

ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
 Field: Tyler
 Facility: Gamehenge East Pad

Slot: Slot #04
 Well: Harpua Unit 2H
 Wellbore: Harpua Unit 2H PWB

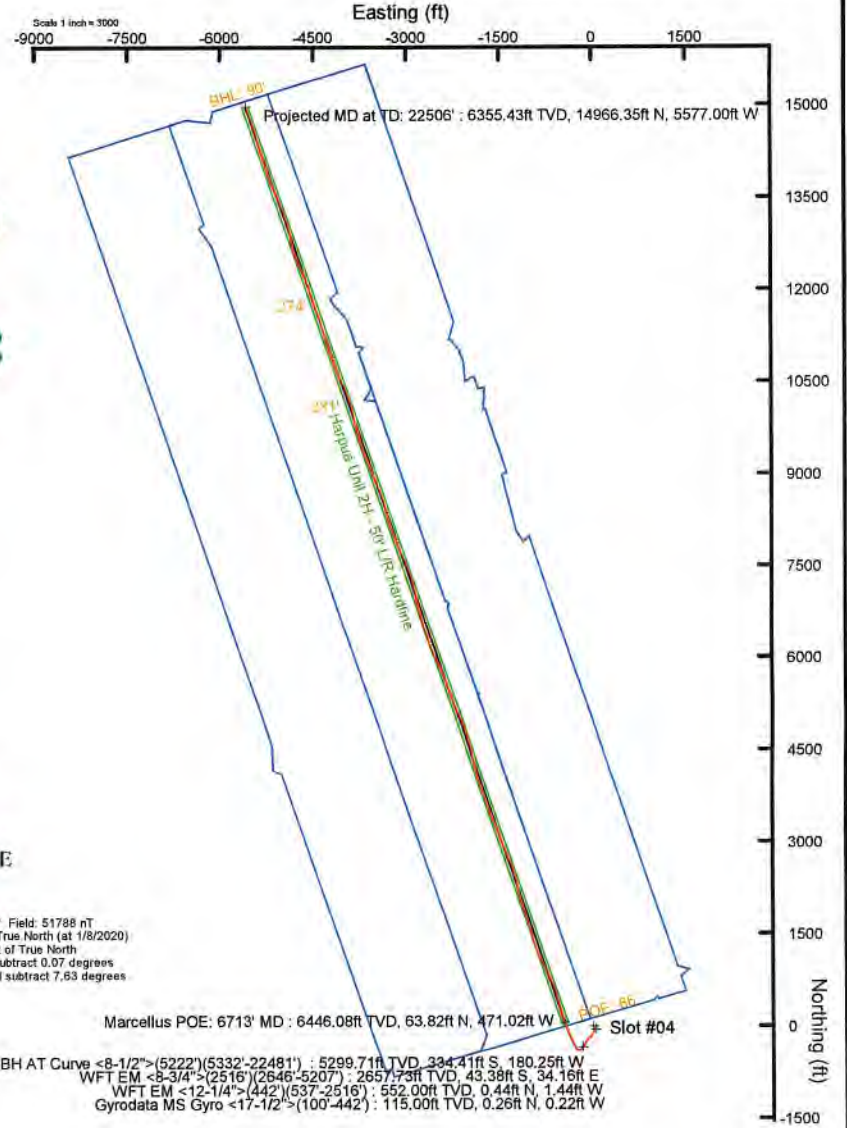
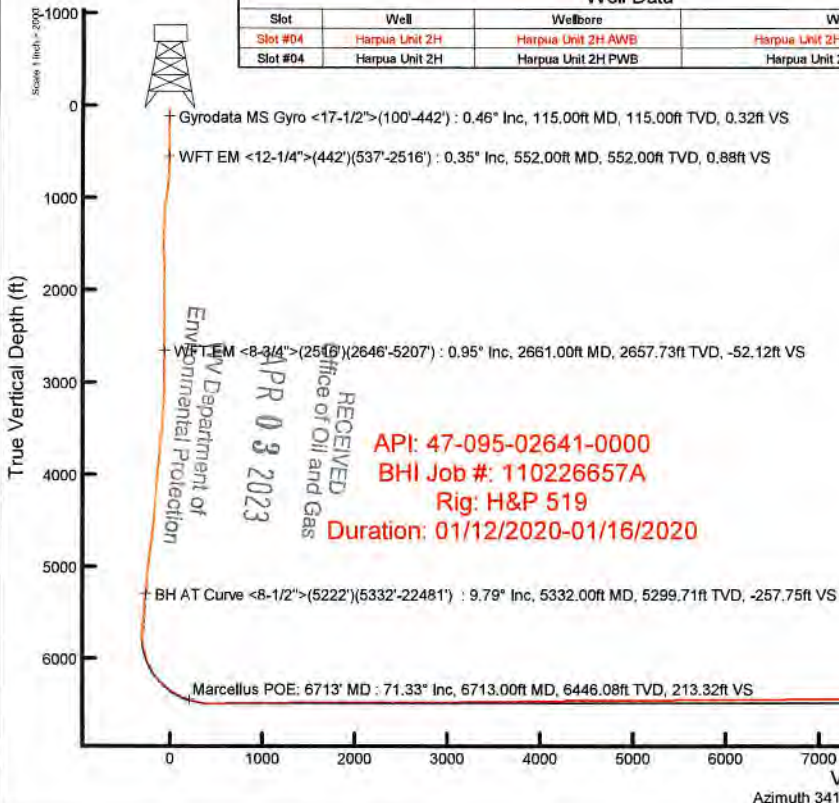


Plot reference wellbore is Harpua Unit 2H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 519 (RKB)	North Reference: Grid north
Reference wellbore measured depths are referenced to H&P 519 (RKB)	Scale: True distance
H&P 519 (RKB) to Mean Sea Level: 1091 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot #04) -1091 feet	Depths are in feet
Offset wellbore MDs are referenced to each plot's default MD datum	Created by: delmet on 2020-01-23; Database: WA_MPL_EasternUS_Deln

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Gamehenge East Pad	1672504.896	14347540.047	39°30'34.9460"N	80°53'10.4370"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #04	0.00	0.00	1672504.900	14347540.050
H&P 519 (RKB) to Ground level (At Slot: Slot #04)				30ft
Mean Sea Level to Ground level (At Slot: Slot #04)				-1091ft
H&P 519 (RKB) to Mean Sea Level				1091ft

Well Profile Data								
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	5222.00	9.710	223.170	5191.29	-320.48	-167.89	1.67	-248.59
Proj. To Bottom	5358.00	9.710	223.170	5325.35	-337.21	-183.58	0.00	-259.31
Curve KOP	5724.25	9.710	223.170	5686.35	-382.26	-225.84	0.00	-288.20
End of 3D Arc	5742.40	9.767	214.509	5704.24	-384.84	-227.76	8.07	-289.83
POE	6707.95	71.934	341.049	6448.00	51.29	-460.17	8.07	197.95
Landing PL	6931.81	90.000	341.049	6483.00	259.52	-531.67	8.07	418.11
BHL	22471.16	90.000	341.049	6483.00	14956.63	-5578.15	0.00	15957.48

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #04	Harpua Unit 2H	Harpua Unit 2H AWP	Harpua Unit 2H AWP Proj: 22506'
Slot #04	Harpua Unit 2H	Harpua Unit 2H PWB	Harpua Unit 2H PWP Rev-A.0



User specified (HDGM) Dip: 68.52° Field: 51788 nT
 Magnetic North is 7.56 degrees West of True North (at 1/8/2020)
 Grid North is 0.07 degrees East of True North
 To correct azimuth from True to Grid subtract 0.07 degrees
 To correct azimuth from Magnetic to Grid subtract 7.63 degrees

Azimuth 341.05° with reference 0.00 N, 0.00 E

Scale 1 inch = 2000'



Actual Wellpath Report

Harpua Unit 2H AWP Proj: 22506'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 2H
Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	1/23/2020 at 5:36:32 PM
Convergence at slot	0.07° 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	1672504.90	14347540.05	39°30'34.9460"N	80°53'10.4369"W
Facility Reference Pt			1672504.90	14347540.05	39°30'34.9460"N	80°53'10.4370"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.3013"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 519 (RKB) to Facility Vertical Datum	1091.00ft
Horizontal Reference Pt	Slot	H&P 519 (RKB) to Mean Sea Level	1091.00ft
Vertical Reference Pt	H&P 519 (RKB)	H&P 519 (RKB) to Ground Level at Slot (Slot #04)	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	341.05°

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Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

