



Actual Wellpath Report

Hennessy Unit 2H AWP Proj: 13970'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Hennessy Unit 2H
Field	Tyler	Wellbore	Hennessy Unit 2H AWB
Facility	Ferrell North Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	10/4/2019 at 1:37:45 PM
Convergence at slot	0.05° East	Database/Source file	WA_MPL_EasternUS_Defn/Hennessy_Unit_2H_AWP_Proj_13970_.xml

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	1663420.83	14333923.30	39°28'20.410"N	80°55'06.540"W
Facility Reference Pt			1663420.83	14333923.30	39°28'20.410"N	80°55'06.540"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 519 (RKB) to Facility Vertical Datum	787.00ft
Horizontal Reference Pt	Slot	H&P 519 (RKB) to Mean Sea Level	787.00ft
Vertical Reference Pt	H&P 519 (RKB)	H&P 519 (RKB) to Ground Level at Slot (Slot #03)	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	341.09°

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WELLPATH DATA (165 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	59.040	0.00	0.00	0.00	0.00	1663420.83	14333923.30	39°28'20.410"N	80°55'06.540"W	0.00	0.000	0.00	0.00	0.00	
30.00	0.000	59.040	30.00	0.00	0.00	0.00	1663420.83	14333923.30	39°28'20.410"N	80°55'06.540"W	0.00	0.000	0.00	0.00	0.00	
115.00	0.270	59.040	115.00	0.04	0.10	0.17	1663421.00	14333923.40	39°28'20.411"N	80°55'06.538"W	0.20	59.040	0.32	0.32	69.46	Gyrodata MS Gyro <17-1/2">(115'-305')
140.00	0.170	54.530	140.00	0.06	0.15	0.25	1663421.08	14333923.45	39°28'20.412"N	80°55'06.537"W	0.30	58.476	0.41	-0.40	-18.04	
165.00	0.170	61.030	165.00	0.08	0.19	0.32	1663421.14	14333923.49	39°28'20.412"N	80°55'06.536"W	0.37	58.337	0.08	0.00	26.00	
190.00	0.170	63.010	190.00	0.09	0.23	0.38	1663421.21	14333923.53	39°28'20.412"N	80°55'06.535"W	0.44	58.951	0.02	0.00	7.92	
215.00	0.090	85.070	215.00	0.09	0.25	0.43	1663421.26	14333923.55	39°28'20.412"N	80°55'06.534"W	0.50	60.245	0.37	-0.32	88.24	
240.00	0.160	183.020	240.00	0.06	0.21	0.45	1663421.28	14333923.51	39°28'20.412"N	80°55'06.534"W	0.50	64.563	0.78	0.28	391.80	
265.00	0.180	220.770	265.00	0.00	0.15	0.42	1663421.25	14333923.45	39°28'20.411"N	80°55'06.535"W	0.45	70.508	0.45	0.08	151.00	
290.00	0.060	254.620	290.00	-0.01	0.12	0.39	1663421.22	14333923.42	39°28'20.411"N	80°55'06.535"W	0.40	73.149	0.54	-0.48	135.40	
305.00	0.090	16.130	305.00	0.00	0.13	0.38	1663421.21	14333923.43	39°28'20.411"N	80°55'06.535"W	0.40	71.708	0.88	0.20	810.07	
