

ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
 Field: Ritchie
 Facility: Noland Pad

Slot: Slot #03
 Well: Western Unit 3H ST01
 Wellbore: Western Unit 3H ST01 PWB



API: 47-085-10295-0100
 BHI Job #: 8401916A
 Rig: Patterson 343
 Duration: 03/12/2017-03/17/2017

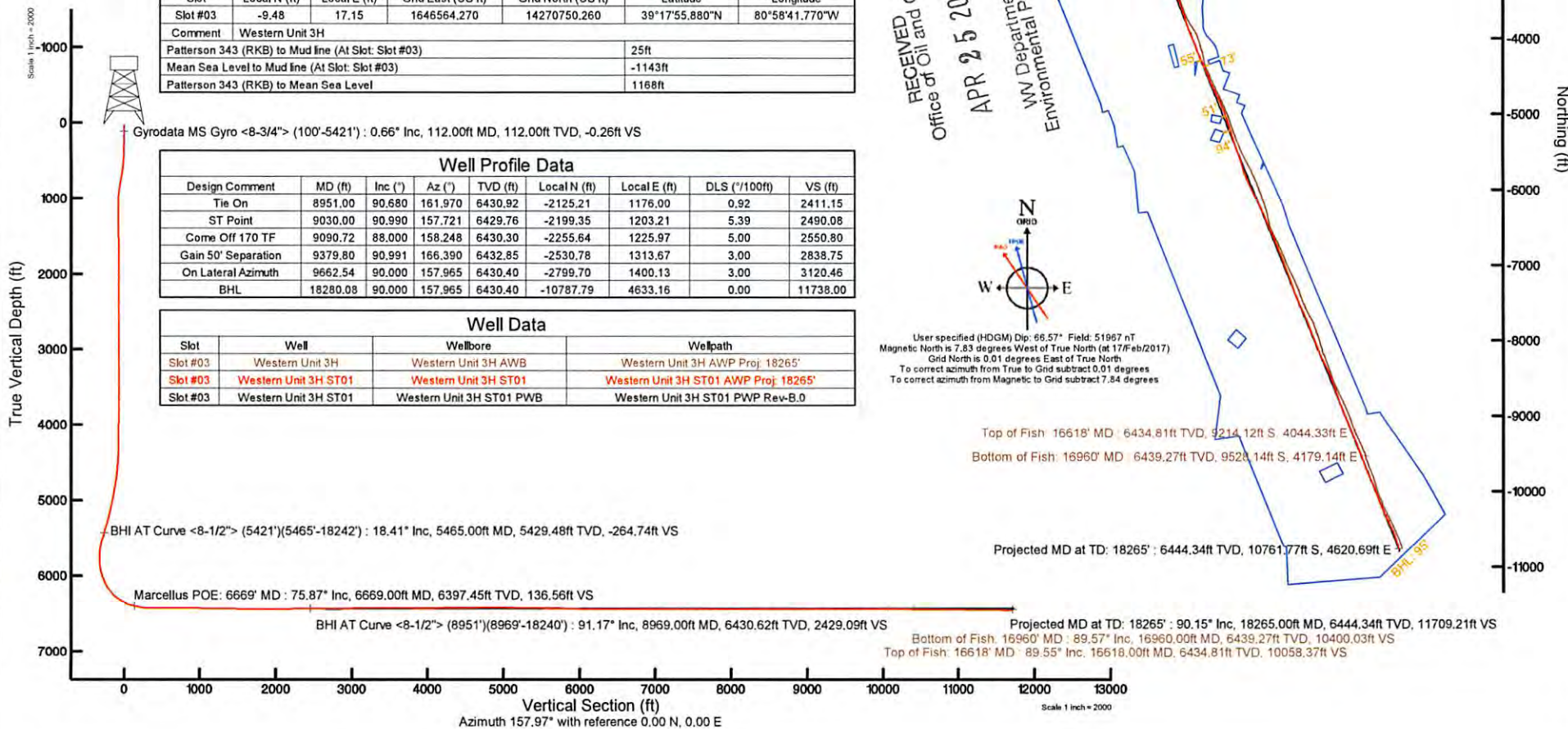


Plot reference wellpath is Western Unit 3H ST01 PWP Rev-B.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Patterson 343 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to Patterson 343 (RKB)	North Reference: Grid north
Patterson 343 (RKB) to Mean Sea Level: 1168 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #03): -1143 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: delaset on 2017-03-22
	Database: WA_MPL_EasternUS_Defn

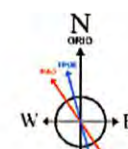
Location Information					
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Noland Pad		1646547.130	14270759.740	39°17'55.974"N	80°58'41.988"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
Slot #03	-9.48	17.15	1646564.270	14270750.260	39°17'55.880"N
Comment: Western Unit 3H					
Patterson 343 (RKB) to Mud line (At Slot: Slot #03)		25ft			
Mean Sea Level to Mud line (At Slot: Slot #03)		-1143ft			
Patterson 343 (RKB) to Mean Sea Level		1168ft			

Well Profile Data							
Design Comment	MD (ft)	Inc (")	Az (")	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	8951.00	90.680	161.970	6430.92	-2125.21	1176.00	0.92
ST Point	9030.00	90.990	157.721	6429.76	-2199.35	1203.21	5.39
Come Off 170 TF	9090.72	88.000	158.248	6430.30	-2255.64	1225.97	5.00
Gain 50' Separation	9379.80	90.991	166.390	6432.85	-2530.78	1313.67	3.00
On Lateral Azimuth	9662.54	90.000	157.965	6430.40	-2799.70	1400.13	3.00
BHL	18280.08	90.000	157.965	6430.40	-10787.79	4633.16	0.00

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #03	Western Unit 3H	Western Unit 3H AWP	Western Unit 3H AWP Proj: 18265'
Slot #03	Western Unit 3H ST01	Western Unit 3H ST01	Western Unit 3H ST01 AWP Proj: 18265'
Slot #03	Western Unit 3H ST01	Western Unit 3H ST01 PWB	Western Unit 3H ST01 PWP Rev-B.0



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User specified (HDGM) Dip: 66.57° Field: 51967 nT
 Magnetic North is 7.83 degrees West of True North (at 17/Feb/2017)
 Grid North is 0.01 degrees East of True North
 To correct azimuth from True to Grid subtract 0.01 degrees
 To correct azimuth from Magnetic to Grid subtract 7.84 degrees

Top of Fish: 16618' MD : 6434.81ft TVD, 9214.12ft S, 4044.33ft E
 Bottom of Fish: 16960' MD : 6439.27ft TVD, 9528.14ft S, 4179.14ft E
 Projected MD at TD: 18265' : 6444.34ft TVD, 10761.77ft S, 4620.69ft E
 Projected MD at TD: 18265' : 90.15° Inc, 18265.00ft MD, 6444.34ft TVD, 11709.21ft VS
 Bottom of Fish: 16960' MD : 89.57° Inc, 16960.00ft MD, 6439.27ft TVD, 10400.03ft VS
 Top of Fish: 16618' MD : 89.55° Inc, 16618.00ft MD, 6434.81ft TVD, 10058.37ft VS



