

ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
 Field: Tyler
 Facility: Neat Pad
 Slot: Slot #04
 Well: Jack Unit 3H
 Wellbore: Jack Unit 3H PWB



Projected MD at TD: 18178' : 6240.52ft TVD, 11213.6ft N, 3345.83ft W



API: 47-095-02463-0000
 BHI Job #: 109434821
 Rig: Frontier 22
 Duration: 10/01/2018-10/04/2018

Photo reference wellpath is Jack Unit 3H PWB Rev-A 0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 1029.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #04) -1005 feet	Created by: dclauson on 2018-10-05
Coordinates are in feet referenced to Slot	Database: VA_MPL_EasternUS_Defn

Gyrodatta MS Gyro <17-1/2>(50-328) : 0.06° Inc, 59.50ft MD, 59.50ft TVD, 0.00ft VS
 Gyrodatta MS Gyro <12-1/4>(328)(358-538) : 0.16° Inc, 367.50ft MD, 367.50ft TVD, 0.05ft VS
 Directional ONE MWD <12-1/4>(538)(594-2492) : 3.11° Inc, 603.50ft MD, 603.44ft TVD, -0.31ft VS

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Neat Pad	1658012.200	14315414.605	80°56'15.700"W
Slot #04	16.20	10.98	39°25'17.450"N
Jack Unit 3H	1658023.171	14315430.855	80°56'15.500"W
Frontier 22 (RKB) to Ground level (At Slot: Slot #04)			24.5ft
Mean Sea Level to Ground level (At Slot: Slot #04)			-1005ft
Frontier 22 (RKB) to Mean Sea Level			1029.5ft

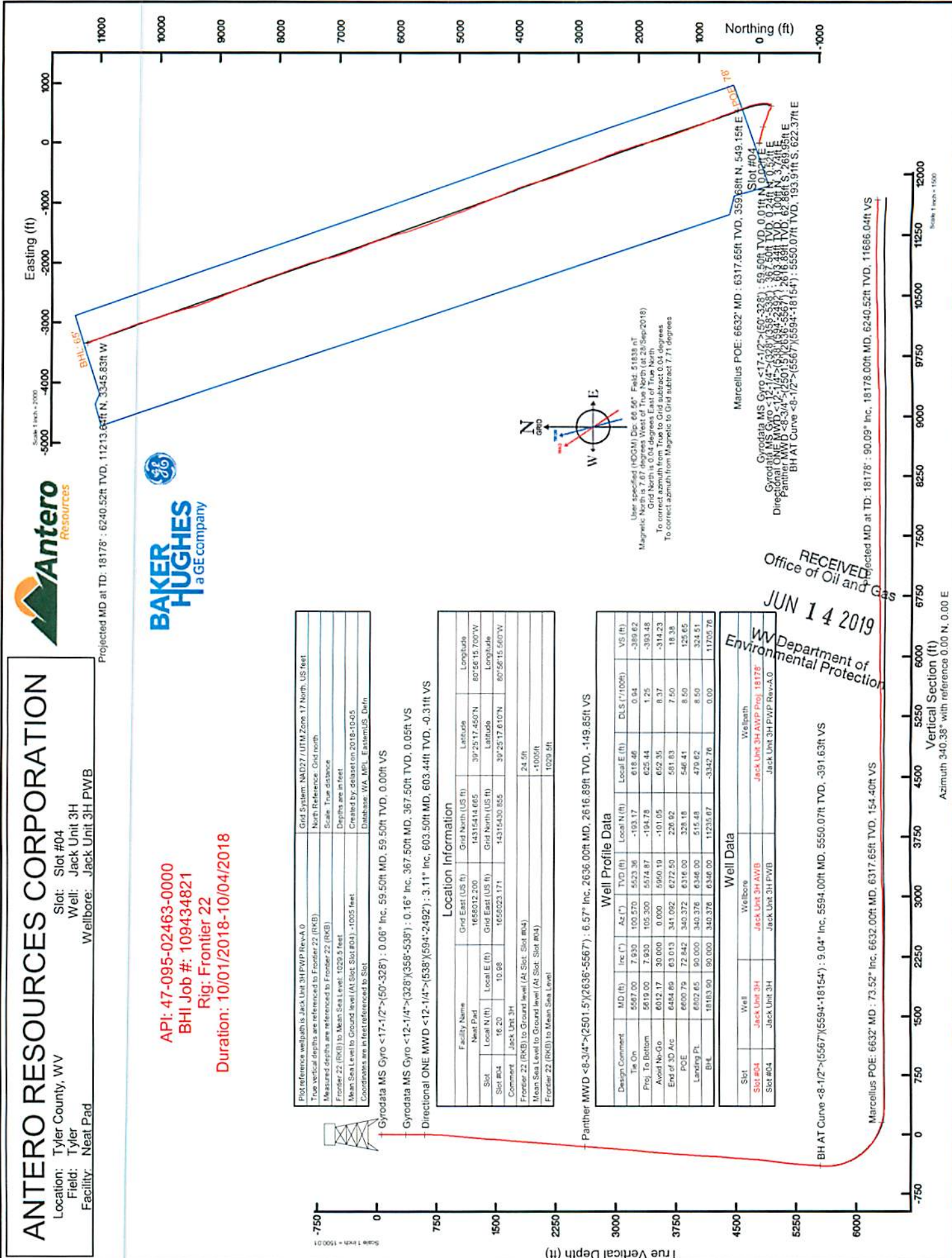
Panther MWD <8-3/4>(2501.5)(2636-5567) : 6.57° Inc, 2636.00ft MD, 2616.89ft TVD, -149.85ft VS

Well Profile Data						
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)
Top On	5567.00	7.930	100.570	5523.36	-103.17	618.46
Proj. To Bottom	5619.00	7.930	105.300	5574.87	-104.75	625.44
Avoid No-Go	6012.17	30.000	0.000	5950.19	-101.05	652.35
End of 3D Arc	6484.89	63.013	341.092	6272.50	226.02	581.83
POE	6600.79	72.842	340.372	6316.00	328.18	546.41
Landing PL	6602.65	90.000	340.376	6346.00	515.48	479.62
BH-L	18183.90	90.000	340.376	6346.00	11235.67	-3342.76
						11705.76

Well Data		
Slot	Well	Wellpath
Slot #04	Jack Unit 3H	Jack Unit 3H AWP Proj. 18178
Slot #04	Jack Unit 3H	Jack Unit 3H PWB Rev-A 0

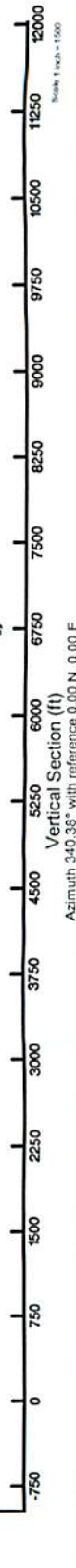
BH AT Curve <8-1/2>(5567)(5594-18154) : 9.04° Inc, 5594.00ft MD, 5550.07ft TVD, -391.63ft VS

Marcellus POE: 6632° MD : 73.52° Inc, 6632.00ft MD, 6317.65ft TVD, 154.40ft VS



User specified (HCOM) Dip: 66.56° Field: 51838 n°
 Magnetic North is 7.87 degrees West of True North (at 28-Sep-2018)
 Grid magnetic North is 7.71 degrees West of True North
 To correct tabsum from Magnetic to Grid subtract 7.71 degrees

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Actual Wellpath Report

Jack Unit 3H AWP Proj: 18178'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Jack Unit 3H
Field	Tyler	Wellbore	Jack Unit 3H AWB
Facility	Neat Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999600	Report Generated	05/Oct/2018 at 15:40
Convergence at slot	0.04° East	Database/Source file	WA_MPL_EasternUS_Defn/Jack_Unit_3H_AWP_Proj_18178_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	16.20	10.98	1658023.17	14315430.86	39°25'17.610"N	80°56'15.560"W
Facility Reference Pt			1658012.20	14315414.67	39°25'17.450"N	80°56'15.700"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM

Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	1029.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	1029.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Ground Level at Slot (Slot #04)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	340.38°

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Facility	Neat Pad		

WELLPATH DATA (224 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 ft/100ft	Bulld Rate ft/100ft	Turn Rate ft/100ft	Comments
0.00	0.00	64.590	0.00	0.00	0.00	0.00	1658023.17	14315430.86	39°25'17.610"N	80°56'15.560"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	64.590	24.50	0.00	0.00	0.00	1658023.17	14315430.86	39°25'17.610"N	80°56'15.560"W	0.00	0.000	0.00	0.00	0.00	
59.50	0.060	64.590	59.50	0.00	0.01	0.02	1658023.19	14315430.86	39°25'17.610"N	80°56'15.560"W	0.02	64.590	0.17	0.17	184.54	Syrodata MS Gyro <17-1/2">-(50'-328')
84.50	0.310	71.790	84.50	0.00	0.03	0.09	1658023.26	14315430.89	39°25'17.610"N	80°56'15.559"W	0.10	69.508	1.00	1.00	28.80	
109.50	0.110	56.690	109.50	0.01	0.07	0.18	1658023.35	14315430.92	39°25'17.611"N	80°56'15.558"W	0.19	68.706	0.82	-0.80	-60.64	
134.50	0.180	23.860	134.50	0.04	0.12	0.21	1658023.38	14315430.97	39°25'17.611"N	80°56'15.557"W	0.24	60.984	0.42	0.28	-131.00	
159.50	0.190	37.490	159.50	0.09	0.19	0.25	1658023.43	14315431.04	39°25'17.612"N	80°56'15.557"W	0.32	53.657	0.18	0.04	54.44	
184.50	0.120	33.370	184.50	0.13	0.24	0.29	1658023.46	14315431.10	39°25'17.612"N	80°56'15.556"W	0.38	50.548	0.28	-0.28	-16.48	
209.50	0.080	43.300	209.50	0.15	0.28	0.32	1658023.49	14315431.13	39°25'17.613"N	80°56'15.556"W	0.42	49.201	0.17	-0.16	39.72	
234.50	0.210	49.680	234.50	0.18	0.32	0.37	1658023.54	14315431.17	39°25'17.613"N	80°56'15.555"W	0.49	49.035	0.52	0.52	25.52	
259.50	0.060	138.440	259.50	0.18	0.34	0.41	1658023.58	14315431.19	39°25'17.613"N	80°56'15.555"W	0.53	50.500	0.87	-0.50	355.04	
284.50	0.170	135.020	284.50	0.14	0.30	0.45	1658023.62	14315431.16	39°25'17.613"N	80°56'15.554"W	0.54	55.830	0.44	0.44	-13.66	
309.50	0.190	88.470	309.50	0.09	0.28	0.51	1658023.68	14315431.13	39°25'17.613"N	80°56'15.553"W	0.58	61.616	0.57	0.08	-186.20	
334.50	0.030	210.420	334.50	0.07	0.27	0.55	1658023.72	14315431.13	39°25'17.613"N	80°56'15.553"W	0.61	63.677	0.83	-0.64	487.80	
337.50	0.020	163.640	337.50	0.07	0.27	0.55	1658023.72	14315431.13	39°25'17.613"N	80°56'15.553"W	0.61	63.765	0.73	-0.33	-1559.33	
367.50	0.160	232.490	367.50	0.05	0.24	0.52	1658023.69	14315431.10	39°25'17.612"N	80°56'15.553"W	0.57	65.101	0.51	0.47	229.50	Syrodata MS Gyro <12-1/4">-(328'-(358'-538'))
457.50	0.190	323.530	457.50	0.16	0.28	0.33	1658023.50	14315431.14	39°25'17.613"N	80°56'15.556"W	0.44	49.306	0.28	0.03	101.16	
547.50	1.590	79.550	547.49	0.10	0.63	1.47	1658024.64	14315431.49	39°25'17.616"N	80°56'15.541"W	1.60	66.771	1.87	1.56	128.91	
603.50	3.110	81.210	603.44	-0.31	1.00	3.74	1658026.91	14315431.86	39°25'17.620"N	80°56'15.512"W	3.87	74.966	2.72	2.71	2.96	Directional ONE MWD <12-1/4">-(538'-(594'-2492'))
694.50	5.140	85.580	694.20	-1.84	1.70	10.24	1658033.41	14315432.55	39°25'17.627"N	80°56'15.430"W	10.38	80.599	2.26	2.23	4.80	
784.50	5.990	92.080	783.77	-4.63	1.84	18.95	1658042.12	14315432.69	39°25'17.628"N	80°56'15.318"W	19.04	84.468	1.17	0.94	7.22	
877.50	7.940	100.900	876.15	-9.45	0.54	29.64	1658052.80	14315431.39	39°25'17.615"N	80°56'15.182"W	29.64	88.964	1.82	1.45	9.48	
971.50	7.920	104.340	969.31	-16.11	-2.20	41.81	1658064.96	14315428.65	39°25'17.588"N	80°56'15.027"W	41.86	93.017	0.79	0.62	3.66	
1065.50	8.080	111.760	1062.40	-24.10	-6.26	54.22	1658077.37	14315424.60	39°25'17.548"N	80°56'14.869"W	54.58	96.583	1.11	0.17	7.89	
1160.50	8.160	110.650	1156.45	-32.87	-11.11	66.73	1658089.87	14315419.75	39°25'17.500"N	80°56'14.710"W	67.65	99.452	0.19	0.08	-1.17	
1254.50	8.110	107.670	1249.50	-41.20	-15.47	79.29	1658102.43	14315415.39	39°25'17.457"N	80°56'14.550"W	80.78	101.044	0.45	-0.05	-3.17	
1348.50	8.300	106.480	1342.54	-49.21	-19.41	92.11	1658115.24	14315411.45	39°25'17.416"N	80°56'14.366"W	94.13	101.901	0.27	0.20	-1.27	
1442.50	8.230	103.810	1435.57	-56.92	-22.94	105.15	1658128.28	14315407.92	39°25'17.383"N	80°56'14.220"W	107.62	102.308	0.42	-0.07	-2.84	
1536.50	8.660	101.460	1528.55	-64.28	-25.95	118.62	1658141.74	14315404.91	39°25'17.353"N	80°56'14.049"W	121.43	102.342	0.59	0.46	-2.50	
1630.50	8.730	101.430	1621.47	-71.61	-28.77	132.55	1658155.67	14315402.09	39°25'17.325"N	80°56'13.871"W	135.63	102.248	0.07	0.07	-0.03	

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Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Jack Unit 3H
Field	Tyler	Wellbore	Jack Unit 3H AWB
Facility	Neat Pad		