490.00	1.100	88.120	489.99	-0.41	0.32	2.20	1663423.03	14333923.62	39°28'20.413"N	80°55'06.512"W	2.22	81.614	0.58	0.55	38.91	Gyrodata MS Gyro <12-1/4">(305')\490'-675')
582.00	3.390	82.040	581.91	-1.18	0.73	5.77	1663426.60	14333924.03	39°28'20.417"N	80°55'06.466"W	5.82	82.799	2.50	2.49	-6.61	
675.00	4.750	75.910	674.67	-2.03	2.05	12.23	1663433.06	14333925.35	39°28'20.430"N	80°55'06.384"W	12.40	80.496	1.53	1.46	-6.59	
795.00	4.700	72.500	794.27	-2.57	4.74	21.74	1663442.56	14333928.03	39°28'20.457"N	80°55'06.263"W	22.25	77.711	0.24	-0.04	-2.84	WFT EM <12-1/4">675')\795'-2540')
888.00	4.740	69.210	886.95	-2.53	7.25	28.97	1663449.78	14333930.54	39°28'20.481"N	80°55'06.171"W	29.86	75.956	0.29	0.04	-3.54	
986.00	4.770	62.290	984.62	-1.78	10.58	36.36	1663457.17	14333933.87	39°28'20.514"N	80°55'06.076"W	37.87	73.779	0.59	0.03	-7.06	
1080.00	4.460	56.990	1078.31	-0.29	14.39	42.88	1663463.70	14333937.68	39°28'20.552"N	80°55'05.993"W	45.23	71.455	0.56	-0.33	-5.64	
1175.00	4.280	59.590	1173.03	1.32	18.19	49.04	1663469.85	14333941.49	39°28'20.589"N	80°55'05.914"W	52.30	69.646	0.28	-0.19	2.74	
1269.00	2.990	65.080	1266.84	2.27	21.00	54.29	1663475.09	14333944.29	39°28'20.617"N	80°55'05.847"W	58.21	68.851	1.42	-1.37	5.84	
1364.00	1.170	115.810	1361.78	1.85	21.62	57.41	1663478.21	14333944.91	39°28'20.623"N	80°55'05.808"W	61.34	69.361	2.55	-1.92	53.40	
1459.00	0.530	154.800	1456.77	0.73	20.80	58.47	1663479.27	14333944.09	39°28'20.615"N	80°55'05.794"W	62.06	70.414	0.87	-0.67	41.04	
1553.00	0.430	200.180	1550.77	0.03	20.08	58.53	1663479.34	14333943.37	39°28'20.608"N	80°55'05.793"W	61.88	71.066	0.41	-0.11	48.28	
1647.00	0.420	185.960	1644.77	-0.56	19.40	58.37	1663479.18	14333942.70	39°28'20.601"N	80°55'05.795"W	61.51	71.612	0.11	-0.01	-15.13	
1742.00	0.530	202.840	1739.76	-1.20	18.65	58.17	1663478.97	14333941.95	39°28'20.594"N	80°55'05.798"W	61.08	72.219	0.19	0.12	17.77	
1837.00	0.640	197.290	1834.76	-1.96	17.74	57.84	1663478.65	14333941.03	39°28'20.585"N	80°55'05.802"W	60.50	72.947	0.13	0.12	-5.84	
1932.00	0.660	202.770	1929.75	-2.80	16.73	57.47	1663478.28	14333940.02	39°28'20.575"N	80°55'05.807"W	59.85	73.768	0.07	0.02	5.77	
2026.00	0.330	329.900	2023.75	-2.94	16.47	57.12	1663477.93	14333939.76	39°28'20.572"N	80°55'05.811"W	59.45	73.920	0.96	-0.35	135.24	
2121.00	1.350	342.590	2118.74	-1.55	17.77	56.65	1663477.46	14333941.06	39°28'20.585"N	80°55'05.817"W	59.37	72.584	1.08	1.07	13.36	
2216.00	0.930	316.590	2213.72	0.27	19.40	55.79	1663476.59	14333942.69	39°28'20.601"N	80°55'05.828"W	59.06	70.826	0.69	-0.44	-27.37	