Actual Wellpath Report

Western Unit 3H ST01 AWP Proj: 18265'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Ritchie County, WV	Well	Western Unit 3H ST01
Field	Ritchie	Wellbore	Western Unit 3H ST01
Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Delaset
Scale	0.999600	Report Generated	22/Mar/2017 at 06:17
Convergence at slot	0.02° East	Database/Source file	WA_MPL_EasternUS_Defn/Western_Unit_3H_ST01_AWP_Proj_18265_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-9.48	17.15	1646564.27	14270750.26	39°17'55.880"N	80°58'41.770"W
Facility Reference Pt			1646547.13	14270759.74	39°17'55.974"N	80°58'41.988"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 343 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 343 (RKB) to Mean Sea Level	1168.00ft
Vertical Reference Pt	Patterson 343 (RKB)	Patterson 343 (RKB) to Mud Line at Slot (Slot #03)	25.00ft
MD Reference Pt	Patterson 343 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	157.97°

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Field	Ritchie	Wellbore	Western Unit 3H ST01
Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

WELLPATH DATA (218 stations) † = interpolated/extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	279.890	0.00	0.00	0.00	0.00	1646564.27	14270750.26	39°17'55.880"N	80°58'41.770"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	279.890	25.00	0.00	0.00	0.00	1646564.27	14270750.26	39°17'55.880"N	80°58'41.770"W	0.00	0.000	0.00	0.00	0.00	
112.00	0.660	279.890	112.00	-0.26	0.09	-0.49	1646563.78	14270750.35	39°17'55.881"N	80°58'41.776"W	0.50	279.890	0.76	0.76	-92.08	Gyrodata MS Gyro <8-3/4"> (100'-5421')
212.00	0.750	292.600	211.99	-1.03	0.44	-1.67	1646562.61	14270750.70	39°17'55.884"N	80°58'41.791"W	1.72	284.688	0.18	0.09	12.71	
312.00	0.950	316.190	311.98	-2.26	1.29	-2.84	1646561.43	14270751.55	39°17'55.893"N	80°58'41.806"W	3.12	294.341	0.40	0.20	23.59	
412.00	2.270	349.710	411.94	-4.97	3.83	-3.77	1646560.50	14270754.09	39°17'55.918"N	80°58'41.818"W	5.38	315.468	1.57	1.32	33.52	
512.00	5.290	346.460	511.71	-11.47	10.27	-5.20	1646559.07	14270760.52	39°17'55.982"N	80°58'41.836"W	11.51	333.115	3.03	3.02	-3.25	
612.00	6.660	350.170	611.17	-21.70	20.46	-7.27	1646557.00	14270770.71	39°17'56.082"N	80°58'41.862"W	21.72	340.430	1.42	1.37	3.71	
712.00	10.610	350.770	710.01	-36.35	35.27	-9.74	1646554.53	14270785.51	39°17'56.229"N	80°58'41.894"W	36.59	344.559	3.95	3.95	0.60	
812.00	11.910	3.020	808.10	-54.68	54.66	-10.67	1646553.60	14270804.90	39°17'56.420"N	80°58'41.906"W	55.70	348.950	2.72	1.30	12.25	
912.00	8.650	16.690	906.50	-69.90	72.18	-7.97	1646556.30	14270822.41	39°17'56.593"N	80°58'41.871"W	72.62	353.699	4.05	-3.26	13.67	
1012.00	5.560	32.700	1005.73	-78.56	83.46	-3.19	1646561.08	14270833.69	39°17'56.705"N	80°58'41.810"W	83.52	357.810	3.64	-3.09	16.01	
1112.00	3.630	61.380	1105.41	-81.73	89.06	2.21	1646566.47	14270839.28	39°17'56.760"N	80°58'41.742"W	89.08	1.419	2.94	-1.93	28.68	
1212.00	1.760	101.620	1205.30	-81.24	90.26	6.49	1646570.76	14270840.49	39°17'56.772"N	80°58'41.687"W	90.50	4.112	2.55	-1.87	40.24	
1312.00	1.100	115.930	1305.27	-79.67	89.53	8.86	1646573.12	14270839.76	39°17'56.765"N	80°58'41.657"W	89.97	5.649	0.75	-0.66	14.31	
1412.00	1.300	131.880	1405.25	-77.94	88.36	10.56	1646574.83	14270838.58	39°17'56.753"N	80°58'41.635"W	88.99	6.818	0.39	0.20	15.95	
1512.00	1.440	138.650	1505.22	-75.74	86.66	12.24	1646576.50	14270836.88	39°17'56.736"N	80°58'41.614"W	87.52	8.039	0.21	0.14	6.77	
1612.00	0.970	113.630	1605.20	-73.95	85.37	13.84	1646578.11	14270835.60	39°17'56.724"N	80°58'41.594"W	86.49	9.211	0.69	-0.47	-25.02	
1712.00	0.990	102.180	1705.19	-72.86	84.85	15.46	1646579.73	14270835.08	39°17'56.719"N	80°58'41.573"W	86.25	10.329	0.20	0.02	-11.45	
1812.00	1.040	105.180	1805.17	-71.82	84.43	17.18	1646581.45	14270834.66	39°17'56.715"N	80°58'41.551"W	86.16	11.505	0.07	0.05	3.00	
1912.00	1.160	112.410	1905.15	-70.56	83.81	19.00	1646583.26	14270834.03	39°17'56.708"N	80°58'41.528"W	85.93	12.771	0.18	0.12	7.23	
2012.00	0.510	118.440	2005.14	-69.51	83.21	20.32	1646584.59	14270833.44	39°17'56.702"N	80°58'41.511"W	85.66	13.725	0.66	-0.65	6.03	
2112.00	0.170	187.640	2105.14	-69.04	82.85	20.70	1646584.96	14270833.08	39°17'56.699"N	80°58'41.507"W	85.40	14.025	0.48	-0.34	69.20	
2212.00	0.150	193.820	2205.14	-68.80	82.58	20.64	1646584.91	14270832.80	39°17'56.696"N	80°58'41.507"W	85.12	14.036	0.03	-0.02	6.18	
2312.00	0.130	208.310	2305.14	-68.63	82.35	20.56	1646584.82	14270832.58	39°17'56.694"N	80°58'41.508"W	84.88	14.018	0.04	-0.02	14.49	
2412.00	0.090	276.390	2405.14	-68.59	82.26	20.43	1646584.69	14270832.49	39°17'56.693"N	80°58'41.510"W	84.76	13.946	0.13	-0.04	68.08	
2512.00	0.210	304.820	2505.14	-68.78	82.37	20.20	1646584.46	14270832.60	39°17'56.694"N	80°58'41.513"W	84.81	13.778	0.24	0.12	28.43	
2612.00	0.230	317.490	2605.14	-69.12	82.63	19.91	1646584.17	14270832.85	39°17'56.697"N	80°58'41.516"W	84.99	13.550	0.56	0.02	12.67	
2712.00	0.260	319.290	2705.14	-69.53	82.95	19.63	1646583.89	14270833.17	39°17'56.700"N	80°58'41.520"W	85.24	13.314	0.33	0.03	1.80	
2812.00	0.240	39.560	2805.14	-69.84	83.28	19.61	1646583.88	14270833.51	39°17'56.703"N	80°58'41.520"W	85.56	13.259	0.32	-0.02	80.27	

