51	39°23'5.1370"N	80°41'15.1121"W	497.56	273.588	0.46	0.27	-1.06	
3617.00	19.930	269.380	3544.63	-200.27	31.55	-528.77	1728674.33	14302179.93	39°23'5.1423"N	80°41'15.5220"W	529.71	273.415	1.01	-0.21	-2.88	
3711.00	19.530	267.840	3633.11	-209.77	30.79	-560.49	1728642.63	14302179.16	39°23'5.1358"N	80°41'15.9260"W	561.34	273.144	0.70	-0.43	-1.64	
3806.00	19.380	273.170	3722.70	-220.22	31.06	-592.10	1728611.03	14302179.44	39°23'5.1396"N	80°41'16.3286"W	592.92	273.003	1.87	-0.16	5.61	
3900.00	19.200	273.510	3811.42	-231.92	32.87	-623.10	1728580.04	14302181.25	39°23'5.1585"N	80°41'16.7233"W	623.97	273.020	0.23	-0.19	0.36	
3994.00	19.040	270.090	3900.24	-242.75	33.84	-653.86	1728549.29	14302182.22	39°23'5.1691"N	80°41'17.1150"W	654.74	272.963	1.20	-0.17	-3.64	
4089.00	17.590	273.610	3990.42	-253.24	34.77	-683.69	1728519.48	14302183.14	39°23'5.1793"N	80°41'17.4948"W	684.57	272.911	1.92	-1.53	3.71	
4184.00	17.160	272.160	4081.09	-263.73	36.20	-712.02	1728491.16	14302184.58	39°23'5.1944"N	80°41'17.8556"W	712.94	272.910	0.64	-0.45	-1.53	
4278.00	16.980	269.230	4170.95	-272.94	36.54	-739.60	1728463.59	14302184.91	39°23'5.1987"N	80°41'18.2068"W	740.50	272.828	0.93	-0.19	-3.12	
4373.00	18.160	270.850	4261.52	-282.21	36.57	-768.28	1728434.93	14302184.95	39°23'5.2000"N	80°41'18.5720"W	769.15	272.725	1.34	1.24	1.71	
4467.00	17.700	269.600	4350.95	-291.65	36.69	-797.21	1728406.00	14302185.06	39°23'5.2022"N	80°41'18.9405"W	798.06	272.635	0.64	-0.49	-1.33	
4562.00	16.820	264.760	4441.68	-299.43	35.33	-825.34	1728377.88	14302183.71	39°23'5.1897"N	80°41'19.2989"W	826.10	272.451	1.77	-0.93	-5.09	
4656.00	17.600	268.130	4531.47	-306.75	33.63	-853.09	1728350.14	14302182.00	39°23'5.1738"N	80°41'19.6523"W	853.75	272.257	1.35	0.83	3.59	
4751.00	17.630	274.410	4622.03	-316.61	34.26	-881.79	1728321.45	14302182.64	39°23'5.1811"N	80°41'20.0178"W	882.46	272.225	2.00	0.03	6.61	
4845.00	16.540	270.330	4711.88	-326.60	35.44	-909.37	1728293.89	14302183.81	39°23'5.1936"N	80°41'20.3690"W	910.06	272.232	1.72	-1.16	-4.34	
4939.00	17.140	273.530	4801.85	-336.25	36.37	-936.57	1728266.69	14302184.74	39°23'5.2037"N	80°41'20.7154"W	937.28	272.224	1.17	0.64	3.40	
5033.00	18.170	278.340	4891.43	-348.20	39.34	-964.90	1728238.38	14302187.72	39°23'5.2341"N	80°41'21.0761"W	965.70	272.335	1.90	1.10	5.12	
5129.00	17.560	276.290	4982.80	-361.17	43.10	-994.11	1728209.18	14302191.48	39°23'5.2723"N	80°41'21.4478"W	995.04	272.483	0.91	-0.64	-2.14	
5224.00	18.500	275.770	5073.13	-373.51	46.19	-1023.35	1728179.95	14302194.56	39°23'5.3038"N	80°41'21.8201"W	1024.39	272.584	1.00	0.99	-0.55	
5318.00	18.520	274.500	5162.27	-385.62	48.86	-1053.07	1728150.24	14302197.23	39°23'5.3312"N	80°41'22.1985"W	1054.20	272.656	0.43	0.02	-1.35	
5412.00	17.050	269.670	5251.78	-395.89	49.95	-1081.74	1728121.59	14302198.32	39°23'5.3429"N	80°41'22.5635"W	1082.89	272.644	2.21	-1.56	-5.14	