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Area	Tyler County, WV	Well	Hennessy Unit 2H
Field	Tyler	Wellbore	Hennessy Unit 2H AWB
Facility	Ferrell North Pad		

WELLPATH DATA (165 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
2310.00	0.730	252.070	2307.71	0.98	19.77	54.69	1663475.50	14333943.06	39°28'20.605"N	80°55'05.842"W	58.16	70.128	0.96	-0.21	-68.64	
2405.00	1.070	253.760	2402.70	1.03	19.33	53.27	1663474.07	14333942.63	39°28'20.601"N	80°55'05.861"W	56.67	70.051	0.36	0.36	1.78	
2540.00	1.470	264.700	2537.67	1.49	18.82	50.33	1663471.14	14333942.11	39°28'20.596"N	80°55'05.898"W	53.74	69.497	0.35	0.30	8.10	
2667.00	2.280	275.390	2664.60	2.92	18.91	46.19	1663467.01	14333942.20	39°28'20.596"N	80°55'05.951"W	49.91	67.740	0.69	0.64	8.42	WFT EM <8-3/4">(2540')(2667'-5763')
2761.00	4.010	99.980	2758.54	2.10	18.51	47.57	1663468.38	14333941.81	39°28'20.593"N	80°55'05.933"W	51.05	68.735	6.69	1.84	-186.61	
2855.00	6.310	99.250	2852.15	-1.93	17.11	55.91	1663476.71	14333940.41	39°28'20.579"N	80°55'05.827"W	58.47	72.980	2.45	2.45	-0.78	
2952.00	8.210	94.940	2948.37	-7.25	15.66	68.07	1663488.87	14333938.95	39°28'20.564"N	80°55'05.672"W	69.85	77.044	2.04	1.96	-4.44	
3047.00	10.140	93.780	3042.15	-13.21	14.52	83.17	1663503.97	14333937.82	39°28'20.553"N	80°55'05.479"W	84.43	80.094	2.04	2.03	-1.22	
3141.00	11.660	99.270	3134.46	-20.89	12.45	100.81	1663521.60	14333935.74	39°28'20.532"N	80°55'05.254"W	101.57	82.960	1.96	1.62	5.84	
3236.00	13.400	100.360	3227.19	-30.81	8.92	121.11	1663541.89	14333932.22	39°28'20.497"N	80°55'04.996"W	121.44	85.786	1.85	1.83	1.15	
3331.00	14.490	102.090	3319.39	-42.31	4.45	143.56	1663564.33	14333927.75	39°28'20.453"N	80°55'04.709"W	143.63	88.223	1.23	1.15	1.82	
3425.00	14.150	100.710	3410.47	-54.05	-0.14	166.35	1663587.11	14333923.16	39°28'20.407"N	80°55'04.419"W	166.35	90.050	0.51	-0.36	-1.47	
3520.00	13.020	98.780	3502.81	-64.76	-3.94	188.34	1663609.09	14333919.37	39°28'20.369"N	80°55'04.138"W	188.38	91.197	1.28	-1.19	-2.03	
3614.00	13.430	100.830	3594.32	-75.10	-7.60	209.52	1663630.27	14333915.70	39°28'20.333"N	80°55'03.868"W	209.66	92.078	0.66	0.44	2.18	
3709.00	14.600	101.380	3686.49	-86.61	-12.04	232.10	1663652.83	14333911.27	39°28'20.289"N	80°55'03.580"W	232.41	92.969	1.24	1.23	0.58	
3803.00	14.210	100.720	3777.53	-98.29	-16.52	255.05	1663675.78	14333906.78	39°28'20.244"N	80°55'03.288"W	255.58	93.707	0.45	-0.41	-0.70	
3898.00	15.220	101.780	3869.42	-110.42	-21.24	278.71	1663699.43	14333902.07	39°28'20.198"N	80°55'02.986"W	279.52	94.357	1.10	1.06	1.12	
3992.00	14.610	101.160	3960.25	-122.66	-26.05	302.42	1663723.13	14333897.26	39°28'20.150"N	80°55'02.684"W	303.54	94.923	0.67	-0.65	-0.66	
4087.00	15.950	100.640	4051.89	-135.10	-30.78	327.01	1663747.71	14333892.53	39°28'20.103"N	80°55'02.370"W	328.45	95.377	1.42	1.41	-0.55	
4182.00	17.420	102.870	4142.89	-149.02	-36.36	353.70	1663774.39	14333886.96	39°28'20.047"N	80°55'02.030"W	355.56	95.869	1.69	1.56	2.35	
4277.00	16.840	102.910	4233.67	-163.77	-42.60	380.98	1663801.65	14333880.72	39°28'19.986"N	80°55'01.682"W	383.35	96.380	0.61	-0.61	0.04	
4371.00	16.020	101.890	4323.83	-177.59	-48.32	406.94	1663827.61	14333875.00	39°28'19.929"N	80°55'01.351"W	409.80	96.771	0.92	-0.87	-1.09	
4466.00	15.460	100.400	4415.27	-190.50	-53.30	432.22	1663852.88	14333870.02	39°28'19.879"N	80°55'01.029"W	435.50	97.030	0.73	-0.59	-1.57	
4563.00	16.410	98.660	4508.54	-203.17	-57.70	458.49	1663879.13	14333865.62	39°28'19.836"N	80°55'00.694"W	462.10	97.173	1.10	0.98	-1.79	
4658.00	15.670	96.560	4599.85	-214.90	-61.18	484.50	1663905.13	14333862.14	39°28'19.801"N	80°55'00.363"W	488.35	97.198	0.99	-0.78	-2.21	
4753.00	16.760	101.620	4691.07	-227.38	-65.41	510.66	1663931.29	14333857.92	39°28'19.759"N	80°55'00.029"W	514.83	97.299	1.88	1.15	5.33	
4847.00	16.770	101.100	4781.07	-241.04	-70.75	537.24	1663957.86	14333852.58	39°28'19.706"N	80°54'59.690"W	541.88	97.502	0.16	0.01	-0.55	
4942.00	16.140	100.310	4872.18	-254.34	-75.75	563.68	1663984.29	14333847.58	39°28'19.656"N	80°54'59.353"W	568.75	97.654	0.70	-0.66	-0.83	
5036.00	16.320	104.410	4962.44	-267.98	-81.38	589.33	1664009.93	14333841.96	39°28'19.600"N	80°54'59.026"W	594.92	97.862	1.23	0.19	4.36	
5131.00	15.890	103.970	5053.71	-282.37	-87.84	614.88	1664035.46	14333835.50	39°28'19.536"N	80°54'58.700"W	621.12	98.130	0.47	-0.45	-0.46	