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Western Unit 3H ST01 AWP Proj: 18265'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Ritchie County, WV	Well	Western Unit 3H ST01
Field	Ritchie	Wellbore	Western Unit 3H ST01
Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

WELLPATH DATA (218 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
2912.00	0.830	78.060	2905.13	-69.81	83.59	20.46	1646584.72	14270833.82	39°17'56.706"N	80°58'41.510"W	86.06	13.752	0.66	0.59	38.50	
3012.00	0.710	73.670	3005.12	-69.63	83.91	21.76	1646586.02	14270834.14	39°17'56.709"N	80°58'41.493"W	86.69	14.537	0.13	-0.12	-4.39	
3112.00	0.640	77.050	3105.12	-69.48	84.21	22.90	1646587.16	14270834.44	39°17'56.712"N	80°58'41.478"W	87.27	15.212	0.08	-0.07	3.38	
3212.00	0.650	73.310	3205.11	-69.33	84.50	23.99	1646588.25	14270834.73	39°17'56.715"N	80°58'41.465"W	87.84	15.847	0.04	0.01	-3.74	
3312.00	0.790	62.800	3305.10	-69.34	84.98	25.14	1646589.40	14270835.21	39°17'56.720"N	80°58'41.450"W	88.62	16.482	0.19	0.14	-10.51	
3412.00	0.810	58.940	3405.09	-69.52	85.66	26.36	1646590.62	14270835.88	39°17'56.727"N	80°58'41.434"W	89.62	17.106	0.06	0.02	-3.86	
3512.00	0.840	51.800	3505.08	-69.83	86.48	27.54	1646591.80	14270836.70	39°17'56.735"N	80°58'41.419"W	90.76	17.667	0.11	0.03	-7.14	
3612.00	0.890	39.210	3605.07	-70.41	87.53	28.61	1646592.87	14270837.76	39°17'56.745"N	80°58'41.406"W	92.09	18.100	0.20	0.05	-12.59	
3712.00	0.830	28.910	3705.06	-71.24	88.77	29.45	1646593.71	14270838.99	39°17'56.757"N	80°58'41.395"W	93.53	18.355	0.17	-0.06	-10.30	
3812.00	0.840	342.210	3805.05	-72.43	90.10	29.58	1646593.84	14270840.32	39°17'56.770"N	80°58'41.394"W	94.83	18.174	0.66	0.01	-46.70	
3912.00	0.950	4.730	3905.04	-73.90	91.62	29.42	1646593.68	14270841.85	39°17'56.786"N	80°58'41.395"W	96.23	17.803	0.37	0.11	22.52	
4012.00	0.950	6.210	4005.02	-75.37	93.27	29.58	1646593.84	14270843.50	39°17'56.802"N	80°58'41.393"W	97.85	17.595	0.02	0.00	1.48	
4112.00	0.790	4.360	4105.01	-76.72	94.79	29.72	1646593.98	14270845.01	39°17'56.817"N	80°58'41.392"W	99.34	17.410	0.16	-0.16	-1.85	
4212.00	0.590	318.480	4205.01	-77.82	95.86	29.43	1646593.69	14270846.08	39°17'56.827"N	80°58'41.395"W	100.28	17.069	0.57	-0.20	-45.88	
4312.00	0.910	286.520	4305.00	-78.80	96.47	28.33	1646592.59	14270846.69	39°17'56.833"N	80°58'41.409"W	100.54	16.366	0.51	0.32	-31.96	
4412.00	2.680	323.170	4404.95	-81.56	98.57	26.17	1646590.43	14270848.79	39°17'56.854"N	80°58'41.437"W	101.98	14.868	2.02	1.77	36.65	
4512.00	3.620	334.830	4504.80	-86.97	103.30	23.42	1646587.68	14270853.51	39°17'56.901"N	80°58'41.472"W	105.92	12.776	1.13	0.94	11.66	
4612.00	5.240	348.540	4604.50	-94.61	110.63	21.17	1646585.43	14270860.84	39°17'56.973"N	80°58'41.500"W	112.64	10.835	1.92	1.62	13.71	
4712.00	7.470	353.430	4703.88	-105.37	121.56	19.52	1646583.78	14270871.77	39°17'57.082"N	80°58'41.521"W	123.12	9.123	2.29	2.23	4.89	
4812.00	9.770	356.450	4802.74	-119.68	136.49	18.25	1646582.52	14270886.70	39°17'57.229"N	80°58'41.537"W	137.71	7.617	2.34	2.30	3.02	
4912.00	12.080	1.270	4900.92	-137.34	155.42	17.96	1646582.22	14270905.62	39°17'57.416"N	80°58'41.541"W	156.46	6.591	2.48	2.31	4.82	
5012.00	14.180	11.540	4998.32	-157.16	177.89	20.64	1646584.90	14270928.08	39°17'57.638"N	80°58'41.507"W	179.09	6.619	3.13	2.10	10.27	
5112.00	17.250	20.500	5094.58	-178.30	203.79	28.29	1646592.55	14270953.97	39°17'57.894"N	80°58'41.410"W	205.75	7.903	3.90	3.07	8.96	
5212.00	17.960	21.700	5189.90	-200.37	232.00	39.18	1646603.44	14270982.17	39°17'58.173"N	80°58'41.271"W	235.29	9.586	0.80	0.71	1.20	
5312.00	19.320	16.540	5284.66	-224.45	262.19	49.59	1646613.84	14271012.35	39°17'58.471"N	80°58'41.138"W	266.84	10.711	2.14	1.36	-5.16	
5412.00	18.640	12.130	5379.22	-250.61	293.68	57.66	1646621.91	14271043.82	39°17'58.783"N	80°58'41.036"W	299.28	11.108	1.59	-0.68	-4.41	
5421.00	18.590	11.810	5387.75	-252.99	296.49	58.26	1646622.50	14271046.63	39°17'58.810"N	80°58'41.028"W	302.15	11.116	1.26	-0.56	-3.56	
5465.00	18.410	9.380	5429.48	-264.74	310.21	60.82	1646625.07	14271060.34	39°17'58.946"N	80°58'40.995"W	316.11	11.094	1.80	-0.41	-5.52	BHI AT Curve <8-1/2"> (5421'')(5465'-18242')
5518.00	19.230	9.000	5479.65	-279.36	327.08	63.55	1646627.80	14271077.21	39°17'59.113"N	80°58'40.961"W	333.20	10.996	1.56	1.55	-0.72	
5560.00	19.080	11.360	5519.32	-291.02	340.65	65.99	1646630.23	14271090.77	39°17'59.247"N	80°58'40.930"W	346.98	10.966	1.88	-0.36	5.62	