WELLPATH DATA (257 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	320.930	0.00	0.00	0.00	1672504.90	14347540.05	39°30'34.9460"N	80°53'10.4369"W	0.00	0.000	0.00	0.00	0.00	
30.00		0.000	320.930	30.00	0.00	0.00	1672504.90	14347540.05	39°30'34.9460"N	80°53'10.4369"W	0.00	0.000	0.00	0.00	0.00	
115.00		0.460	320.930	115.00	0.32	0.26	1672504.69	14347540.31	39°30'34.9486"N	80°53'10.4397"W	0.34	320.930	0.54	0.54	0.00	Gyrodata MS Gyro <17-1/2">(100'-442')
140.00		0.330	323.110	140.00	0.48	0.40	1672504.58	14347540.45	39°30'34.9500"N	80°53'10.4410"W	0.51	321.236	0.52	-0.52	8.72	
165.00		0.200	303.540	165.00	0.59	0.48	1672504.50	14347540.53	39°30'34.9508"N	80°53'10.4421"W	0.63	320.239	0.63	-0.52	-78.28	
190.00		0.110	311.350	190.00	0.64	0.52	1672504.44	14347540.57	39°30'34.9512"N	80°53'10.4427"W	0.69	318.895	0.37	-0.36	31.24	
215.00		0.090	247.820	215.00	0.66	0.53	1672504.41	14347540.58	39°30'34.9513"N	80°53'10.4432"W	0.72	317.174	0.43	-0.08	-254.12	
240.00		0.070	282.700	240.00	0.67	0.53	1672504.38	14347540.58	39°30'34.9512"N	80°53'10.4436"W	0.74	315.091	0.21	-0.08	139.52	
265.00		0.090	259.240	265.00	0.68	0.53	1672504.34	14347540.58	39°30'34.9512"N	80°53'10.4441"W	0.77	313.267	0.15	0.08	-93.84	
290.00		0.100	271.080	290.00	0.69	0.52	1672504.30	14347540.57	39°30'34.9512"N	80°53'10.4446"W	0.80	311.068	0.09	0.04	47.36	
315.00		0.110	260.990	315.00	0.70	0.52	1672504.25	14347540.57	39°30'34.9512"N	80°53'10.4452"W	0.83	308.826	0.08	0.04	-40.36	
340.00		0.140	263.780	340.00	0.71	0.51	1672504.20	14347540.56	39°30'34.9511"N	80°53'10.4459"W	0.87	306.222	0.12	0.12	11.16	
365.00		0.110	294.790	365.00	0.74	0.52	1672504.15	14347540.57	39°30'34.9512"N	80°53'10.4465"W	0.91	304.631	0.29	-0.12	124.04	
390.00		0.230	267.390	390.00	0.77	0.53	1672504.08	14347540.58	39°30'34.9512"N	80°53'10.4474"W	0.98	302.611	0.57	0.48	-109.60	
415.00		0.180	297.140	415.00	0.81	0.54	1672503.99	14347540.59	39°30'34.9514"N	80°53'10.4485"W	1.06	300.841	0.46	-0.20	119.00	
440.00		0.180	293.470	440.00	0.86	0.58	1672503.92	14347540.63	39°30'34.9517"N	80°53'10.4494"W	1.14	300.459	0.05	0.00	-14.68	
457.00		0.170	255.090	457.00	0.88	0.58	1672503.87	14347540.63	39°30'34.9518"N	80°53'10.4501"W	1.18	299.431	0.68	-0.06	-225.76	
552.00		0.350	248.740	552.00	0.88	0.44	1672503.47	14347540.49	39°30'34.9504"N	80°53'10.4552"W	1.50	287.002	0.19	0.19	-6.68	WFT EM <12-1/4">(442')(537'-2516')
644.00		1.040	179.210	643.99	0.08	-0.50	1672503.22	14347539.55	39°30'34.9411"N	80°53'10.4585"W	1.76	253.543	1.06	0.75	-75.58	
736.00		2.390	156.370	735.95	-2.63	-3.09	1672504.00	14347536.96	39°30'34.9155"N	80°53'10.4485"W	3.22	196.325	1.62	1.47	-24.83	
843.00		6.230	147.690	842.63	-10.50	-10.04	1672507.99	14347530.01	39°30'34.8467"N	80°53'10.3976"W	10.51	162.879	3.63	3.59	-8.11	
970.00		7.840	143.300	968.67	-25.46	-22.81	1672516.85	14347517.25	39°30'34.7204"N	80°53'10.2848"W	25.76	152.346	1.34	1.27	-3.46	
1064.00		8.050	137.950	1061.77	-37.62	-32.84	1672525.09	14347507.22	39°30'34.6212"N	80°53'10.1798"W	38.55	148.413	0.82	0.22	-5.69	
1159.00		5.380	137.400	1156.11	-47.82	-41.06	1672532.55	14347499.01	39°30'34.5399"N	80°53'10.0846"W	49.51	146.029	2.81	-2.81	-0.58	
1254.00		2.560	135.150	1250.87	-53.81	-45.84	1672537.06	14347494.22	39°30'34.4925"N	80°53'10.0272"W	56.01	144.936	2.97	-2.97	-2.37	
1349.00		1.440	126.600	1345.81	-56.70	-48.06	1672539.52	14347492.01	39°30'34.4706"N	80°53'9.9959"W	59.24	144.224	1.22	-1.18	-9.00	
1443.00		0.410	37.020	1439.80	-57.49	-48.50	1672540.67	14347491.57	39°30'34.4663"N	80°53'9.9812"W	60.27	143.578	1.59	-1.10	-95.30	
1538.00		0.580	15.610	1534.79	-56.90	-47.76	1672541.00	14347492.31	39°30'34.4735"N	80°53'9.9769"W	59.88	142.904	0.26	0.18	-22.54	
1632.00		0.730	5.540	1628.79	-55.96	-46.71	1672541.19	14347493.36	39°30'34.4840"N	80°53'9.9745"W	59.16	142.144	0.20	0.16	-10.71	
1727.00		0.640	1.910	1723.78	-54.92	-45.57	1672541.26	14347494.49	39°30'34.4951"N	80°53'9.9735"W	58.31	141.402	0.11	-0.09	-3.82	

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Operator	ANTERO RESOURCES CORPORATION		Well	Harpua Unit 2H
Field	Tyler		API	47-095-02641-0000
Facility	Gamehenge East Pad		Wellbore	Harpua Unit 2H AWB
Slot	Slot #04			