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5226.00	16.270	105.950	5145.00	-297.04	-94.64	640.30	1664060.87	14333828.70	39°28'19.469"N	80°54'58.376"W	647.25	98.407	0.70	0.40	2.08	
5321.00	15.980	105.270	5236.26	-311.99	-101.74	665.71	1664086.27	14333821.60	39°28'19.398"N	80°54'58.052"W	673.44	98.689	0.36	-0.31	-0.72	
5416.00	14.850	92.490	5327.87	-323.78	-105.71	690.49	1664111.05	14333817.63	39°28'19.359"N	80°54'57.736"W	698.54	98.704	3.76	-1.19	-13.45	
5479.00	13.990	65.780	5388.95	-326.03	-102.93	705.52	1664126.07	14333820.41	39°28'19.386"N	80°54'57.545"W	712.99	98.301	10.55	-1.37	-42.40	
5542.00	17.200	43.550	5449.67	-321.01	-93.05	718.90	1664139.44	14333830.29	39°28'19.484"N	80°54'57.374"W	724.89	97.375	10.68	5.10	-35.29	
5605.00	19.740	33.150	5509.44	-310.16	-77.38	731.14	1664151.68	14333845.95	39°28'19.639"N	80°54'57.218"W	735.22	96.042	6.59	4.03	-16.51	
5668.00	21.990	19.710	5568.34	-294.39	-57.36	740.94	1664161.47	14333865.97	39°28'19.836"N	80°54'57.092"W	743.16	94.426	8.37	3.57	-21.33	
5732.00	24.730	7.790	5627.12	-273.05	-32.79	746.80	1664167.33	14333890.52	39°28'20.079"N	80°54'57.017"W	747.52	92.514	8.52	4.28	-18.62	
5763.00	25.860	5.380	5655.15	-261.09	-19.64	748.31	1664168.84	14333903.67	39°28'20.209"N	80°54'56.998"W	748.57	91.503	4.93	3.65	-7.77	
5800.00	27.510	1.460	5688.21	-245.73	-3.06	749.29	1664169.82	14333920.24	39°28'20.373"N	80°54'56.985"W	749.30	90.234	6.52	4.46	-10.59	BH AT Curve <8-1/2"> (5763')(5800'-13945')
5893.00	33.260	4.370	5768.41	-202.13	43.88	751.78	1664172.31	14333967.16	39°28'20.837"N	80°54'56.953"W	753.06	86.659	6.38	6.18	3.13	
5987.00	40.680	2.530	5843.46	-149.86	100.27	755.10	1664175.63	14334023.53	39°28'21.394"N	80°54'56.910"W	761.73	82.436	7.98	7.89	-1.96	
6082.00	48.370	357.470	5911.16	-86.86	166.79	754.90	1664175.43	14334090.03	39°28'22.052"N	80°54'56.912"W	773.11	77.541	8.91	8.09	-5.33	
6120.00†	51.078	357.752	5935.72	-59.07	195.76	753.69	1664174.22	14334118.98	39°28'22.338"N	80°54'56.927"W	778.70	75.440	7.15	7.13	0.74	Middlesex: 6120' MD
6176.00	55.070	358.130	5969.36	-16.23	240.49	752.09	1664172.62	14334163.69	39°28'22.780"N	80°54'56.947"W	789.60	72.268	7.15	7.13	0.68	
6271.00	63.350	359.210	6017.95	61.49	322.00	750.23	1664170.76	14334245.17	39°28'23.586"N	80°54'56.969"W	816.41	66.771	8.77	8.72	1.14	
6280.00†	63.928	359.040	6021.94	69.15	330.06	750.11	1664170.64	14334253.23	39°28'23.665"N	80°54'56.971"W	819.51	66.249	6.65	6.43	-1.89	Burkett: 6280' MD
6337.00†	67.596	358.000	6045.34	118.74	382.01	748.76	1664169.29	14334305.16	39°28'24.179"N	80°54'56.987"W	840.58	62.970	6.65	6.43	-1.82	Tully: 6337' MD
6365.00	69.400	357.510	6055.60	143.69	408.04	747.74	1664168.27	14334331.18	39°28'24.436"N	80°54'57.000"W	851.83	61.379	6.65	6.44	-1.75	
6400.00†	72.347	356.190	6067.07	175.51	441.06	745.92	1664166.45	14334364.18	39°28'24.762"N	80°54'57.023"W	866.56	59.404	9.14	8.42	-3.77	Marcellus POE: 6400' MD
6412.00	73.360	355.750	6070.61	186.59	452.49	745.11	1664165.64	14334375.61	39°28'24.875"N	80°54'57.033"W	871.75	58.730	9.14	8.44	-3.68	
6460.00	77.780	354.650	6082.57	231.67	498.80	741.22	1664161.75	14334421.90	39°28'25.333"N	80°54'57.082"W	893.43	56.061	9.47	9.21	-2.29	
6507.00	81.880	353.840	6090.86	276.71	544.82	736.58	1664157.11	14334467.90	39°28'25.788"N	80°54'57.141"W	916.18	53.511	8.89	8.72	-1.72	
6554.00	83.930	353.190	6096.67	322.25	591.16	731.31	1664151.85	14334514.22	39°28'26.246"N	80°54'57.207"W	940.37	51.049	4.57	4.36	-1.38	
6601.00	87.140	352.890	6100.33	368.09	637.67	725.63	1664146.17	14334560.71	39°28'26.706"N	80°54'57.279"W	966.00	48.692	6.86	6.83	-0.64	
6648.00	89.660	352.960	6101.64	414.07	684.29	719.85	1664140.39	14334607.31	39°28'27.167"N	80°54'57.353"W	993.19	46.451	5.36	5.36	0.15	
6743.00	89.630	350.500	6102.23	507.42	778.29	706.18	1664126.73	14334701.28	39°28'28.096"N	80°54'57.526"W	1050.92	42.219	2.59	-0.03	-2.59	
6837.00	89.630	346.690	6102.83	600.60	870.42	687.60	1664108.15	14334793.37	39°28'29.006"N	80°54'57.762"W	1109.24	38.308	4.05	0.00	-4.05	
6932.00	89.450	341.990	6103.60	695.42	961.86	661.97	1664082.53	14334884.77	39°28'29.910"N	80°54'58.087"W	1167.64	34.536	4.95	-0.19	-4.95	
7026.00	89.940	339.680	6104.10	789.41	1050.64	631.11	1664051.69	14334973.52	39°28'30.788"N	80°54'58.480"W	1225.62	30.993	2.51	0.52	-2.46	