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MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	("/100ft)	("/100ft)	("/100ft)	
5607.00	18.120	10.450	5563.87	-303.60	355.36	68.83	1646633.07	14271105.48	39°17'59.392"N	80°58'40.893"W	361.97	10.961	2.13	-2.04	-1.94	
5654.00	14.240	16.410	5609.00	-314.30	368.10	71.79	1646636.03	14271118.22	39°17'59.518"N	80°58'40.856"W	375.04	11.035	8.97	-8.26	12.68	
5701.00	10.610	37.300	5654.91	-321.04	377.10	76.05	1646640.28	14271127.21	39°17'59.607"N	80°58'40.802"W	384.69	11.401	12.18	-7.72	44.45	
5749.00	8.970	51.700	5702.22	-324.34	382.93	81.66	1646645.90	14271133.04	39°17'59.665"N	80°58'40.730"W	391.54	12.038	6.11	-3.42	30.00	
5796.00	7.250	53.870	5748.75	-326.09	386.95	86.93	1646651.17	14271137.06	39°17'59.704"N	80°58'40.663"W	396.60	12.662	3.72	-3.66	4.62	
5843.00	8.730	75.670	5795.30	-326.34	389.59	92.78	1646657.02	14271139.69	39°17'59.730"N	80°58'40.589"W	400.48	13.396	7.12	3.15	46.38	
5890.00	12.020	91.850	5841.54	-323.88	390.31	101.14	1646665.37	14271140.41	39°17'59.738"N	80°58'40.482"W	403.20	14.527	9.29	7.00	34.43	
5937.00	12.430	103.360	5887.48	-318.97	388.98	110.95	1646675.18	14271139.09	39°17'59.724"N	80°58'40.358"W	404.50	15.920	5.25	0.87	24.49	
5984.00	15.360	121.860	5933.12	-311.00	384.53	121.17	1646685.39	14271134.63	39°17'59.680"N	80°58'40.228"W	403.16	17.490	11.25	6.23	39.36	
6031.00	18.280	137.890	5978.13	-299.04	375.77	131.40	1646695.62	14271125.87	39°17'59.594"N	80°58'40.097"W	398.08	19.274	11.61	6.21	34.11	
6078.00	20.640	150.170	6022.46	-283.90	363.10	140.47	1646704.69	14271113.22	39°17'59.469"N	80°58'39.982"W	389.33	21.150	10.02	5.02	26.13	
6125.00	23.220	155.300	6066.06	-266.44	347.50	148.47	1646712.68	14271097.62	39°17'59.314"N	80°58'39.880"W	377.88	23.134	6.83	5.49	10.91	
6172.00	27.470	155.760	6108.52	-246.34	329.19	156.79	1646721.00	14271079.31	39°17'59.133"N	80°58'39.775"W	364.62	25.469	9.05	9.04	0.98	
6219.00	31.830	154.220	6149.36	-223.13	308.13	166.64	1646730.84	14271058.27	39°17'58.925"N	80°58'39.649"W	350.30	28.405	9.42	9.28	-3.28	
6266.00	36.750	152.910	6188.18	-196.74	284.44	178.44	1646742.64	14271034.58	39°17'58.691"N	80°58'39.499"W	335.77	32.102	10.58	10.47	-2.79	
6313.00	41.430	152.490	6224.65	-167.24	258.11	192.03	1646756.22	14271008.27	39°17'58.431"N	80°58'39.327"W	321.71	36.649	9.97	9.96	-0.89	
6351.00†	45.518	154.291	6252.22	-141.18	234.74	203.72	1646767.91	14270984.90	39°17'58.200"N	80°58'39.178"W	310.81	40.954	11.24	10.76	4.74	Middlesex: 6351' MD , Middlesex: 6351' MD
6360.00	46.490	154.680	6258.47	-134.72	228.89	206.51	1646770.70	14270979.06	39°17'58.142"N	80°58'39.142"W	308.29	42.058	11.24	10.80	4.33	
6407.00	51.880	156.970	6289.18	-99.19	196.45	221.05	1646785.23	14270946.63	39°17'57.821"N	80°58'38.958"W	295.72	48.372	12.04	11.47	4.87	
6454.00	57.790	153.500	6316.25	-60.84	161.60	237.17	1646801.34	14270911.80	39°17'57.477"N	80°58'38.753"W	286.99	55.731	13.94	12.57	-7.38	
6501.00	62.120	154.190	6339.77	-20.27	125.09	255.09	1646819.26	14270875.30	39°17'57.116"N	80°58'38.525"W	284.11	63.878	9.30	9.21	1.47	
6531.00†	65.100	153.569	6353.11	6.53	100.96	266.93	1646831.09	14270851.18	39°17'56.877"N	80°58'38.374"W	285.38	69.281	10.11	9.93	-2.07	Burket: 6531' MD
6533.00†	65.299	153.528	6353.94	8.34	99.34	267.73	1646831.90	14270849.56	39°17'56.861"N	80°58'38.364"W	285.57	69.644	10.11	9.94	-2.02	Burket: 6533' MD
6548.00	66.790	153.230	6360.04	22.00	87.08	273.88	1646838.04	14270837.31	39°17'56.740"N	80°58'38.286"W	287.39	72.361	10.11	9.94	-1.99	
6596.00	71.500	152.790	6377.12	66.68	47.13	294.23	1646858.38	14270797.37	39°17'56.345"N	80°58'38.027"W	297.98	80.900	9.85	9.81	-0.92	
6605.00†	72.091	152.938	6379.93	75.19	39.52	298.13	1646862.28	14270789.76	39°17'56.270"N	80°58'37.978"W	300.74	82.449	6.75	6.57	1.64	Tully: 6605' MD
6607.00†	72.223	152.970	6380.54	77.09	37.82	299.00	1646863.15	14270788.07	39°17'56.253"N	80°58'37.967"W	301.38	82.791	6.75	6.57	1.63	Tully: 6607' MD
6643.00	74.590	153.550	6390.82	111.47	7.01	314.52	1646878.66	14270757.27	39°17'55.949"N	80°58'37.769"W	314.59	88.723	6.75	6.58	1.61	
6667.00†	75.772	154.659	6396.96	134.62	-13.86	324.65	1646888.79	14270736.41	39°17'55.742"N	80°58'37.640"W	324.94	92.444	6.65	4.93	4.62	Marcellus POE: 6667' MD
6669.00†	75.871	154.750	6397.45	136.56	-15.61	325.48	1646889.62	14270734.65	39°17'55.725"N	80°58'37.630"W	325.85	92.746	6.65	4.94	4.59	Marcellus POE: 6669' MD

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Actual Wellpath Report

Western Unit 3H ST01 AWP Proj: 18265'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Ritchie County, WV	Well	Western Unit 3H ST01
Field	Ritchie	Wellbore	Western Unit 3H ST01
Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

