



ANTERO RESOURCES CORPORATION

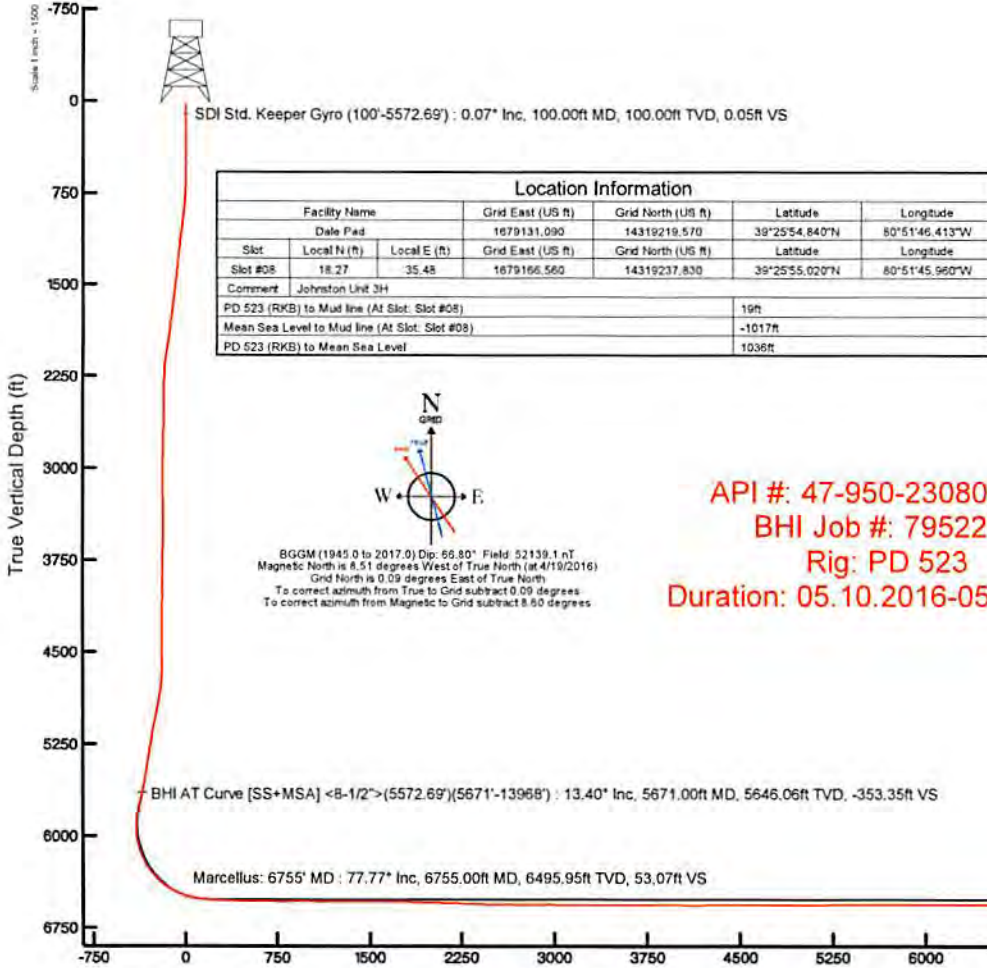
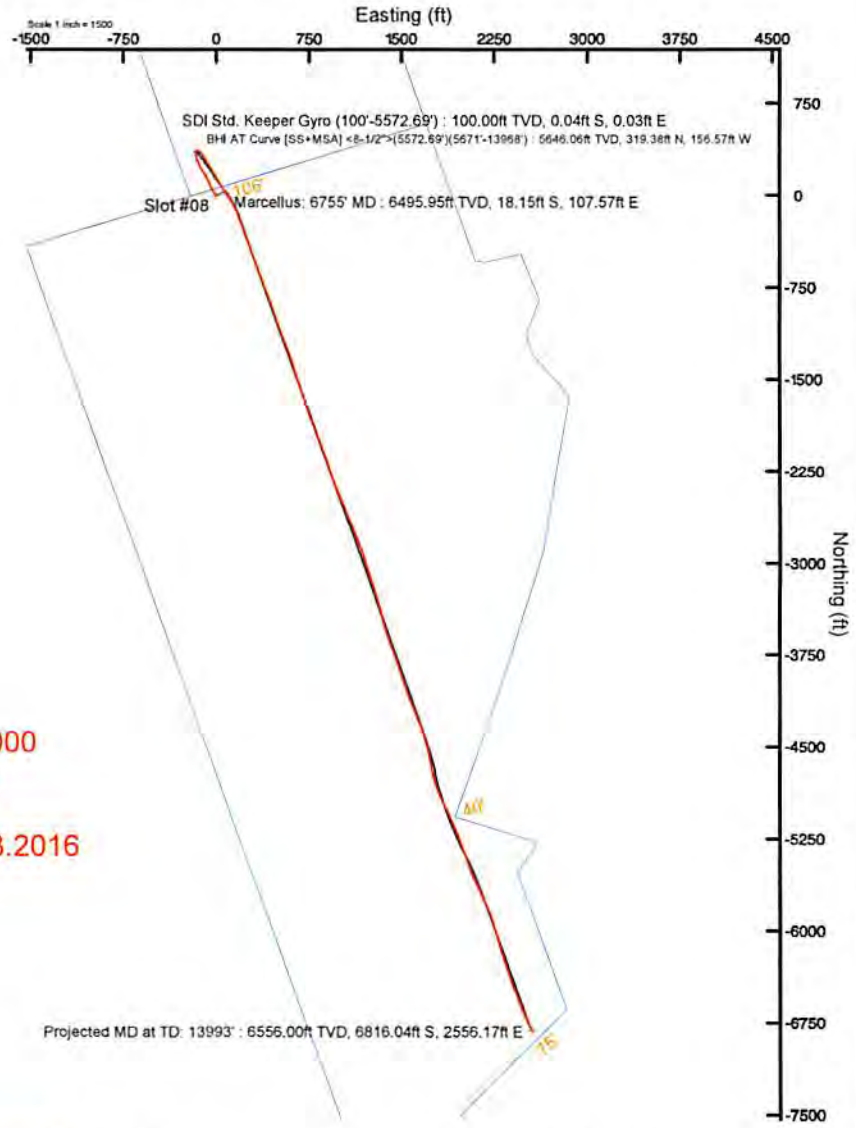


Location: Tyler County, WV
 Field: Tyler
 Facility: Dale Pad

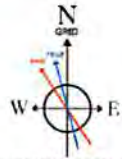
Slot: Slot #08
 Well: Johnston Unit 3H
 Wellbore: Johnston Unit 3H PWB

Plot reference wellbore is Johnston Unit 3H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to PD 523 (RKB)	* = Wellbore was transformed from a different geodetic datum
Measured depths are referenced to PD 523 (RKB)	North Reference: Grid north
PD 523 (RKB) to Mean Sea Level: 1036 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot Slot #08): -1017 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: harekja on 2016-06-10
	Dataverse: WA_MPL_EASTERNUS_Deln

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #08	Johnston Unit 3H	Johnston Unit 3H AWP	Johnston Unit 3H AWP Proj: 13993
Slot #08	Johnston Unit 3H	Johnston Unit 3H PWB	Johnston Unit 3H PWP Rev-A.0



Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Dale Pad	1679131.090	14319219.570	39°25'54.840"N	80°51'46.413"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #08	18.27	35.48	1679166.560	14319237.830
			Latitude	Longitude
			39°25'55.020"N	80°51'45.960"W
Comment	Johnston Unit 3H			
PD 523 (RKB) to Mud line (At Slot Slot #08)	19ft			
Mean Sea Level to Mud line (At Slot Slot #08)	-1017ft			
PD 523 (RKB) to Mean Sea Level	1036ft			



BGGM (1945.0 to 2017.0) Dip: 66.80° Field: 52139.1 nT
 Magnetic North is 8.51 degrees West of True North (at 4/19/2016)
 Grid North is 0.09 degrees East of True North
 To correct azimuth from True to Grid subtract 0.09 degrees
 To correct azimuth from Magnetic to Grid subtract 8.60 degrees

API #: 47-950-23080-0000
 BHI Job #: 7952206
 Rig: PD 523
 Duration: 05.10.2016-05.13.2016

Azimuth 160.47° with reference 0.00 N, 0.00 E



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 1 of 14



REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Johnston Unit 3H
Field	Tyler	Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Hareluk
Scale	0.999602	Report Generated	6/10/2016 at 11:47:27 AM
Convergence at slot	0.09° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Johnston_Unit_3H_AWP_Proj_13993_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	18.27	35.48	1679166.56	14319237.83	39°25'55.020"N	80°51'45.960"W
Facility Reference Pt			1679131.09	14319219.57	39°25'54.840"N	80°51'46.413"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM

Calculation method	Minimum curvature	PD 523 (RKB) to Facility Vertical Datum	19.00ft
Horizontal Reference Pt	Slot	PD 523 (RKB) to Mean Sea Level	1036.00ft
Vertical Reference Pt	PD 523 (RKB)	PD 523 (RKB) to Mud Line at Slot (Slot #08)	19.00ft
MD Reference Pt	PD 523 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	160.47°

POSITIONAL UNCERTAINTY CALCULATION SETTINGS

Ellipse Confidence Limit	2.00 Std Dev	Ellipse Start MD	19.00ft	Surface Position Uncertainty	Included
Declination	8.51° West of TN	Dip Angle	66.80°	Magnetic Field Strength	52139nT
Slot Surface Uncertainty @1SD		Horizontal	0.100ft	Vertical	1.000ft
Facility Surface Uncertainty @1SD		Horizontal	8.200ft	Vertical	3.000ft

Positional Uncertainty values in the WELLPATH DATA table are the projection of the ellipsoid of uncertainty onto the vertical and horizontal planes



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 2 of 14



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Johnston Unit 3H
Field	Tyler	Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad		