WELLPATH DATA (224 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
1724.50	8.420	99.610	1714.42	-78.65	-31.34	146.32	1658169.44	14315399.53	39°25'17.299"N	80°56'13.696"W	149.64	102.088	0.44	-0.33	-1.94	
1818.50	8.140	100.950	1807.44	-85.40	-33.75	159.64	1658182.75	14315397.12	39°25'17.275"N	80°56'13.526"W	163.17	101.937	0.36	-0.30	1.43	
1913.50	7.570	102.130	1901.54	-92.11	-36.34	172.37	1658195.47	14315394.53	39°25'17.250"N	80°56'13.364"W	176.15	101.906	0.62	-0.60	1.24	
2007.50	8.100	103.010	1994.67	-98.94	-39.13	184.87	1658207.97	14315391.74	39°25'17.222"N	80°56'13.205"W	188.97	101.952	0.58	0.56	0.94	
2101.50	8.950	104.420	2087.63	-106.60	-42.45	198.41	1658221.50	14315388.43	39°25'17.189"N	80°56'13.032"W	202.89	102.076	0.93	0.90	1.50	
2195.50	8.510	107.100	2180.54	-114.85	-46.31	212.13	1658235.22	14315384.56	39°25'17.151"N	80°56'12.857"W	217.13	102.315	0.64	-0.47	2.86	
2289.50	8.120	107.120	2273.55	-122.98	-50.31	225.13	1658248.21	14315380.56	39°25'17.111"N	80°56'12.692"W	230.68	102.597	0.41	-0.41	0.02	
2383.50	8.160	106.910	2366.60	-130.93	-54.21	237.85	1658260.93	14315376.69	39°25'17.073"N	80°56'12.530"W	243.95	102.838	0.05	0.04	-0.22	
2477.50	7.970	106.900	2459.67	-138.77	-58.04	250.47	1658273.54	14315372.84	39°25'17.035"N	80°56'12.369"W	257.11	103.047	0.20	-0.20	-0.01	
2501.50	7.790	106.690	2483.45	-140.73	-58.99	253.62	1658276.69	14315371.89	39°25'17.025"N	80°56'12.329"W	260.39	103.094	0.76	-0.75	-0.87	
2636.00	6.570	99.320	2616.89	-149.85	-62.86	259.95	1658293.01	14315368.02	39°25'16.987"N	80°56'12.121"W	277.17	103.107	1.13	-0.91	-5.48	Panther MWD <-8-3/4">(2501.5)(2636-5567)
2731.00	7.360	111.340	2711.20	-156.47	-65.95	280.98	1658304.04	14315364.93	39°25'16.956"N	80°56'11.980"W	288.61	103.209	1.74	0.83	12.65	
2826.00	6.430	100.900	2805.51	-163.16	-69.17	291.87	1658314.92	14315361.71	39°25'16.924"N	80°56'11.841"W	299.95	103.333	1.64	-0.98	-10.99	
2920.00	6.720	117.680	2898.90	-169.87	-72.72	301.91	1658324.96	14315358.16	39°25'16.889"N	80°56'11.714"W	310.55	103.543	2.06	0.31	17.85	
3015.00	8.370	113.550	2993.08	-178.69	-78.07	313.17	1658336.22	14315352.82	39°25'16.836"N	80°56'11.570"W	322.76	103.997	1.83	1.74	-4.36	
3115.00	7.380	100.960	3092.14	-186.94	-82.20	326.15	1658349.19	14315348.69	39°25'16.795"N	80°56'11.405"W	336.35	104.145	1.98	-0.99	-12.59	
3210.00	8.240	105.450	3186.26	-193.95	-85.17	338.70	1658361.74	14315345.72	39°25'16.766"N	80°56'11.245"W	349.25	104.115	1.11	0.91	4.73	
3306.00	8.340	113.550	3281.26	-202.67	-89.78	351.72	1658374.75	14315341.11	39°25'16.720"N	80°56'11.079"W	363.00	104.320	1.22	0.10	8.44	
3400.00	7.890	124.290	3374.32	-212.55	-96.14	363.30	1658386.32	14315334.75	39°25'16.657"N	80°56'10.932"W	375.80	104.823	1.68	-0.48	11.43	
3495.00	7.160	108.010	3468.51	-221.43	-101.65	374.32	1658397.34	14315329.25	39°25'16.603"N	80°56'10.791"W	387.87	105.193	2.36	-0.77	-17.14	
3589.00	7.250	112.430	3561.77	-228.98	-105.72	385.37	1658408.39	14315325.18	39°25'16.562"N	80°56'10.650"W	399.61	105.341	0.60	0.10	4.70	
3684.00	6.850	112.810	3656.05	-238.82	-110.21	396.13	1658419.14	14315320.69	39°25'16.518"N	80°56'10.513"W	411.18	105.547	0.42	-0.42	0.40	
3779.00	6.670	115.550	3750.39	-244.56	-114.78	406.33	1658429.34	14315316.12	39°25'16.473"N	80°56'10.383"W	422.23	105.774	0.39	-0.19	2.88	
3875.00	7.610	104.310	3845.65	-252.06	-118.76	417.52	1658440.53	14315312.15	39°25'16.433"N	80°56'10.241"W	434.08	105.878	1.75	0.98	-11.71	
3969.00	7.620	105.040	3938.82	-259.08	-121.91	429.57	1658452.57	14315308.99	39°25'16.402"N	80°56'10.087"W	446.54	105.844	0.10	0.01	0.78	
4063.00	4.940	101.940	4032.25	-264.74	-124.37	439.55	1658462.55	14315306.54	39°25'16.378"N	80°56'09.960"W	456.81	105.798	2.87	-2.85	-3.30	
4159.00	5.690	103.280	4127.84	-269.49	-126.32	448.23	1658471.22	14315304.59	39°25'16.358"N	80°56'09.850"W	465.69	105.738	0.79	0.78	1.40	
4253.00	6.220	101.210	4221.33	-274.63	-128.38	457.76	1658480.75	14315302.53	39°25'16.338"N	80°56'09.728"W	475.42	105.666	0.61	0.56	-2.20	
4347.00	7.120	112.950	4314.70	-281.18	-131.64	468.12	1658491.10	14315299.27	39°25'16.306"N	80°56'09.596"W	486.28	105.706	1.73	0.96	12.49	
4443.00	8.090	117.520	4409.85	-290.16	-137.08	479.59	1658502.57	14315293.83	39°25'16.252"N	80°56'09.450"W	498.80	105.951	1.19	1.01	4.76	

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Field	Tyler	Wellbore	Jack Unit 3H AWB
Facility	Neat Pad		