WELLPATH DATA (257 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
1822.00	0.510	27.910	1818.78	-54.13	-44.67	36.59	1672541.48	14347495.40	39°30'34.5041"N	80°53'9.9708"W	57.75	140.676	0.30	-0.14	27.37	
1916.00	0.850	12.280	1912.77	-53.25	-43.62	36.94	1672541.82	14347496.45	39°30'34.5145"N	80°53'9.9664"W	57.16	139.741	0.41	0.36	-16.63	
2011.00	0.930	19.100	2007.76	-52.04	-42.20	37.34	1672542.23	14347497.86	39°30'34.5285"N	80°53'9.9612"W	56.35	138.498	0.14	0.08	7.18	
2106.00	0.370	36.340	2102.75	-51.26	-41.23	37.77	1672542.66	14347498.84	39°30'34.5381"N	80°53'9.9557"W	55.92	137.502	0.62	-0.59	18.15	
2200.00	0.370	185.070	2196.75	-51.36	-41.28	37.93	1672542.81	14347498.78	39°30'34.5375"N	80°53'9.9537"W	56.06	137.427	0.76	0.00	158.22	
2295.00	0.430	230.010	2291.75	-51.77	-41.82	37.63	1672542.51	14347498.25	39°30'34.5322"N	80°53'9.9576"W	56.26	138.020	0.33	0.06	47.31	
2389.00	0.510	240.580	2385.75	-51.97	-42.25	36.99	1672541.88	14347497.82	39°30'34.5280"N	80°53'9.9657"W	56.16	138.797	0.13	0.09	11.24	
2484.00	0.620	247.310	2480.74	-52.08	-42.66	36.15	1672541.04	14347497.41	39°30'34.5240"N	80°53'9.9764"W	55.91	139.720	0.14	0.12	7.08	
2531.00	0.520	241.450	2527.74	-52.14	-42.86	35.73	1672540.61	14347497.21	39°30'34.5220"N	80°53'9.9818"W	55.80	140.184	0.25	-0.21	-12.47	
2661.00	0.950	257.050	2657.73	-52.12	-43.38	34.16	1672539.05	14347496.69	39°30'34.5169"N	80°53'10.0018"W	55.22	141.782	0.36	0.33	12.00	WFT EM <8-3/4">(2516')(2646'-5207')
2755.00	1.090	251.480	2751.71	-52.03	-43.84	32.55	1672537.44	14347496.23	39°30'34.5123"N	80°53'10.0223"W	54.60	143.405	0.18	0.15	-5.93	
2850.00	1.080	243.820	2846.70	-52.14	-44.52	30.89	1672535.78	14347495.55	39°30'34.5056"N	80°53'10.0435"W	54.19	145.244	0.15	-0.01	-8.06	
2945.00	1.050	243.830	2941.68	-52.36	-45.30	29.31	1672534.20	14347494.77	39°30'34.4979"N	80°53'10.0638"W	53.95	147.099	0.03	-0.03	0.01	
3039.00	3.130	219.870	3035.61	-53.80	-47.65	26.89	1672531.78	14347492.42	39°30'34.4747"N	80°53'10.0946"W	54.71	150.564	2.35	2.21	-25.49	
3134.00	3.770	214.910	3130.44	-56.98	-52.20	23.44	1672528.33	14347487.87	39°30'34.4298"N	80°53'10.1367"W	57.22	155.820	0.74	0.67	-5.22	
3228.00	4.830	212.230	3224.18	-61.29	-58.08	19.56	1672524.45	14347481.99	39°30'34.3717"N	80°53'10.1883"W	61.29	161.389	1.15	1.13	-2.85	
3323.00	6.360	213.360	3318.72	-67.01	-65.86	14.53	1672519.43	14347474.21	39°30'34.2949"N	80°53'10.2526"W	67.45	167.557	1.61	1.61	1.19	
3418.00	8.000	214.310	3412.97	-74.18	-75.72	7.91	1672512.81	14347464.36	39°30'34.1976"N	80°53'10.3372"W	76.13	174.034	1.73	1.73	1.00	
3513.00	9.600	216.600	3506.85	-82.62	-87.54	-0.54	1672504.36	14347452.55	39°30'34.0809"N	80°53'10.4452"W	87.54	180.351	1.72	1.68	2.41	
3612.00	9.280	215.620	3604.51	-91.92	-100.66	-10.11	1672494.80	14347439.43	39°30'33.9513"N	80°53'10.5675"W	101.16	185.734	0.36	-0.32	-0.99	
3707.00	8.090	213.270	3698.42	-100.45	-112.47	-18.24	1672486.67	14347427.62	39°30'33.8347"N	80°53'10.6714"W	113.94	189.210	1.31	-1.25	-2.47	
3801.00	8.860	214.680	3791.39	-108.80	-123.95	-25.98	1672478.93	14347416.14	39°30'33.7213"N	80°53'10.7705"W	126.65	191.839	0.85	0.82	1.50	
3896.00	9.980	217.270	3885.11	-117.71	-136.52	-35.13	1672469.78	14347403.58	39°30'33.5972"N	80°53'10.8874"W	140.97	194.431	1.26	1.18	2.73	
3991.00	9.380	213.940	3978.76	-126.96	-149.50	-44.44	1672460.48	14347390.61	39°30'33.4691"N	80°53'11.0063"W	155.96	196.555	0.86	-0.63	-3.51	
4085.00	8.820	219.120	4071.58	-135.40	-161.44	-53.26	1672451.66	14347378.67	39°30'33.3511"N	80°53'11.1191"W	170.00	198.259	1.06	-0.60	5.51	
4180.00	9.860	226.840	4165.32	-142.58	-172.66	-63.79	1672441.13	14347367.46	39°30'33.2404"N	80°53'11.2536"W	184.07	200.278	1.71	1.09	8.13	
4274.00	9.370	224.340	4258.00	-149.32	-183.64	-75.01	1672429.92	14347356.49	39°30'33.1320"N	80°53'11.3969"W	198.37	202.219	0.68	-0.52	-2.66	
4401.00	9.550	222.420	4383.27	-159.02	-198.81	-89.34	1672415.59	14347341.32	39°30'32.9823"N	80°53'11.5800"W	217.96	204.199	0.29	0.14	-1.51	
4464.00	9.100	219.590	4445.44	-164.12	-206.50	-96.04	1672408.89	14347333.63	39°30'32.9063"N	80°53'11.6656"W	227.75	204.943	1.02	-0.71	-4.49	
4558.00	10.020	215.670	4538.13	-172.74	-218.88	-105.55	1672399.39	14347321.26	39°30'32.7841"N	80°53'11.7871"W	243.00	205.745	1.20	0.98	-4.17	

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Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

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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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
4653.00	10.160	210.310	4631.67	-182.99	-232.82	-114.60	1672390.35	14347307.32	39°30'32.6464"N	80°53'11.9028"W	259.50	206.207	1.00	0.15	-5.64	
4748.00	10.740	211.280	4725.09	-194.12	-247.62	-123.42	1672381.53	14347292.53	39°30'32.5002"N	80°53'12.0156"W	276.68	206.493	0.64	0.61	1.02	
4843.00	10.710	206.710	4818.43	-205.95	-263.07	-131.99	1672372.97	14347277.08	39°30'32.3476"N	80°53'12.1251"W	294.33	206.643	0.90	-0.03	-4.81	
4938.00	10.250	210.140	4911.85	-217.66	-278.27	-140.20	1672364.76	14347261.89	39°30'32.1975"N	80°53'12.2301"W	311.59	206.740	0.82	-0.48	3.61	
5032.00	10.330	207.870	5004.34	-228.90	-292.95	-148.34	1672356.62	14347247.21	39°30'32.0525"N	80°53'12.3342"W	328.37	206.856	0.44	0.09	-2.41	
5127.00	10.540	215.480	5097.77	-239.79	-307.56	-157.36	1672347.60	14347232.62	39°30'31.9083"N	80°53'12.4496"W	345.48	207.097	1.47	0.22	8.01	
5222.00	9.710	223.170	5191.29	-248.59	-320.48	-167.89	1672337.08	14347219.70	39°30'31.7807"N	80°53'12.5841"W	361.79	207.649	1.67	-0.87	8.09	
5332.00	9.790	220.000	5299.71	-257.75	-334.41	-180.25	1672324.73	14347205.78	39°30'31.6432"N	80°53'12.7420"W	379.89	208.325	0.49	0.07	-2.88	BH AT Curve <8-1/2">(5222')(5332'-22481')
5402.00	10.190	219.120	5368.65	-264.09	-343.77	-187.98	1672317.00	14347196.42	39°30'31.5508"N	80°53'12.8408"W	391.81	208.671	0.61	0.57	-1.26	
5496.00	10.030	218.610	5461.19	-272.88	-356.62	-198.33	1672306.65	14347183.58	39°30'31.4239"N	80°53'12.9731"W	408.06	209.081	0.20	-0.17	-0.54	
5592.00	9.990	220.930	5555.72	-281.55	-369.44	-209.00	1672295.98	14347170.76	39°30'31.2973"N	80°53'13.1095"W	424.46	209.498	0.42	-0.04	2.42	
5686.00	9.610	213.080	5648.36	-290.46	-382.18	-218.63	1672286.36	14347158.03	39°30'31.1716"N	80°53'13.2324"W	440.29	209.772	1.48	-0.40	-8.35	
5781.00	10.290	262.370	5742.09	-293.68	-389.96	-231.39	1672273.60	14347150.26	39°30'31.0948"N	80°53'13.3954"W	453.44	210.683	8.72	0.72	51.88	
5875.00	10.800	304.680	5834.64	-284.93	-386.06	-246.98	1672258.02	14347154.15	39°30'31.1336"N	80°53'13.5942"W	458.30	212.609	8.07	0.54	45.01	
5970.00	14.340	311.330	5927.35	-267.54	-373.22	-263.14	1672241.87	14347166.98	39°30'31.2606"N	80°53'13.8001"W	456.65	215.185	4.02	3.73	7.00	
6064.00	21.260	324.210	6016.83	-241.08	-351.67	-281.87	1672223.14	14347188.52	39°30'31.4738"N	80°53'14.0388"W	450.70	218.713	8.43	7.36	13.70	
6158.00	27.830	331.070	6102.31	-203.11	-318.60	-302.48	1672202.54	14347221.57	39°30'31.8009"N	80°53'14.3012"W	439.32	223.513	7.61	6.99	7.30	
6253.00	35.890	333.650	6182.93	-153.57	-274.17	-325.61	1672179.42	14347265.99	39°30'32.2404"N	80°53'14.5956"W	425.66	229.902	8.60	8.48	2.72	
6348.00	43.470	334.860	6255.99	-93.38	-219.55	-351.89	1672153.15	14347320.59	39°30'32.7805"N	80°53'14.9300"W	414.76	238.039	8.02	7.98	1.27	
6418.00†	49.635	335.513	6304.11	-42.85	-173.44	-373.19	1672131.86	14347366.68	39°30'33.2365"N	80°53'15.2011"W	411.53	245.074	8.83	8.81	0.93	Middlesex: 6418' MD
6442.00	51.750	335.710	6319.31	-24.36	-156.53	-380.86	1672124.19	14347383.59	39°30'33.4038"N	80°53'15.2986"W	411.77	247.658	8.83	8.81	0.82	
6536.00	59.500	337.050	6372.34	52.91	-85.48	-411.88	1672093.18	14347454.60	39°30'34.1063"N	80°53'15.6933"W	420.66	258.275	8.33	8.24	1.43	
6573.00†	62.208	337.771	6390.36	85.15	-55.65	-424.29	1672080.78	14347484.42	39°30'34.4013"N	80°53'15.8511"W	427.92	262.528	7.51	7.32	1.95	Burkett: 6573' MD
6583.00	62.940	337.960	6394.97	94.02	-47.43	-427.63	1672077.44	14347492.64	39°30'34.4826"N	80°53'15.8937"W	430.26	263.672	7.51	7.32	1.89	
6616.00†	64.836	338.257	6409.49	123.61	-19.93	-438.68	1672066.39	14347520.13	39°30'34.7545"N	80°53'16.0342"W	439.13	267.398	5.80	5.74	0.90	Tully: 6616' MD
6630.00	65.640	338.380	6415.36	136.31	-8.12	-443.38	1672061.70	14347531.93	39°30'34.8713"N	80°53'16.0939"W	443.45	268.951	5.80	5.75	0.88	
6677.00	68.420	338.920	6433.70	179.54	32.18	-459.13	1672045.96	14347572.22	39°30'35.2698"N	80°53'16.2942"W	460.26	274.009	6.01	5.91	1.15	
6713.00†	71.329	339.871	6446.08	213.32	63.82	-471.02	1672034.07	14347603.84	39°30'35.5826"N	80°53'16.4454"W	475.32	277.716	8.45	8.08	2.64	Marcellus POE: 6713' MD
6725.00	72.300	340.180	6449.83	224.72	74.53	-474.91	1672030.18	14347614.55	39°30'35.6885"N	80°53'16.4950"W	480.73	278.919	8.45	8.09	2.58	
6819.00	80.140	344.040	6472.21	315.91	161.34	-502.88	1672002.22	14347701.33	39°30'36.5469"N	80°53'16.8504"W	528.13	287.788	9.24	8.34	4.11	