WELLPATH DATA (334 stations) - with Positional Uncertainty values † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
0.00†	0.000	140.660	0.00	0.00	0.00	0.00	39°25'55.020"N	80°51'45.960"W	0.00	0.000	0.00	0.00	0.00	0.00	0.000	
19.00	0.000	140.660	19.00	0.00	0.00	0.00	39°25'55.020"N	80°51'45.960"W	0.00	0.000	0.00	6.32	16.40	16.40	0.000	
100.00	0.070	140.660	100.00	0.05	-0.04	0.03	39°25'55.020"N	80°51'45.960"W	0.05	140.660	0.09	6.33	16.40	16.40	230.650	SDI Std. Keeper Gyro (100°-5572.69°)
125.00	0.070	129.030	125.00	0.07	-0.06	0.05	39°25'55.019"N	80°51'45.959"W	0.08	138.448	0.06	6.33	16.40	16.40	49.295	
150.00	0.080	213.540	150.00	0.10	-0.08	0.06	39°25'55.019"N	80°51'45.959"W	0.10	146.679	0.40	6.33	16.40	16.40	233.907	
175.00	0.020	264.120	175.00	0.11	-0.10	0.04	39°25'55.019"N	80°51'45.960"W	0.11	157.401	0.28	6.33	16.40	16.40	244.543	
200.00	0.080	231.200	200.00	0.11	-0.11	0.02	39°25'55.019"N	80°51'45.960"W	0.11	168.113	0.26	6.33	16.40	16.40	255.761	
225.00	0.030	162.460	225.00	0.12	-0.13	0.01	39°25'55.019"N	80°51'45.960"W	0.13	174.809	0.30	6.33	16.40	16.40	80.086	
250.00	0.040	127.990	250.00	0.14	-0.14	0.02	39°25'55.019"N	80°51'45.960"W	0.14	171.642	0.09	6.33	16.40	16.40	76.557	
275.00	0.070	141.260	275.00	0.16	-0.16	0.04	39°25'55.018"N	80°51'45.960"W	0.16	166.731	0.13	6.33	16.40	16.40	72.479	
300.00	0.090	172.770	300.00	0.19	-0.19	0.05	39°25'55.018"N	80°51'45.959"W	0.19	165.401	0.19	6.33	16.40	16.40	251.850	
325.00	0.060	184.620	325.00	0.22	-0.22	0.05	39°25'55.018"N	80°51'45.959"W	0.23	167.133	0.13	6.34	16.40	16.40	253.625	
350.00	0.110	184.040	350.00	0.26	-0.26	0.05	39°25'55.017"N	80°51'45.959"W	0.26	169.524	0.20	6.34	16.41	16.40	255.603	
375.00	0.010	284.910	375.00	0.28	-0.28	0.04	39°25'55.017"N	80°51'45.960"W	0.28	171.136	0.45	6.34	16.41	16.40	258.851	
400.00	0.070	125.000	400.00	0.29	-0.29	0.05	39°25'55.017"N	80°51'45.959"W	0.29	169.378	0.32	6.34	16.41	16.40	79.406	
425.00	0.080	167.290	425.00	0.32	-0.31	0.07	39°25'55.017"N	80°51'45.959"W	0.32	167.366	0.22	6.34	16.41	16.40	77.570	
450.00	0.100	171.170	450.00	0.36	-0.35	0.08	39°25'55.017"N	80°51'45.959"W	0.36	167.592	0.08	6.34	16.41	16.40	257.702	
475.00	0.180	136.350	475.00	0.42	-0.40	0.11	39°25'55.016"N	80°51'45.959"W	0.42	164.982	0.45	6.35	16.41	16.40	76.722	
500.00	0.230	135.400	500.00	0.50	-0.47	0.17	39°25'55.015"N	80°51'45.958"W	0.50	159.954	0.20	6.35	16.41	16.40	74.669	
525.00	0.050	119.180	525.00	0.55	-0.51	0.22	39°25'55.015"N	80°51'45.957"W	0.55	157.049	0.73	6.35	16.41	16.41	72.387	
550.00	0.200	10.330	550.00	0.52	-0.47	0.23	39°25'55.015"N	80°51'45.957"W	0.53	153.704	0.89	6.35	16.41	16.41	70.187	
575.00	0.160	347.830	575.00	0.45	-0.39	0.23	39°25'55.016"N	80°51'45.957"W	0.46	149.373	0.32	6.36	16.41	16.41	68.898	
600.00	0.190	348.690	600.00	0.37	-0.32	0.22	39°25'55.017"N	80°51'45.957"W	0.39	145.695	0.12	6.36	16.41	16.41	68.188	
625.00	0.770	342.330	625.00	0.18	-0.12	0.16	39°25'55.019"N	80°51'45.958"W	0.20	126.718	2.33	6.36	16.41	16.41	67.589	
650.00	1.340	337.200	649.99	-0.30	0.31	-0.01	39°25'55.023"N	80°51'45.960"W	0.31	358.931	2.31	6.37	16.41	16.41	247.395	
675.00	2.160	339.460	674.98	-1.06	1.02	-0.28	39°25'55.030"N	80°51'45.964"W	1.06	344.450	3.29	6.37	16.41	16.41	67.305	
700.00	2.600	339.730	699.96	-2.10	2.00	-0.65	39°25'55.040"N	80°51'45.968"W	2.10	342.055	1.76	6.37	16.41	16.41	67.061	
725.00	2.990	339.820	724.93	-3.32	3.14	-1.07	39°25'55.051"N	80°51'45.974"W	3.32	341.218	1.56	6.38	16.41	16.41	66.740	
750.00	3.220	339.550	749.89	-4.67	4.41	-1.54	39°25'55.064"N	80°51'45.980"W	4.67	340.772	0.92	6.38	16.41	16.41	66.345	
775.00	3.500	338.440	774.85	-6.13	5.78	-2.06	39°25'55.077"N	80°51'45.988"W	6.13	340.342	1.15	6.38	16.41	16.41	65.933	



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 3 of 14



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #08
Area	Tyler County, WV		Well	Johnston Unit 3H
Field	Tyler		Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad			

WELLPATH DATA (334 stations) - with Positional Uncertainty values

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
800.00	4.150	338.120	799.80	-7.80	7.33	-2.88	39°25'55.092"N	80°51'45.994"W	7.80	339.898	2.60	6.39	16.41	16.41	65.493	
825.00	4.480	336.610	824.72	-9.68	9.06	-3.41	39°25'55.110"N	80°51'46.003"W	9.68	339.401	1.40	6.39	16.41	16.41	65.039	
850.00	4.950	336.830	849.64	-11.73	10.95	-4.22	39°25'55.128"N	80°51'46.014"W	11.73	338.932	1.88	6.40	16.41	16.41	64.434	
875.00	5.320	335.420	874.54	-13.96	12.99	-5.12	39°25'55.149"N	80°51'46.025"W	13.97	338.479	1.56	6.40	16.41	16.41	63.193	
900.00	5.940	334.500	899.42	-16.40	15.22	-6.16	39°25'55.171"N	80°51'46.038"W	16.42	337.950	2.51	6.41	16.41	16.41	40.958	
925.00	6.040	333.400	924.28	-18.99	17.56	-7.31	39°25'55.194"N	80°51'46.053"W	19.02	337.401	0.61	6.41	16.41	16.41	336.615	
950.00	6.270	332.740	949.14	-21.65	19.95	-8.52	39°25'55.217"N	80°51'46.068"W	21.69	336.866	0.96	6.41	16.41	16.41	335.732	
975.00	6.390	331.930	973.99	-24.38	22.39	-9.80	39°25'55.241"N	80°51'46.085"W	24.44	336.355	0.60	6.42	16.42	16.41	336.113	
1000.00	6.400	330.440	998.83	-27.13	24.83	-11.15	39°25'55.266"N	80°51'46.102"W	27.22	335.827	0.67	6.42	16.42	16.42	338.875	
1025.00	6.480	329.780	1023.67	-29.89	27.26	-12.54	39°25'55.290"N	80°51'46.119"W	30.01	335.293	0.44	6.43	16.42	16.42	14.357	
1050.00	6.570	328.050	1048.51	-32.67	29.69	-14.01	39°25'55.314"N	80°51'46.138"W	32.83	334.742	0.86	6.43	16.42	16.42	53.256	
1075.00	6.670	327.590	1073.34	-35.48	32.13	-15.54	39°25'55.338"N	80°51'46.158"W	35.70	334.184	0.45	6.44	16.42	16.42	56.276	
1100.00	6.850	327.790	1098.17	-38.35	34.62	-17.12	39°25'55.362"N	80°51'46.178"W	38.62	333.691	0.73	6.45	16.42	16.42	57.131	
1125.00	6.750	327.970	1122.99	-41.24	37.13	-18.69	39°25'55.387"N	80°51'46.198"W	41.57	333.277	0.41	6.45	16.42	16.42	57.527	
1150.00	6.800	327.640	1147.82	-44.12	39.62	-20.26	39°25'55.412"N	80°51'46.218"W	44.50	332.915	0.25	6.46	16.42	16.42	237.721	
1175.00	6.760	327.030	1172.64	-46.99	42.11	-21.86	39°25'55.437"N	80°51'46.238"W	47.44	332.569	0.33	6.46	16.42	16.42	237.769	
1200.00	6.910	327.100	1197.47	-49.89	44.60	-23.47	39°25'55.461"N	80°51'46.258"W	50.40	332.244	0.60	6.47	16.42	16.42	237.756	
1225.00	6.860	327.620	1222.29	-52.80	47.13	-25.09	39°25'55.486"N	80°51'46.279"W	53.39	331.970	0.32	6.48	16.43	16.42	237.762	
1250.00	6.910	327.020	1247.11	-55.72	49.65	-26.71	39°25'55.511"N	80°51'46.299"W	56.38	331.723	0.35	6.48	16.43	16.43	237.756	
1275.00	6.930	326.680	1271.92	-58.65	52.17	-28.35	39°25'55.536"N	80°51'46.320"W	59.38	331.477	0.18	6.49	16.43	16.43	237.707	
1300.00	7.020	327.230	1296.74	-61.60	54.72	-30.01	39°25'55.561"N	80°51'46.341"W	62.41	331.257	0.45	6.49	16.43	16.43	237.669	
1325.00	6.820	327.640	1321.56	-64.54	57.26	-31.83	39°25'55.586"N	80°51'46.362"W	65.41	331.081	0.82	6.50	16.43	16.43	237.668	
1350.00	6.780	330.100	1346.38	-67.43	59.79	-33.16	39°25'55.611"N	80°51'46.382"W	68.37	330.985	1.18	6.51	16.43	16.43	57.758	
1375.00	6.610	330.620	1371.21	-70.30	62.32	-34.60	39°25'55.637"N	80°51'46.400"W	71.28	330.959	0.72	6.52	16.44	16.43	57.927	
1400.00	6.510	331.340	1396.05	-73.12	64.82	-35.99	39°25'55.661"N	80°51'46.417"W	74.14	330.960	0.52	6.52	16.44	16.43	58.113	
1425.00	6.590	330.340	1420.88	-75.93	67.31	-37.38	39°25'55.686"N	80°51'46.435"W	76.99	330.955	0.56	6.53	16.44	16.43	58.268	
1450.00	6.670	329.720	1445.72	-78.77	69.81	-38.82	39°25'55.711"N	80°51'46.453"W	79.88	330.922	0.43	6.54	16.44	16.44	58.364	
1475.00	6.800	329.560	1470.54	-81.65	72.34	-40.30	39°25'55.736"N	80°51'46.472"W	82.81	330.877	0.53	6.54	16.44	16.44	58.429	
1500.00	6.750	331.900	1495.37	-84.56	74.91	-41.74	39°25'55.761"N	80°51'46.491"W	85.76	330.871	1.12	6.55	16.45	16.44	58.537	
1525.00	6.570	338.130	1520.20	-87.44	77.54	-42.97	39°25'55.787"N	80°51'46.506"W	88.65	331.005	2.98	6.56	16.45	16.44	58.824	