WELLPATH DATA (224 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
4538.00	7.490	94.040	4504.00	-297.54	-140.61	1491.70	1658514.67	14315280.31	39°25'16.217"N	80°56'09.296"W	511.41	105.958	3.38	-0.63	-24.72	
4633.00	7.900	95.130	4598.14	-302.76	-141.63	1504.38	1658527.34	14315289.29	39°25'16.207"N	80°56'09.134"W	523.88	105.684	0.46	0.43	1.15	
4728.00	7.180	104.650	4692.33	-308.84	-143.71	1516.62	1658539.59	14315287.20	39°25'16.186"N	80°56'08.978"W	536.24	105.545	1.52	-0.76	10.02	
4822.00	7.170	116.270	4785.59	-316.36	-147.79	1527.57	1658550.53	14315283.12	39°25'16.146"N	80°56'08.839"W	547.88	105.650	1.54	-0.01	12.36	
4917.00	8.430	123.840	4879.72	-326.21	-154.30	1538.67	1658561.62	14315276.62	39°25'16.081"N	80°56'08.697"W	560.33	105.984	1.71	1.33	7.97	
5011.00	9.150	129.340	4972.61	-338.15	-162.87	1550.17	1658573.12	14315268.05	39°25'15.996"N	80°56'08.551"W	573.77	106.491	1.18	0.77	5.85	
5105.00	8.680	132.010	5065.49	-350.73	-172.30	1561.16	1658584.11	14315258.62	39°25'15.903"N	80°56'08.411"W	587.02	107.069	0.75	-0.61	2.84	
5200.00	7.760	110.850	5159.55	-361.13	-179.33	1572.42	1658595.37	14315251.60	39°25'15.834"N	80°56'08.268"W	599.86	107.395	3.26	-0.86	-22.27	
5296.00	7.710	109.350	5254.67	-369.38	-183.77	1584.56	1658607.49	14315247.16	39°25'15.790"N	80°56'08.113"W	612.76	107.452	0.22	-0.05	-1.56	
5389.00	7.500	111.730	5346.86	-377.32	-188.08	1596.08	1658619.01	14315242.85	39°25'15.747"N	80°56'07.966"W	625.05	107.512	0.41	-0.23	2.56	
5484.00	7.180	99.020	5441.08	-384.26	-191.31	1607.71	1658630.63	14315239.62	39°25'15.715"N	80°56'07.818"W	637.11	107.474	1.74	-0.34	-13.38	
5587.00	7.930	100.570	5523.36	-389.62	-193.17	1618.46	1658641.38	14315237.76	39°25'15.696"N	80°56'07.681"W	647.92	107.346	0.94	0.90	1.87	
5594.00	9.040	100.820	5550.07	-391.63	-193.91	1622.37	1658645.29	14315237.02	39°25'15.689"N	80°56'07.631"W	651.88	107.306	4.11	4.11	0.93	BH AT Curve <8-1/2'> (5567')(5594'-18154')
5626.00	9.670	93.290	5581.64	-393.95	-194.54	1627.52	1658650.44	14315236.39	39°25'15.683"N	80°56'07.566"W	656.99	107.224	4.30	1.97	-23.53	
5671.00	11.310	74.850	5625.90	-395.77	-193.60	1635.56	1658658.47	14315237.33	39°25'15.692"N	80°56'07.463"W	664.39	106.942	8.26	3.64	-40.98	
5721.00	12.810	55.170	5674.82	-394.70	-189.15	1644.85	1658667.76	14315241.78	39°25'15.736"N	80°56'07.345"W	672.02	106.348	8.70	3.00	-39.36	
5785.00	14.070	38.170	5717.63	-390.57	-182.16	1652.16	1658675.07	14315248.77	39°25'15.805"N	80°56'07.252"W	677.12	105.606	9.39	2.86	-38.64	
5816.00	16.250	23.700	5766.87	-382.07	-170.75	1658.86	1658681.77	14315260.18	39°25'15.918"N	80°56'07.166"W	680.63	104.529	8.53	4.27	-28.37	
5861.00	18.900	15.640	5809.77	-371.53	-157.96	1663.36	1658686.26	14315272.96	39°25'16.044"N	80°56'07.109"W	681.91	103.394	7.98	5.89	-17.91	
5912.00	22.260	9.830	5857.51	-356.37	-140.48	1667.24	1658690.14	14315290.43	39°25'16.217"N	80°56'07.059"W	681.86	101.889	7.70	6.59	-11.39	
5956.00	25.050	5.080	5897.82	-340.64	-122.99	1669.48	1658692.39	14315307.92	39°25'16.390"N	80°56'07.030"W	680.69	100.409	7.67	6.34	-10.80	
6007.00	28.190	1.270	5943.41	-319.57	-100.18	1670.71	1658693.61	14315330.71	39°25'16.615"N	80°56'07.014"W	678.15	98.495	7.01	6.16	-7.47	
6052.00	31.700	358.710	5982.40	-298.41	-77.73	1670.68	1658693.58	14315353.16	39°25'16.837"N	80°56'07.015"W	675.17	96.611	8.30	7.80	-5.69	
6102.00	35.190	356.260	6024.11	-272.08	-50.21	1669.44	1658692.34	14315380.67	39°25'17.109"N	80°56'07.030"W	671.32	94.289	7.48	6.98	-4.90	
6147.00	38.590	354.400	6060.10	-245.98	-23.29	1667.22	1658690.13	14315407.57	39°25'17.375"N	80°56'07.058"W	667.63	91.999	7.95	7.56	-4.13	
6198.00	42.480	351.550	6098.95	-213.64	9.59	1663.14	1658686.04	14315440.44	39°25'17.700"N	80°56'07.110"W	663.21	89.172	8.45	7.63	-5.59	
6245.00	46.400	348.270	6132.41	-181.19	41.97	1657.34	1658680.25	14315472.80	39°25'18.020"N	80°56'07.183"W	658.68	86.347	9.66	8.34	-6.98	
6292.00	50.920	345.870	6163.64	-146.32	76.18	1649.47	1658672.38	14315507.01	39°25'18.358"N	80°56'07.284"W	653.92	83.310	9.17	8.34	-5.11	
6339.00	54.550	344.140	6192.27	-109.18	112.16	1639.81	1658662.73	14315542.97	39°25'18.714"N	80°56'07.406"W	649.57	80.057	9.54	9.09	-3.68	Middlesex: 6339' MD
6386.00	59.070	342.070	6217.98	-69.90	149.79	1628.36	1658651.28	14315580.58	39°25'19.086"N	80°56'07.552"W	645.97	76.592	10.22	9.53	-4.40	



Actual Wellpath Report

Jack Unit 3H AWP Proj: 18178'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #04
Operator	ANTERO RESOURCES CORPORATION	Well	Jack Unit 3H
Area	Tyler County, WV	Wellbore	Jack Unit 3H AWB
Field	Tyler		
Facility	Neat Pad		

WELLPATH DATA (224 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6433.00	63.330	340.620	6240.62	-28.73	188.80	615.18	1658638.11	14315619.58	39°25'19.472"N	80°56'07.719"W	643.50	72.939	9.48	9.06	-3.09	
6481.00	64.990	339.770	6261.54	14.47	229.44	600.55	1658623.48	14315660.20	39°25'19.874"N	80°56'07.906"W	642.88	69.090	3.81	3.46	-1.77	
6523.00†	65.749	338.652	6279.04	52.64	265.13	566.99	1658609.93	14315685.88	39°25'20.226"N	80°56'08.078"W	644.09	65.692	3.02	1.81	-2.66	Burkett: 6523' MD
6528.00	65.840	338.520	6281.09	57.20	269.38	565.33	1658608.26	14315700.13	39°25'20.268"N	80°56'08.099"W	644.34	65.287	3.02	1.82	-2.64	
6576.00	68.810	337.790	6299.60	101.45	310.48	568.85	1658591.79	14315741.21	39°25'20.675"N	80°56'08.309"W	648.06	61.374	6.34	6.19	-1.52	
6580.00†	69.150	337.847	6301.03	105.18	313.94	567.44	1658590.38	14315744.67	39°25'20.709"N	80°56'08.327"W	648.49	61.046	8.61	8.51	1.41	Tully: 6580' MD
6623.00	72.810	338.440	6315.04	145.79	351.66	562.31	1658575.26	14315782.38	39°25'21.082"N	80°56'08.519"W	654.76	57.514	8.61	8.51	1.38	
6632.00†	73.524	338.583	6317.65	154.40	359.68	549.15	1658572.10	14315790.39	39°25'21.161"N	80°56'08.559"W	656.46	56.776	8.08	7.94	1.61	Marcellus POE: 6632' MD
6671.00	76.620	339.200	6327.69	192.07	394.83	535.59	1658558.54	14315825.53	39°25'21.509"N	80°56'08.732"W	665.39	53.603	8.08	7.94	1.58	
6718.00	81.290	339.720	6336.70	238.18	438.02	519.41	1658542.37	14315868.70	39°25'21.936"N	80°56'08.938"W	679.44	49.859	10.00	9.94	1.11	
6766.00	85.500	339.920	6342.22	285.85	482.76	502.96	1658525.93	14315913.42	39°25'22.378"N	80°56'09.147"W	697.16	48.174	8.78	8.77	0.42	
6813.00	90.370	340.530	6343.91	332.80	526.95	487.08	1658510.05	14315957.59	39°25'22.815"N	80°56'09.349"W	717.58	42.748	10.44	10.36	1.30	
6862.00	90.550	340.180	6343.52	381.80	573.09	470.60	1658493.59	14316003.72	39°25'23.271"N	80°56'09.558"W	741.55	39.392	0.80	0.37	-0.71	
6956.00	90.430	338.510	6342.71	475.78	661.04	437.45	1658460.44	14316091.63	39°25'24.140"N	80°56'09.980"W	792.68	33.495	1.78	-0.13	-1.78	
7051.00	90.460	336.810	6341.97	570.66	748.91	401.34	1658424.35	14316179.46	39°25'25.009"N	80°56'10.439"W	849.67	28.187	1.79	0.03	-1.79	
7145.00	90.370	337.460	6341.29	664.51	835.52	364.82	1658387.84	14316266.04	39°25'25.865"N	80°56'10.904"W	911.69	23.588	0.70	-0.10	0.69	
7240.00	90.460	338.800	6340.61	759.43	923.68	329.43	1658352.47	14316354.16	39°25'26.737"N	80°56'11.354"W	980.67	19.629	1.41	0.09	1.41	
7335.00	90.370	339.100	6339.92	854.40	1012.34	295.31	1658318.36	14316442.78	39°25'27.613"N	80°56'11.788"W	1054.53	16.263	0.33	-0.09	0.32	
7430.00	90.620	339.260	6339.10	949.38	1101.13	261.55	1658284.61	14316531.54	39°25'28.491"N	80°56'12.217"W	1131.76	13.362	0.31	0.26	0.17	
7524.00	90.520	339.030	6338.16	1043.35	1188.97	228.08	1658251.16	14316619.34	39°25'29.360"N	80°56'12.643"W	1210.65	10.859	0.27	-0.11	-0.24	
7619.00	90.370	338.230	6337.42	1138.30	1277.43	193.47	1658216.56	14316707.77	39°25'30.234"N	80°56'13.063"W	1292.00	8.612	0.86	-0.16	-0.84	
7713.00	90.180	339.830	6336.97	1232.27	1365.20	159.83	1658182.93	14316795.51	39°25'31.102"N	80°56'13.511"W	1374.53	6.677	1.71	-0.20	1.70	
7808.00	90.120	341.250	6336.72	1327.27	1454.77	128.18	1658151.30	14316885.04	39°25'31.987"N	80°56'13.914"W	1460.41	5.035	1.50	-0.06	1.49	
7903.00	90.180	342.670	6336.47	1422.23	1545.10	98.76	1658121.89	14316975.33	39°25'32.880"N	80°56'14.288"W	1548.25	3.657	1.50	0.06	1.49	
7997.00	90.220	342.990	6336.15	1516.14	1634.91	71.01	1658094.15	14317065.11	39°25'33.768"N	80°56'14.641"W	1636.45	2.487	0.34	0.04	0.34	
8092.00	89.820	342.870	6336.11	1611.05	1725.72	43.13	1658066.28	14317155.89	39°25'34.666"N	80°56'14.995"W	1726.26	1.431	0.44	-0.42	-0.13	
8187.00	90.680	345.510	6335.70	1705.83	1817.12	17.25	1658040.41	14317247.25	39°25'35.569"N	80°56'15.324"W	1817.20	0.544	2.92	0.91	2.78	
8282.00	91.200	345.400	6334.14	1800.44	1909.06	-6.61	1658016.56	14317339.15	39°25'36.478"N	80°56'15.627"W	1909.07	359.802	0.56	0.55	-0.12	
8375.00	90.710	341.420	6332.59	1893.28	1998.16	-33.15	1657990.03	14317428.21	39°25'37.359"N	80°56'15.965"W	1998.44	359.049	4.31	-0.53	-4.28	
8469.00	90.460	340.550	6331.63	1987.27	2087.03	-63.78	1657959.42	14317517.04	39°25'38.238"N	80°56'16.354"W	2088.00	359.250	0.96	-0.27	-0.93	