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Harpua Unit 2H AWP Proj: 22506'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 2H
Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

WELLPATH DATA (257 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
6914.00	88.740	347.180	6481.41	410.06	252.84	-526.34	1671978.77	14347792.79	39°30'37.4514"N	80°53'17.1482"W	583.92	295.658	9.63	9.05	3.31	
7009.00	90.650	345.810	6481.91	504.62	345.20	-548.52	1671956.60	14347885.11	39°30'38.3646"N	80°53'17.4298"W	648.10	302.184	2.47	2.01	-1.44	
7104.00	91.080	345.290	6480.48	599.32	437.19	-572.22	1671932.91	14347977.06	39°30'39.2740"N	80°53'17.7308"W	720.12	307.380	0.71	0.45	-0.55	
7199.00	90.490	343.160	6479.18	694.16	528.59	-598.05	1671907.09	14348068.43	39°30'40.1777"N	80°53'18.0588"W	798.17	311.472	2.33	-0.62	-2.24	
7294.00	90.740	339.670	6478.16	789.13	618.62	-628.32	1671876.83	14348158.42	39°30'41.0678"N	80°53'18.4436"W	881.75	314.554	3.68	0.26	-3.67	
7388.00	90.680	336.190	6476.99	882.97	705.71	-663.63	1671841.54	14348245.48	39°30'41.9290"N	80°53'18.8927"W	968.73	316.760	3.70	-0.06	-3.70	
7483.00	90.710	332.870	6475.84	977.34	791.46	-704.47	1671800.71	14348331.19	39°30'42.7770"N	80°53'19.4125"W	1059.57	318.328	3.49	0.03	-3.49	
7578.00	90.400	333.450	6474.92	1071.43	876.22	-747.36	1671757.83	14348415.92	39°30'43.6152"N	80°53'19.9584"W	1151.66	319.538	0.69	-0.33	0.61	
7673.00	90.280	334.210	6474.35	1165.68	961.48	-789.26	1671715.95	14348501.15	39°30'44.4584"N	80°53'20.4916"W	1243.94	320.618	0.81	-0.13	0.80	
7768.00	90.400	334.240	6473.79	1260.00	1047.03	-830.57	1671674.66	14348586.66	39°30'45.3044"N	80°53'21.0174"W	1336.46	321.576	0.13	0.13	0.03	
7862.00	90.400	335.970	6473.13	1353.49	1132.29	-870.14	1671635.11	14348671.88	39°30'46.1475"N	80°53'21.5209"W	1428.01	322.459	1.84	0.00	1.84	
7957.00	90.340	338.040	6472.52	1448.25	1219.73	-907.25	1671598.02	14348759.29	39°30'47.0122"N	80°53'21.9930"W	1520.15	323.358	2.18	-0.06	2.18	
8051.00	90.220	341.530	6472.06	1542.21	1307.93	-939.72	1671565.55	14348847.45	39°30'47.8843"N	80°53'22.4059"W	1610.51	324.303	3.71	-0.13	3.71	
8146.00	90.430	343.450	6471.52	1637.17	1398.52	-968.30	1671536.98	14348938.01	39°30'48.7800"N	80°53'22.7692"W	1701.02	325.302	2.03	0.22	2.02	
8241.00	90.030	345.880	6471.14	1731.98	1490.13	-993.43	1671511.87	14349029.58	39°30'49.6857"N	80°53'23.0883"W	1790.92	326.310	2.59	-0.42	2.56	
8336.00	89.940	344.050	6471.17	1826.75	1581.87	-1018.07	1671487.24	14349121.29	39°30'50.5927"N	80°53'23.4013"W	1881.17	327.235	1.93	-0.09	-1.93	
8430.00	90.220	341.850	6471.03	1920.69	1671.74	-1045.63	1671459.69	14349211.12	39°30'51.4812"N	80°53'23.7515"W	1971.81	327.975	2.36	0.30	-2.34	
8524.00	90.120	341.300	6470.76	2014.69	1760.92	-1075.34	1671429.99	14349300.26	39°30'52.3630"N	80°53'24.1292"W	2063.29	328.589	0.59	-0.11	-0.59	
8619.00	90.120	341.410	6470.56	2109.69	1850.93	-1105.71	1671399.63	14349390.24	39°30'53.2530"N	80°53'24.5153"W	2156.05	329.147	0.12	0.00	0.12	
8713.00	90.090	342.450	6470.38	2203.67	1940.29	-1134.87	1671370.49	14349479.57	39°30'54.1365"N	80°53'24.8860"W	2247.81	329.677	1.11	-0.03	1.11	
8808.00	90.090	341.900	6470.24	2298.66	2030.73	-1163.95	1671341.42	14349569.97	39°30'55.0307"N	80°53'25.2556"W	2340.65	330.180	0.58	0.00	-0.58	
8903.00	90.180	344.150	6470.01	2393.59	2121.59	-1191.68	1671313.70	14349660.79	39°30'55.9290"N	80°53'25.6081"W	2433.36	330.677	2.37	0.09	2.37	
8998.00	90.090	349.620	6469.79	2488.06	2214.08	-1213.23	1671292.16	14349753.24	39°30'56.8433"N	80°53'25.8816"W	2524.69	331.279	5.76	-0.09	5.76	
9092.00	90.180	349.850	6469.57	2580.99	2306.57	-1229.98	1671275.41	14349845.70	39°30'57.7577"N	80°53'26.0939"W	2614.02	331.931	0.26	0.10	0.24	
9186.00	90.400	347.290	6469.09	2674.17	2398.70	-1248.61	1671256.80	14349937.79	39°30'58.6684"N	80°53'26.3301"W	2704.21	332.501	2.73	0.23	-2.72	
9280.00	90.310	343.760	6468.51	2767.87	2489.70	-1272.10	1671233.31	14350028.75	39°30'59.5681"N	80°53'26.6285"W	2795.86	332.935	3.76	-0.10	-3.76	
9374.00	90.310	339.930	6468.00	2861.84	2579.00	-1301.38	1671204.04	14350118.02	39°31'0.4511"N	80°53'27.0007"W	2888.74	333.224	4.07	0.00	-4.07	
9468.00	90.120	336.630	6467.65	2955.71	2666.31	-1336.16	1671169.27	14350205.29	39°31'1.3144"N	80°53'27.4432"W	2982.37	333.383	3.52	-0.20	-3.51	
9563.00	90.000	337.340	6467.55	3050.47	2753.75	-1373.30	1671132.15	14350292.70	39°31'2.1790"N	80°53'27.9158"W	3077.19	333.494	0.76	-0.13	0.75	
9657.00	90.680	338.930	6466.99	3144.35	2840.98	-1408.31	1671097.15	14350379.90	39°31'3.0416"N	80°53'28.3611"W	3170.89	333.632	1.84	0.72	1.69	

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Actual Wellpath Report

Harpua Unit 2H AWP Proj: 22506'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 2H
Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