RECEIVED
 Office of Oil and Gas
 OCT 12 2017
 WV Department of
 Environmental Protection



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'

Page 4 of 14



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #08
Area	Tyler County, WV		Well	Johnston Unit 3H
Field	Tyler		Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad			

WELLPATH DATA (334 stations) - with Positional Uncertainty values

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
1550.00	6.620	340.000	1545.04	-90.31	80.22	-43.99	39°25'55.814"N	80°51'46.519"W	91.49	331.257	0.88	6.57	16.45	16.44	59.255	
1575.00	6.770	339.450	1569.87	-93.22	82.95	-45.00	39°25'55.841"N	80°51'46.532"W	94.37	331.518	0.65	6.58	16.45	16.44	59.673	
1600.00	7.080	339.950	1594.68	-96.24	85.78	-46.05	39°25'55.868"N	80°51'46.545"W	97.36	331.771	1.26	6.58	16.45	16.44	60.050	
1625.00	7.210	339.960	1619.49	-99.35	88.70	-47.12	39°25'55.897"N	80°51'46.559"W	100.44	332.023	0.52	6.59	16.46	16.45	60.400	
1650.00	7.210	339.270	1644.29	-102.48	91.64	-48.21	39°25'55.928"N	80°51'46.573"W	103.55	332.252	0.35	6.60	16.46	16.45	60.712	
1675.00	7.340	339.840	1669.09	-105.65	94.61	-49.31	39°25'55.956"N	80°51'46.587"W	106.69	332.469	0.59	6.61	16.46	16.45	60.999	
1700.00	7.400	339.070	1693.88	-108.86	97.61	-50.44	39°25'55.985"N	80°51'46.601"W	109.87	332.672	0.46	6.62	16.46	16.45	61.261	
1725.00	7.300	338.940	1718.68	-112.05	100.60	-51.59	39°25'56.015"N	80°51'46.616"W	113.05	332.851	0.41	6.63	16.47	16.45	61.493	
1750.00	7.490	338.390	1743.47	-115.27	103.59	-52.76	39°25'56.045"N	80°51'46.630"W	116.25	333.011	0.81	6.64	16.47	16.45	61.700	
1775.00	7.370	338.370	1768.26	-118.50	106.60	-53.95	39°25'56.074"N	80°51'46.646"W	119.47	333.156	0.48	6.65	16.47	16.46	61.885	
1800.00	7.280	337.870	1793.06	-121.68	109.56	-55.14	39°25'56.104"N	80°51'46.661"W	122.65	333.285	0.44	6.66	16.47	16.46	62.054	
1825.00	7.200	337.140	1817.86	-124.83	112.47	-56.34	39°25'56.132"N	80°51'46.676"W	125.79	333.391	0.49	6.67	16.48	16.46	62.198	
1850.00	7.310	336.770	1842.66	-127.98	115.37	-57.58	39°25'56.161"N	80°51'46.692"W	128.94	333.478	0.48	6.67	16.48	16.46	62.320	
1875.00	7.530	335.850	1867.45	-131.20	118.33	-58.87	39°25'56.190"N	80°51'46.708"W	132.17	333.547	1.00	6.68	16.48	16.46	62.417	
1900.00	7.550	336.180	1892.23	-134.47	121.32	-60.21	39°25'56.220"N	80°51'46.725"W	135.44	333.607	0.19	6.69	16.49	16.47	62.500	
1925.00	7.730	335.030	1917.01	-137.78	124.35	-61.58	39°25'56.250"N	80°51'46.742"W	138.76	333.655	0.94	6.70	16.49	16.47	62.569	
1950.00	8.050	334.770	1941.77	-141.20	127.46	-63.04	39°25'56.281"N	80°51'46.761"W	142.20	333.685	1.29	6.72	16.49	16.47	62.616	
1975.00	8.240	333.570	1966.52	-144.72	130.65	-64.58	39°25'56.312"N	80°51'46.781"W	145.74	333.696	1.02	6.73	16.50	16.47	62.645	
2000.00	8.730	333.660	1991.25	-148.38	133.95	-66.22	39°25'56.345"N	80°51'46.801"W	149.43	333.694	1.96	6.74	16.50	16.47	62.659	
2025.00	8.810	333.530	2015.95	-152.17	137.37	-67.91	39°25'56.379"N	80°51'46.823"W	153.24	333.692	0.33	6.75	16.50	16.48	62.671	
2050.00	8.130	334.070	2040.68	-155.82	140.67	-69.54	39°25'56.411"N	80°51'46.844"W	156.92	333.694	2.74	6.76	16.51	16.48	62.687	
2075.00	6.940	335.150	2065.46	-159.08	143.63	-70.95	39°25'56.441"N	80°51'46.861"W	160.20	333.712	4.79	6.77	16.51	16.48	62.724	
2100.00	6.690	334.890	2090.29	-162.04	146.32	-72.20	39°25'56.467"N	80°51'46.877"W	163.16	333.736	1.01	6.78	16.51	16.48	62.771	
2125.00	5.970	335.970	2115.14	-164.78	148.82	-73.35	39°25'56.492"N	80°51'46.892"W	165.92	333.763	2.92	6.79	16.52	16.49	62.828	
2150.00	4.520	335.670	2140.03	-167.06	150.91	-74.28	39°25'56.513"N	80°51'46.904"W	168.20	333.792	5.80	6.80	16.52	16.49	62.899	
2175.00	3.610	330.530	2164.97	-168.82	152.49	-75.08	39°25'56.528"N	80°51'46.914"W	169.97	333.787	3.92	6.81	16.52	16.49	242.905	
2200.00	3.370	328.940	2189.92	-170.31	153.81	-75.84	39°25'56.541"N	80°51'46.924"W	171.49	333.752	1.04	6.83	16.53	16.49	242.829	
2225.00	2.440	327.580	2214.89	-171.55	154.89	-76.51	39°25'56.552"N	80°51'46.932"W	172.75	333.712	3.73	6.84	16.53	16.49	242.709	
2250.00	1.050	319.870	2239.88	-172.28	155.51	-76.94	39°25'56.558"N	80°51'46.938"W	173.50	333.675	5.63	6.85	16.54	16.50	242.458	
2275.00	0.650	306.500	2264.87	-172.62	155.77	-77.20	39°25'56.561"N	80°51'46.941"W	173.85	333.636	1.78	6.86	16.54	16.50	241.936	

RECEIVED
 Office of Oil and Gas
 OCT 12 2017
 WV Department of
 Environmental Protection



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 5 of 14



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Johnston Unit 3H
Field	Tyler	Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad		