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Hennessy Unit 2H AWP Proj: 13970'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #03
Area	Tyler County, WV		Well	Hennessy Unit 2H
Field	Tyler		Wellbore	Hennessy Unit 2H AWB
Facility	Ferrell North Pad			

WELLPATH DATA (165 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
7120.00	90.060	336.620	6104.10	883.27	1137.88	596.13	1664016.72	14335060.72	39°28'31.651"N	80°54'58.925"W	1284.58	27.650	3.26	0.13	-3.26	
7215.00	90.000	335.820	6104.05	977.93	1224.81	557.82	1663978.43	14335147.62	39°28'32.510"N	80°54'59.412"W	1345.86	24.486	0.84	-0.06	-0.84	
7309.00	90.280	339.740	6103.82	1071.75	1311.82	522.28	1663942.90	14335234.59	39°28'33.370"N	80°54'59.865"W	1411.96	21.709	4.18	0.30	4.17	
7404.00	90.310	339.400	6103.33	1166.72	1400.84	489.12	1663909.75	14335323.58	39°28'34.251"N	80°55'00.286"W	1483.78	19.247	0.36	0.03	-0.36	
7498.00	90.310	337.390	6102.82	1260.61	1488.23	454.51	1663875.16	14335410.93	39°28'35.115"N	80°55'00.727"W	1556.09	16.983	2.14	0.00	-2.14	
7592.00	90.520	335.730	6102.14	1354.31	1574.47	417.12	1663837.78	14335497.13	39°28'35.967"N	80°55'01.202"W	1628.78	14.838	1.78	0.22	-1.77	
7687.00	90.340	338.490	6101.43	1449.07	1661.97	380.18	1663800.85	14335584.61	39°28'36.833"N	80°55'01.673"W	1704.90	12.885	2.91	-0.19	2.91	
7781.00	90.120	341.770	6101.05	1543.04	1750.37	348.23	1663768.92	14335672.96	39°28'37.706"N	80°55'02.079"W	1784.67	11.252	3.50	-0.23	3.49	
7876.00	90.250	343.240	6100.74	1638.01	1840.97	319.67	1663740.37	14335763.53	39°28'38.602"N	80°55'02.442"W	1868.52	9.851	1.55	0.14	1.55	
7970.00	90.250	343.780	6100.33	1731.92	1931.10	292.99	1663713.70	14335853.63	39°28'39.493"N	80°55'02.781"W	1953.20	8.627	0.57	0.00	0.57	
8065.00	90.250	345.530	6099.92	1826.74	2022.71	267.85	1663688.57	14335945.20	39°28'40.399"N	80°55'03.101"W	2040.37	7.543	1.84	0.00	1.84	
8159.00	90.220	346.860	6099.53	1920.36	2113.99	245.42	1663666.15	14336036.44	39°28'41.301"N	80°55'03.386"W	2128.19	6.622	1.42	-0.03	1.41	
8254.00	90.180	347.010	6099.20	2014.87	2206.53	223.95	1663644.69	14336128.95	39°28'42.216"N	80°55'03.659"W	2217.87	5.795	0.16	-0.04	0.16	
8348.00	90.250	346.430	6098.85	2108.41	2298.02	202.36	1663623.10	14336220.39	39°28'43.120"N	80°55'03.933"W	2306.91	5.032	0.62	0.07	-0.62	