WELLPATH DATA (257 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
9751.00	90.250	339.810	6466.23	3238.30	2928.95	-1441.43	1671064.05	14350467.83	39°31'3.9114"N	80°53'28.7823"W	3264.43	333.797	1.04	-0.46	0.94	
9846.00	90.120	337.920	6465.92	3333.23	3017.56	-1475.68	1671029.81	14350556.40	39°31'4.7875"N	80°53'29.2180"W	3359.06	333.940	1.99	-0.14	-1.99	
9940.00	90.620	338.580	6465.31	3427.11	3104.86	-1510.51	1670994.99	14350643.67	39°31'5.6508"N	80°53'29.6611"W	3452.80	334.057	0.88	0.53	0.70	
10035.00	90.650	339.110	6464.26	3522.04	3193.46	-1544.79	1670960.73	14350732.23	39°31'6.5268"N	80°53'30.0972"W	3547.47	334.185	0.56	0.03	0.56	
10129.00	90.340	337.010	6463.45	3615.90	3280.64	-1579.91	1670925.62	14350819.37	39°31'7.3889"N	80°53'30.5440"W	3641.25	334.285	2.26	-0.33	-2.23	
10224.00	90.710	337.450	6462.58	3710.69	3368.23	-1616.68	1670888.87	14350906.93	39°31'8.2550"N	80°53'31.0118"W	3736.13	334.360	0.61	0.39	0.46	
10318.00	92.000	339.940	6460.35	3804.57	3455.77	-1650.82	1670854.74	14350994.44	39°31'9.1207"N	80°53'31.4461"W	3829.83	334.466	2.98	1.37	2.65	
10413.00	90.650	340.210	6458.16	3899.53	3545.06	-1683.18	1670822.39	14351083.69	39°31'10.0035"N	80°53'31.8577"W	3924.36	334.602	1.45	-1.42	0.28	
10507.00	90.580	341.590	6457.15	3993.52	3633.88	-1713.94	1670791.65	14351172.47	39°31'10.8817"N	80°53'32.2488"W	4017.79	334.749	1.47	-0.07	1.47	
10602.00	90.830	341.230	6455.98	4088.51	3723.92	-1744.22	1670761.38	14351262.47	39°31'11.7719"N	80°53'32.6339"W	4112.16	334.902	0.46	0.26	-0.38	
10697.00	90.680	338.730	6454.73	4183.48	3813.16	-1776.74	1670728.87	14351351.68	39°31'12.6543"N	80°53'33.0475"W	4206.78	335.017	2.64	-0.16	-2.63	
10792.00	90.620	340.280	6453.65	4278.44	3902.14	-1810.00	1670695.63	14351440.62	39°31'13.5341"N	80°53'33.4705"W	4301.49	335.116	1.63	-0.06	1.63	
10886.00	90.370	341.330	6452.84	4372.43	3990.91	-1840.90	1670664.73	14351529.36	39°31'14.4118"N	80°53'33.8635"W	4395.03	335.237	1.15	-0.27	1.12	
10981.00	90.340	344.270	6452.25	4467.37	4081.65	-1868.99	1670636.66	14351620.06	39°31'15.3089"N	80°53'34.2205"W	4489.21	335.397	3.09	-0.03	3.09	
11075.00	90.370	346.290	6451.67	4561.11	4172.56	-1892.88	1670612.78	14351710.93	39°31'16.2077"N	80°53'34.5239"W	4581.83	335.599	2.15	0.03	2.15	
11170.00	90.400	347.720	6451.03	4655.59	4265.12	-1914.24	1670591.43	14351803.46	39°31'17.1228"N	80°53'34.7951"W	4674.99	335.829	1.51	0.03	1.51	
11264.00	90.460	347.890	6450.32	4748.94	4356.99	-1934.09	1670571.58	14351895.30	39°31'18.0311"N	80°53'35.0471"W	4766.98	336.063	0.19	0.06	0.18	
11358.00	90.430	347.830	6449.59	4842.27	4448.89	-1953.86	1670551.82	14351987.16	39°31'18.9395"N	80°53'35.2979"W	4859.03	336.290	0.07	-0.03	-0.06	
11453.00	90.310	345.460	6448.98	4936.81	4541.31	-1975.80	1670529.89	14352079.54	39°31'19.8532"N	80°53'35.5765"W	4952.51	336.487	2.50	-0.13	-2.49	
11548.00	90.400	344.190	6448.39	5031.60	4633.00	-2000.67	1670505.03	14352171.19	39°31'20.7596"N	80°53'35.8925"W	5046.52	336.644	1.34	0.09	-1.34	
11641.00	90.280	343.360	6447.84	5124.49	4722.29	-2026.65	1670479.06	14352260.45	39°31'21.6425"N	80°53'36.2227"W	5138.81	336.773	0.90	-0.13	-0.89	
11737.00	89.970	340.340	6447.63	5220.47	4813.50	-2056.56	1670449.17	14352351.62	39°31'22.5443"N	80°53'36.6029"W	5234.43	336.866	3.16	-0.32	-3.15	
11831.00	90.250	335.930	6447.45	5314.33	4900.72	-2091.55	1670414.18	14352438.80	39°31'23.4067"N	80°53'37.0482"W	5328.38	336.888	4.70	0.30	-4.69	
11926.00	90.120	334.160	6447.14	5408.80	4986.84	-2131.63	1670374.12	14352524.90	39°31'24.2584"N	80°53'37.5584"W	5423.33	336.856	1.87	-0.14	-1.86	
12021.00	90.340	335.430	6446.76	5503.23	5072.80	-2172.09	1670333.68	14352610.81	39°31'25.1083"N	80°53'38.0733"W	5518.26	336.820	1.36	0.23	1.34	
12116.00	90.220	338.170	6446.30	5597.96	5160.11	-2209.51	1670296.28	14352698.09	39°31'25.9717"N	80°53'38.5495"W	5613.25	336.820	2.89	-0.13	2.88	
12211.00	90.220	339.540	6445.93	5692.89	5248.71	-2243.78	1670262.02	14352786.65	39°31'26.8477"N	80°53'38.9855"W	5708.19	336.854	1.44	0.00	1.44	
12305.00	90.060	339.110	6445.70	5786.85	5336.65	-2276.97	1670228.85	14352874.56	39°31'27.7173"N	80°53'39.4077"W	5802.11	336.894	0.49	-0.17	-0.46	
12400.00	90.090	341.870	6445.58	5881.83	5426.19	-2308.69	1670197.14	14352964.06	39°31'28.6026"N	80°53'39.8112"W	5896.91	336.952	2.91	0.03	2.91	
12494.00	90.090	340.330	6445.43	5975.83	5515.12	-2339.14	1670166.70	14353052.96	39°31'29.4819"N	80°53'40.1984"W	5990.67	337.017	1.64	0.00	-1.64	

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Actual Wellpath Report

Harpua Unit 2H AWP Proj: 22506'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Harpua Unit 2H
Field	Tyler		API	47-095-02641-0000
Facility	Gamehenge East Pad		Wellbore	Harpua Unit 2H AWB
Slot	Slot #04			