WELLPATH DATA (334 stations) - with Positional Uncertainty values

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
2300.00	0.740	308.710	2289.87	-172.87	155.96	-77.44	39°25'56.563"N	80°51'46.944"W	174.12	333.592	0.38	6.87	16.54	16.50	241.301	
2325.00	0.660	307.560	2314.87	-173.13	156.14	-77.68	39°25'56.564"N	80°51'46.947"W	174.40	333.549	0.32	6.89	16.55	16.50	240.718	
2350.00	0.720	308.720	2339.87	-173.38	156.33	-77.92	39°25'56.566"N	80°51'46.950"W	174.67	333.507	0.25	6.90	16.55	16.50	240.170	
2375.00	0.710	307.750	2364.87	-173.65	156.52	-78.16	39°25'56.568"N	80°51'46.953"W	174.95	333.463	0.06	6.91	16.55	16.51	239.656	
2400.00	0.840	298.510	2389.86	-173.91	156.71	-78.45	39°25'56.570"N	80°51'46.957"W	175.24	333.407	0.72	6.93	16.56	16.51	239.058	
2425.00	0.850	300.540	2414.86	-174.19	156.89	-78.77	39°25'56.572"N	80°51'46.961"W	175.55	333.340	0.13	6.94	16.56	16.51	238.413	
2450.00	0.990	292.720	2439.86	-174.48	157.06	-79.13	39°25'56.574"N	80°51'46.965"W	175.87	333.261	0.75	6.95	16.57	16.51	237.742	
2475.00	1.080	289.650	2464.85	-174.77	157.23	-79.55	39°25'56.575"N	80°51'46.971"W	176.21	333.163	0.42	6.97	16.57	16.51	236.999	
2500.00	1.140	293.250	2489.85	-175.09	157.40	-80.00	39°25'56.577"N	80°51'46.977"W	176.57	333.059	0.37	6.98	16.57	16.51	236.293	
2525.00	1.020	290.350	2514.84	-175.40	157.58	-80.44	39°25'56.579"N	80°51'46.982"W	176.92	332.958	0.53	6.99	16.58	16.52	235.623	
2550.00	1.090	284.790	2539.84	-175.68	157.72	-80.88	39°25'56.580"N	80°51'46.988"W	177.25	332.852	0.50	7.01	16.58	16.52	234.908	
2575.00	1.100	285.610	2564.84	-175.95	157.84	-81.34	39°25'56.581"N	80°51'46.994"W	177.57	332.738	0.07	7.02	16.59	16.52	234.181	
2600.00	1.070	285.540	2589.83	-176.23	157.97	-81.79	39°25'56.583"N	80°51'46.999"W	177.89	332.626	0.12	7.04	16.59	16.52	233.487	
2625.00	1.080	288.270	2614.83	-176.50	158.11	-82.24	39°25'56.584"N	80°51'47.005"W	178.22	332.518	0.21	7.05	16.59	16.52	232.842	
2650.00	0.960	286.080	2639.82	-176.77	158.24	-82.67	39°25'56.585"N	80°51'47.011"W	178.53	332.417	0.50	7.07	16.60	16.52	232.224	
2675.00	0.950	308.790	2664.82	-177.07	158.43	-83.03	39°25'56.587"N	80°51'47.015"W	178.87	332.342	1.50	7.08	16.60	16.53	231.811	
2700.00	1.660	335.250	2689.81	-177.61	158.89	-83.34	39°25'56.592"N	80°51'47.019"W	179.42	332.321	3.65	7.10	16.61	16.53	51.851	
2725.00	1.730	332.630	2714.80	-178.34	159.55	-83.67	39°25'56.598"N	80°51'47.023"W	180.16	332.328	0.42	7.11	16.61	16.53	52.104	
2750.00	1.730	337.530	2739.79	-179.09	160.23	-83.98	39°25'56.605"N	80°51'47.027"W	180.91	332.339	0.59	7.13	16.62	16.53	52.365	
2775.00	1.710	335.190	2764.78	-179.84	160.92	-84.29	39°25'56.612"N	80°51'47.031"W	181.66	332.356	0.29	7.14	16.62	16.54	52.637	
2800.00	1.820	335.380	2789.77	-180.61	161.62	-84.61	39°25'56.619"N	80°51'47.035"W	182.43	332.368	0.44	7.16	16.63	16.54	52.880	
2825.00	1.800	333.040	2814.76	-181.39	162.33	-84.95	39°25'56.626"N	80°51'47.040"W	183.22	332.376	0.31	7.17	16.63	16.54	53.095	
2850.00	1.320	333.120	2839.75	-182.07	162.94	-85.26	39°25'56.632"N	80°51'47.043"W	183.90	332.379	1.92	7.19	16.64	16.54	53.285	
2875.00	0.410	290.160	2864.74	-182.41	163.23	-85.47	39°25'56.635"N	80°51'47.046"W	184.25	332.361	4.23	7.21	16.64	16.54	233.129	
2900.00	0.210	268.680	2889.74	-182.48	163.26	-85.60	39°25'56.635"N	80°51'47.048"W	184.34	332.330	0.91	7.22	16.65	16.55	232.517	
2925.00	0.150	262.730	2914.74	-182.50	163.25	-85.68	39°25'56.635"N	80°51'47.049"W	184.37	332.308	0.25	7.24	16.65	16.55	231.763	
2950.00	0.210	300.490	2939.74	-182.54	163.27	-85.75	39°25'56.635"N	80°51'47.050"W	184.42	332.291	0.52	7.25	16.66	16.55	231.228	
2975.00	0.220	294.720	2964.74	-182.61	163.31	-85.84	39°25'56.635"N	80°51'47.051"W	184.50	332.274	0.10	7.27	16.66	16.55	230.894	
3000.00	0.230	302.330	2989.74	-182.68	163.36	-85.92	39°25'56.636"N	80°51'47.052"W	184.58	332.257	0.13	7.29	16.67	16.55	230.584	
3025.00	0.270	308.610	3014.74	-182.77	163.42	-86.01	39°25'56.637"N	80°51'47.053"W	184.67	332.242	0.19	7.31	16.67	16.56	230.383	

RECEIVED
 Office of Oil and Gas
 OCT 12 2017
 WV Department of Environmental Protection



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'

Page 6 of 14



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #08
Area	Tyler County, WV		Well	Johnston Unit 3H
Field	Tyler		Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad			

WELLPATH DATA (334 stations) - with Positional Uncertainty values

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
3050.00	0.260	303.060	3039.74	-182.87	163.49	-86.10	39°25'56.637"N	80°51'47.054"W	184.78	332.226	0.11	7.32	16.68	16.56	230.193	
3075.00	0.430	298.780	3064.74	-182.98	163.57	-86.23	39°25'56.638"N	80°51'47.056"W	184.91	332.201	0.69	7.34	16.68	16.56	229.939	
3100.00	0.340	310.270	3089.74	-183.12	163.66	-86.37	39°25'56.639"N	80°51'47.058"W	185.05	332.177	0.47	7.36	16.69	16.56	229.744	
3125.00	0.430	70.310	3114.74	-183.18	163.74	-86.34	39°25'56.640"N	80°51'47.057"W	185.11	332.197	2.67	7.38	16.69	16.56	50.065	
3150.00	1.050	91.300	3139.74	-183.10	163.77	-86.02	39°25'56.640"N	80°51'47.053"W	184.98	332.288	2.67	7.39	16.69	16.57	50.747	
3175.00	0.920	98.990	3164.73	-182.92	163.73	-85.60	39°25'56.640"N	80°51'47.048"W	184.75	332.400	0.74	7.41	16.69	16.57	51.321	
3200.00	1.030	91.370	3189.73	-182.75	163.69	-85.17	39°25'56.639"N	80°51'47.042"W	184.53	332.511	0.68	7.43	16.69	16.57	51.909	
3225.00	1.070	88.220	3214.73	-182.60	163.69	-84.72	39°25'56.639"N	80°51'47.037"W	184.32	332.637	0.28	7.45	16.69	16.57	52.564	
3250.00	0.980	85.840	3239.72	-182.47	163.72	-84.27	39°25'56.639"N	80°51'47.031"W	184.13	332.764	0.40	7.47	16.69	16.58	53.258	
3275.00	1.070	87.300	3264.72	-182.34	163.74	-83.82	39°25'56.640"N	80°51'47.025"W	183.95	332.892	0.37	7.49	16.69	16.58	53.969	
3300.00	0.960	90.080	3289.71	-182.21	163.75	-83.38	39°25'56.640"N	80°51'47.020"W	183.76	333.016	0.48	7.51	16.69	16.58	54.676	
3325.00	0.950	83.850	3314.71	-182.09	163.78	-82.96	39°25'56.640"N	80°51'47.014"W	183.59	333.135	0.42	7.53	16.70	16.58	55.412	
3350.00	0.850	79.600	3339.71	-182.01	163.83	-82.58	39°25'56.640"N	80°51'47.009"W	183.47	333.251	0.48	7.55	16.70	16.59	56.203	
3375.00	0.850	84.280	3364.71	-181.94	163.88	-82.21	39°25'56.641"N	80°51'47.005"W	183.35	333.360	0.28	7.57	16.70	16.59	57.005	
3400.00	0.890	78.090	3389.70	-181.87	163.94	-81.83	39°25'56.642"N	80°51'47.000"W	183.23	333.473	0.41	7.59	16.70	16.59	57.824	
3425.00	0.940	73.720	3414.70	-181.83	164.04	-81.45	39°25'56.643"N	80°51'46.995"W	183.15	333.595	0.34	7.61	16.70	16.59	58.686	
3450.00	0.900	70.000	3439.70	-181.82	164.16	-81.07	39°25'56.644"N	80°51'46.990"W	183.09	333.719	0.29	7.63	16.70	16.60	59.574	
3475.00	0.810	65.450	3464.69	-181.84	164.31	-80.72	39°25'56.645"N	80°51'46.986"W	183.06	333.836	0.45	7.65	16.70	16.60	60.482	
3500.00	0.790	54.190	3489.69	-181.90	164.48	-80.42	39°25'56.647"N	80°51'46.982"W	183.09	333.944	0.63	7.67	16.71	16.60	61.397	
3525.00	0.690	49.000	3514.69	-182.00	164.68	-80.17	39°25'56.649"N	80°51'46.979"W	183.16	334.043	0.48	7.69	16.71	16.60	62.300	
3550.00	0.660	56.200	3539.69	-182.10	164.86	-79.93	39°25'56.651"N	80°51'46.976"W	183.21	334.133	0.36	7.71	16.71	16.61	63.201	
3575.00	0.620	60.040	3564.69	-182.16	165.01	-79.70	39°25'56.652"N	80°51'46.973"W	183.24	334.220	0.23	7.73	16.72	16.61	64.111	
3600.00	0.570	54.940	3589.68	-182.21	165.14	-79.48	39°25'56.653"N	80°51'46.970"W	183.27	334.300	0.29	7.75	16.72	16.61	65.016	
3625.00	0.630	52.400	3614.68	-182.29	165.30	-79.27	39°25'56.655"N	80°51'46.967"W	183.32	334.381	0.26	7.77	16.72	16.61	65.906	
3650.00	0.690	43.640	3639.68	-182.40	165.49	-79.05	39°25'56.657"N	80°51'46.964"W	183.41	334.467	0.47	7.79	16.73	16.62	66.761	
3675.00	0.640	24.050	3664.68	-182.57	165.73	-78.89	39°25'56.659"N	80°51'46.962"W	183.55	334.544	0.93	7.82	16.73	16.62	67.497	
3700.00	0.790	17.920	3689.68	-182.81	166.02	-78.78	39°25'56.662"N	80°51'46.961"W	183.77	334.614	0.67	7.84	16.73	16.62	68.098	
3725.00	0.710	14.730	3714.68	-183.07	166.33	-78.69	39°25'56.665"N	80°51'46.960"W	184.01	334.682	0.36	7.86	16.74	16.63	68.630	
3750.00	0.700	21.750	3739.67	-183.31	166.63	-78.60	39°25'56.668"N	80°51'46.958"W	184.23	334.747	0.35	7.88	16.75	16.63	69.165	
3775.00	0.760	16.950	3764.67	-183.56	166.93	-78.49	39°25'56.671"N	80°51'46.957"W	184.46	334.817	0.34	7.91	16.75	16.63	69.708	

RECEIVED
 Office of Oil and Gas
 OCT 12 2017
 WV Department of
 Environmental Protection



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 7 of 14



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #08
Area	Tyler County, WV		Well	Johnston Unit 3H
Field	Tyler		Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad			