8443.00	90.310	345.910	6098.38	2203.04	2390.26	179.65	1663600.40	14336312.60	39°28'44.032"N	80°55'04.221"W	2397.00	4.298	0.55	0.06	-0.55	
8537.00	90.250	344.650	6097.92	2296.78	2481.17	155.76	1663576.53	14336403.48	39°28'44.931"N	80°55'04.525"W	2486.06	3.592	1.34	-0.06	-1.34	
8631.00	90.370	343.950	6097.42	2390.63	2571.66	130.33	1663551.10	14336493.93	39°28'45.826"N	80°55'04.848"W	2574.96	2.901	0.76	0.13	-0.74	
8726.00	90.220	343.110	6096.93	2485.54	2662.76	103.39	1663524.18	14336585.00	39°28'46.726"N	80°55'05.191"W	2664.77	2.224	0.90	-0.16	-0.88	
8820.00	90.120	340.680	6096.65	2579.53	2752.10	74.18	1663494.98	14336674.30	39°28'47.609"N	80°55'05.562"W	2753.10	1.544	2.59	-0.11	-2.59	
8915.00	90.220	338.730	6096.37	2674.49	2841.20	41.23	1663462.05	14336763.36	39°28'48.490"N	80°55'05.981"W	2841.50	0.831	2.06	0.11	-2.05	
9009.00	90.150	337.270	6096.06	2768.35	2928.35	6.02	1663426.85	14336850.48	39°28'49.352"N	80°55'06.429"W	2928.36	0.118	1.55	-0.07	-1.55	
9104.00	90.220	337.190	6095.76	2863.14	3015.95	-30.74	1663390.10	14336938.04	39°28'50.218"N	80°55'06.897"W	3016.11	359.416	0.11	0.07	-0.08	
9198.00	90.250	338.370	6095.37	2956.98	3102.97	-66.29	1663354.57	14337025.02	39°28'51.078"N	80°55'07.350"W	3103.67	358.776	1.26	0.03	1.26	
9293.00	90.060	339.840	6095.11	3051.92	3191.72	-100.17	1663320.70	14337113.73	39°28'51.956"N	80°55'07.781"W	3193.29	358.202	1.56	-0.20	1.55	
9387.00	90.150	340.250	6094.94	3145.90	3280.07	-132.25	1663288.63	14337202.06	39°28'52.829"N	80°55'08.189"W	3282.74	357.691	0.45	0.10	0.44	
9482.00	89.850	337.180	6094.94	3240.81	3368.58	-166.73	1663254.16	14337290.53	39°28'53.704"N	80°55'08.628"W	3372.70	357.166	3.25	-0.32	-3.23	
9576.00	89.690	333.630	6095.32	3334.33	3454.04	-205.85	1663215.06	14337375.95	39°28'54.549"N	80°55'09.125"W	3460.17	356.589	3.78	-0.17	-3.78	
9670.00	89.910	336.820	6095.65	3427.83	3539.37	-245.24	1663175.69	14337461.25	39°28'55.393"N	80°55'09.627"W	3547.86	356.036	3.40	0.23	3.39	
9765.00	90.030	339.770	6095.70	3522.70	3627.63	-280.37	1663140.58	14337549.47	39°28'56.266"N	80°55'10.074"W	3638.45	355.581	3.11	0.13	3.11	
9859.00	89.880	339.200	6095.77	3616.67	3715.67	-313.31	1663107.65	14337637.48	39°28'57.136"N	80°55'10.493"W	3728.85	355.180	0.63	-0.16	-0.61	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Hennessy Unit 2H
Field	Tyler	Wellbore	Hennessy Unit 2H AWB
Facility	Ferrell North Pad		