WELLPATH DATA (257 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
12589.00	90.150	340.390	6445.23	6070.82	5604.59	-2371.07	1670134.78	14353142.40	39°31'30.3665"N	80°53'40.6045"W	6085.51	337.069	0.09	0.06	0.06	
12684.00	90.620	339.580	6444.59	6165.80	5693.85	-2403.58	1670102.28	14353231.62	39°31'31.2491"N	80°53'41.0181"W	6180.38	337.114	0.99	0.49	-0.85	
12779.00	90.710	336.140	6443.49	6260.64	5781.83	-2439.38	1670066.50	14353319.56	39°31'32.1190"N	80°53'41.4736"W	6275.35	337.125	3.62	0.09	-3.62	
12874.00	90.490	335.550	6442.49	6355.24	5868.50	-2478.25	1670027.64	14353406.20	39°31'32.9761"N	80°53'41.9684"W	6370.33	337.106	0.66	-0.23	-0.62	
12969.00	90.550	335.560	6441.63	6449.80	5954.98	-2517.56	1669988.35	14353492.65	39°31'33.8313"N	80°53'42.4688"W	6465.29	337.083	0.06	0.06	0.01	
13063.00	90.150	334.980	6441.06	6543.32	6040.36	-2556.88	1669949.04	14353577.99	39°31'34.6755"N	80°53'42.9693"W	6559.24	337.057	0.75	-0.43	-0.62	
13158.00	90.580	340.250	6440.45	6638.11	6128.17	-2593.05	1669912.89	14353665.76	39°31'35.5438"N	80°53'43.4296"W	6654.20	337.065	5.57	0.45	5.55	
13253.00	90.800	341.660	6439.31	6733.10	6217.96	-2624.04	1669881.91	14353755.52	39°31'36.4316"N	80°53'43.8238"W	6748.97	337.120	1.50	0.23	1.48	
13347.00	90.830	341.990	6437.97	6827.08	6307.26	-2653.36	1669852.60	14353844.78	39°31'37.3145"N	80°53'44.1966"W	6842.65	337.184	0.35	0.03	0.35	
13442.00	90.830	341.400	6436.59	6922.07	6397.44	-2683.20	1669822.78	14353934.93	39°31'38.2061"N	80°53'44.5760"W	6937.35	337.246	0.62	0.00	-0.62	
13537.00	90.680	341.490	6435.34	7017.06	6487.50	-2713.42	1669792.56	14354024.95	39°31'39.0965"N	80°53'44.9604"W	7032.09	337.303	0.18	-0.16	0.09	
13631.00	89.910	343.220	6434.86	7111.03	6577.07	-2741.92	1669764.08	14354114.48	39°31'39.9821"N	80°53'45.3227"W	7125.73	337.369	2.01	-0.82	1.84	
13726.00	90.710	345.950	6434.34	7205.83	6668.64	-2767.16	1669738.84	14354206.02	39°31'40.8874"N	80°53'45.6436"W	7219.97	337.464	2.99	0.84	2.87	
13820.00	90.370	344.920	6433.46	7299.55	6759.62	-2790.80	1669715.22	14354296.96	39°31'41.7868"N	80°53'45.9439"W	7313.07	337.566	1.15	-0.36	-1.10	
13915.00	90.740	345.980	6432.54	7394.27	6851.56	-2814.67	1669691.36	14354388.87	39°31'42.6958"N	80°53'46.2471"W	7407.18	337.667	1.18	0.39	1.12	
14010.00	90.860	348.580	6431.21	7488.69	6944.22	-2835.58	1669670.46	14354481.48	39°31'43.6118"N	80°53'46.5127"W	7500.84	337.788	2.74	0.13	2.74	
14104.00	90.740	348.780	6429.90	7581.85	7036.38	-2854.03	1669652.01	14354573.61	39°31'44.5229"N	80°53'46.7468"W	7593.16	337.922	0.25	-0.13	0.21	
14199.00	90.860	345.910	6428.57	7676.26	7129.05	-2874.84	1669631.21	14354666.24	39°31'45.4390"N	80°53'47.0109"W	7686.88	338.038	3.02	0.13	-3.02	
14294.00	90.830	345.210	6427.17	7770.95	7221.04	-2898.53	1669607.54	14354758.19	39°31'46.3484"N	80°53'47.3119"W	7781.06	338.129	0.74	-0.03	-0.74	
14389.00	90.650	344.100	6425.94	7865.75	7312.64	-2923.66	1669582.41	14354849.76	39°31'47.2541"N	80°53'47.6314"W	7875.44	338.208	1.18	-0.19	-1.17	
14483.00	90.800	341.470	6424.75	7959.69	7402.42	-2951.48	1669554.61	14354939.50	39°31'48.1417"N	80°53'47.9850"W	7969.13	338.262	2.80	0.16	-2.80	
14577.00	90.680	337.420	6423.54	8053.63	7490.41	-2984.47	1669521.62	14355027.45	39°31'49.0117"N	80°53'48.4048"W	8063.08	338.276	4.31	-0.13	-4.31	
14672.00	90.550	334.290	6422.52	8148.22	7577.08	-3023.32	1669482.79	14355114.09	39°31'49.8687"N	80°53'48.8994"W	8157.98	338.248	3.30	-0.14	-3.29	
14766.00	90.710	333.230	6421.49	8241.46	7661.39	-3064.88	1669441.25	14355198.37	39°31'50.7024"N	80°53'49.4285"W	8251.69	338.196	1.14	0.17	-1.13	
14860.00	90.740	337.580	6420.30	8334.97	7746.83	-3103.99	1669402.15	14355283.78	39°31'51.5473"N	80°53'49.9264"W	8345.55	338.165	4.63	0.03	4.63	
14955.00	90.580	340.650	6419.20	8429.90	7835.57	-3137.85	1669368.30	14355372.48	39°31'52.4248"N	80°53'50.3573"W	8440.52	338.176	3.24	-0.17	3.23	
15049.00	90.580	338.300	6418.25	8523.85	7923.60	-3170.81	1669335.36	14355460.47	39°31'53.2951"N	80°53'50.7766"W	8534.48	338.190	2.50	0.00	-2.50	
15143.00	90.710	338.460	6417.19	8617.74	8010.98	-3205.44	1669300.75	14355547.82	39°31'54.1591"N	80°53'51.2173"W	8628.47	338.192	0.22	0.14	0.17	
15238.00	90.860	340.830	6415.89	8712.70	8100.03	-3238.48	1669267.72	14355636.83	39°31'55.0396"N	80°53'51.6377"W	8723.43	338.208	2.50	0.16	2.49	
15332.00	90.770	342.030	6414.55	8806.69	8189.12	-3268.41	1669237.80	14355725.89	39°31'55.9205"N	80°53'52.0184"W	8817.27	338.242	1.28	-0.10	1.28	

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Harpua Unit 2H AWP Proj: 22506'
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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Harpua Unit 2H
Field	Tyler		API	47-095-02641-0000
Facility	Gamehenge East Pad		Wellbore	Harpua Unit 2H AWB
Slot	Slot #04			

WELLPATH DATA (257 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
15427.00	90.800	343.150	6413.25	8901.64	8279.76	-3296.83	1669209.39	14355816.49	39°31'56.8166"N	80°53'52.3798"W	8911.99	338.289	1.18	0.03	1.18	
15522.00	90.800	346.690	6411.93	8996.40	8371.47	-3321.54	1669184.69	14355908.16	39°31'57.7232"N	80°53'52.6938"W	9006.34	338.358	3.73	0.00	3.73	
15617.00	90.620	345.750	6410.75	9091.01	8463.73	-3344.17	1669162.07	14356000.38	39°31'58.6353"N	80°53'52.9813"W	9100.44	338.440	1.01	-0.19	-0.99	
15712.00	90.550	343.760	6409.78	9185.80	8555.37	-3369.14	1669137.11	14356091.99	39°31'59.5414"N	80°53'53.2987"W	9194.86	338.505	2.10	-0.07	-2.09	
15807.00	90.580	340.440	6408.84	9280.76	8645.76	-3398.34	1669107.92	14356182.34	39°32'0.4350"N	80°53'53.6700"W	9289.66	338.542	3.49	0.03	-3.49	
15902.00	90.430	338.500	6408.00	9375.72	8734.72	-3431.65	1669074.62	14356271.26	39°32'1.3146"N	80°53'54.0939"W	9384.64	338.551	2.05	-0.16	-2.04	
15996.00	90.580	337.090	6407.18	9469.56	8821.74	-3467.17	1669039.12	14356358.25	39°32'2.1750"N	80°53'54.5460"W	9478.63	338.544	1.51	0.16	-1.50	
16091.00	90.460	335.800	6406.31	9564.25	8908.82	-3505.14	1669001.17	14356445.30	39°32'3.0361"N	80°53'55.0293"W	9573.56	338.523	1.36	-0.13	-1.36	
16185.00	90.310	336.710	6405.68	9657.92	8994.86	-3542.99	1668963.33	14356531.30	39°32'3.8869"N	80°53'55.5111"W	9667.48	338.501	0.98	-0.16	0.97	
16279.00	90.400	339.210	6405.10	9751.77	9081.98	-3578.26	1668928.08	14356618.39	39°32'4.7483"N	80°53'55.9600"W	9761.47	338.496	2.66	0.10	2.66	
16373.00	91.320	338.120	6403.69	9845.68	9169.53	-3612.45	1668893.90	14356705.90	39°32'5.6139"N	80°53'56.3952"W	9855.46	338.497	1.52	0.98	-1.16	
16467.00	89.970	337.280	6402.63	9939.51	9256.49	-3648.12	1668858.25	14356792.83	39°32'6.4738"N	80°53'56.8492"W	9949.44	338.490	1.69	-1.44	-0.89	
16561.00	90.030	340.360	6402.63	10033.42	9344.13	-3682.07	1668824.30	14356880.43	39°32'7.3403"N	80°53'57.2813"W	10043.42	338.493	3.28	0.06	3.28	
16656.00	90.220	343.720	6402.42	10128.40	9434.48	-3711.36	1668795.02	14356970.75	39°32'8.2337"N	80°53'57.6539"W	10138.23	338.526	3.54	0.20	3.54	
16750.00	90.030	344.340	6402.22	10222.27	9524.86	-3737.23	1668769.17	14357061.09	39°32'9.1271"N	80°53'57.9827"W	10231.80	338.577	0.69	-0.20	0.66	
16844.00	90.120	343.490	6402.09	10316.15	9615.17	-3763.27	1668743.14	14357151.37	39°32'10.0201"N	80°53'58.3138"W	10325.40	338.625	0.91	0.10	-0.90	
16938.00	90.220	344.410	6401.82	10410.03	9705.51	-3789.26	1668717.16	14357241.67	39°32'10.9132"N	80°53'58.6442"W	10418.99	338.673	0.98	0.11	0.98	
17032.00	90.150	344.750	6401.51	10503.85	9796.13	-3814.25	1668692.18	14357332.25	39°32'11.8090"N	80°53'58.9619"W	10512.50	338.726	0.37	-0.07	0.36	
17127.00	90.520	347.820	6400.96	10598.44	9888.40	-3836.77	1668669.67	14357424.49	39°32'12.7213"N	80°53'59.2480"W	10606.67	338.793	3.25	0.39	3.23	
17221.00	90.580	348.460	6400.05	10691.72	9980.39	-3856.09	1668650.36	14357516.44	39°32'13.6307"N	80°53'59.4933"W	10699.42	338.875	0.68	0.06	0.68	
17316.00	90.460	345.840	6399.19	10786.17	10073.00	-3877.22	1668629.24	14357609.01	39°32'14.5462"N	80°53'59.7616"W	10793.43	338.948	2.76	-0.13	-2.76	
17410.00	90.400	343.280	6398.49	10879.98	10163.60	-3902.24	1668604.23	14357699.57	39°32'15.4418"N	80°54'0.0797"W	10886.97	338.996	2.72	-0.06	-2.72	
17505.00	90.490	339.940	6397.75	10974.96	10253.73	-3932.20	1668574.27	14357789.67	39°32'16.3330"N	80°54'0.4609"W	10981.86	339.019	3.52	0.09	-3.52	
17600.00	90.280	337.470	6397.11	11069.87	10342.24	-3966.70	1668539.79	14357878.14	39°32'17.2081"N	80°54'0.9000"W	11076.85	339.016	2.61	-0.22	-2.60	
17694.00	90.370	333.990	6396.58	11163.45	10427.91	-4005.33	1668501.17	14357963.78	39°32'18.0553"N	80°54'1.3918"W	11170.68	338.988	3.70	0.10	-3.70	
17789.00	90.220	333.840	6396.09	11257.71	10513.24	-4047.10	1668459.42	14358049.07	39°32'18.8990"N	80°54'1.9238"W	11265.31	338.946	0.22	-0.16	-0.16	
17884.00	90.280	337.480	6395.67	11352.27	10599.78	-4086.25	1668420.29	14358135.58	39°32'19.7547"N	80°54'2.4222"W	11360.14	338.918	3.83	0.06	3.83	
17979.00	90.460	341.130	6395.06	11447.21	10688.63	-4119.82	1668386.73	14358224.40	39°32'20.6333"N	80°54'2.8494"W	11455.12	338.921	3.85	0.19	3.84	
18074.00	90.400	341.060	6394.35	11542.21	10778.50	-4150.60	1668355.97	14358314.23	39°32'21.5218"N	80°54'3.2410"W	11550.05	338.939	0.10	-0.06	-0.07	
18169.00	90.430	340.210	6393.66	11637.20	10868.13	-4182.10	1668324.48	14358403.82	39°32'22.4079"N	80°54'3.6418"W	11645.00	338.953	0.90	0.03	-0.89	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 2H
Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