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Environmental Protection



Actual Wellpath Report

Jack Unit 3H AWP Proj: 18178'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Jack Unit 3H
Field	Tyler	Wellbore	Jack Unit 3H AWB
Facility	Neat Pad		

WELLPATH DATA (224 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 (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
8564.00	90.090	341.630	6331.17	2082.26	2176.95	-94.41	1657928.80	14317605.93	39°25'39.125"N	80°56'16.744"W	2179.00	357.517	1.40	-0.39	1.35	
8659.00	91.200	343.380	6330.10	2177.18	2257.59	-122.81	1657900.41	14317697.54	39°25'40.023"N	80°56'17.105"W	2270.92	356.900	2.01	1.17	1.63	
8754.00	90.490	339.070	6328.70	2272.13	2357.51	-153.37	1657869.86	14317787.42	39°25'40.911"N	80°56'17.494"W	2362.49	356.278	4.60	-0.75	-4.54	
8849.00	90.580	338.640	6327.82	2367.09	2446.11	-187.64	1657835.61	14317875.98	39°25'41.787"N	80°56'17.930"W	2453.29	355.613	0.46	0.09	-0.45	
8943.00	90.740	337.170	6326.73	2461.00	2533.20	-222.99	1657800.27	14317963.03	39°25'42.648"N	80°56'18.379"W	2542.99	354.969	1.57	0.17	-1.56	
9039.00	90.680	336.890	6325.54	2556.83	2621.58	-260.46	1657762.82	14318051.38	39°25'43.522"N	80°56'18.856"W	2634.48	354.326	0.30	-0.06	-0.29	
9133.00	90.520	336.140	6324.56	2650.61	2707.79	-297.91	1657725.38	14318137.55	39°25'44.374"N	80°56'19.333"W	2724.12	353.722	0.82	-0.17	-0.80	
9228.00	90.550	337.340	6323.87	2745.41	2795.06	-335.43	1657687.88	14318224.79	39°25'45.237"N	80°56'19.810"W	2815.11	353.157	1.26	0.03	1.26	
9324.00	90.490	338.790	6322.80	2841.32	2884.10	-371.29	1657652.03	14318313.80	39°25'46.118"N	80°56'20.266"W	2907.90	352.664	1.51	-0.06	1.51	
9418.00	90.490	338.490	6322.00	2935.28	2971.64	-405.52	1657617.61	14318401.30	39°25'46.983"N	80°56'20.702"W	2999.18	352.229	0.32	0.00	-0.32	
9513.00	90.310	339.090	6321.33	3030.24	3060.21	-439.89	1657583.46	14318489.83	39°25'47.858"N	80°56'21.139"W	3091.66	351.820	0.66	-0.19	0.63	
9607.00	90.520	340.310	6320.65	3124.23	3148.36	-472.50	1657550.86	14318577.95	39°25'48.730"N	80°56'21.564"W	3183.62	351.465	1.32	0.22	1.30	
9702.00	90.620	339.040	6319.71	3219.21	3237.44	-505.50	1657517.88	14318667.00	39°25'49.611"N	80°56'21.974"W	3276.67	351.125	1.34	0.11	-1.34	
9797.00	90.370	340.290	6318.89	3314.20	3326.52	-538.51	1657484.88	14318756.03	39°25'50.491"N	80°56'22.393"W	3369.82	350.805	1.34	-0.26	1.32	
9890.00	90.580	341.510	6318.12	3407.19	3414.39	-568.94	1657454.46	14318843.88	39°25'51.360"N	80°56'22.781"W	3461.47	350.540	1.33	0.23	1.31	
9985.00	90.460	343.900	6317.25	3502.10	3505.09	-597.18	1657426.23	14318934.53	39°25'52.256"N	80°56'23.140"W	3555.59	350.331	2.52	-0.13	2.52	
10080.00	90.400	343.600	6316.54	3596.93	3596.29	-623.76	1657399.66	14319025.70	39°25'53.158"N	80°56'23.478"W	3649.98	350.160	0.32	-0.06	-0.32	
10175.00	90.490	345.580	6315.80	3691.67	3687.87	-649.00	1657374.43	14319117.24	39°25'54.063"N	80°56'23.799"W	3744.54	350.019	2.09	0.09	2.08	
10270.00	90.620	345.310	6314.88	3786.30	3779.81	-672.87	1657350.57	14319209.15	39°25'54.972"N	80°56'24.102"W	3839.24	349.906	0.32	0.14	-0.28	
10365.00	91.510	341.720	6313.12	3881.12	3870.88	-699.82	1657323.63	14319300.18	39°25'55.872"N	80°56'24.445"W	3933.63	349.752	3.89	0.94	-3.78	
10460.00	90.460	339.740	6311.48	3976.10	3960.53	-731.17	1657292.30	14319389.80	39°25'56.759"N	80°56'24.843"W	4027.46	349.540	2.36	-1.11	-2.08	
10555.00	90.340	338.130	6310.82	4071.06	4049.18	-765.31	1657258.17	14319478.41	39°25'57.635"N	80°56'25.278"W	4120.87	349.297	1.70	-0.13	-1.69	
10650.00	90.430	337.500	6310.18	4165.96	4137.14	-801.18	1657222.31	14319566.34	39°25'58.505"N	80°56'25.734"W	4214.01	349.040	0.67	0.09	-0.66	
10745.00	90.860	337.220	6309.11	4260.83	4224.82	-837.75	1657185.76	14319653.98	39°25'59.372"N	80°56'26.200"W	4307.08	348.784	0.54	0.45	-0.29	
10840.00	90.250	337.690	6308.19	4355.70	4312.55	-874.17	1657149.35	14319741.68	39°26'00.239"N	80°56'26.663"W	4400.26	348.541	0.81	-0.64	0.49	
10935.00	90.310	339.010	6307.73	4450.63	4409.85	-909.22	1657114.32	14319829.94	39°26'01.112"N	80°56'27.109"W	4493.79	348.327	1.39	0.06	1.39	
11030.00	90.430	339.230	6307.11	4545.61	4489.61	-943.08	1657080.47	14319918.66	39°26'01.989"N	80°56'27.540"W	4587.59	348.137	0.26	0.13	-1.03	
11125.00	90.550	338.250	6306.30	4640.57	4578.14	-977.52	1657046.04	14320007.15	39°26'02.864"N	80°56'27.978"W	4681.34	347.947	1.04	0.13	-1.03	
11220.00	90.460	337.860	6305.46	4735.48	4666.25	-1013.02	1657010.55	14320095.23	39°26'03.736"N	80°56'28.430"W	4774.95	347.761	0.42	-0.09	-0.41	
11316.00	90.460	336.580	6304.69	4831.33	4754.76	-1050.19	1656973.40	14320183.70	39°26'04.611"N	80°56'28.903"W	4869.36	347.545	1.33	0.00	-1.33	