WELLPATH DATA (334 stations) - with Positional Uncertainty values

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
3800.00	0.770	15.010	3789.67	-183.83	167.25	-78.40	39°25'56.674"N	80°51'46.956"W	184.71	334.885	0.11	7.93	16.76	16.63	70.193	
3825.00	0.830	5.580	3814.67	-184.14	167.59	-78.34	39°25'56.678"N	80°51'46.955"W	184.99	334.947	0.58	7.95	16.76	16.64	70.596	
3850.00	0.860	2.250	3839.66	-184.47	167.96	-78.31	39°25'56.681"N	80°51'46.955"W	185.32	335.002	0.23	7.98	16.77	16.64	70.907	
3875.00	0.790	352.910	3864.66	-184.82	168.32	-78.33	39°25'56.685"N	80°51'46.955"W	185.65	335.045	0.61	8.00	16.77	16.64	71.124	
3900.00	0.770	354.290	3889.66	-185.15	168.65	-78.36	39°25'56.688"N	80°51'46.955"W	185.97	335.078	0.11	8.02	16.78	16.64	71.284	
3925.00	0.810	356.610	3914.66	-185.48	169.00	-78.39	39°25'56.691"N	80°51'46.956"W	186.29	335.115	0.20	8.05	16.79	16.65	71.463	
3950.00	0.770	339.690	3939.65	-185.82	169.33	-78.46	39°25'56.695"N	80°51'46.957"W	186.63	335.139	0.94	8.07	16.79	16.65	251.541	
3975.00	0.800	348.810	3964.65	-186.16	169.66	-78.55	39°25'56.698"N	80°51'46.958"W	186.96	335.156	0.51	8.09	16.80	16.65	71.566	
4000.00	0.660	344.190	3989.65	-186.48	169.97	-78.63	39°25'56.701"N	80°51'46.959"W	187.27	335.175	0.61	8.12	16.81	16.66	71.620	
4025.00	0.630	339.300	4014.65	-186.76	170.24	-78.71	39°25'56.704"N	80°51'46.960"W	187.55	335.185	0.25	8.14	16.81	16.66	251.612	
4050.00	0.700	321.200	4039.65	-187.04	170.48	-78.86	39°25'56.706"N	80°51'46.962"W	187.84	335.177	0.88	8.17	16.82	16.66	251.462	
4075.00	0.630	313.880	4064.65	-187.31	170.70	-79.05	39°25'56.708"N	80°51'46.964"W	188.12	335.151	0.44	8.19	16.83	16.67	251.165	
4100.00	0.560	318.620	4089.64	-187.54	170.89	-79.23	39°25'56.710"N	80°51'46.967"W	188.36	335.125	0.34	8.22	16.83	16.67	250.860	
4125.00	0.500	324.830	4114.64	-187.76	171.07	-79.38	39°25'56.712"N	80°51'46.968"W	188.59	335.108	0.33	8.24	16.84	16.67	250.625	
4150.00	0.540	307.220	4139.64	-187.96	171.23	-79.53	39°25'56.714"N	80°51'46.970"W	188.80	335.086	0.66	8.27	16.85	16.67	250.334	
4175.00	0.450	323.870	4164.64	-188.16	171.38	-79.68	39°25'56.715"N	80°51'46.972"W	189.00	335.063	0.67	8.30	16.85	16.68	250.046	
4200.00	0.510	317.430	4189.64	-188.35	171.54	-79.82	39°25'56.717"N	80°51'46.974"W	189.20	335.047	0.32	8.32	16.86	16.68	249.816	
4225.00	0.550	296.080	4214.64	-188.54	171.67	-80.00	39°25'56.718"N	80°51'46.976"W	189.40	335.014	0.80	8.35	16.87	16.68	249.454	
4250.00	0.490	315.600	4239.64	-188.72	171.80	-80.18	39°25'56.719"N	80°51'46.979"W	189.59	334.981	0.74	8.37	16.88	16.69	249.089	
4275.00	0.440	310.590	4264.64	-188.90	171.94	-80.33	39°25'56.721"N	80°51'46.980"W	189.78	334.958	0.26	8.40	16.88	16.69	248.799	
4300.00	0.440	113.790	4289.64	-188.92	171.97	-80.32	39°25'56.721"N	80°51'46.980"W	189.80	334.965	3.48	8.43	16.89	16.69	68.875	
4325.00	0.470	131.610	4314.64	-188.77	171.86	-80.15	39°25'56.720"N	80°51'46.978"W	189.63	334.997	0.58	8.45	16.89	16.70	69.264	
4350.00	0.560	122.180	4339.64	-188.58	171.73	-79.97	39°25'56.718"N	80°51'46.976"W	189.43	335.029	0.49	8.48	16.88	16.70	69.624	
4375.00	0.590	120.200	4364.63	-188.39	171.60	-79.76	39°25'56.717"N	80°51'46.973"W	189.23	335.071	0.14	8.51	16.88	16.70	70.046	
4400.00	0.540	110.320	4389.63	-188.21	171.49	-79.53	39°25'56.716"N	80°51'46.970"W	189.04	335.119	0.44	8.54	16.88	16.71	70.527	
4425.00	0.430	118.160	4414.63	-188.07	171.40	-79.34	39°25'56.715"N	80°51'46.968"W	188.88	335.161	0.51	8.56	16.88	16.71	71.026	
4450.00	0.280	117.940	4439.63	-187.95	171.33	-79.21	39°25'56.715"N	80°51'46.966"W	188.75	335.189	0.60	8.59	16.88	16.71	71.503	
4475.00	0.210	118.660	4464.63	-187.87	171.28	-79.11	39°25'56.714"N	80°51'46.965"W	188.67	335.209	0.28	8.62	16.89	16.71	71.988	
4500.00	0.250	92.120	4489.63	-187.82	171.26	-79.02	39°25'56.714"N	80°51'46.964"W	188.61	335.232	0.45	8.65	16.89	16.72	72.565	
4525.00	0.140	124.440	4514.63	-187.77	171.24	-78.94	39°25'56.714"N	80°51'46.963"W	188.56	335.251	0.61	8.68	16.89	16.72	73.124	

RECEIVED
 Office of Oil and Gas
 OCT 12 2017
 WV Department of
 Environmental Protection



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 8 of 14



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Johnston Unit 3H
Field	Tyler	Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad		

WELLPATH DATA (334 stations) - with Positional Uncertainty values																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
4550.00	0.240	302.210	4539.63	-187.79	171.25	-78.96	39°25'56.714"N	80°51'46.963"W	188.57	335.248	1.52	8.71	16.89	16.72	253.114	
4575.00	1.150	303.820	4564.63	-188.03	171.42	-79.21	39°25'56.715"N	80°51'46.966"W	188.83	335.199	3.64	8.74	16.90	16.73	252.656	
4600.00	1.370	305.670	4589.62	-188.48	171.73	-79.66	39°25'56.719"N	80°51'46.972"W	189.31	335.115	0.89	8.76	16.90	16.73	252.226	
4625.00	1.460	312.230	4614.61	-189.01	172.12	-80.14	39°25'56.722"N	80°51'46.978"W	189.86	335.033	0.74	8.79	16.91	16.73	251.846	
4650.00	2.790	314.030	4639.60	-189.83	172.76	-80.81	39°25'56.729"N	80°51'46.987"W	190.72	334.931	5.33	8.82	16.92	16.74	251.518	
4675.00	3.860	315.160	4664.55	-191.14	173.78	-81.84	39°25'56.739"N	80°51'47.000"W	192.08	334.781	4.29	8.85	16.92	16.74	251.234	
4700.00	4.340	317.000	4689.49	-192.77	175.06	-83.08	39°25'56.752"N	80°51'47.015"W	193.78	334.612	1.99	8.88	16.93	16.75	250.937	
4725.00	4.640	318.200	4714.41	-194.57	176.51	-84.40	39°25'56.766"N	80°51'47.032"W	195.65	334.445	1.26	8.91	16.94	16.75	250.682	
4750.00	5.900	320.730	4739.31	-196.71	178.26	-85.89	39°25'56.783"N	80°51'47.051"W	197.87	334.275	5.12	8.94	16.95	16.75	250.454	
4775.00	6.850	321.240	4764.15	-199.33	180.42	-87.63	39°25'56.804"N	80°51'47.073"W	200.57	334.093	3.81	8.97	16.95	16.76	250.251	
4800.00	7.190	321.130	4788.97	-202.22	182.80	-89.55	39°25'56.828"N	80°51'47.098"W	203.55	333.900	1.36	9.00	16.96	16.76	250.057	
4825.00	7.950	319.230	4813.75	-205.30	185.32	-91.66	39°25'56.853"N	80°51'47.125"W	206.75	333.683	3.20	9.04	16.97	16.76	249.861	
4850.00	9.110	319.010	4838.47	-208.76	188.13	-94.09	39°25'56.881"N	80°51'47.155"W	210.34	333.429	4.64	9.07	16.98	16.77	249.666	
4875.00	9.580	317.120	4863.14	-212.51	191.14	-96.80	39°25'56.911"N	80°51'47.190"W	214.26	333.141	2.25	9.10	16.98	16.77	249.470	
4900.00	9.820	316.380	4887.78	-216.36	194.21	-99.69	39°25'56.941"N	80°51'47.227"W	218.30	332.829	1.08	9.13	16.99	16.77	249.272	
4925.00	10.370	318.590	4912.39	-220.40	197.44	-102.65	39°25'56.973"N	80°51'47.264"W	222.53	332.531	2.69	9.16	17.00	16.78	249.088	
4950.00	10.770	320.700	4936.97	-224.68	200.94	-105.61	39°25'57.008"N	80°51'47.302"W	227.00	332.273	2.23	9.19	17.01	16.78	248.931	
4975.00	11.140	321.260	4961.51	-229.16	204.63	-108.61	39°25'57.044"N	80°51'47.340"W	231.66	332.043	1.54	9.22	17.01	16.79	248.793	
5000.00	11.380	323.500	4986.03	-233.80	208.50	-111.58	39°25'57.082"N	80°51'47.378"W	236.48	331.845	2.00	9.25	17.02	16.79	248.673	
5025.00	11.810	327.730	5010.52	-238.66	212.64	-114.42	39°25'57.123"N	80°51'47.414"W	241.47	331.717	3.81	9.29	17.03	16.80	248.584	
5050.00	12.200	332.550	5034.98	-243.77	217.15	-117.00	39°25'57.168"N	80°51'47.447"W	246.66	331.684	4.30	9.32	17.04	16.80	248.536	
5075.00	12.360	334.070	5059.41	-249.05	221.90	-119.39	39°25'57.215"N	80°51'47.477"W	251.98	331.719	1.44	9.35	17.05	16.81	248.514	
5100.00	11.390	335.040	5083.87	-254.16	226.54	-121.60	39°25'57.261"N	80°51'47.505"W	257.12	331.775	3.96	9.38	17.05	16.81	248.502	
5125.00	10.690	335.260	5108.41	-258.93	230.89	-123.61	39°25'57.304"N	80°51'47.531"W	261.90	331.837	2.81	9.42	17.06	16.81	248.493	
5150.00	10.350	334.550	5132.99	-263.47	235.02	-125.55	39°25'57.345"N	80°51'47.556"W	266.45	331.889	1.46	9.45	17.07	16.82	248.481	
5175.00	10.040	333.470	5157.59	-267.87	239.00	-127.49	39°25'57.384"N	80°51'47.580"W	270.88	331.924	1.46	9.48	17.08	16.82	248.462	
5200.00	9.350	334.560	5182.23	-272.05	242.78	-129.33	39°25'57.422"N	80°51'47.604"W	275.08	331.956	2.86	9.52	17.09	16.83	248.442	
5225.00	9.360	334.130	5206.90	-276.09	246.45	-131.09	39°25'57.458"N	80°51'47.626"W	279.14	331.990	0.28	9.55	17.10	16.83	248.424	
5250.00	9.440	334.180	5231.57	-280.15	250.12	-132.87	39°25'57.494"N	80°51'47.649"W	283.22	332.022	0.32	9.58	17.11	16.84	248.406	
5275.00	9.700	337.800	5256.22	-284.29	253.92	-134.56	39°25'57.532"N	80°51'47.670"W	287.37	332.079	2.62	9.62	17.12	16.84	248.402	