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(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	(°/100ft)	(°/100ft)	(°/100ft)	
5507.00	17.440	272.900	5342.51	-405.57	50.59	-1109.88	1728093.46	14302198.96	39°23'5.3502"N	80°41'22.9220"W	1111.03	272.610	1.09	0.41	3.40	
5601.00	19.320	269.510	5431.71	-415.66	51.17	-1139.50	1728063.85	14302199.54	39°23'5.3570"N	80°41'23.2992"W	1140.65	272.571	2.30	2.00	-3.61	
5696.00	19.060	266.760	5521.44	-424.76	50.16	-1170.70	1728032.66	14302198.53	39°23'5.3480"N	80°41'23.6966"W	1171.78	272.453	0.99	-0.27	-2.89	
5790.00	18.380	270.860	5610.47	-433.86	49.51	-1200.85	1728002.52	14302197.88	39°23'5.3427"N	80°41'24.0805"W	1201.87	272.361	1.58	-0.72	4.36	
5884.00	18.330	275.700	5699.69	-444.98	51.20	-1230.38	1727973.01	14302199.57	39°23'5.3604"N	80°41'24.4565"W	1231.44	272.383	1.62	-0.05	5.15	
5979.00	17.280	274.260	5790.14	-456.70	53.74	-1259.31	1727944.08	14302202.11	39°23'5.3864"N	80°41'24.8249"W	1260.46	272.443	1.20	-1.11	-1.52	
6073.00	17.230	276.060	5879.91	-468.02	56.24	-1287.08	1727916.33	14302204.61	39°23'5.4121"N	80°41'25.1784"W	1288.31	272.502	0.57	-0.05	1.91	
6168.00	17.290	278.250	5970.63	-480.36	59.75	-1315.04	1727888.38	14302208.12	39°23'5.4477"N	80°41'25.5344"W	1316.40	272.602	0.69	0.06	2.31	
6262.00	15.180	276.180	6060.88	-491.91	63.08	-1341.10	1727862.32	14302211.45	39°23'5.4815"N	80°41'25.8662"W	1342.59	272.693	2.33	-2.24	-2.20	
6356.00	14.520	276.420	6151.74	-502.13	65.73	-1365.05	1727838.39	14302214.09	39°23'5.5085"N	80°41'26.1711"W	1366.63	272.757	0.71	-0.70	0.26	
6450.00	13.590	272.470	6242.93	-511.16	67.52	-1387.79	1727815.65	14302215.88	39°23'5.5270"N	80°41'26.4606"W	1389.44	272.785	1.42	-0.99	-4.20	
6498.00	13.750	269.640	6289.57	-515.01	67.73	-1399.13	1727804.32	14302216.09	39°23'5.5294"N	80°41'26.6050"W	1400.77	272.771	1.43	0.33	-5.90	BH Lucida <8-1/2"> (6450')(6498'-19958')
6543.00	14.490	264.940	6333.21	-518.04	67.20	-1410.09	1727793.37	14302215.56	39°23'5.5245"N	80°41'26.7446"W	1411.69	272.728	3.03	1.64	-10.44	
6637.00	19.280	256.270	6423.14	-522.20	62.47	-1436.90	1727766.57	14302210.84	39°23'5.4787"N	80°41'27.0862"W	1438.25	272.490	5.74	5.10	-9.22	
6732.00	19.380	241.220	6512.85	-520.86	51.15	-1465.97	1727737.51	14302199.52	39°23'5.3679"N	80°41'27.4569"W	1466.86	271.999	5.23	0.11	-15.84	
6826.00	21.960	221.810	6600.89	-509.51	30.52	-1491.39	1727712.10	14302178.90	39°23'5.1648"N	80°41'27.7816"W	1491.70	271.172	7.75	2.74	-20.65	
6920.00	23.810	202.710	6687.61	-486.64	-0.13	-1510.46	1727693.04	14302148.26	39°23'4.8625"N	80°41'28.0258"W	1510.46	269.995	8.11	1.97	-20.32	
6986.00†	27.830	196.248	6747.02	-464.04	-27.23	-1519.92	1727683.58	14302121.17	39°23'4.5950"N	80°41'28.1475"W	1520.16	268.974	7.43	6.09	-9.79	Sycamore: 6986' MD
7014.00	29.610	194.010	6771.57	-452.88	-40.22	-1523.42	1727680.08	14302108.19	39°23'4.4668"N	80°41'28.1926"W	1523.95	268.488	7.43	6.36	-7.99	
7109.00	35.220	179.990	6851.85	-407.12	-90.49	-1529.11	1727674.39	14302057.93	39°23'3.9700"N	80°41'28.2673"W	1531.79	266.613	9.84	5.91	-14.76	
7159.00†	38.828	177.185	6891.77	-378.39	-120.58	-1528.34	1727675.16	14302027.86	39°23'3.6727"N	80°41'28.2588"W	1533.09	265.489	7.96	7.22	-5.61	Middlesex: 7159' MD
7203.00	42.050	175.060	6925.26	-350.81	-149.04	-1526.39	1727677.11	14301999.40	39°23'3.3912"N	80°41'28.2352"W	1533.65	264.423	7.96	7.32	-4.83	
7298.00	51.420	171.780	6990.30	-283.26	-217.65	-1518.32	1727685.17	14301930.82	39°23'2.7129"N	80°41'28.1355"W	1533.85	261.842	10.18	9.86	-3.45	
7372.00†	56.988	169.505	7033.57	-224.08	-276.84	-1508.53	1727694.96	14301871.66	39°23'2.1276"N	80°41'28.0133"W	1533.72	259.601	7.93	7.52	-3.07	Burkett: 7372' MD
7392.00	58.500	168.940	7044.25	-207.33	-293.45	-1505.36	1727698.13	14301855.05	39°23'1.9632"N	80°41'27.9737"W	1533.70	258.969	7.93	7.56	-2.82	
7431.00†	60.850	167.791	7063.94	-173.93	-326.42	-1498.57	1727704.92	14301822.10	39°23'1.6372"N	80°41'27.8887"W	1533.71	257.712	6.54	6.03	-2.95	Tully: 7431' MD
7487.00	64.240	166.230	7089.75	-124.50	-374.83	-1487.40	1727716.09	14301773.70	39°23'1.1583"N	80°41'27.7484"W	1533.90	255.856	6.54	6.05	-2.79	
7581.00	71.880	163.900	7124.85	-37.58	-459.00	-1464.90	1727738.58	14301689.57	39°23'0.3257"N	80°41'27.4655"W	1535.12	252.603	8.45	8.13	-2.48	
7636.00†	75.568	162.030	7140.27	15.18	-509.46	-1449.43	1727754.04	14301639.13	39°22'59.8264"N	80°41'27.2707"W	1536.35	250.634	7.46	6.71	-3.40	Marcellus POE: 7636' MD
7676.00	78.260	160.710	7149.32	54.14	-546.38	-1436.98	1727766.49	14301602.23	39°22'59.4612"N	80°41'27.1138"W	1537.35	249.182	7.46	6.73	-3.30	

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Actual Wellpath Report

Perna Unit 1H AWP Proj: 19983'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Perna Unit 1H
Field	Doddridge	API	47-017-06982-0000
Facility	Crimson Pad	Wellbore	Perna Unit 1H AWB
Slot	Slot E		