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Actual Wellpath Report

Jack Unit 3H AWP Proj: 18178'
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #04
Operator	ANTERO RESOURCES CORPORATION	Well	Jack Unit 3H
Area	Tyler County, WV	Wellbore	Jack Unit 3H AWB
Field	Tyler		
Facility	Neat Pad		

WELLPATH DATA (224 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (IUS ft)	Grid North (IUS ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (F'/100ft)	Build Rate (F'/100ft)	Turn Rate (F'/100ft)	Comments
11410.00	90.370	335.890	6304.01	4925.08	4840.79	-1088.07	1658993.54	14320269.70	39°26'05.481"N	80°56'29.385"W	4961.56	347.332	0.74	-0.10	-0.73	
11505.00	90.340	339.370	6303.42	5019.96	4928.62	-1124.22	1658899.40	14320357.50	39°26'06.329"N	80°56'29.845"W	5055.21	347.151	3.66	-0.03	3.66	
11600.00	90.620	341.290	6302.63	5114.95	5018.07	-1156.20	1658867.44	14320446.91	39°26'07.214"N	80°56'30.251"W	5149.55	347.025	2.04	0.29	2.02	
11695.00	91.450	340.280	6300.91	5209.93	5107.76	-1187.46	1658836.19	14320536.56	39°26'08.100"N	80°56'30.649"W	5243.98	346.912	1.38	0.87	-1.06	
11790.00	90.800	337.050	6299.05	5304.86	5196.22	-1222.01	1658801.65	14320624.99	39°26'08.975"N	80°56'31.089"W	5337.98	346.766	3.47	-0.68	-3.40	
11885.00	90.830	337.960	6297.69	5399.73	5283.98	-1258.35	1658765.33	14320712.72	39°26'09.842"N	80°56'31.551"W	5431.75	346.605	0.96	0.03	0.96	
11979.00	90.890	339.100	6296.28	5493.67	5371.45	-1292.75	1658730.94	14320800.15	39°26'10.707"N	80°56'31.989"W	5524.82	346.468	1.21	0.06	1.21	
12073.00	90.920	340.530	6294.80	5587.65	5459.66	-1325.18	1658698.52	14320888.32	39°26'11.579"N	80°56'32.402"W	5618.19	346.357	1.52	0.03	1.52	
12169.00	91.230	341.390	6293.00	5683.62	5550.39	-1356.49	1658667.22	14320979.02	39°26'12.476"N	80°56'32.800"W	5713.75	346.266	0.95	0.32	0.90	
12264.00	90.830	341.990	6291.29	5778.58	5640.54	-1386.41	1658637.32	14321069.13	39°26'13.367"N	80°56'33.181"W	5808.43	346.191	0.67	-0.42	0.53	
12358.00	90.580	340.130	6290.13	5872.57	5729.42	-1417.00	1658606.74	14321157.97	39°26'14.246"N	80°56'33.570"W	5902.04	346.108	1.89	-0.27	-1.87	
12453.00	90.550	340.570	6289.20	5967.56	5818.88	-1448.94	1658574.81	14321247.40	39°26'15.130"N	80°56'33.976"W	5996.56	346.017	0.46	-0.03	0.46	
12549.00	90.310	343.870	6288.48	6063.50	5910.28	-1478.25	1658545.51	14321338.76	39°26'16.034"N	80°56'34.349"W	6092.34	345.958	3.45	-0.25	3.44	
12643.00	90.620	345.580	6287.71	6157.22	6000.95	-1503.01	1658520.76	14321429.40	39°26'16.930"N	80°56'34.664"W	6186.31	345.939	1.85	0.33	1.82	
12738.00	90.860	344.990	6286.49	6251.86	6092.83	-1527.14	1658496.64	14321521.24	39°26'17.838"N	80°56'34.971"W	6281.30	345.929	0.67	0.25	-0.62	
12833.00	91.450	341.740	6284.57	6346.70	6183.82	-1554.33	1658469.47	14321612.19	39°26'18.738"N	80°56'35.316"W	6376.17	345.891	3.48	0.62	-3.42	
12927.00	90.520	340.670	6282.95	6440.68	6272.79	-1584.61	1658439.20	14321701.13	39°26'19.617"N	80°56'35.702"W	6469.85	345.823	1.51	-0.99	-1.14	
13021.00	90.490	342.060	6282.13	6534.66	6361.86	-1614.64	1658409.18	14321790.16	39°26'20.498"N	80°56'36.064"W	6563.56	345.759	1.48	-0.03	1.48	
13116.00	90.490	341.010	6281.31	6629.63	6451.96	-1644.73	1658379.10	14321880.23	39°26'21.389"N	80°56'36.466"W	6658.30	345.699	1.11	0.00	-1.11	
13211.00	90.770	337.380	6280.27	6724.59	6540.75	-1678.47	1658345.38	14321968.98	39°26'22.266"N	80°56'36.896"W	6752.68	345.607	3.83	0.29	-3.82	
13306.00	90.250	337.370	6279.42	6819.46	6628.43	-1715.01	1658308.85	14322058.63	39°26'23.133"N	80°56'37.361"W	6846.71	345.494	0.55	-0.55	-0.01	
13400.00	90.430	338.270	6278.87	6913.36	6715.48	-1750.50	1658273.38	14322143.63	39°26'23.994"N	80°56'37.812"W	6939.87	345.390	0.98	0.19	0.96	
13495.00	90.580	337.920	6278.03	7008.28	6803.61	-1785.94	1658237.95	14322231.74	39°26'24.865"N	80°56'38.263"W	7034.11	345.292	0.40	0.16	-0.37	
13588.00	90.520	339.720	6277.14	7101.24	6890.32	-1819.54	1658204.37	14322318.41	39°26'25.722"N	80°56'38.691"W	7128.52	345.208	1.94	-0.06	1.94	
13682.00	90.340	341.630	6276.43	7195.23	6979.02	-1850.64	1658173.27	14322407.07	39°26'26.589"N	80°56'39.087"W	7220.22	345.149	2.04	-0.19	2.03	
13777.00	90.180	344.910	6275.64	7290.10	7069.99	-1877.98	1658145.94	14322498.00	39°26'27.498"N	80°56'39.434"W	7315.16	345.124	3.46	-0.17	3.45	
13873.00	90.250	348.500	6275.64	7385.49	7163.40	-1900.06	1658123.88	14322591.38	39°26'28.422"N	80°56'39.715"W	7411.11	345.145	3.74	0.07	3.74	
13968.00	90.680	347.550	6274.87	7479.65	7256.33	-1919.77	1658104.18	14322684.27	39°26'29.340"N	80°56'39.966"W	7505.98	345.181	1.10	0.45	-1.00	
14062.00	90.580	342.830	6273.83	7573.28	7347.17	-1943.79	1658080.17	14322775.08	39°26'30.238"N	80°56'40.271"W	7599.95	345.181	5.02	-0.11	-5.02	
14157.00	90.770	341.630	6272.71	7668.22	7437.63	-1972.78	1658051.19	14322865.50	39°26'31.132"N	80°56'40.640"W	7694.82	345.145	1.28	0.20	-1.26	