WELLPATH DATA (218 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
6690.00	76.910	155.710	6402.39	156.94	-34.14	334.03	1646898.16	14270716.13	39°17'55.542"N	80°58'37.521"W	335.77	95.837	6.65	4.95	4.57	
6737.00	80.670	158.740	6411.53	203.03	-76.64	351.86	1646915.99	14270673.65	39°17'55.122"N	80°58'37.295"W	360.11	102.288	10.20	8.00	6.45	
6784.00	83.990	160.090	6417.80	249.59	-120.24	368.23	1646932.36	14270630.07	39°17'54.691"N	80°58'37.086"W	387.37	108.084	7.62	7.06	2.87	
6831.00	87.820	161.600	6421.16	296.40	-164.52	383.61	1646947.73	14270585.81	39°17'54.253"N	80°58'36.891"W	417.40	113.213	8.76	8.15	3.21	
6879.00	90.030	161.950	6422.06	344.28	-210.10	398.62	1646962.73	14270540.25	39°17'53.803"N	80°58'36.700"W	450.60	117.792	4.66	4.60	0.73	
6973.00	90.120	158.990	6421.94	438.18	-298.68	430.04	1646994.14	14270451.70	39°17'52.927"N	80°58'36.301"W	523.59	124.782	3.15	0.10	-3.15	
7067.00	89.880	156.630	6421.94	532.17	-385.71	465.54	1647029.62	14270364.70	39°17'52.067"N	80°58'35.850"W	604.57	129.643	2.52	-0.26	-2.51	
7161.00	89.450	157.800	6422.49	626.16	-472.37	501.94	1647066.01	14270278.08	39°17'51.210"N	80°58'35.387"W	689.26	133.262	1.33	-0.46	1.24	
7255.00	89.450	160.840	6423.39	720.12	-560.30	535.13	1647099.19	14270190.18	39°17'50.341"N	80°58'34.965"W	774.80	136.316	3.23	0.00	3.23	
7350.00	89.540	161.260	6424.23	814.98	-650.15	565.98	1647130.03	14270100.37	39°17'49.453"N	80°58'34.573"W	861.99	138.959	0.45	0.09	0.44	
7444.00	89.480	155.010	6425.03	908.93	-737.34	600.97	1647165.00	14270013.21	39°17'48.591"N	80°58'34.128"W	951.23	140.818	6.65	-0.06	-6.65	
7538.00	89.750	152.230	6425.66	1002.65	-821.54	642.73	1647206.75	14269929.05	39°17'47.759"N	80°58'33.597"W	1043.09	141.962	2.97	0.29	-2.96	
7632.00	89.260	152.300	6426.47	1096.18	-904.74	686.48	1647250.47	14269845.88	39°17'46.936"N	80°58'33.041"W	1135.70	142.810	0.53	-0.52	0.07	
7726.00	89.200	154.920	6427.74	1189.89	-988.93	728.25	1647292.23	14269761.73	39°17'46.104"N	80°58'32.510"W	1228.14	143.632	2.79	-0.06	2.79	
7820.00	89.540	156.840	6428.77	1283.81	-1074.71	766.66	1647330.62	14269675.98	39°17'45.256"N	80°58'32.022"W	1320.14	144.497	2.07	0.36	2.04	
7915.00	88.740	156.660	6430.20	1378.78	-1161.99	804.16	1647368.10	14269588.74	39°17'44.393"N	80°58'31.545"W	1413.11	145.315	0.86	-0.84	-0.19	
8008.00	88.890	159.920	6432.12	1471.75	-1248.36	838.55	1647402.48	14269502.40	39°17'43.539"N	80°58'31.108"W	1503.85	146.110	3.51	0.16	3.51	
8103.00	88.770	160.740	6434.06	1566.65	-1337.80	870.52	1647434.44	14269413.00	39°17'42.655"N	80°58'30.702"W	1596.09	146.948	0.87	-0.13	0.86	
8197.00	91.480	165.040	6433.86	1660.27	-1427.61	898.16	1647462.07	14269323.23	39°17'41.768"N	80°58'30.350"W	1686.64	147.824	5.41	2.88	4.57	
8291.00	90.000	157.690	6432.64	1754.03	-1516.61	928.18	1647492.07	14269234.26	39°17'40.888"N	80°58'29.969"W	1778.09	148.533	7.98	-1.57	-7.82	
8385.00	89.940	157.300	6432.69	1848.03	-1603.45	964.16	1647528.04	14269147.45	39°17'40.030"N	80°58'29.511"W	1871.00	148.981	0.42	-0.06	-0.41	
8480.00	89.600	147.370	6433.07	1942.45	-1687.48	1008.21	1647572.07	14269063.45	39°17'39.199"N	80°58'28.951"W	1965.73	149.143	10.46	-0.36	-10.45	
8574.00	90.120	152.140	6433.30	2035.46	-1768.66	1055.54	1647619.39	14268982.31	39°17'38.396"N	80°58'28.350"W	2059.70	149.171	5.10	0.55	5.07	
8668.00	90.400	160.180	6432.87	2129.33	-1854.57	1093.50	1647657.33	14268896.43	39°17'37.547"N	80°58'27.867"W	2152.95	149.475	8.56	0.30	8.55	
8762.00	90.250	165.270	6432.34	2222.97	-1944.30	1121.41	1647685.23	14268806.74	39°17'36.660"N	80°58'27.513"W	2244.52	150.025	5.42	-0.16	5.41	
8857.00	90.400	162.790	6431.80	2317.43	-2035.63	1147.54	1647711.35	14268715.45	39°17'35.758"N	80°58'27.180"W	2336.80	150.589	2.62	0.16	-2.61	
8951.00	90.680	161.970	6430.92	2411.15	-2125.21	1176.00	1647739.79	14268625.90	39°17'34.872"N	80°58'26.819"W	2428.89	151.042	0.92	0.30	-0.87	
8969.00	91.170	163.070	6430.62	2429.09	-2142.38	1181.40	1647745.20	14268608.74	39°17'34.702"N	80°58'26.750"W	2446.53	151.126	6.69	2.72	6.11	BHI AT Curve <8-1/2"> (8951')(8969'-18240')
9031.00	91.110	164.500	6429.39	2490.76	-2201.90	1198.71	1647762.50	14268549.25	39°17'34.114"N	80°58'26.530"W	2507.04	151.436	2.31	-0.10	2.31	
9125.00	89.910	167.570	6428.55	2583.81	-2293.10	1221.39	1647785.17	14268458.08	39°17'33.212"N	80°58'26.242"W	2598.10	151.959	3.51	-1.28	3.27	

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Actual Wellpath Report

Western Unit 3H ST01 AWP Proj: 18265'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Ritchie County, WV	Well	Western Unit 3H ST01
Field	Ritchie	Wellbore	Western Unit 3H ST01
Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