WELLPATH DATA (222 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
7770.00	85.810	160.810	7162.34	147.16	-634.21	-1406.32	1727797.13	14301514.43	39°22'58.5921"N	80°41'26.7273"W	1542.71	245.726	8.03	8.03	0.11	
7864.00	89.630	160.800	7166.08	241.07	-722.90	-1375.45	1727827.99	14301425.78	39°22'57.7145"N	80°41'26.3379"W	1553.85	242.275	4.06	4.06	-0.01	
7958.00	89.630	160.870	7166.68	335.06	-811.68	-1344.59	1727858.84	14301337.02	39°22'56.8359"N	80°41'25.9488"W	1570.59	238.882	0.07	0.00	0.07	
8053.00	89.630	160.810	7167.30	430.06	-901.42	-1313.41	1727890.00	14301247.32	39°22'55.9479"N	80°41'25.5556"W	1592.99	235.537	0.06	0.00	-0.06	
8147.00	89.600	161.070	7167.93	524.06	-990.26	-1282.72	1727920.69	14301158.51	39°22'55.0688"N	80°41'25.1686"W	1620.49	232.332	0.28	-0.03	0.28	
8241.00	89.630	160.860	7168.56	618.05	-1079.12	-1252.06	1727951.33	14301069.69	39°22'54.1895"N	80°41'24.7821"W	1652.92	229.243	0.23	0.03	-0.22	
8335.00	89.630	160.750	7169.17	712.05	-1167.89	-1221.15	1727982.23	14300980.95	39°22'53.3111"N	80°41'24.3924"W	1689.73	226.277	0.12	0.00	-0.12	
8429.00	89.630	160.880	7169.77	806.05	-1256.67	-1190.26	1728013.10	14300892.21	39°22'52.4326"N	80°41'24.0029"W	1730.88	223.445	0.14	0.00	0.14	
8523.00	89.420	160.960	7170.55	900.04	-1345.50	-1159.54	1728043.82	14300803.41	39°22'51.5536"N	80°41'23.6154"W	1776.21	220.754	0.24	-0.22	0.09	
8618.00	89.600	160.810	7171.37	995.04	-1435.26	-1128.43	1728074.91	14300713.69	39°22'50.6654"N	80°41'23.2232"W	1825.74	218.175	0.25	0.19	-0.16	
8712.00	89.780	160.550	7171.87	1089.03	-1523.97	-1097.33	1728106.00	14300625.02	39°22'49.7876"N	80°41'22.8310"W	1877.93	215.756	0.34	0.19	-0.28	
8806.00	89.910	161.340	7172.13	1183.03	-1612.82	-1066.64	1728136.68	14300536.21	39°22'48.9085"N	80°41'22.4441"W	1933.62	213.479	0.85	0.14	0.84	
8901.00	89.750	160.810	7172.41	1278.03	-1702.68	-1035.83	1728167.48	14300446.38	39°22'48.0192"N	80°41'22.0557"W	1993.00	211.314	0.58	-0.17	-0.56	
8995.00	89.750	160.710	7172.82	1372.02	-1791.43	-1004.86	1728198.44	14300357.66	39°22'47.1410"N	80°41'21.6651"W	2054.01	209.289	0.11	0.00	-0.11	
9090.00	89.910	161.110	7173.10	1467.02	-1881.20	-973.79	1728229.50	14300267.92	39°22'46.2527"N	80°41'21.2734"W	2118.30	207.368	0.45	0.17	0.42	
9184.00	89.540	160.460	7173.55	1561.02	-1969.97	-942.85	1728260.42	14300179.20	39°22'45.3744"N	80°41'20.8833"W	2183.97	205.576	0.80	-0.39	-0.69	
9279.00	89.750	160.360	7174.14	1656.01	-2059.47	-911.00	1728292.26	14300089.73	39°22'44.4887"N	80°41'20.4816"W	2251.96	203.862	0.24	0.22	-0.11	
9373.00	89.910	160.390	7174.42	1750.00	-2148.00	-879.43	1728323.82	14300001.23	39°22'43.6125"N	80°41'20.0835"W	2321.06	202.265	0.17	0.17	0.03	
9468.00	89.750	160.630	7174.70	1844.99	-2237.56	-847.73	1728355.50	14299911.71	39°22'42.7263"N	80°41'19.6837"W	2392.77	200.750	0.30	-0.17	0.25	
9562.00	89.880	160.780	7175.01	1938.99	-2326.28	-816.67	1728386.55	14299823.02	39°22'41.8484"N	80°41'19.2921"W	2465.47	199.344	0.21	0.14	0.16	
9656.00	89.940	160.550	7175.15	2032.98	-2414.98	-785.55	1728417.66	14299734.36	39°22'40.9707"N	80°41'18.8997"W	2539.53	198.019	0.25	0.06	-0.24	
9751.00	89.780	160.370	7175.39	2127.97	-2504.51	-753.77	1728449.42	14299644.87	39°22'40.0848"N	80°41'18.4990"W	2615.48	196.750	0.25	-0.17	-0.19	
9845.00	89.750	160.660	7175.77	2221.97	-2593.12	-722.42	1728480.76	14299556.29	39°22'39.2079"N	80°41'18.1036"W	2691.87	195.567	0.31	-0.03	0.31	
9939.00	89.630	160.130	7176.28	2315.96	-2681.67	-690.88	1728512.29	14299467.77	39°22'38.3316"N	80°41'17.7058"W	2769.24	194.447	0.58	-0.13	-0.56	
10034.00	89.880	160.770	7176.69	2410.95	-2771.19	-659.09	1728544.07	14299378.29	39°22'37.4457"N	80°41'17.3050"W	2848.49	193.378	0.72	0.26	0.67	
10128.00	89.850	160.080	7176.91	2504.94	-2859.76	-627.60	1728575.55	14299289.75	39°22'36.5693"N	80°41'16.9078"W	2927.82	192.378	0.73	-0.03	-0.73	
10223.00	90.280	161.030	7176.80	2599.93	-2949.34	-595.97	1728607.16	14299200.21	39°22'35.6829"N	80°41'16.5090"W	3008.95	191.424	1.10	0.45	1.00	
10317.00	90.030	161.590	7176.55	2693.93	-3038.38	-565.85	1728637.27	14299111.20	39°22'34.8018"N	80°41'16.1294"W	3090.62	190.550	0.65	-0.27	0.60	
10411.00	90.120	161.740	7176.42	2787.92	-3127.61	-536.28	1728666.83	14299022.01	39°22'33.9189"N	80°41'15.7568"W	3173.25	189.730	0.19	0.10	0.16	
10505.00	90.090	161.830	7176.25	2881.92	-3216.90	-506.90	1728696.20	14298932.75	39°22'33.0354"N	80°41'15.3865"W	3256.59	188.955	0.10	-0.03	0.10	