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 9 of 14



REFERENCE WELLPATH IDENTIFICATION					
Operator	ANTERO RESOURCES CORPORATION			Slot	Slot #08
Area	Tyler County, WV			Well	Johnston Unit 3H
Field	Tyler			Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad				

WELLPATH DATA (334 stations) - with Positional Uncertainty values † = interpolated/extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
5300.00	9.830	343.420	5280.86	-288.53	257.91	-135.96	39°25'57.571"N	80°51'47.688"W	291.56	332.203	3.85	9.65	17.12	16.85	68.430	
5325.00	9.960	344.670	5305.49	-292.81	262.04	-137.14	39°25'57.612"N	80°51'47.703"W	295.76	332.374	1.00	9.69	17.13	16.85	68.481	
5350.00	9.880	344.030	5330.11	-297.11	266.19	-138.31	39°25'57.653"N	80°51'47.718"W	299.98	332.545	0.54	9.72	17.14	16.86	68.532	
5375.00	9.900	341.890	5354.74	-301.40	270.29	-139.56	39°25'57.694"N	80°51'47.733"W	304.20	332.691	1.47	9.76	17.15	16.86	68.573	
5400.00	9.710	340.300	5379.38	-305.66	274.32	-140.94	39°25'57.733"N	80°51'47.751"W	308.41	332.806	1.32	9.79	17.16	16.87	68.601	
5425.00	9.590	338.540	5404.02	-309.85	278.25	-142.42	39°25'57.772"N	80°51'47.770"W	312.57	332.895	1.27	9.83	17.17	16.88	248.617	
5450.00	9.520	337.480	5428.67	-313.99	282.09	-143.97	39°25'57.810"N	80°51'47.789"W	316.71	332.962	0.76	9.86	17.18	16.88	248.624	
5475.00	9.560	336.020	5453.33	-318.13	285.90	-145.61	39°25'57.848"N	80°51'47.810"W	320.84	333.011	0.98	9.90	17.19	16.89	248.623	
5500.00	9.630	334.790	5477.98	-322.28	289.69	-147.34	39°25'57.885"N	80°51'47.832"W	325.01	333.041	0.87	9.93	17.20	16.89	248.614	
5525.00	9.400	333.980	5502.64	-326.39	293.42	-149.13	39°25'57.922"N	80°51'47.855"W	329.14	333.058	1.06	9.97	17.21	16.90	248.599	
5550.00	9.060	338.230	5527.31	-330.38	297.08	-150.75	39°25'57.958"N	80°51'47.876"W	333.14	333.095	3.05	10.01	17.22	16.90	248.595	
5572.69	9.400	346.800	5549.71	-334.01	300.54	-151.84	39°25'57.993"N	80°51'47.889"W	336.72	333.196	6.23	10.04	17.22	16.91	68.625	
5671.00	13.400	345.290	5646.06	-353.35	319.38	-156.57	39°25'58.179"N	80°51'47.949"W	355.69	333.885	4.08	10.37	17.35	16.93	70.403	BHI AT Curve [SS+MSA] <8-1/2">(5572.69')(5671'-13968')
5760.00	15.020	342.920	5732.33	-375.15	340.38	-162.57	39°25'58.387"N	80°51'48.025"W	377.21	334.470	1.93	10.51	17.46	16.94	70.095	
5805.00	11.550	353.960	5776.13	-385.36	350.44	-164.76	39°25'58.486"N	80°51'48.053"W	387.24	334.820	9.52	10.58	17.48	16.96	69.527	
5850.00	9.120	13.910	5820.41	-392.72	358.39	-164.38	39°25'58.565"N	80°51'48.048"W	394.29	335.361	9.54	10.65	17.51	16.98	68.293	
5894.00	8.960	37.580	5863.88	-397.49	364.49	-161.45	39°25'58.625"N	80°51'48.011"W	398.64	336.110	8.40	10.72	17.55	17.00	66.970	
5939.00	9.090	52.190	5908.33	-400.51	369.45	-156.50	39°25'58.674"N	80°51'47.947"W	401.23	337.042	5.09	10.79	17.58	17.02	65.569	
5984.00	8.510	82.050	5952.82	-400.96	372.09	-150.39	39°25'58.700"N	80°51'47.870"W	401.33	337.992	10.12	10.86	17.61	17.03	65.220	
6029.00	9.960	109.100	5997.26	-397.86	371.27	-143.41	39°25'58.692"N	80°51'47.781"W	398.01	338.880	10.06	10.93	17.66	17.05	66.399	
6074.00	13.850	122.250	6041.29	-391.19	367.12	-135.18	39°25'58.651"N	80°51'47.676"W	391.22	339.786	10.49	11.00	17.72	17.06	67.598	
6118.00	17.280	134.730	6083.68	-381.16	359.71	-126.07	39°25'58.577"N	80°51'47.560"W	381.16	340.685	10.85	11.06	17.78	17.06	68.299	
6163.00	21.350	144.290	6126.15	-367.27	348.35	-116.54	39°25'58.465"N	80°51'47.439"W	367.33	341.503	11.43	11.12	17.85	17.08	70.200	
6208.00	24.980	148.010	6167.52	-350.11	333.63	-106.72	39°25'58.319"N	80°51'47.314"W	350.29	342.262	8.69	11.19	17.91	17.09	72.087	
6253.00	29.030	148.820	6207.60	-330.13	316.23	-96.03	39°25'58.147"N	80°51'47.178"W	330.48	343.108	9.04	11.25	17.96	17.12	73.118	
6297.00	33.160	148.100	6245.27	-307.91	296.87	-84.14	39°25'57.955"N	80°51'47.027"W	308.56	344.176	9.42	11.31	18.01	17.15	73.832	
6342.00	37.480	147.840	6281.98	-282.52	274.82	-70.34	39°25'57.737"N	80°51'46.851"W	283.68	345.643	9.61	11.38	18.07	17.20	74.720	
6387.00	41.870	148.140	6316.61	-254.48	250.46	-55.12	39°25'57.496"N	80°51'46.658"W	256.45	347.589	9.76	11.45	18.13	17.28	76.262	
6401.00†	43.192	148.235	6326.93	-245.23	242.42	-50.13	39°25'57.417"N	80°51'46.594"W	247.55	348.317	9.46	11.62	18.18	17.34	77.608	Middlesex: 6401' MD
6432.00	46.120	148.430	6348.97	-223.93	223.88	-38.69	39°25'57.233"N	80°51'46.449"W	227.19	350.194	9.46	11.52	18.19	17.37	78.728	

RECEIVED
 Office of Oil and Gas
 OCT 12 2017
 WV Department of
 Environmental Protection



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 10 of 14



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Johnston Unit 3H
Field	Tyler	Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad		