WELLPATH DATA (218 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
9220.00	89.970	166.420	6428.65	2677.64	-2385.67	1242.77	1647806.54	14268365.55	39°17'32.298"N	80°58'25.971"W	2689.96	152.484	1.21	0.06	-1.21	
9314.00	90.150	164.960	6428.56	2770.78	-2476.75	1266.00	1647829.76	14268274.51	39°17'31.397"N	80°58'25.675"W	2781.55	152.926	1.56	0.19	-1.55	
9408.00	90.280	163.180	6428.20	2864.24	-2567.13	1291.80	1647855.55	14268184.16	39°17'30.504"N	80°58'25.348"W	2873.83	153.288	1.90	0.14	-1.89	
9502.00	90.180	161.860	6427.83	2957.94	-2656.79	1320.04	1647883.78	14268094.54	39°17'29.618"N	80°58'24.989"W	2966.65	153.579	1.41	-0.11	-1.40	
9597.00	90.220	156.720	6427.49	3052.89	-2745.62	1353.62	1647917.35	14268005.74	39°17'28.740"N	80°58'24.562"W	3061.16	153.756	5.41	0.04	-5.41	
9691.00	90.310	154.360	6427.06	3146.80	-2831.18	1392.54	1647956.25	14267920.22	39°17'27.894"N	80°58'24.067"W	3155.11	153.809	2.51	0.10	-2.51	
9785.00	90.220	155.480	6426.62	3240.66	-2916.31	1432.38	1647996.08	14267835.12	39°17'27.052"N	80°58'23.561"W	3249.09	153.841	1.20	-0.10	1.19	
9880.00	90.180	155.180	6426.29	3335.56	-3002.64	1472.03	1648035.71	14267748.83	39°17'26.199"N	80°58'23.057"W	3344.06	153.884	0.32	-0.04	-0.32	
9974.00	90.220	153.970	6425.96	3429.39	-3087.53	1512.39	1648076.05	14267663.97	39°17'25.360"N	80°58'22.544"W	3438.05	153.903	1.29	0.04	-1.29	
10068.00	90.370	154.520	6425.48	3523.19	-3172.19	1553.23	1648116.88	14267579.34	39°17'24.523"N	80°58'22.025"W	3532.05	153.912	0.61	0.16	0.59	
10162.00	90.340	154.120	6424.90	3617.00	-3256.91	1593.97	1648157.60	14267494.66	39°17'23.685"N	80°58'21.507"W	3626.04	153.922	0.43	-0.03	-0.43	
10257.00	90.280	153.940	6424.38	3711.77	-3342.31	1635.57	1648199.18	14267409.29	39°17'22.841"N	80°58'20.978"W	3721.04	153.925	0.20	-0.06	-0.19	
10351.00	90.400	155.550	6423.83	3805.62	-3427.32	1675.67	1648239.27	14267324.31	39°17'22.001"N	80°58'20.469"W	3815.03	153.945	1.72	0.13	1.71	
10445.00	90.650	157.790	6422.96	3899.58	-3513.63	1712.89	1648276.47	14267238.04	39°17'21.148"N	80°58'19.995"W	3908.91	154.011	2.40	0.27	2.38	
10540.00	90.620	160.690	6421.91	3994.54	-3602.45	1746.56	1648310.13	14267149.26	39°17'20.270"N	80°58'19.568"W	4003.51	154.135	3.05	-0.03	3.05	
10634.00	90.710	163.130	6420.82	4088.31	-3691.79	1775.74	1648339.30	14267059.96	39°17'19.387"N	80°58'19.197"W	4096.65	154.313	2.60	0.10	2.60	
10728.00	90.800	164.870	6419.58	4181.78	-3782.13	1801.65	1648365.20	14266969.65	39°17'18.494"N	80°58'18.868"W	4189.33	154.529	1.85	0.10	1.85	
10822.00	90.830	159.690	6418.24	4275.47	-3871.64	1830.25	1648393.78	14266880.18	39°17'17.609"N	80°58'18.504"W	4282.45	154.698	5.51	0.03	-5.51	
10916.00	90.680	154.690	6417.00	4369.42	-3958.25	1866.68	1648430.20	14266793.60	39°17'16.753"N	80°58'18.041"W	4376.32	154.752	5.32	-0.16	-5.32	
11011.00	90.650	157.320	6415.90	4464.35	-4045.03	1905.30	1648468.81	14266706.86	39°17'15.895"N	80°58'17.550"W	4471.29	154.778	2.77	-0.03	2.77	
11105.00	90.120	158.380	6415.27	4558.35	-4132.09	1940.74	1648504.23	14266619.84	39°17'15.034"N	80°58'17.100"W	4565.15	154.842	1.26	-0.56	1.13	
11199.00	90.370	157.960	6414.87	4652.35	-4219.34	1975.70	1648539.17	14266532.61	39°17'14.172"N	80°58'16.656"W	4659.00	154.909	0.52	0.27	-0.45	
11294.00	89.940	155.090	6414.61	4747.31	-4306.47	2013.53	1648577.00	14266445.52	39°17'13.311"N	80°58'16.175"W	4753.95	154.941	3.05	-0.45	-3.02	
11388.00	89.230	156.060	6415.29	4841.22	-4392.05	2052.40	1648615.85	14266359.97	39°17'12.465"N	80°58'15.681"W	4847.94	154.953	1.28	-0.76	1.03	
11482.00	89.320	157.190	6416.48	4935.18	-4478.33	2089.69	1648653.12	14266273.73	39°17'11.612"N	80°58'15.207"W	4941.89	154.985	1.21	0.10	1.20	
11576.00	89.350	157.520	6417.57	5029.17	-4565.08	2125.88	1648689.30	14266187.02	39°17'10.754"N	80°58'14.747"W	5035.80	155.029	0.35	0.03	0.35	
11670.00	89.320	154.720	6418.66	5123.11	-4651.02	2163.93	1648727.33	14266101.11	39°17'09.905"N	80°58'14.264"W	5129.77	155.049	2.98	-0.03	-2.98	
11764.00	89.200	153.520	6419.88	5216.89	-4735.58	2204.95	1648768.34	14266016.58	39°17'09.069"N	80°58'13.742"W	5223.75	155.033	1.28	-0.13	-1.28	
11858.00	89.320	154.580	6421.09	5310.66	-4820.10	2246.08	1648809.45	14265932.10	39°17'08.233"N	80°58'13.220"W	5317.73	155.015	1.13	0.13	1.13	
11953.00	89.350	156.830	6422.19	5405.57	-4906.67	2285.17	1648848.52	14265845.56	39°17'07.377"N	80°58'12.723"W	5412.71	155.027	2.37	0.03	2.37	

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Actual Wellpath Report

Western Unit 3H ST01 AWP Proj: 18265'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Ritchie County, WV	Well	Western Unit 3H ST01
Field	Ritchie	Wellbore	Western Unit 3H ST01
Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