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Actual Wellpath Report

Perna Unit 1H AWP Proj: 19983'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Perna Unit 1H
Field	Doddridge	API	47-017-06982-0000
Facility	Crimson Pad	Wellbore	Perna Unit 1H AWB
Slot	Slot E		

WELLPATH DATA (222 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
10600.00	90.120	161.870	7176.08	2976.91	-3307.17	-477.31	1728725.78	14298842.52	39°22'32.1422"N	80°41'15.0137"W	3341.44	188.212	0.05	0.03	0.04	
10694.00	90.280	161.950	7175.75	3070.91	-3396.53	-448.12	1728754.96	14298753.20	39°22'31.2581"N	80°41'14.6459"W	3425.96	187.516	0.19	0.17	0.09	
10789.00	89.350	161.870	7176.06	3165.90	-3486.83	-418.62	1728784.45	14298662.93	39°22'30.3645"N	80°41'14.2743"W	3511.87	186.846	0.98	-0.98	-0.08	
10883.00	89.630	162.010	7176.89	3259.88	-3576.19	-389.48	1728813.57	14298573.60	39°22'29.4803"N	80°41'13.9072"W	3597.34	186.216	0.33	0.30	0.15	
10977.00	89.480	161.730	7177.62	3353.88	-3665.52	-360.23	1728842.81	14298484.31	39°22'28.5964"N	80°41'13.5386"W	3683.18	185.613	0.34	-0.16	-0.30	
11072.00	89.420	161.320	7178.53	3448.87	-3755.62	-330.13	1728872.90	14298394.24	39°22'27.7049"N	80°41'13.1593"W	3770.10	185.024	0.44	-0.06	-0.43	
11166.00	89.600	161.680	7179.34	3542.86	-3844.76	-300.30	1728902.72	14298305.14	39°22'26.8228"N	80°41'12.7834"W	3856.47	184.466	0.43	0.19	0.38	
11260.00	89.570	161.610	7180.02	3636.86	-3933.98	-270.70	1728932.31	14298215.96	39°22'25.9401"N	80°41'12.4105"W	3943.28	183.936	0.08	-0.03	-0.07	
11355.00	89.540	161.620	7180.76	3731.85	-4024.13	-240.74	1728962.26	14298125.85	39°22'25.0481"N	80°41'12.0329"W	4031.32	183.424	0.03	-0.03	0.01	
11450.00	89.600	161.570	7181.47	3826.85	-4114.26	-210.75	1728992.24	14298035.74	39°22'24.1561"N	80°41'11.6550"W	4119.66	182.932	0.08	0.06	-0.05	
11544.00	89.600	161.800	7182.13	3920.84	-4203.50	-181.21	1729021.76	14297946.54	39°22'23.2732"N	80°41'11.2828"W	4207.40	182.468	0.24	0.00	0.24	
11638.00	89.540	161.470	7182.83	4014.84	-4292.71	-151.59	1729051.37	14297857.37	39°22'22.3904"N	80°41'10.9096"W	4295.39	182.022	0.36	-0.06	-0.35	
11733.00	89.600	161.830	7183.54	4109.83	-4382.88	-121.68	1729081.26	14297767.24	39°22'21.4983"N	80°41'10.5328"W	4384.57	181.590	0.38	0.06	0.38	
11827.00	89.510	161.720	7184.27	4203.82	-4472.16	-92.29	1729110.65	14297677.99	39°22'20.6148"N	80°41'10.1624"W	4473.11	181.182	0.15	-0.10	-0.12	
11921.00	89.570	161.600	7185.03	4297.82	-4561.38	-62.71	1729140.21	14297588.80	39°22'19.7320"N	80°41'9.7897"W	4561.81	180.788	0.14	0.06	-0.13	
12016.00	89.660	161.790	7185.67	4392.81	-4651.57	-32.87	1729170.04	14297498.65	39°22'18.8395"N	80°41'9.4138"W	4651.69	180.405	0.22	0.09	0.20	
12110.00	89.570	161.810	7186.30	4486.81	-4740.87	-3.52	1729199.39	14297409.39	39°22'17.9560"N	80°41'9.0439"W	4740.87	180.042	0.10	-0.10	0.02	
12204.00	89.570	161.570	7187.00	4580.80	-4830.11	26.01	1729228.90	14297320.18	39°22'17.0730"N	80°41'8.6719"W	4830.18	179.691	0.26	0.00	-0.26	
12298.00	89.630	161.910	7187.66	4674.79	-4919.37	55.47	1729258.35	14297230.95	39°22'16.1897"N	80°41'8.3008"W	4919.68	179.354	0.37	0.06	0.36	
12393.00	89.480	161.480	7188.40	4769.79	-5009.56	85.30	1729288.17	14297140.80	39°22'15.2973"N	80°41'7.9249"W	5010.29	179.024	0.48	-0.16	-0.45	
12487.00	89.540	161.740	7189.20	4863.78	-5098.76	114.96	1729317.81	14297051.64	39°22'14.4147"N	80°41'7.5513"W	5100.05	178.708	0.28	0.06	0.28	
12581.00	89.510	161.480	7189.98	4957.77	-5187.95	144.61	1729347.46	14296962.48	39°22'13.5321"N	80°41'7.1776"W	5189.97	178.403	0.28	-0.03	-0.28	
12676.00	89.380	161.580	7190.90	5052.77	-5278.05	174.71	1729377.54	14296872.41	39°22'12.6406"N	80°41'6.7984"W	5280.94	178.104	0.17	-0.14	0.11	
12770.00	89.540	161.670	7191.79	5146.76	-5367.26	204.34	1729407.16	14296783.24	39°22'11.7579"N	80°41'6.4251"W	5371.15	177.820	0.20	0.17	0.10	
12865.00	89.970	161.610	7192.19	5241.76	-5457.42	234.26	1729437.07	14296693.11	39°22'10.8657"N	80°41'6.0481"W	5462.45	177.542	0.46	0.45	-0.06	
12959.00	89.720	161.500	7192.45	5335.76	-5546.59	264.00	1729466.80	14296603.98	39°22'9.9834"N	80°41'5.6733"W	5552.87	177.275	0.29	-0.27	-0.12	
13053.00	89.690	161.480	7192.93	5429.75	-5635.73	293.84	1729496.63	14296514.88	39°22'9.1014"N	80°41'5.2973"W	5643.38	177.015	0.04	-0.03	-0.02	
13148.00	89.690	160.430	7193.45	5524.75	-5725.52	324.84	1729527.62	14296425.12	39°22'8.2128"N	80°41'4.9066"W	5734.73	176.753	1.11	0.00	-1.11	
13242.00	89.780	161.110	7193.88	5618.74	-5814.28	355.80	1729558.56	14296336.40	39°22'7.3345"N	80°41'4.5164"W	5825.15	176.498	0.73	0.10	0.72	
13336.00	89.880	161.570	7194.16	5712.74	-5903.34	385.88	1729588.63	14296247.37	39°22'6.4533"N	80°41'4.1374"W	5915.93	176.260	0.50	0.11	0.49	