WELLPATH DATA (257 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
18264.00	90.520	340.100	6392.87	11732.19	10957.48	-4214.34	1668292.24	14358493.14	39°32'23.2914"N	80°54'4.0522"W	11739.98	338.963	0.15	0.09	-0.12	
18359.00	90.400	340.220	6392.11	11827.17	11046.84	-4246.59	1668260.02	14358582.46	39°32'24.1749"N	80°54'4.4625"W	11834.95	338.972	0.18	-0.13	0.13	
18454.00	90.430	341.430	6391.42	11922.17	11136.56	-4277.79	1668228.83	14358672.15	39°32'25.0620"N	80°54'4.8595"W	11929.90	338.987	1.27	0.03	1.27	
18548.00	90.620	344.700	6390.56	12016.09	11226.47	-4305.16	1668201.46	14358762.02	39°32'25.9509"N	80°54'5.2077"W	12023.65	339.019	3.48	0.20	3.48	
18643.00	90.150	344.630	6389.92	12110.90	11318.09	-4330.29	1668176.35	14358853.60	39°32'26.8567"N	80°54'5.5271"W	12118.19	339.063	0.50	-0.49	-0.07	
18738.00	90.180	343.660	6389.65	12205.76	11409.47	-4356.24	1668150.40	14358944.95	39°32'27.7601"N	80°54'5.8571"W	12212.82	339.103	1.02	0.03	-1.02	
18832.00	89.970	340.710	6389.52	12299.73	11498.95	-4385.00	1668121.66	14359034.40	39°32'28.6448"N	80°54'6.2229"W	12306.67	339.126	3.15	-0.22	-3.14	
18927.00	90.060	339.400	6389.50	12394.72	11588.25	-4417.40	1668089.27	14359123.66	39°32'29.5277"N	80°54'6.6353"W	12401.66	339.133	1.38	0.09	-1.38	
19022.00	90.060	340.190	6389.40	12489.69	11677.41	-4450.21	1668056.47	14359212.78	39°32'30.4092"N	80°54'7.0528"W	12496.65	339.138	0.83	0.00	0.83	
19116.00	90.060	338.610	6389.30	12583.65	11765.39	-4483.29	1668023.41	14359300.73	39°32'31.2792"N	80°54'7.4737"W	12590.65	339.140	1.68	0.00	-1.68	
19211.00	90.030	340.300	6389.23	12678.61	11854.35	-4516.62	1667990.09	14359389.65	39°32'32.1587"N	80°54'7.8981"W	12685.64	339.143	1.78	-0.03	1.78	
19306.00	90.090	344.620	6389.13	12773.56	11944.91	-4545.25	1667961.47	14359480.17	39°32'33.0540"N	80°54'8.2622"W	12780.46	339.167	4.55	0.06	4.55	
19402.00	90.030	342.750	6389.03	12869.45	12037.04	-4572.21	1667934.52	14359572.27	39°32'33.9649"N	80°54'8.6051"W	12876.16	339.201	1.95	-0.06	-1.95	
19497.00	90.890	337.490	6388.26	12964.41	12126.34	-4604.51	1667902.24	14359661.53	39°32'34.8478"N	80°54'9.0161"W	12971.11	339.208	5.61	0.91	-5.54	
19592.00	90.340	335.990	6387.24	13059.13	12213.61	-4642.02	1667864.74	14359748.77	39°32'35.7108"N	80°54'9.4937"W	13066.01	339.190	1.68	-0.58	-1.58	
19687.00	90.490	334.970	6386.55	13153.68	12300.04	-4681.44	1667825.33	14359835.16	39°32'36.5654"N	80°54'9.9957"W	13160.81	339.163	1.09	0.16	-1.07	
19781.00	90.370	337.030	6385.85	13247.30	12385.91	-4719.67	1667787.12	14359921.00	39°32'37.4144"N	80°54'10.4826"W	13254.66	339.141	2.20	-0.13	2.19	
19876.00	90.250	337.210	6385.33	13342.08	12473.43	-4756.61	1667750.20	14360008.48	39°32'38.2799"N	80°54'10.9528"W	13349.60	339.126	0.23	-0.13	0.19	
19971.00	90.770	339.170	6384.49	13436.95	12561.63	-4791.90	1667714.92	14360096.64	39°32'39.1519"N	80°54'11.4021"W	13444.58	339.120	2.13	0.55	2.06	
20066.00	90.860	345.570	6383.14	13531.87	12652.11	-4820.66	1667686.18	14360187.09	39°32'40.0464"N	80°54'11.7679"W	13539.37	339.142	6.74	0.09	6.74	
20160.00	90.980	350.570	6381.83	13625.12	12744.04	-4840.08	1667666.76	14360278.98	39°32'40.9552"N	80°54'12.0146"W	13632.20	339.204	5.32	0.13	5.32	
20255.00	90.920	350.030	6380.05	13718.87	12837.67	-4856.08	1667650.76	14360372.57	39°32'41.8807"N	80°54'12.2176"W	13725.42	339.280	0.57	-0.06	-0.57	
20350.00	90.830	347.650	6378.60	13812.98	12930.85	-4874.47	1667632.39	14360465.72	39°32'42.8019"N	80°54'12.4510"W	13819.09	339.345	2.51	-0.09	-2.51	
20445.00	90.710	345.170	6377.32	13907.55	13023.18	-4896.79	1667610.08	14360558.01	39°32'43.7146"N	80°54'12.7346"W	13913.36	339.393	2.61	-0.13	-2.61	
20541.00	91.350	340.510	6375.60	14003.46	13114.86	-4925.10	1667581.78	14360649.66	39°32'44.6211"N	80°54'13.0948"W	14009.15	339.417	4.90	0.67	-4.85	
20635.00	92.550	341.280	6372.40	14097.40	13203.63	-4955.84	1667551.04	14360738.39	39°32'45.4987"N	80°54'13.4861"W	14103.06	339.427	1.52	1.28	0.82	
20730.00	91.910	338.690	6368.70	14192.30	13292.82	-4988.33	1667518.57	14360827.54	39°32'46.3805"N	80°54'13.8996"W	14197.97	339.431	2.81	-0.67	-2.73	
20825.00	92.580	338.360	6364.98	14287.14	13381.15	-5023.08	1667483.83	14360915.84	39°32'47.2539"N	80°54'14.3420"W	14292.89	339.425	0.79	0.71	-0.35	
20920.00	92.120	338.230	6361.08	14381.95	13469.34	-5058.19	1667448.74	14361003.99	39°32'48.1259"N	80°54'14.7889"W	14387.79	339.417	0.50	-0.48	-0.14	
21015.00	91.260	335.370	6358.28	14476.63	13558.61	-5095.59	1667411.35	14361091.23	39°32'48.9888"N	80°54'15.2652"W	14482.64	339.400	3.14	-0.91	-3.01	