WELLPATH DATA (218 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
12047.00	89.320	160.090	6423.29	5499.55	-4994.09	2319.67	1648883.01	14265758.18	39°17'06.513"N	80°58'12.284"W	5506.52	155.086	3.47	-0.03	3.47	
12141.00	89.290	159.970	6424.43	5593.48	-5082.43	2351.77	1648915.10	14265669.87	39°17'05.640"N	80°58'11.877"W	5600.17	155.169	0.13	-0.03	-0.13	
12235.00	89.660	161.090	6425.29	5687.38	-5171.05	2383.10	1648946.41	14265581.29	39°17'04.764"N	80°58'11.479"W	5693.76	155.257	1.25	0.39	1.19	
12329.00	89.750	164.530	6425.77	5781.03	-5260.84	2410.88	1648974.18	14265491.54	39°17'03.877"N	80°58'11.126"W	5786.94	155.379	3.66	0.10	3.66	
12424.00	90.090	161.860	6425.90	5875.63	-5351.77	2438.34	1649001.63	14265400.64	39°17'02.978"N	80°58'10.777"W	5881.07	155.505	2.83	0.36	-2.81	
12518.00	89.660	158.750	6426.11	5969.54	-5440.26	2470.02	1649033.29	14265312.19	39°17'02.103"N	80°58'10.374"W	5974.73	155.581	3.34	-0.46	-3.31	
12613.00	89.660	158.570	6426.67	6064.53	-5528.75	2504.59	1649067.85	14265223.74	39°17'01.228"N	80°58'09.935"W	6069.59	155.629	0.19	0.00	-0.19	
12707.00	89.850	164.070	6427.07	6158.33	-5617.76	2534.68	1649097.93	14265134.76	39°17'00.348"N	80°58'09.553"W	6163.10	155.716	5.85	0.20	5.85	
12801.00	90.000	167.060	6427.20	6251.50	-5708.78	2558.11	1649121.35	14265043.77	39°16'59.449"N	80°58'09.255"W	6255.73	155.863	3.18	0.16	3.18	
12895.00	89.880	157.890	6427.30	6345.11	-5798.32	2586.39	1649149.62	14264954.27	39°16'58.564"N	80°58'08.896"W	6349.01	155.960	9.76	-0.13	-9.76	
12989.00	89.880	154.990	6427.49	6439.06	-5884.48	2623.95	1649187.17	14264868.15	39°16'57.712"N	80°58'08.419"W	6443.00	155.967	3.09	0.00	-3.09	
13084.00	89.940	155.700	6427.64	6533.96	-5970.82	2663.58	1649226.78	14264781.84	39°16'56.858"N	80°58'07.915"W	6537.99	155.958	0.75	0.06	0.75	
13178.00	89.880	153.280	6427.79	6627.78	-6055.65	2704.06	1649267.25	14264697.05	39°16'56.020"N	80°58'07.401"W	6631.95	155.938	2.58	-0.06	-2.57	
13272.00	89.910	152.630	6427.96	6721.42	-6139.37	2746.80	1649309.97	14264613.36	39°16'55.192"N	80°58'06.857"W	6725.83	155.896	0.69	0.03	-0.69	
13366.00	89.910	154.430	6428.11	6815.13	-6223.51	2788.70	1649351.85	14264529.25	39°16'54.361"N	80°58'06.325"W	6819.74	155.863	1.91	0.00	1.91	
13461.00	89.940	156.760	6428.23	6910.05	-6310.01	2827.95	1649391.08	14264442.78	39°16'53.505"N	80°58'05.826"W	6914.74	155.860	2.45	0.03	2.45	
13555.00	89.940	157.780	6428.33	7004.04	-6396.71	2864.27	1649427.39	14264356.12	39°16'52.648"N	80°58'05.365"W	7008.71	155.878	1.09	0.00	1.09	
13649.00	90.000	155.730	6428.38	7098.01	-6483.08	2901.37	1649464.47	14264269.79	39°16'51.795"N	80°58'04.893"W	7102.69	155.890	2.18	0.06	-2.18	
13743.00	89.910	155.860	6428.46	7191.94	-6568.81	2939.91	1649503.00	14264184.09	39°16'50.947"N	80°58'04.404"W	7196.69	155.889	0.17	-0.10	0.14	
13837.00	89.940	157.530	6428.58	7285.92	-6655.14	2977.09	1649540.17	14264097.79	39°16'50.094"N	80°58'03.931"W	7290.68	155.899	1.78	0.03	1.78	
13931.00	89.940	159.130	6428.68	7379.91	-6742.49	3011.80	1649574.86	14264010.48	39°16'49.230"N	80°58'03.490"W	7384.59	155.930	1.70	0.00	1.70	
14026.00	89.940	155.270	6428.78	7474.89	-6830.05	3048.61	1649611.66	14263922.95	39°16'48.365"N	80°58'03.022"W	7479.55	155.946	4.06	0.00	-4.06	
14120.00	89.880	159.790	6428.92	7568.86	-6916.90	3084.53	1649647.56	14263836.14	39°16'47.506"N	80°58'02.566"W	7573.49	155.966	4.81	-0.06	4.81	
14214.00	89.780	160.650	6429.20	7662.78	-7005.35	3116.34	1649679.36	14263747.73	39°16'46.632"N	80°58'02.162"W	7667.23	156.018	0.92	-0.11	0.91	
14309.00	89.940	156.410	6429.44	7757.76	-7093.74	3151.10	1649714.11	14263659.38	39°16'45.758"N	80°58'01.720"W	7762.12	156.049	4.47	0.17	-4.46	
14403.00	89.780	161.350	6429.67	7851.72	-7181.39	3184.96	1649747.95	14263571.75	39°16'44.892"N	80°58'01.290"W	7855.98	156.083	5.26	-0.17	5.26	
14497.00	90.000	161.250	6429.85	7945.56	-7270.43	3215.10	1649778.08	14263482.75	39°16'44.011"N	80°58'00.907"W	7949.59	156.144	0.26	0.23	-0.11	
14591.00	90.060	159.120	6429.80	8039.48	-7358.86	3246.96	1649809.93	14263394.36	39°16'43.137"N	80°58'00.502"W	8043.36	156.191	2.27	0.06	-2.27	
14685.00	90.000	157.180	6429.75	8133.48	-7446.10	3281.94	1649844.90	14263307.15	39°16'42.275"N	80°58'00.058"W	8137.30	156.214	2.06	-0.06	-2.06	
14780.00	89.850	154.820	6429.87	8228.41	-7532.88	3320.58	1649883.52	14263220.40	39°16'41.417"N	80°57'59.567"W	8232.29	156.212	2.49	-0.16	-2.48	

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Western Unit 3H ST01 AWP Proj: 18265'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #03
Area	Ritchie County, WV		Well	Western Unit 3H ST01
Field	Ritchie		Wellbore	Western Unit 3H ST01
Facility	Noland Pad		Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