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Perna Unit 1H AWP Proj: 19983'

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Slot	Slot E		

WELLPATH DATA (222 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
13431.00	89.780	161.660	7194.44	5807.74	-5993.49	415.84	1729618.58	14296157.26	39°22'5.5612"N	80°41'3.7599"W	6007.90	176.031	0.14	-0.11	0.09	
13526.00	89.820	161.640	7194.77	5902.74	-6083.66	445.75	1729648.47	14296067.13	39°22'4.6690"N	80°41'3.3831"W	6099.96	175.809	0.05	0.04	-0.02	
13620.00	90.030	161.870	7194.90	5996.73	-6172.93	475.18	1729677.89	14295977.89	39°22'3.7857"N	80°41'3.0124"W	6191.19	175.598	0.33	0.22	0.24	
13715.00	89.630	161.340	7195.18	6091.73	-6263.07	505.16	1729707.86	14295887.78	39°22'2.8937"N	80°41'2.6347"W	6283.41	175.389	0.70	-0.42	-0.56	
13809.00	89.940	161.480	7195.53	6185.73	-6352.17	535.12	1729737.81	14295798.72	39°22'2.0121"N	80°41'2.2571"W	6374.67	175.185	0.36	0.33	0.15	
13903.00	90.090	161.520	7195.51	6279.73	-6441.31	564.95	1729767.63	14295709.61	39°22'1.1300"N	80°41'1.8813"W	6466.04	174.988	0.17	0.16	0.04	
13997.00	90.030	161.710	7195.41	6373.72	-6530.51	594.60	1729797.26	14295620.44	39°22'0.2473"N	80°41'1.5078"W	6557.53	174.798	0.21	-0.06	0.20	
14092.00	90.000	161.580	7195.38	6468.72	-6620.68	624.51	1729827.17	14295530.31	39°21'59.3551"N	80°41'1.1309"W	6650.07	174.611	0.14	-0.03	-0.14	
14186.00	90.090	161.580	7195.31	6562.72	-6709.86	654.21	1729856.86	14295441.16	39°21'58.4727"N	80°41'0.7567"W	6741.68	174.431	0.10	0.10	0.00	
14281.00	90.060	161.560	7195.18	6657.72	-6799.99	684.25	1729886.88	14295351.07	39°21'57.5808"N	80°41'0.3783"W	6834.33	174.254	0.04	-0.03	-0.02	
14375.00	90.030	161.870	7195.11	6751.71	-6889.25	713.74	1729916.36	14295261.85	39°21'56.6977"N	80°41'0.0068"W	6926.12	174.085	0.33	-0.03	0.33	
14469.00	89.970	161.860	7195.11	6845.71	-6978.58	743.00	1729945.61	14295172.56	39°21'55.8138"N	80°40'59.6383"W	7018.02	173.923	0.06	-0.06	-0.01	
14564.00	90.030	161.480	7195.11	6940.70	-7068.76	772.87	1729975.47	14295082.41	39°21'54.9214"N	80°40'59.2619"W	7110.88	173.760	0.40	0.06	-0.40	
14658.00	90.000	161.450	7195.09	7034.70	-7157.88	802.76	1730005.34	14294993.32	39°21'54.0395"N	80°40'58.8855"W	7202.75	173.601	0.05	-0.03	-0.03	
14753.00	89.850	161.610	7195.21	7129.70	-7247.99	832.85	1730035.43	14294903.25	39°21'53.1479"N	80°40'58.5063"W	7295.68	173.445	0.23	-0.16	0.17	
14847.00	90.090	161.820	7195.26	7223.70	-7337.24	862.34	1730064.91	14294814.03	39°21'52.2648"N	80°40'58.1348"W	7387.74	173.297	0.34	0.26	0.22	
14941.00	90.030	161.570	7195.16	7317.69	-7426.48	891.87	1730094.42	14294724.83	39°21'51.3817"N	80°40'57.7629"W	7479.84	173.152	0.27	-0.06	-0.27	
15036.00	90.030	161.460	7195.11	7412.69	-7516.58	921.99	1730124.53	14294634.76	39°21'50.4902"N	80°40'57.3834"W	7572.92	173.007	0.12	0.00	-0.12	
15131.00	90.120	161.570	7194.99	7507.69	-7606.68	952.11	1730154.63	14294544.70	39°21'49.5986"N	80°40'57.0040"W	7666.04	172.866	0.15	0.09	0.12	
15225.00	89.970	161.670	7194.91	7601.69	-7695.88	981.75	1730184.26	14294455.53	39°21'48.7159"N	80°40'56.6306"W	7758.25	172.730	0.19	-0.16	0.11	
15319.00	90.060	161.800	7194.89	7695.68	-7785.15	1011.21	1730213.71	14294366.30	39°21'47.8327"N	80°40'56.2595"W	7850.55	172.599	0.17	0.10	0.14	
15414.00	90.120	161.760	7194.74	7790.68	-7875.39	1040.91	1730243.40	14294276.10	39°21'46.9398"N	80°40'55.8854"W	7943.88	172.471	0.08	0.06	-0.04	
15508.00	89.780	161.330	7194.82	7884.68	-7964.55	1070.67	1730273.15	14294186.97	39°21'46.0575"N	80°40'55.5105"W	8036.19	172.344	0.58	-0.36	-0.46	
15602.00	89.450	160.540	7195.45	7978.67	-8053.39	1101.37	1730303.84	14294098.16	39°21'45.1783"N	80°40'55.1236"W	8128.35	172.213	0.91	-0.35	-0.84	
15697.00	88.400	159.150	7197.24	8073.63	-8142.56	1134.10	1730336.55	14294009.03	39°21'44.2959"N	80°40'54.7109"W	8221.16	172.071	1.83	-1.11	-1.46	
15791.00	89.910	161.880	7198.62	8167.60	-8231.15	1165.45	1730367.89	14293920.47	39°21'43.4192"N	80°40'54.3158"W	8313.25	171.941	3.32	1.61	2.90	
15885.00	89.350	161.010	7199.23	8261.59	-8320.26	1195.36	1730397.79	14293831.40	39°21'42.5374"N	80°40'53.9390"W	8405.69	171.824	1.10	-0.60	-0.93	
15980.00	89.570	160.100	7200.12	8356.58	-8409.84	1226.98	1730429.40	14293741.86	39°21'41.6510"N	80°40'53.5404"W	8498.87	171.699	0.99	0.23	-0.96	
16074.00	89.820	161.710	7200.63	8450.58	-8498.66	1257.73	1730460.14	14293653.07	39°21'40.7720"N	80°40'53.1529"W	8591.23	171.582	1.73	0.27	1.71	
16169.00	89.630	161.420	7201.08	8545.57	-8588.79	1287.77	1730490.16	14293562.98	39°21'39.8803"N	80°40'52.7745"W	8684.79	171.473	0.36	-0.20	-0.31	