WELLPATH DATA (334 stations) - with Positional Uncertainty values † = interpolated/extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
6477.00	50.420	149.120	6378.92	-191.05	195.16	-21.29	39°25'56.949"N	80°51'46.228"W	196.32	353.773	9.62	11.60	18.26	17.49	82.450	
6521.00	55.540	149.960	6405.40	-156.57	164.89	-3.50	39°25'56.650"N	80°51'46.001"W	164.92	358.785	11.74	11.69	18.35	17.63	87.865	
6559.00†	59.504	149.804	6425.80	-125.06	137.16	12.59	39°25'56.375"N	80°51'45.797"W	137.74	5.243	10.44	11.81	18.45	17.77	94.845	Burkett: 6559' MD
6565.00	60.130	149.780	6428.82	-119.97	132.68	15.20	39°25'56.331"N	80°51'45.764"W	133.55	6.533	10.44	11.79	18.46	17.78	95.500	
6611.00	64.310	149.090	6450.26	-80.03	97.65	35.89	39°25'55.985"N	80°51'45.501"W	104.03	20.181	9.18	11.89	18.62	17.93	105.922	
6635.00†	66.795	148.635	6460.19	-59.63	78.95	47.19	39°25'55.800"N	80°51'45.357"W	91.98	30.867	10.50	12.11	18.79	18.03	113.971	Tully: 6635' MD
6656.00	68.970	148.250	6468.09	-39.61	62.37	57.37	39°25'55.636"N	80°51'45.228"W	84.74	42.607	10.50	12.00	18.85	18.05	116.448	
6700.00	73.270	147.920	6482.33	1.05	27.04	79.37	39°25'55.286"N	80°51'44.948"W	83.85	71.186	9.80	12.12	19.14	18.13	124.515	
6745.00	77.220	148.060	6493.79	43.53	-9.85	102.44	39°25'54.921"N	80°51'44.655"W	102.91	95.493	8.78	12.25	19.51	18.18	130.103	
6755.00†	77.770	148.503	6495.95	53.07	-18.15	107.57	39°25'54.839"N	80°51'44.590"W	109.09	99.580	7.00	12.46	19.77	18.21	132.496	Marcellus: 6755' MD
6790.00	79.700	150.040	6502.79	86.74	-47.66	125.11	39°25'54.547"N	80°51'44.367"W	133.88	110.854	7.00	12.37	19.93	18.22	133.882	
6834.00	83.010	153.010	6509.40	129.70	-85.89	145.84	39°25'54.169"N	80°51'44.103"W	169.25	120.496	10.06	12.49	20.38	18.24	136.655	
6879.00	86.840	156.900	6513.39	174.30	-126.49	164.80	39°25'53.767"N	80°51'43.862"W	207.74	127.507	12.11	12.62	20.89	18.26	139.072	
6924.00	88.040	159.370	6515.40	219.21	-168.20	181.54	39°25'53.355"N	80°51'43.650"W	247.48	132.816	6.10	12.76	21.42	18.27	141.240	
7013.00	87.860	159.380	6518.58	308.14	-251.44	212.87	39°25'52.532"N	80°51'43.252"W	329.45	139.749	0.20	13.02	22.53	18.30	144.577	
7103.00	88.020	159.930	6521.82	398.07	-335.78	244.14	39°25'51.698"N	80°51'42.855"W	415.15	143.979	0.64	13.30	23.75	18.31	146.886	
7193.00	89.100	160.870	6524.08	488.04	-420.53	274.32	39°25'50.860"N	80°51'42.472"W	502.09	146.883	1.59	13.61	25.06	18.33	148.636	
7282.00	89.340	159.110	6525.29	577.03	-504.15	304.77	39°25'50.033"N	80°51'42.086"W	589.11	148.846	2.00	13.96	26.43	18.34	149.935	
7372.00	89.160	159.690	6526.47	667.00	-588.39	336.43	39°25'49.200"N	80°51'41.684"W	677.78	150.239	0.67	14.32	27.88	18.35	150.916	
7461.00	89.370	158.590	6527.61	755.97	-671.54	368.12	39°25'48.377"N	80°51'41.282"W	765.82	151.270	1.26	14.71	29.36	18.36	151.665	
7551.00	90.760	160.220	6527.51	845.95	-755.79	399.78	39°25'47.544"N	80°51'40.880"W	855.01	152.123	2.38	15.12	30.90	18.37	152.309	
7640.00	89.900	158.430	6526.99	934.93	-839.05	431.20	39°25'46.721"N	80°51'40.481"W	943.36	152.801	2.23	15.57	32.47	18.37	152.846	
7729.00	89.800	162.160	6527.23	1023.91	-922.82	461.20	39°25'45.892"N	80°51'40.100"W	1031.65	153.445	4.19	16.02	34.08	18.38	153.366	
7819.00	89.830	161.630	6527.52	1113.88	-1008.37	489.17	39°25'45.046"N	80°51'39.746"W	1120.75	154.121	0.59	16.49	35.74	18.39	153.932	
7909.00	89.650	158.770	6527.93	1203.87	-1093.04	518.65	39°25'44.209"N	80°51'39.359"W	1210.28	154.573	3.18	16.97	37.40	18.41	154.323	
7998.00	89.680	158.640	6528.45	1292.83	-1175.96	551.98	39°25'43.389"N	80°51'38.949"W	1299.06	154.855	0.15	17.47	39.08	18.42	154.584	
8088.00	89.680	160.150	6528.95	1382.81	-1260.20	583.65	39°25'42.556"N	80°51'38.547"W	1388.79	155.149	1.68	17.98	40.78	18.43	154.839	
8177.00	89.900	161.980	6529.28	1471.80	-1344.38	612.53	39°25'41.724"N	80°51'38.180"W	1477.34	155.505	2.07	18.50	42.48	18.44	155.147	
8267.00	89.770	162.500	6529.53	1561.75	-1430.09	639.98	39°25'40.876"N	80°51'37.832"W	1566.75	155.891	0.60	19.04	44.21	18.46	155.485	
8356.00	89.770	163.670	6529.89	1650.66	-1515.23	665.87	39°25'40.034"N	80°51'37.504"W	1655.09	156.277	1.31	19.58	45.92	18.47	155.826	



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 11 of 14



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #08
Area	Tyler County, WV		Well	Johnston Unit 3H
Field	Tyler		Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad			

WELLPATH DATA (334 stations) - with Positional Uncertainty values

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
8446.00	89.030	162.020	6530.83	1740.57	-1601.22	692.42	39°25'39.184"N	80°51'37.167"W	1744.52	156.615	2.01	20.15	47.66	18.49	156.135	
8535.00	89.310	161.780	6532.12	1829.54	-1685.81	720.06	39°25'38.347"N	80°51'36.817"W	1833.15	156.871	0.41	20.71	49.40	18.51	156.377	
8625.00	89.120	160.260	6533.36	1919.52	-1770.90	749.33	39°25'37.506"N	80°51'36.445"W	1922.91	157.065	1.70	21.29	51.17	18.52	156.566	
8714.00	88.540	159.270	6535.17	2008.49	-1854.39	780.11	39°25'36.680"N	80°51'36.055"W	2011.80	157.184	1.29	21.87	52.94	18.54	156.692	
8804.00	88.480	159.630	6537.51	2098.43	-1938.36	812.42	39°25'35.850"N	80°51'35.645"W	2101.73	157.260	0.71	22.46	54.73	18.57	156.778	
8893.00	88.010	158.700	6540.24	2187.34	-2021.22	844.79	39°25'35.031"N	80°51'35.234"W	2190.66	157.317	0.53	23.05	56.51	18.59	156.846	
8983.00	87.980	159.450	6543.39	2277.26	-2105.23	876.91	39°25'34.200"N	80°51'34.826"W	2280.56	157.386	0.83	23.66	58.31	18.61	156.922	
9072.00	88.690	161.430	6545.97	2366.22	-2189.06	906.69	39°25'33.371"N	80°51'34.448"W	2369.40	157.501	2.36	24.26	60.10	18.64	157.036	
9162.00	89.060	161.720	6547.74	2456.19	-2274.43	935.13	39°25'32.527"N	80°51'34.088"W	2459.16	157.650	0.52	24.88	61.91	18.66	157.182	
9251.00	89.000	159.790	6549.25	2545.17	-2358.44	964.46	39°25'31.696"N	80°51'33.716"W	2548.02	157.758	2.17	25.49	63.71	18.69	157.294	
9341.00	89.640	158.270	6550.32	2635.13	-2442.47	996.67	39°25'30.865"N	80°51'33.307"W	2637.99	157.802	1.83	26.11	65.54	18.71	157.349	
9431.00	89.740	156.790	6550.80	2725.01	-2525.63	1031.06	39°25'30.042"N	80°51'32.870"W	2727.98	157.793	1.65	26.74	67.37	18.74	157.357	
9520.00	89.740	158.410	6551.21	2813.89	-2607.91	1064.98	39°25'29.229"N	80°51'32.440"W	2816.98	157.787	1.82	27.38	69.19	18.77	157.363	
9610.00	89.670	157.640	6551.67	2903.81	-2691.37	1098.66	39°25'28.403"N	80°51'32.012"W	2906.98	157.794	0.86	28.00	71.03	18.80	157.381	
9699.00	89.610	157.820	6552.23	2992.70	-2773.73	1132.38	39°25'27.589"N	80°51'31.584"W	2995.98	157.792	0.21	28.63	72.85	18.83	157.391	
9789.00	89.640	159.120	6552.82	3082.65	-2857.45	1165.41	39°25'26.761"N	80°51'31.165"W	3085.97	157.812	1.44	29.27	74.70	18.86	157.418	
9879.00	89.580	162.800	6553.43	3172.63	-2942.46	1194.91	39°25'25.920"N	80°51'30.790"W	3175.83	157.898	3.87	29.91	76.54	18.89	157.504	
9968.00	89.700	163.250	6553.99	3261.54	-3027.53	1221.05	39°25'25.079"N	80°51'30.459"W	3264.49	158.035	0.74	30.55	78.37	18.92	157.638	
10058.00	89.830	162.480	6554.36	3351.46	-3113.54	1247.56	39°25'24.228"N	80°51'30.123"W	3354.18	158.165	0.87	31.20	80.20	18.95	157.765	
10148.00	89.610	161.040	6554.80	3441.44	-3199.01	1275.73	39°25'23.383"N	80°51'29.766"W	3444.00	158.258	1.62	31.85	82.05	18.98	157.861	
10237.00	89.610	163.220	6555.41	3530.39	-3283.71	1303.04	39°25'22.546"N	80°51'29.420"W	3532.80	158.356	2.45	32.50	83.87	19.02	157.959	
10327.00	89.520	164.580	6556.09	3620.23	-3370.17	1328.00	39°25'21.691"N	80°51'29.103"W	3622.38	158.493	1.51	33.16	85.72	19.05	158.092	
10417.00	89.890	165.750	6556.55	3709.92	-3457.17	1351.04	39°25'20.830"N	80°51'28.811"W	3711.78	158.655	1.36	33.81	87.55	19.09	158.248	
10506.00	89.850	163.700	6556.75	3798.67	-3543.02	1374.48	39°25'19.982"N	80°51'28.514"W	3800.29	158.797	2.30	34.47	89.37	19.13	158.387	
10596.00	89.920	160.120	6556.94	3888.63	-3628.56	1402.43	39°25'19.136"N	80°51'28.160"W	3890.15	158.869	3.98	35.13	91.23	19.17	158.464	
10685.00	89.880	159.380	6557.09	3977.62	-3712.06	1433.23	39°25'18.310"N	80°51'27.769"W	3979.14	158.888	0.83	35.78	93.08	19.20	158.492	
10775.00	89.700	160.980	6557.42	4067.62	-3796.72	1463.74	39°25'17.473"N	80°51'27.382"W	4069.11	158.917	1.79	36.45	94.94	19.24	158.526	
10864.00	90.250	162.380	6557.46	4156.59	-3881.21	1491.72	39°25'16.637"N	80°51'27.027"W	4158.01	158.976	1.69	37.11	96.78	19.28	158.588	
10954.00	90.220	162.170	6557.09	4246.55	-3966.94	1519.12	39°25'15.790"N	80°51'26.680"W	4247.86	159.046	0.24	37.77	98.64	19.32	158.659	
11043.00	90.310	161.250	6556.68	4335.52	-4051.44	1547.05	39°25'14.954"N	80°51'26.326"W	4336.76	159.101	1.04	38.44	100.48	19.36	158.718	

RECEIVED
 Office of Oil and Gas
 OCT 12 2017
 WV Department of
 Environmental Protection