WELLPATH DATA (165 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
9954.00	89.940	339.160	6095.92	3711.61	3804.46	-347.08	1663073.89	14337726.24	39°28'58.014"N	80°55'10.923"W	3820.26	354.787	0.08	0.06	-0.04	
10048.00	89.820	338.090	6096.12	3805.53	3892.00	-381.33	1663039.65	14337813.73	39°28'58.880"N	80°55'11.358"W	3910.63	354.404	1.15	-0.13	-1.14	
10143.00	90.060	339.000	6096.22	3900.43	3980.41	-416.08	1663004.91	14337902.12	39°28'59.754"N	80°55'11.801"W	4002.10	354.032	0.99	0.25	0.96	
10237.00	90.180	338.970	6096.02	3994.37	4068.16	-449.79	1662971.22	14337989.83	39°29'00.621"N	80°55'12.230"W	4092.95	353.691	0.13	0.13	-0.03	
10332.00	89.880	340.300	6095.97	4089.33	4157.22	-482.85	1662938.17	14338078.85	39°29'01.502"N	80°55'12.650"W	4185.17	353.375	1.44	-0.32	1.40	
10426.00	89.820	342.870	6096.21	4183.32	4246.40	-512.54	1662908.49	14338167.99	39°29'02.383"N	80°55'13.028"W	4277.22	353.118	2.73	-0.06	2.73	
10521.00	90.000	344.660	6096.36	4278.21	4337.61	-539.10	1662881.94	14338259.17	39°29'03.285"N	80°55'13.366"W	4370.98	352.915	1.89	0.19	1.88	
10615.00	89.970	343.600	6096.39	4372.08	4428.02	-564.81	1662856.25	14338349.55	39°29'04.179"N	80°55'13.692"W	4463.90	352.731	1.13	-0.03	-1.13	
10710.00	89.970	346.060	6096.44	4466.87	4519.71	-589.66	1662831.40	14338441.19	39°29'05.085"N	80°55'14.008"W	4558.01	352.567	2.59	0.00	2.59	
10804.00	90.030	347.900	6096.44	4560.37	4611.28	-610.84	1662810.23	14338532.73	39°29'05.991"N	80°55'14.277"W	4651.57	352.454	1.96	0.06	1.96	
10898.00	89.850	347.150	6096.54	4653.78	4703.06	-631.15	1662789.94	14338624.48	39°29'06.898"N	80°55'14.535"W	4745.23	352.357	0.82	-0.19	-0.80	
10993.00	90.030	343.140	6096.64	4748.52	4794.87	-655.50	1662765.60	14338716.25	39°29'07.805"N	80°55'14.845"W	4839.47	352.215	4.23	0.19	-4.22	
11087.00	89.970	341.360	6096.64	4842.50	4884.39	-684.15	1662736.95	14338805.73	39°29'08.690"N	80°55'15.209"W	4932.07	352.027	1.89	-0.06	-1.89	
11182.00	90.030	341.410	6096.64	4937.50	4974.42	-714.48	1662706.64	14338895.73	39°29'09.580"N	80°55'15.595"W	5026.47	351.826	0.08	0.06	0.05	
11276.00	90.250	341.550	6096.41	5031.49	5063.55	-744.33	1662676.79	14338984.82	39°29'10.462"N	80°55'15.975"W	5117.97	351.637	0.28	0.23	0.15	
11371.00	90.150	341.370	6096.08	5126.49	5153.62	-774.54	1662646.60	14339074.85	39°29'11.352"N	80°55'16.359"W	5211.50	351.453	0.22	-0.11	-0.19	
11465.00	90.250	345.050	6095.75	5220.41	5243.60	-801.69	1662619.46	14339164.80	39°29'12.242"N	80°55'16.704"W	5304.53	351.307	3.92	0.11	3.91	
11560.00	90.770	346.940	6094.90	5315.05	5335.77	-824.68	1662596.48	14339256.93	39°29'13.153"N	80°55'16.997"W	5399.12	351.214	2.06	0.55	1.99	
11654.00	90.580	346.210	6093.79	5408.62	5427.19	-846.50	1662574.67	14339348.31	39°29'14.056"N	80°55'17.274"W	5492.81	351.135	0.80	-0.20	-0.78	
11748.00	90.620	344.920	6092.81	5502.32	5518.22	-869.93	1662551.25	14339439.30	39°29'14.956"N	80°55'17.572"W	5586.37	351.041	1.37	0.04	-1.37	
11843.00	90.650	340.770	6091.76	5597.25	5608.97	-897.94	1662523.25	14339530.01	39°29'15.853"N	80°55'17.928"W	5680.39	350.905	4.37	0.03	-4.37	
11937.00	90.460	336.880	6090.85	5691.16	5696.60	-931.89	1662489.31	14339617.61	39°29'16.720"N	80°55'18.360"W	5772.32	350.709	4.14	-0.20	-4.14	
12032.00	90.370	335.620	6090.16	5785.81	5783.55	-970.15	1662451.07	14339704.53	39°29'17.580"N	80°55'18.847"W	5864.35	350.478	1.33	-0.09	-1.33	
12126.00	90.430	335.760	6089.50	5879.39	5869.21	-1008.85	1662412.39	14339790.16	39°29'18.427"N	80°55'19.340"W	5955.29	350.247	0.16	0.06	0.15	
12220.00	90.400	336.450	6088.82	5973.03	5955.15	-1046.92	1662374.33	14339876.06	39°29'19.276"N	80°55'19.824"W	6046.48	350.029	0.73	-0.03	0.73	
12315.00	90.280	336.020	6088.26	6067.69	6042.10	-1085.20	1662336.06	14339962.97	39°29'20.136"N	80°55'20.312"W	6138.78	349.818	0.47	-0.13	-0.45	
12409.00	90.370	337.420	6087.72	6161.41	6128.44	-1122.35	1662298.93	14340049.28	39°29'20.990"N	80°55'20.785"W	6230.36	349.622	1.49	0.10	1.49	
12503.00	90.490	338.640	6087.02	6255.28	6215.81	-1157.52	1662263.78	14340136.41	39°29'21.851"N	80°55'21.232"W	6322.47	349.451	1.30	0.13	1.30	
12598.00	90.400	340.540	6086.28	6350.24	6304.64	-1190.65	1662230.66	14340225.41	39°29'22.732"N	80°55'21.654"W	6416.08	349.306	2.00	-0.09	2.00	
12692.00	90.430	342.200	6085.60	6444.23	6393.71	-1220.67	1662200.65	14340314.44	39°29'23.612"N	80°55'22.036"W	6509.19	349.191	1.77	0.03	1.77	