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Actual Wellpath Report

Perna Unit 1H AWP Proj: 19983'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Perna Unit 1H
Field	Doddridge	API	47-017-06982-0000
Facility	Crimson Pad	Wellbore	Perna Unit 1H AWB
Slot	Slot E		

WELLPATH DATA (222 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
16263.00	89.940	161.690	7201.43	8639.57	-8677.96	1317.51	1730519.89	14293473.84	39°21'38.9979"N	80°40'52.3998"W	8777.40	171.367	0.44	0.33	0.29	
16358.00	89.690	161.690	7201.74	8734.57	-8768.15	1347.36	1730549.73	14293383.69	39°21'38.1055"N	80°40'52.0239"W	8871.06	171.264	0.26	-0.26	0.00	
16452.00	89.450	160.580	7202.45	8828.56	-8857.09	1377.75	1730580.11	14293294.78	39°21'37.2253"N	80°40'51.6410"W	8963.61	171.158	1.21	-0.26	-1.18	
16546.00	89.820	161.500	7203.04	8922.56	-8945.99	1408.29	1730610.64	14293205.92	39°21'36.3456"N	80°40'51.2562"W	9056.16	171.054	1.05	0.39	0.98	
16641.00	89.780	161.410	7203.38	9017.56	-9036.06	1438.50	1730640.84	14293115.88	39°21'35.4544"N	80°40'50.8756"W	9149.84	170.955	0.10	-0.04	-0.09	
16735.00	89.850	161.260	7203.68	9111.56	-9125.11	1468.59	1730670.91	14293026.86	39°21'34.5731"N	80°40'50.4966"W	9242.53	170.857	0.18	0.07	-0.16	
16830.00	89.720	161.500	7204.04	9206.55	-9215.14	1498.92	1730701.23	14292936.87	39°21'33.6823"N	80°40'50.1145"W	9336.25	170.761	0.29	-0.14	0.25	
16924.00	89.720	161.240	7204.50	9300.55	-9304.21	1528.95	1730731.25	14292847.83	39°21'32.8009"N	80°40'49.7362"W	9429.00	170.668	0.28	0.00	-0.28	
17019.00	89.750	161.220	7204.94	9395.55	-9394.16	1559.52	1730761.80	14292757.92	39°21'31.9108"N	80°40'49.3511"W	9522.73	170.574	0.04	0.03	-0.02	
17113.00	89.910	161.570	7205.21	9489.55	-9483.25	1589.51	1730791.78	14292668.87	39°21'31.0293"N	80°40'48.9733"W	9615.53	170.485	0.41	0.17	0.37	
17207.00	90.060	161.770	7205.24	9583.55	-9572.48	1619.07	1730821.33	14292579.68	39°21'30.1463"N	80°40'48.6010"W	9708.43	170.400	0.27	0.16	0.21	
17302.00	89.880	161.580	7205.29	9678.54	-9662.66	1648.94	1730851.19	14292489.53	39°21'29.2540"N	80°40'48.2248"W	9802.34	170.316	0.28	-0.19	-0.20	
17396.00	89.910	161.440	7205.46	9772.54	-9751.81	1678.75	1730880.99	14292400.42	39°21'28.3718"N	80°40'47.8493"W	9895.25	170.232	0.15	0.03	-0.15	
17490.00	89.940	161.490	7205.58	9866.54	-9840.93	1708.63	1730910.86	14292311.33	39°21'27.4899"N	80°40'47.4729"W	9988.16	170.150	0.06	0.03	0.05	
17584.00	89.780	161.220	7205.81	9960.54	-9930.00	1738.68	1730940.90	14292222.30	39°21'26.6086"N	80°40'47.0943"W	10081.06	170.069	0.33	-0.17	-0.29	