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Jack Unit 3H
Field	Tyler	Wellbore	Jack Unit 3H AWB
Facility	Neat Pad		

WELLPATH DATA (224 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
14251.00	90.520	342.640	6271.66	7762.17	7527.09	-2001.61	1656022.36	14322954.92	39°26'32.017"N	80°56'41.007"W	7788.68	345.108	1.11	-0.27	1.07	
14346.00	90.340	341.790	6270.94	7857.12	7617.55	-2030.63	1655993.36	14323045.34	39°26'32.911"N	80°56'41.376"W	7883.56	345.074	0.91	-0.19	-0.89	
14441.00	90.250	339.590	6270.45	7952.11	7707.20	-2082.04	1655961.96	14323134.96	39°26'33.797"N	80°56'41.775"W	7978.28	345.021	2.32	-0.09	-2.32	
14535.00	90.310	338.760	6269.99	8046.09	7795.05	-2095.46	1655928.56	14323222.78	39°26'34.666"N	80°56'42.201"W	8071.79	344.954	0.89	0.06	-0.88	
14630.00	90.280	339.480	6269.51	8141.06	7883.81	-2129.32	1655894.71	14323311.50	39°26'35.543"N	80°56'42.632"W	8166.30	344.886	0.76	-0.03	0.76	
14724.00	90.310	339.750	6269.02	8235.06	7971.93	-2162.06	1655861.98	14323399.58	39°26'36.414"N	80°56'43.048"W	8259.91	344.826	0.29	0.03	0.29	
14820.00	90.680	340.570	6268.19	8331.05	8062.22	-2194.64	1655829.41	14323489.84	39°26'37.307"N	80°56'43.463"W	8355.59	344.772	0.94	0.39	0.85	
14914.00	90.460	340.900	6267.26	8425.04	8150.96	-2225.65	1655798.41	14323578.54	39°26'38.184"N	80°56'43.857"W	8449.35	344.727	0.42	-0.23	0.35	
15008.00	90.340	339.440	6266.60	8519.04	8239.38	-2257.54	1655766.54	14323666.92	39°26'39.068"N	80°56'44.263"W	8543.06	344.677	1.56	-0.13	-1.55	
15103.00	90.340	338.840	6266.04	8614.01	8328.15	-2291.36	1655732.73	14323755.66	39°26'39.936"N	80°56'44.694"W	8637.62	344.617	0.63	0.00	-0.63	
15198.00	90.400	337.520	6265.42	8708.94	8416.34	-2326.67	1655697.43	14323843.81	39°26'40.808"N	80°56'45.143"W	8732.02	344.547	1.39	0.06	-1.39	
15293.00	90.340	337.940	6264.81	8803.84	8504.25	-2362.68	1655661.45	14323931.69	39°26'41.677"N	80°56'45.601"W	8826.35	344.473	0.45	-0.06	0.44	
15387.00	90.120	338.180	6264.43	8897.76	8591.44	-2397.80	1655626.34	14324018.85	39°26'42.539"N	80°56'46.048"W	8919.77	344.406	0.35	-0.23	0.26	
15482.00	90.310	338.000	6264.08	8992.68	8679.58	-2433.25	1655590.90	14324106.95	39°26'43.410"N	80°56'46.500"W	9014.20	344.340	0.28	0.20	-0.19	
15576.00	90.280	337.820	6263.59	9086.59	8766.68	-2468.59	1655555.57	14324194.01	39°26'44.271"N	80°56'46.950"W	9107.61	344.273	0.19	-0.03	-0.19	
15670.00	90.000	336.940	6263.36	9180.46	8853.45	-2504.75	1655519.43	14324280.74	39°26'45.129"N	80°56'47.410"W	9200.94	344.203	0.98	-0.30	-0.94	
15765.00	91.020	335.690	6262.52	9275.22	8940.44	-2542.91	1655481.28	14324367.70	39°26'45.989"N	80°56'47.895"W	9295.04	344.123	1.70	1.07	-1.32	
15860.00	92.060	337.940	6261.96	9369.99	9027.73	-2580.29	1655443.91	14324454.96	39°26'46.852"N	80°56'48.371"W	9389.24	344.049	2.61	1.09	2.37	
15954.00	90.950	337.170	6261.49	9463.84	9114.57	-2616.17	1655408.05	14324541.77	39°26'47.710"N	80°56'48.828"W	9482.60	343.965	1.44	-1.18	-0.82	
16048.00	90.650	338.610	6260.18	9557.74	9201.65	-2651.54	1655372.69	14324628.81	39°26'48.571"N	80°56'49.278"W	9576.07	343.925	1.56	-0.32	1.53	
16143.00	90.180	340.720	6255.49	9652.73	9290.72	-2684.56	1655339.69	14324717.84	39°26'49.452"N	80°56'49.698"W	9670.80	343.863	2.28	-0.49	2.22	
16239.00	90.950	342.280	6254.55	9748.70	9381.75	-2715.01	1655309.25	14324808.84	39°26'50.351"N	80°56'50.096"W	9766.71	343.860	1.81	0.80	1.62	
16334.00	91.140	345.060	6252.81	9843.52	9472.90	-2741.72	1655282.55	14324899.95	39°26'51.252"N	80°56'50.426"W	9861.68	343.858	2.93	0.20	2.93	
16429.00	90.950	345.580	6251.08	9938.15	9564.78	-2765.79	1655258.49	14324991.79	39°26'52.161"N	80°56'50.732"W	9956.64	343.872	0.58	-0.20	0.55	
16523.00	90.740	343.300	6249.70	10031.90	9655.32	-2791.00	1655233.29	14325082.30	39°26'53.056"N	80°56'51.063"W	10050.61	343.877	2.44	-0.22	-2.43	
16617.00	90.830	342.770	6247.31	10125.79	9745.22	-2818.43	1655205.88	14325172.16	39°26'53.944"N	80°56'51.401"W	10144.60	343.870	0.57	0.10	-0.56	
16711.00	90.430	343.270	6247.37	10219.68	9835.12	-2845.87	1655178.44	14325262.02	39°26'54.833"N	80°56'51.751"W	10238.58	343.862	0.68	-0.43	0.53	
16807.00	90.520	340.550	6246.58	10315.63	9926.36	-2875.68	1655148.65	14325353.23	39°26'55.735"N	80°56'52.130"W	10334.51	343.844	2.83	0.09	-2.83	
16902.00	90.490	340.250	6245.74	10410.63	10015.85	-2907.55	1655116.79	14325442.68	39°26'56.620"N	80°56'52.536"W	10429.34	343.812	0.32	-0.03	-0.32	
16997.00	90.430	341.440	6244.98	10505.62	10105.59	-2938.72	1655085.63	14325532.38	39°26'57.507"N	80°56'52.932"W	10524.21	343.786	1.25	-0.08	1.25	