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Hennessy Unit 2H
Field	Tyler	Wellbore	Hennessy Unit 2H AWB
Facility	Ferrell North Pad		

WELLPATH DATA (165 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
12787.00	90.520	341.940	6084.81	6539.21	6484.09	-1249.92	1662171.41	14340404.79	39°29'24.506"N	80°55'22.408"W	6603.46	349.089	0.29	0.09	-0.27	
12881.00	90.550	342.730	6083.93	6633.19	6573.65	-1278.44	1662142.90	14340494.31	39°29'25.391"N	80°55'22.771"W	6696.81	348.995	0.84	0.03	0.84	
12976.00	90.460	343.120	6083.10	6728.13	6664.46	-1306.33	1662115.02	14340585.09	39°29'26.289"N	80°55'23.125"W	6791.29	348.910	0.42	-0.09	0.41	
13070.00	90.520	342.580	6082.29	6822.08	6754.28	-1334.05	1662087.31	14340674.87	39°29'27.177"N	80°55'23.478"W	6884.76	348.827	0.58	0.06	-0.57	
13165.00	90.550	343.940	6081.41	6917.01	6845.25	-1361.41	1662059.96	14340765.80	39°29'28.076"N	80°55'23.826"W	6979.32	348.752	1.43	0.03	1.43	
13259.00	90.550	347.220	6080.50	7010.70	6936.27	-1384.82	1662036.57	14340856.78	39°29'28.976"N	80°55'24.124"W	7073.16	348.709	3.49	0.00	3.49	
13354.00	90.430	345.390	6079.69	7105.30	7028.56	-1407.31	1662014.09	14340949.04	39°29'29.888"N	80°55'24.409"W	7168.07	348.678	1.93	-0.13	-1.93	
13448.00	90.460	339.140	6078.96	7199.23	7118.05	-1435.93	1661985.48	14341038.49	39°29'30.773"N	80°55'24.773"W	7261.44	348.595	6.65	0.03	-6.65	
13543.00	90.310	335.750	6078.32	7294.03	7205.76	-1472.36	1661949.06	14341126.17	39°29'31.640"N	80°55'25.237"W	7354.65	348.452	3.57	-0.16	-3.57	
13637.00	90.220	336.350	6077.89	7387.66	7291.67	-1510.52	1661910.92	14341212.04	39°29'32.489"N	80°55'25.723"W	7446.48	348.296	0.65	-0.10	0.64	
13731.00	90.430	337.950	6077.35	7481.43	7378.29	-1547.02	1661874.43	14341298.63	39°29'33.346"N	80°55'26.188"W	7538.73	348.158	1.72	0.22	1.70	
13826.00	90.430	339.330	6076.64	7576.34	7466.76	-1581.62	1661839.85	14341387.06	39°29'34.221"N	80°55'26.628"W	7632.43	348.040	1.45	0.00	1.45	
13920.00	90.370	338.410	6075.98	7670.27	7554.44	-1615.50	1661805.98	14341474.70	39°29'35.087"N	80°55'27.059"W	7725.24	347.929	0.98	-0.06	-0.98	
13945.00	90.490	337.880	6075.80	7695.24	7577.64	-1624.81	1661796.67	14341497.90	39°29'35.317"N	80°55'27.178"W	7749.86	347.898	2.17	0.48	-2.12	
13970.00	90.490	337.880	6075.58	7720.20	7600.80	-1634.22	1661787.27	14341521.05	39°29'35.546"N	80°55'27.298"W	7774.50	347.866	0.00	0.00	0.00	Projected MD at TD: 13970'

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Actual Wellpath Report

Hennessy Unit 2H AWP Proj: 13970'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Hennessy Unit 2H
Field	Tyler	Wellbore	Hennessy Unit 2H AWB
Facility	Ferrell North Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Hennessy Unit 2H AWB Ref Wellpath: Hennessy Unit 2H AWP Proj: 13970'

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	110.00	80.00	30.00	110.00	0.00	0.00	0.09	0.15
17.5in Open Hole	110.00	394.00	284.00	110.00	394.00	0.09	0.15	0.24	0.82
13.375in Casing Surface	30.00	394.00	364.00	30.00	394.00	0.00	0.00	0.24	0.82
12.25in Open Hole	394.00	2620.00	2226.00	394.00	2617.63	0.24	0.82	18.79	47.93
9.625in Casing Intermediate	30.00	2620.00	2590.00	30.00	2617.63	0.00	0.00	18.79	47.93
8.75in Open Hole	2620.00	5835.00	3215.00	2617.63	5718.94	18.79	47.93	13.68	749.90
8.5in Open Hole	5835.00	13970.00	8135.00	5718.94	6075.58	13.68	749.90	7600.80	-1634.22
5.5in Casing Production	30.00	13970.00	13940.00	30.00	6075.58	0.00	0.00	7600.80	-1634.22

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Hennessy Unit 2H POE Rev-3	6062.00	405.26	764.81	1664185.33	14334328.40	39°28'24.408"N	80°54'56.783"W	point
Hennessy Unit 2H BHL Rev-4	6100.00	7576.44	-1611.96	1661809.52	14341496.70	39°29'35.305"N	80°55'27.014"W	point

WELLPATH COMPOSITION - Ref Wellbore: Hennessy Unit 2H AWB Ref Wellpath: Hennessy Unit 2H AWP Proj: 13970'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
30.00	305.00	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(115'-305')	Hennessy Unit 2H AWB
305.00	675.00	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4">(305')(490'-675')	Hennessy Unit 2H AWB
675.00	2540.00	OWSG MWD rev2 + HRGM	03 WFT EM <12-1/4">(675')(795'-2540')	Hennessy Unit 2H AWB
2540.00	5763.00	OWSG MWD rev2 + HRGM	04 WFT EM <8-3/4">(2540')(2667'-5763')	Hennessy Unit 2H AWB
5763.00	13945.00	BHI AutoTrak Curve (Short)	05 BH AT Curve <8-1/2">(5763')(5800'-13945')	Hennessy Unit 2H AWB
13945.00	13970.00	Blind Drilling (std)	Projection to bit	Hennessy Unit 2H AWB

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Facility	Ferrell North Pad		

COMMENTS

Wellpath general comments

API: 47-095-02575-0000
BHI Job #: 110037520A
Rig: H&P 519
Duration: 09/27/2019-09/29/2019
Gyrodatta MS Gyro <17-1/2">(115'-305')
Gyrodatta MS Gyro <12-1/4">(305')(490'-675')
WFT EM <12-1/4">(675')(795'-2540')
WFT EM <8-3/4">(2540')(2667'-5763')
BH AT Curve <8-1/2"> (5763')(5800'-13945')
Middlesex: 6120' MD
Burkett: 6280' MD
Tully: 6337' MD
Marcellus POE: 6400' MD
Projected MD at TD: 13970'

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