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 12 of 14



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #08
Area	Tyler County, WV		Well	Johnston Unit 3H
Field	Tyler		Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad			

WELLPATH DATA (334 stations) - with Positional Uncertainty values																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
11133.00	90.160	158.450	6556.31	4425.51	-4135.92	1578.05	39°25'14.119"N	80°51'25.932"W	4426.75	159.116	3.12	39.11	102.34	19.41	158.740	
11222.00	90.130	156.460	6556.08	4514.38	-4218.12	1612.17	39°25'13.306"N	80°51'25.499"W	4515.70	159.083	2.24	39.77	104.20	19.45	158.717	
11312.00	90.160	158.260	6555.86	4604.25	-4301.18	1646.81	39°25'12.484"N	80°51'25.059"W	4605.66	159.049	2.00	40.44	106.08	19.49	158.692	
11401.00	89.970	160.490	6555.76	4693.22	-4384.47	1678.16	39°25'11.660"N	80°51'24.662"W	4694.65	159.056	2.51	41.11	107.93	19.54	158.703	
11491.00	89.940	164.910	6555.83	4783.13	-4470.37	1704.92	39°25'10.811"N	80°51'24.323"W	4784.45	159.124	4.91	41.78	109.80	19.58	158.772	
11581.00	90.990	169.770	6555.10	4872.46	-4558.16	1724.64	39°25'09.943"N	80°51'24.073"W	4873.52	159.275	5.52	42.46	111.66	19.63	158.919	
11670.00	90.440	169.430	6553.98	4960.32	-4645.69	1740.70	39°25'09.078"N	80°51'23.870"W	4961.09	159.459	0.73	43.13	113.48	19.68	159.099	
11760.00	90.130	165.150	6553.54	5049.66	-4733.46	1760.50	39°25'08.210"N	80°51'23.620"W	5050.25	159.599	4.77	43.81	115.33	19.73	159.235	
11849.00	90.530	163.130	6553.02	5138.47	-4819.06	1784.82	39°25'07.363"N	80°51'23.311"W	5138.97	159.677	2.31	44.48	117.18	19.78	159.317	
11939.00	90.680	155.340	6552.07	5228.38	-4903.15	1816.70	39°25'06.532"N	80°51'22.907"W	5228.89	159.669	8.66	45.16	119.07	19.83	159.317	
12028.00	90.190	153.820	6551.40	5316.90	-4983.53	1854.90	39°25'05.737"N	80°51'22.422"W	5317.54	159.584	1.79	45.83	120.97	19.88	159.240	
12118.00	90.250	155.610	6551.05	5406.44	-5064.90	1893.34	39°25'04.932"N	80°51'21.934"W	5407.21	159.503	1.99	46.52	122.85	19.93	159.169	
12208.00	90.280	155.870	6550.63	5496.14	-5146.95	1930.32	39°25'04.120"N	80°51'21.464"W	5497.02	159.442	0.29	47.20	124.73	19.98	159.115	
12297.00	90.250	159.160	6550.22	5585.01	-5229.17	1964.35	39°25'03.307"N	80°51'21.032"W	5585.96	159.411	3.70	47.87	126.59	20.03	159.090	
12387.00	90.280	160.320	6549.81	5675.00	-5313.60	1995.52	39°25'02.472"N	80°51'20.637"W	5675.96	159.416	1.29	48.56	128.47	20.09	159.099	
12476.00	90.280	161.100	6549.37	5763.99	-5397.61	2024.92	39°25'01.642"N	80°51'20.264"W	5764.93	159.436	0.88	49.23	130.32	20.14	159.122	
12566.00	90.130	160.540	6549.05	5853.99	-5482.61	2054.48	39°25'00.801"N	80°51'19.889"W	5854.90	159.458	0.64	49.92	132.20	20.20	159.146	
12655.00	90.400	157.830	6548.64	5942.96	-5565.79	2086.11	39°24'59.978"N	80°51'19.488"W	5943.89	159.454	3.06	50.59	134.05	20.25	159.147	
12745.00	89.910	154.700	6548.39	6032.71	-5648.17	2122.33	39°24'59.164"N	80°51'19.028"W	6033.75	159.406	3.52	51.28	135.94	20.31	159.107	
12834.00	90.030	155.770	6548.44	6121.33	-5728.98	2159.61	39°24'58.364"N	80°51'18.555"W	6122.51	159.345	1.21	51.96	137.81	20.36	159.053	
12924.00	89.200	155.340	6549.05	6211.00	-5810.91	2196.85	39°24'57.554"N	80°51'18.082"W	6212.31	159.291	1.04	52.65	139.69	20.42	159.005	
13013.00	89.140	161.580	6550.34	6299.89	-5893.65	2229.51	39°24'56.736"N	80°51'17.667"W	6301.25	159.279	7.01	53.33	141.55	20.48	158.997	
13103.00	89.830	164.340	6551.30	6389.79	-5979.68	2265.88	39°24'55.885"N	80°51'17.333"W	6391.05	159.331	3.11	54.01	143.45	20.55	159.049	
13192.00	89.690	163.850	6551.83	6478.61	-6065.27	2300.27	39°24'55.039"N	80°51'17.024"W	6479.75	159.396	0.55	54.70	145.30	20.61	159.115	
13282.00	89.790	163.680	6552.24	6568.46	-6151.68	2335.43	39°24'54.184"N	80°51'16.705"W	6569.49	159.456	0.22	55.38	147.17	20.67	159.175	
13371.00	89.690	162.340	6552.64	6657.37	-6236.80	2331.43	39°24'53.343"N	80°51'16.376"W	6658.32	159.503	1.51	56.07	149.01	20.73	159.223	
13461.00	89.760	161.380	6553.08	6747.34	-6322.32	2369.45	39°24'52.497"N	80°51'16.020"W	6748.24	159.535	1.07	56.76	150.89	20.79	159.257	
13550.00	89.720	160.730	6553.48	6836.34	-6406.50	2388.35	39°24'51.665"N	80°51'15.654"W	6837.21	159.554	0.73	57.44	152.75	20.86	159.279	
13640.00	89.660	159.180	6553.97	6926.33	-6491.04	2419.20	39°24'50.828"N	80°51'15.263"W	6927.20	159.560	1.72	58.13	154.63	20.92	159.288	
13729.00	89.660	159.440	6554.49	7015.31	-6574.30	2450.64	39°24'50.005"N	80°51'14.864"W	7016.20	159.557	0.29	58.81	156.49	20.98	159.288	



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 13 of 14



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Johnston Unit 3H
Field	Tyler	Wellbore	Johnston Unit 3H AWB
Facility	Dale Pad		

WELLPATH DATA (334 stations) - with Positional Uncertainty values																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Vertical Semi-Axis [ft]	Horiz Major Semi-Axis [ft]	Horiz Minor Semi-Axis [ft]	Horiz Minor Axis Azim [°]	Comments
13819.00	89.690	158.670	6555.00	7105.28	-8658.35	2482.81	39°24'49.174"N	80°51'14.456"W	7106.20	159.550	0.86	59.50	158.37	21.05	159.285	
13908.00	89.690	154.330	6555.49	7194.04	-6739.95	2518.29	39°24'48.367"N	80°51'14.005"W	7195.05	159.512	4.88	60.19	160.24	21.12	159.253	
13968.00	89.630	153.100	6555.84	7253.62	-6793.74	2544.86	39°24'47.835"N	80°51'13.668"W	7254.74	159.465	2.05	60.65	161.50	21.16	159.209	
13993.00	89.630	153.100	6556.00	7278.42	-6816.04	2556.17	39°24'47.614"N	80°51'13.524"W	7279.59	159.443	0.00	60.83	162.04	26.55	159.272	Projected MD at TD: 13993'

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Johnston Unit 3H POE - Plat	6491.00	1.46	99.81	1679266.33	14319239.29	39°25'55.033"N	80°51'44.688"W	point
Johnston Unit 3H BHL Rev-1	6513.00	-6794.22	2541.55	1681707.10	14312446.33	39°24'47.830"N	80°51'13.710"W	point
Johnston Unit 3H LP Rev-1	6513.00	-155.85	181.77	1679348.25	14319082.04	39°25'53.477"N	80°51'43.647"W	point

WELLPATH COMPOSITION - Ref Wellbore: Johnston Unit 3H AWB Ref Wellpath: Johnston Unit 3H AWP Proj: 13993'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
19.00	5572.69	SDI Keeper v1.04	01 SDI Std. Keeper Gyro (100'-5572.69')	Johnston Unit 3H AWB
5572.69	13968.00	BHI AutoTrak Curve w/ Surcon (MagCAD, Short spacing)	02 BHI AT Curve [SS+MSA] <8-1/2">(5572.69')(5671'-13968')	Johnston Unit 3H AWB
13968.00	13993.00	Blind Drilling (std)	Projection to bit	Johnston Unit 3H AWB

RECEIVED
 Office of Oil and Gas
 OCT 12 2017
 WV Department of
 Environmental Protection



Actual Wellpath Report

Positional Uncertainty
Johnston Unit 3H AWP Proj: 13993'
Page 14 of 14



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Johnston Unit 3H
Field	Tyler	Wellbore	Johnston Unit 3H AWP
Facility	Dale Pad		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
100.00	0.070	140.660	100.00	SDI Std. Keeper Gyro (100'-5572.69')
5671.00	13.400	345.290	5646.06	BHI AT Curve [SS+MSA] <8-1/2">(5572.69')(5671'-13968')
6401.00	43.192	148.235	6326.93	Middlesex: 6401' MD
6559.00	59.504	149.804	6425.80	Burkett: 6559' MD
6635.00	66.795	148.635	6460.19	Tully: 6635' MD
6755.00	77.770	148.503	6495.95	Marcellus: 6755' MD
13993.00	89.630	153.100	6556.00	Projected MD at TD: 13993'

COMMENTS
<p>Wellpath general comments API #: 47-950-23080-0000 BHI Job #: 7952206 Rig: PD 523 Duration: 05.10.2016-05.13.2016 SDI Std. Keeper Gyro (100'-5572.69') BHI AT Curve [SS+MSA] <8-1/2">(5572.69')(5671'-13968') Middlesex: 6401' MD Burkett: 6559' MD Tully: 6635' MD Marcellus: 6755' MD Projected MD at TD: 13993'</p>

RECEIVED
Office of Oil and Gas
OCT 12 2017
WV Department of
Environmental Protection