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #04
Operator	ANTERO RESOURCES CORPORATION	Well	Jack Unit 3H
Area	Tyler County, WV	Wellbore	Jack Unit 3H AWB
Field	Tyler		
Facility	Neat Pad		

WELLPATH DATA (224 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
17091.00	90.460	343.160	6244.25	10599.56	10195.13	-2967.29	1655057.07	14325621.89	39°26'58.392"N	80°56'53.296"W	10618.17	343.772	1.83	0.03	1.83	
17185.00	90.150	342.690	6243.75	10693.47	10284.98	-2994.89	1655029.48	14325711.71	39°26'59.280"N	80°56'53.647"W	10712.16	343.765	0.60	-0.33	-0.50	
17280.00	90.250	341.470	6243.42	10788.42	10375.37	-3024.12	1655000.26	14325802.06	39°27'00.174"N	80°56'54.019"W	10807.11	343.750	1.29	0.11	-1.28	
17375.00	90.150	338.980	6243.08	10883.42	10464.76	-3056.26	1654968.14	14325891.42	39°27'01.057"N	80°56'54.428"W	10901.93	343.719	2.62	-0.11	-2.62	
17470.00	90.460	338.770	6242.58	10978.38	10553.38	-3090.50	1654933.91	14325979.99	39°27'01.933"N	80°56'54.864"W	10996.59	343.678	0.39	0.33	-0.22	
17565.00	90.180	339.960	6242.05	11073.36	10642.29	-3123.96	1654900.46	14326068.87	39°27'02.812"N	80°56'55.290"W	11091.32	343.641	1.31	-0.29	1.27	
17659.00	90.150	340.470	6241.78	11167.36	10730.74	-3155.77	1654868.67	14326157.29	39°27'03.687"N	80°56'55.695"W	11185.15	343.612	0.52	-0.03	0.52	
17754.00	90.150	338.760	6241.53	11262.35	10819.79	-3188.85	1654835.60	14326246.30	39°27'04.567"N	80°56'56.116"W	11279.92	343.578	1.80	0.00	-1.80	
17849.00	90.030	338.260	6241.38	11357.30	10908.18	-3223.66	1654800.81	14326334.66	39°27'05.441"N	80°56'56.559"W	11374.55	343.536	0.54	-0.13	-0.53	
17942.00	90.090	339.040	6241.28	11450.26	10994.80	-3257.51	1654766.96	14326421.24	39°27'06.297"N	80°56'56.990"W	11467.22	343.497	0.84	0.06	0.84	
18037.00	90.310	338.400	6240.95	11545.22	11083.32	-3291.99	1654732.50	14326509.73	39°27'07.172"N	80°56'57.429"W	11561.89	343.457	0.71	0.23	-0.67	
18131.00	90.120	337.320	6240.60	11639.12	11170.39	-3327.42	1654697.09	14326596.76	39°27'08.033"N	80°56'57.880"W	11655.44	343.412	1.17	-0.20	-1.15	
18154.00	90.090	336.820	6240.55	11692.08	11191.57	-3336.38	1654688.13	14326681.93	39°27'08.242"N	80°56'57.994"W	11678.30	343.400	2.18	-0.13	-2.17	
18178.00	90.090	336.820	6240.52	11686.04	11213.64	-3345.83	1654678.69	14326639.99	39°27'08.460"N	80°56'58.114"W	11702.14	343.366	0.00	0.00	0.00	Projected MD at TD: 18178'

HOLE & CASING SECTIONS - Ref Wellbore: Jack Unit 3H AWB										Ref Wellpath: Jack Unit 3H AWP Proj: 18178'			
String/Diameter	Start MD (ft)	End MD (ft)	Interval (ft)	Start TVD (ft)	End TVD (ft)	Start N/S (ft)	End N/S (ft)	Start E/W (ft)	End E/W (ft)	Start N/S (ft)	End N/S (ft)	Start E/W (ft)	End E/W (ft)
20in Conductor	24.50	104.50	80.00	24.50	104.50	104.50	0.00	0.00	0.00	104.50	0.06	0.00	0.17
17.5in Open Hole	104.50	372.50	268.00	104.50	372.50	372.50	0.06	0.00	0.00	372.50	0.23	0.17	0.51
13.375in Casing Surface	24.50	372.50	348.00	24.50	372.50	372.50	0.00	0.00	0.00	372.50	0.23	0.00	0.51
12.25in Open Hole	372.50	2572.50	2200.00	372.50	2553.85	2553.85	0.23	0.00	0.00	2553.85	-61.37	0.51	262.52
9.625in Casing Intermediate	24.50	2572.50	2548.00	24.50	2553.85	2553.85	0.00	0.00	0.00	2553.85	-61.37	0.00	262.52
8.75in Open Hole	2572.50	5619.00	3046.50	2553.85	5574.74	5574.74	-61.37	262.52	-194.46	5574.74	11213.64	626.36	626.36
8.5in Open Hole	5619.00	18178.00	12559.00	5574.74	6240.52	6240.52	-194.46	626.36	-3345.83	6240.52	11213.64	626.36	-3345.83
5.5in Casing Production	24.50	18178.00	18153.50	24.50	6240.52	6240.52	0.00	0.00	0.00	6240.52	11213.64	0.00	-3345.83

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Actual Wellpath Report

Jack Unit 3H AWP Proj: 18178'
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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #04
ANTERO RESOURCES CORPORATION	Well	Jack Unit 3H
Area	Wellbore	Jack Unit 3H AWB
Field		
Facility		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Jack Unit 3H POE Rev-4	6316.00	328.18	546.41	1658569.36	14315758.90	39°25'20.850"N	80°56'08.594"W	point
Jack Unit 3H BHL Rev-4	6346.00	11235.67	-3342.76	1654681.75	14326662.01	39°27'08.678"N	80°56'58.075"W	point
Jack Unit 3H LP Rev-4	6346.00	515.48	479.62	1658502.60	14315946.13	39°25'22.701"N	80°56'09.444"W	point

WELLPATH COMPOSITION - Ref Wellbore: Jack Unit 3H AWB Ref Wellpath: Jack Unit 3H AWP Proj: 18178'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	337.50	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">{(50'-328')}	Jack Unit 3H AWB
337.50	547.50	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4">{(358'-538')}	Jack Unit 3H AWB
547.50	2501.50	ISCWSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <12-1/4">{(538')/594'-2492')}	Jack Unit 3H AWB
2501.50	5567.00	ISCWSA MWD, Rev. 4 (Standard)	04 Panther MWD <8-3/4">{(2501.5')/2636'-5567')}	Jack Unit 3H AWB
5567.00	18154.00	BHI AutoTrak Curve (Short)	05 BH AT Curve <8-1/2">{(5567')/5594'-18154')}	Jack Unit 3H AWB
18154.00	18178.00	Blind Drilling (std)	Projection to bit	Jack Unit 3H AWB



Actual Wellpath Report

Jack Unit 3H AWP Proj: 18178'
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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #04
ANTERO RESOURCES CORPORATION	Well	Jack Unit 3H
Tyler County, WV	Wellbore	Jack Unit 3H AWB
Tyler		
Neat Pad		

COMMENTS

Wellpath general comments

API: 47-095-02463-0000

BHI Job #: 109434821

Rig: Frontier 22

Duration: 10/01/2018-10/04/2018

Gyrodata MS Gyro <17-1/2">(50'-328')

Gyrodata MS Gyro <12-1/4">(328')(358'-538')

Directional ONE MWD <12-1/4">(538')(594'-2492')

Panther MWD <8-3/4">(2501.5')(2636'-5567')

BH AT Curve <8-1/2">(5567')(5594'-18154')

Middlesex: 6339' MD

Burkett: 6523' MD

Tully: 6580' MD

Marcellus POE: 6632' MD

Projected MD at TD: 18178'

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