17679.00	89.910	161.610	7206.07	10055.54	-10020.04	1768.96	1730971.16	14292132.29	39°21'25.7176"N	80°40'46.7129"W	10174.99	169.988	0.43	0.14	0.41	
17773.00	89.780	161.070	7206.32	10149.54	-10109.10	1799.03	1731001.23	14292043.26	39°21'24.8363"N	80°40'46.3341"W	10267.93	169.909	0.59	-0.14	-0.57	
17868.00	90.150	161.270	7206.38	10244.54	-10199.02	1829.69	1731031.88	14291953.38	39°21'23.9465"N	80°40'45.9478"W	10361.84	169.829	0.44	0.39	0.21	
17962.00	90.150	160.830	7206.14	10338.54	-10287.92	1860.22	1731062.39	14291864.51	39°21'23.0668"N	80°40'45.5632"W	10454.75	169.751	0.47	0.00	-0.47	
18057.00	90.150	161.430	7205.89	10433.54	-10377.81	1890.95	1731093.10	14291774.65	39°21'22.1772"N	80°40'45.1761"W	10548.68	169.673	0.63	0.00	0.63	
18151.00	90.120	160.480	7205.67	10527.53	-10466.67	1921.62	1731123.76	14291685.84	39°21'21.2980"N	80°40'44.7897"W	10641.60	169.597	1.01	-0.03	-1.01	
18246.00	90.220	160.670	7205.38	10622.53	-10556.26	1953.21	1731155.34	14291596.28	39°21'20.4114"N	80°40'44.3915"W	10735.44	169.517	0.23	0.11	0.20	
18341.00	90.280	160.410	7204.97	10717.52	-10645.83	1984.86	1731186.98	14291506.74	39°21'19.5250"N	80°40'43.9927"W	10829.28	169.439	0.28	0.06	-0.27	
18436.00	90.370	160.940	7204.43	10812.52	-10735.48	2016.30	1731218.41	14291417.13	39°21'18.6379"N	80°40'43.5965"W	10923.18	169.363	0.57	0.09	0.56	
18530.00	90.310	160.290	7203.87	10906.51	-10824.15	2047.50	1731249.59	14291328.50	39°21'17.7604"N	80°40'43.2033"W	11016.10	169.288	0.69	-0.06	-0.69	
18625.00	90.180	160.610	7203.47	11001.50	-10913.67	2079.29	1731281.37	14291239.01	39°21'16.8745"N	80°40'42.8027"W	11109.98	169.213	0.36	-0.14	0.34	
18720.00	90.120	160.390	7203.22	11096.49	-11003.22	2111.00	1731313.07	14291149.49	39°21'15.9883"N	80°40'42.4031"W	11203.89	169.140	0.24	-0.06	-0.23	
18814.00	90.340	160.640	7202.84	11190.48	-11091.83	2142.35	1731344.41	14291060.91	39°21'15.1113"N	80°40'42.0079"W	11296.83	169.068	0.35	0.23	0.27	
18909.00	90.150	160.510	7202.43	11285.48	-11181.43	2173.95	1731375.99	14290971.36	39°21'14.2248"N	80°40'41.6098"W	11390.80	168.998	0.24	-0.20	-0.14	
19004.00	90.220	160.230	7202.13	11380.47	-11270.90	2205.86	1731407.89	14290881.91	39°21'13.3393"N	80°40'41.2076"W	11484.73	168.926	0.30	0.07	-0.29	

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Actual Wellpath Report

Perna Unit 1H AWP Proj: 19983'

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REFERENCE WELLPATH IDENTIFICATION

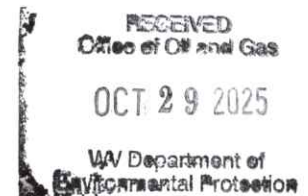
Operator	ANTERO RESOURCES CORPORATION	Well	Perna Unit 1H
Field	Doddridge	API	47-017-06982-0000
Facility	Crimson Pad	Wellbore	Perna Unit 1H AWB
Slot	Slot E		