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Actual Wellpath Report

Harpua Unit 2H AWP Proj: 22506'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 2H
Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

WELLPATH DATA (257 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
21110.00	91.170	336.680	6356.27	14571.25	13643.40	-5134.19	1667372.77	14361177.98	39°32'49.8469"N	80°54'15.7566"W	14577.45	339.378	1.38	-0.09	1.38	
21205.00	90.430	339.400	6354.94	14666.10	13731.49	-5169.70	1667337.27	14361266.03	39°32'50.7179"N	80°54'16.2089"W	14672.41	339.369	2.97	-0.78	2.86	
21300.00	90.370	341.040	6354.28	14761.08	13820.87	-5201.85	1667305.13	14361355.39	39°32'51.6017"N	80°54'16.6180"W	14767.39	339.375	1.73	-0.06	1.73	
21395.00	90.520	341.570	6353.54	14856.08	13910.86	-5232.30	1667274.70	14361445.33	39°32'52.4914"N	80°54'17.0055"W	14862.33	339.387	0.58	0.16	0.56	
21490.00	89.910	341.300	6353.18	14951.07	14000.91	-5262.55	1667244.46	14361535.35	39°32'53.3817"N	80°54'17.3904"W	14957.27	339.400	0.70	-0.64	-0.28	
21585.00	89.910	343.280	6353.33	15046.05	14091.41	-5291.44	1667215.58	14361625.81	39°32'54.2764"N	80°54'17.7581"W	15052.15	339.418	2.08	0.00	2.08	
21681.00	89.420	343.540	6353.89	15141.96	14183.41	-5318.85	1667188.18	14361717.77	39°32'55.1859"N	80°54'18.1067"W	15147.91	339.444	0.58	-0.51	0.27	
21776.00	89.170	344.140	6355.06	15236.84	14274.65	-5345.29	1667161.75	14361808.98	39°32'56.0880"N	80°54'18.4430"W	15242.63	339.471	0.68	-0.26	0.63	
21871.00	89.230	343.830	6356.39	15331.71	14365.95	-5371.50	1667135.55	14361900.24	39°32'56.9906"N	80°54'18.7763"W	15337.33	339.499	0.33	0.06	-0.33	
21966.00	89.350	343.460	6357.57	15426.60	14457.10	-5398.25	1667108.82	14361991.36	39°32'57.8917"N	80°54'19.1166"W	15432.07	339.524	0.41	0.13	-0.39	
22061.00	89.690	342.240	6358.36	15521.55	14547.87	-5426.26	1667080.82	14362082.09	39°32'58.7891"N	80°54'19.4729"W	15526.91	339.545	1.33	0.36	-1.28	
22156.00	89.600	341.780	6358.95	15616.54	14638.23	-5455.60	1667051.49	14362172.41	39°32'59.6824"N	80°54'19.8463"W	15621.82	339.560	0.49	-0.09	-0.48	
22251.00	90.310	341.460	6359.03	15711.53	14728.38	-5485.55	1667021.54	14362262.53	39°33'0.5738"N	80°54'20.2275"W	15716.76	339.572	0.82	0.75	-0.34	
22345.00	90.550	337.990	6358.32	15805.49	14816.54	-5518.12	1666988.99	14362350.65	39°33'1.4454"N	80°54'20.6420"W	15810.74	339.573	3.70	0.26	-3.69	
22440.00	91.080	338.700	6356.97	15900.37	14904.82	-5553.17	1666953.95	14362438.90	39°33'2.3183"N	80°54'21.0883"W	15905.71	339.566	0.93	0.56	0.75	
22481.00	91.450	338.890	6356.06	15941.33	14943.04	-5568.00	1666939.13	14362477.10	39°33'2.6962"N	80°54'21.2771"W	15946.69	339.564	1.01	0.90	0.46	
22506.00†	91.450	338.890	6355.43	15966.30	14966.35	-5577.00	1666930.13	14362500.40	39°33'2.9267"N	80°54'21.3917"W	15971.68	339.563	0.00	0.00	0.00	Projected MD at TD: 22506'

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Actual Wellpath Report

Harpua Unit 2H AWP Proj: 22506'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 2H
Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

HOLE & CASING SECTIONS - Ref Wellbore: Harpua Unit 2H AWB Ref Wellpath: Harpua Unit 2H AWP Proj: 22506'

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	0.23	-0.19
17.5in Open Hole	110.00	477.00	367.00	110.00	477.00	0.23	-0.19	0.56	-1.09
13.375in Casing Surface	30.00	477.00	447.00	30.00	477.00	0.00	0.00	0.56	-1.09
12.25in Open Hole	477.00	2614.00	2137.00	477.00	2610.73	0.56	-1.09	-43.20	34.85
9.625in Casing Intermediate	30.00	2614.00	2584.00	30.00	2610.73	0.00	0.00	-43.20	34.85
8.75in Open Hole	2614.00	5358.00	2744.00	2610.73	5325.32	-43.20	34.85	-337.83	-183.10
8.5in Open Hole	5358.00	22506.00	17148.00	5325.32	6355.43	-337.83	-183.10	14966.35	-5577.00
5.5in Casing Production	30.00	22506.00	22476.00	30.00	6355.43	0.00	0.00	14966.35	-5577.00

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Harpua Unit 2H - POE - Rev-3	6448.00	51.29	-460.17	1672044.91	14347591.32	39°30'35.4586"N	80°53'16.3073"W	point
Harpua Unit 2H - BHL - Rev-3	6483.00	14956.63	-5578.15	1666928.98	14362490.69	39°33'2.8306"N	80°54'21.4065"W	point
Harpua Unit 2H - LP - Rev-3	6483.00	259.52	-531.67	1671973.44	14347799.47	39°30'37.5175"N	80°53'17.2162"W	point
Harpua Unit 2H - 50' L/R Hardline	6550.00	7503.96	-3019.17	1669486.95	14355041.01	39°31'49.1460"N	80°53'48.8474"W	rectangle
2D Rectangle 15763.2 x 100.								

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Harpua Unit 2H AWP Proj: 22506'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 2H
Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

WELLPATH COMPOSITION - Ref Wellbore: Harpua Unit 2H AWB Ref Wellpath: Harpua Unit 2H AWP Proj: 22506'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
30.00	457.00	Gyrodatta 2015 - GC+WIR+DPIPE	01 Gyrodatta MS Gyro <17-1/2">(100'-442')	Harpua Unit 2H AWB	1/3/2020
457.00	2531.00	OWSG MWD rev2 + HRGM	03 WFT EM <12-1/4">(442')(537'-2516')	Harpua Unit 2H AWB	1/3/2020
2531.00	5222.00	OWSG MWD rev2 + HRGM	04 WFT EM <8-3/4">(2516')(2646'-5207')	Harpua Unit 2H AWB	1/3/2020
5222.00	22506.00	BH AutoTrak Curve (2019) (Short spacing)	05 BH AT Curve <8-1/2">(5222')(5332'-22481')	Harpua Unit 2H AWB	1/8/2020

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Harpua Unit 2H AWP Proj: 22506'

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Field	Tyler	API	47-095-02641-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 2H AWB
Slot	Slot #04		

COMMENTS
<p>Wellpath general comments API: 47-095-02641-0000 BHI Job #: 110226657A Rig: H&P 519 Duration: 01/12/2020-01/16/2020 Gyrodata MS Gyro <17-1/2">(100'-442') WFT EM <12-1/4">(442')(537'-2516') WFT EM <8-3/4">(2516')(2646'-5207') BH AT Curve <8-1/2">(5222')(5332'-22481') Middlesex: 6418' MD Burkett: 6573' MD Tully: 6616' MD Marcellus POE: 6713' MD Projected MD at TD: 22506'</p>

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