WELLPATH DATA (222 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
19098.00	90.430	160.460	7201.59	11474.45	-11359.43	2237.48	1731439.50	14290793.43	39°21'12.4632"N	80°40'40.8091"W	11577.69	168.857	0.33	0.22	0.24	
19193.00	90.400	160.250	7200.91	11569.44	-11448.89	2269.42	1731471.42	14290704.00	39°21'11.5779"N	80°40'40.4066"W	11671.65	168.788	0.22	-0.03	-0.22	
19288.00	90.310	160.830	7200.32	11664.43	-11538.46	2301.06	1731503.06	14290614.46	39°21'10.6915"N	80°40'40.0078"W	11765.67	168.722	0.62	-0.09	0.61	
19382.00	90.340	160.150	7199.79	11758.42	-11627.07	2332.46	1731534.44	14290525.89	39°21'9.8147"N	80°40'39.6122"W	11858.71	168.657	0.72	0.03	-0.72	
19477.00	90.370	160.460	7199.20	11853.41	-11716.51	2364.47	1731566.44	14290436.49	39°21'8.9295"N	80°40'39.2087"W	11952.71	168.591	0.33	0.03	0.33	
19572.00	90.120	160.030	7198.79	11948.40	-11805.91	2396.58	1731598.54	14290347.12	39°21'8.0447"N	80°40'38.8040"W	12046.71	168.525	0.52	-0.26	-0.45	
19666.00	90.770	160.740	7198.06	12042.38	-11894.46	2428.14	1731630.08	14290258.61	39°21'7.1685"N	80°40'38.4064"W	12139.77	168.462	1.02	0.69	0.76	
19761.00	90.950	160.410	7196.63	12137.37	-11984.04	2459.73	1731661.66	14290169.06	39°21'6.2820"N	80°40'38.0083"W	12233.86	168.401	0.40	0.19	-0.35	
19855.00	90.860	160.520	7195.15	12231.35	-12072.62	2491.15	1731693.08	14290080.52	39°21'5.4055"N	80°40'37.6123"W	12326.96	168.341	0.15	-0.10	0.12	
19950.00	90.860	160.510	7193.72	12326.33	-12162.16	2522.84	1731724.75	14289991.00	39°21'4.5193"N	80°40'37.2130"W	12421.07	168.281	0.01	0.00	-0.01	
19958.00	90.860	160.590	7193.60	12334.33	-12169.71	2525.50	1731727.41	14289983.46	39°21'4.4446"N	80°40'37.1794"W	12429.00	168.276	1.00	0.00	1.00	
19983.00‡	90.860	160.590	7193.23	12359.32	-12193.28	2533.81	1731735.71	14289959.90	39°21'4.2113"N	80°40'37.0748"W	12453.77	168.261	0.00	0.00	0.00	Projected MD at TD: 19983'

HOLE & CASING SECTIONS - Ref Wellbore: Perna Unit 1H AWB Ref Wellpath: Perna Unit 1H AWP Proj: 19983'

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	-0.31	-0.20
17.5in Open Hole	125.50	1060.00	934.50	125.50	1059.99	-0.31	-0.20	-3.99	-0.80
13.375in Casing Surface	25.50	1040.00	1014.50	25.50	1039.99	0.00	0.00	-3.93	-0.75
12.375in Open Hole	1060.00	3241.00	2181.00	1059.99	3188.93	-3.99	-0.80	30.09	-407.35
9.625in Casing Intermediate	25.50	3209.00	3183.50	25.50	3158.16	0.00	0.00	30.73	-398.56
8.75in Open Hole	3241.00	6521.00	3280.00	3188.93	6311.89	30.09	-407.35	67.57	-1404.67
8.5in Open Hole	6521.00	19983.00	13462.00	6311.89	7193.23	67.57	-1404.67	-12193.28	2533.81
5.5in Casing Production	25.50	19963.00	19937.50	25.50	7193.53	0.00	0.00	-12174.42	2527.16





Actual Wellpath Report

Perna Unit 1H AWP Proj: 19983'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Perna Unit 1H
Field	Doddridge	API	47-017-06982-0000
Facility	Crimson Pad	Wellbore	Perna Unit 1H AWB
Slot	Slot E		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Perna Unit 1H POE Rev-2	7138.00	-500.20	-1452.00	1727751.47	14301648.39	39°22'59.9181"N	80°41'27.3031"W	point
Perna Unit 1H BHL Rev-2	7163.00	-12223.73	2538.91	1731740.81	14289929.46	39°21'3.9102"N	80°40'37.0113"W	point
Perna Unit 1H LP Rev-2	7163.00	-677.77	-1391.55	1727811.89	14301470.89	39°22'58.1611"N	80°41'26.5410"W	point
Perna Unit 1H 50' L/R Hard Line	7500.00	-6361.97	543.45	1729746.14	14295788.92	39°22'1.9150"N	80°41'2.1514"W	rectangle

2D Rectangle 12384.2 x 100.

WELLPATH COMPOSITION - Ref Wellbore: Perna Unit 1H AWB Ref Wellpath: Perna Unit 1H AWP Proj: 19983'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
25.50	1000.00	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata MS Gyro <17-1/2"> (100'-1000')	Perna Unit 1H AWB	8/5/2024
1000.00	1224.00	Gyrodata 2015 - GC+WIR+DPIPE	02 Gyrodata MS Gyro <12-3/8"> (1000')(1100'-1224')	Perna Unit 1H AWB	8/6/2024
1224.00	3153.00	BH NaviTrak (2019) (Axial Corr+HRGM)	03 APS EM <12-3/8"> (1224')(1264'-3153')	Perna Unit 1H AWB	8/5/2024
3153.00	6450.00	BH NaviTrak (2019) (Axial Corr+HRGM)	04 APS EM <8-3/4"> (3153')(3239'-6450')	Perna Unit 1H AWB	8/22/2024
6450.00	19983.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	05 BH Lucida <8-1/2"> (6450')(6498'-19958')	Perna Unit 1H AWB	8/22/2024

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Actual Wellpath Report

Perna Unit 1H AWP Proj: 19983'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Perna Unit 1H
Field	Doddridge	API	47-017-06982-0000
Facility	Crimson Pad	Wellbore	Perna Unit 1H AWB
Slot	Slot E		

COMMENTS
<p>Wellpath general comments API: 47-017-06982-0000 BH Job #: 112320231 Rig: H&P 317 Duration: 8/25/2024-8/28/2024 Gyrodata MS Gyro <17-1/2"> (100'-1000') Gyrodata MS Gyro <12-3/8"> (1000')(1100'-1224') APS EM <12-3/8"> (1224')(1264'-3153') APS EM <8-3/4"> (3153')(3239'-6450') BH Lucida <8-1/2"> (6450')(6498'-19958') Sycamore: 6986' MD Middlesex: 7159' MD Burkett: 7372' MD Tully: 7431' MD Marcellus POE: 7636' MD Projected MD at TD: 19983'</p>

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