WELLPATH DATA (218 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
14874.00	89.880	156.190	6430.09	8322.32	-7618.42	3359.55	1649922.47	14263134.90	39°16'40.572"N	80°57'59.072"W	8326.28	156.204	1.46	0.03	1.46	
14968.00	89.880	157.480	6430.29	8416.30	-7704.84	3396.53	1649959.44	14263048.52	39°16'39.717"N	80°57'58.602"W	8420.27	156.211	1.37	0.00	1.37	
15062.00	89.970	159.660	6430.41	8510.29	-7792.34	3430.87	1649993.76	14262961.06	39°16'38.852"N	80°57'58.166"W	8514.19	156.237	2.32	0.10	2.32	
15157.00	89.940	159.720	6430.49	8605.25	-7881.43	3463.85	1650026.73	14262872.00	39°16'37.972"N	80°57'57.747"W	8609.02	156.275	0.07	-0.03	0.06	
15251.00	89.970	156.770	6430.56	8699.24	-7968.73	3498.68	1650061.55	14262784.74	39°16'37.109"N	80°57'57.304"W	8702.95	156.296	3.14	0.03	-3.14	
15344.00	89.970	159.910	6430.61	8792.23	-8055.15	3533.01	1650095.86	14262698.35	39°16'36.254"N	80°57'56.868"W	8795.88	156.318	3.38	0.00	3.38	
15439.00	89.940	159.480	6430.69	8887.18	-8144.24	3565.97	1650128.81	14262609.29	39°16'35.374"N	80°57'56.450"W	8890.72	156.354	0.45	-0.03	-0.45	
15533.00	90.060	156.040	6430.69	8981.17	-8231.24	3601.55	1650164.37	14262522.33	39°16'34.514"N	80°57'55.998"W	8984.68	156.368	3.66	0.13	-3.66	
15627.00	90.220	152.210	6430.46	9074.94	-8315.80	3642.56	1650205.37	14262437.80	39°16'33.678"N	80°57'55.477"W	9078.59	156.345	4.08	0.17	-4.07	
15721.00	90.030	152.020	6430.25	9168.45	-8398.88	3686.52	1650249.31	14262354.75	39°16'32.856"N	80°57'54.918"W	9172.33	156.302	0.29	-0.20	-0.20	
15817.00	90.220	160.270	6430.04	9264.32	-8486.61	3725.31	1650288.09	14262267.06	39°16'31.989"N	80°57'54.425"W	9268.25	156.300	8.60	0.20	8.59	
15911.00	90.340	163.190	6429.58	9358.10	-8575.86	3754.78	1650317.54	14262177.85	39°16'31.107"N	80°57'54.051"W	9361.82	156.355	3.11	0.13	3.11	
16006.00	90.250	161.430	6429.09	9452.82	-8666.36	3783.65	1650346.39	14262087.38	39°16'30.212"N	80°57'53.684"W	9456.31	156.414	1.86	-0.09	-1.85	
16101.00	89.850	159.240	6429.01	9547.74	-8755.81	3815.61	1650378.35	14261997.96	39°16'29.328"N	80°57'53.278"W	9551.08	156.453	2.34	-0.42	-2.31	
16196.00	89.660	158.940	6429.42	9642.72	-8844.56	3849.52	1650412.24	14261909.26	39°16'28.451"N	80°57'52.847"W	9645.98	156.479	0.37	-0.20	-0.32	
16290.00	89.630	159.130	6430.00	9736.70	-8932.33	3883.15	1650445.86	14261821.52	39°16'27.583"N	80°57'52.420"W	9739.89	156.504	0.20	-0.03	0.20	
16384.00	89.690	156.940	6430.56	9830.69	-9019.50	3918.31	1650481.00	14261734.38	39°16'26.721"N	80°57'51.974"W	9833.85	156.519	2.33	0.06	-2.33	
16479.00	89.660	157.010	6431.09	9925.68	-9106.93	3955.46	1650518.14	14261646.99	39°16'25.857"N	80°57'51.502"W	9928.84	156.523	0.08	-0.03	0.07	
16574.00	89.540	156.470	6431.76	10020.65	-9194.21	3992.98	1650555.64	14261559.75	39°16'24.994"N	80°57'51.025"W	10023.84	156.525	0.58	-0.13	-0.57	
16669.00	89.660	160.210	6432.42	10115.63	-9282.48	4028.04	1650590.69	14261471.51	39°16'24.122"N	80°57'50.580"W	10118.77	156.542	3.94	0.13	3.94	
16764.00	89.690	158.120	6432.96	10210.60	-9371.26	4061.82	1650624.46	14261382.76	39°16'23.244"N	80°57'50.150"W	10213.67	156.566	2.20	0.03	-2.20	
16859.00	89.600	158.120	6433.55	10305.60	-9459.42	4097.23	1650659.85	14261294.64	39°16'22.373"N	80°57'49.701"W	10308.63	156.581	0.09	-0.09	0.00	
16954.00	89.600	159.240	6434.21	10400.59	-9547.91	4131.76	1650694.37	14261206.18	39°16'21.498"N	80°57'49.262"W	10403.56	156.600	1.18	0.00	1.18	
17049.00	89.690	160.440	6434.80	10495.54	-9637.09	4164.50	1650727.10	14261117.04	39°16'20.616"N	80°57'48.846"W	10498.41	156.629	1.27	0.09	1.26	
17144.00	89.540	157.510	6435.44	10590.51	-9725.75	4198.58	1650761.17	14261028.41	39°16'19.740"N	80°57'48.413"W	10593.32	156.650	3.09	-0.16	-3.08	
17238.00	89.630	154.420	6436.12	10684.44	-9811.59	4236.86	1650799.43	14260942.61	39°16'18.891"N	80°57'47.927"W	10687.30	156.644	3.29	0.10	-3.29	
17333.00	89.630	156.450	6436.73	10779.34	-9897.99	4276.35	1650838.91	14260856.25	39°16'18.037"N	80°57'47.425"W	10782.27	156.634	2.14	0.00	2.14	
17428.00	89.600	160.410	6437.37	10874.31	-9986.31	4311.27	1650873.81	14260767.96	39°16'17.164"N	80°57'46.982"W	10877.20	156.649	4.17	-0.03	4.17	
17522.00	89.630	159.890	6438.00	10968.24	-10074.73	4343.19	1650905.71	14260679.58	39°16'16.290"N	80°57'46.576"W	10971.03	156.679	0.55	0.03	-0.55	
17616.00	89.690	156.840	6438.56	11062.23	-10162.09	4377.84	1650940.35	14260592.25	39°16'15.427"N	80°57'46.136"W	11064.97	156.694	3.25	0.06	-3.24	

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Western Unit 3H ST01 AWP Proj: 18265'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Ritchie County, WV	Well	Western Unit 3H ST01
Field	Ritchie	Wellbore	Western Unit 3H ST01
Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

WELLPATH DATA (218 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
17711.00	89.600	155.270	6439.15	11157.17	-10248.91	4416.40	1650978.89	14260505.47	39°16'14.568"N	80°57'45.647"W	11159.96	156.688	1.66	-0.09	-1.65	
17805.00	89.080	155.530	6440.23	11251.07	-10334.38	4455.52	1651018.00	14260420.04	39°16'13.723"N	80°57'45.149"W	11253.93	156.677	0.62	-0.55	0.28	
17899.00	89.200	154.760	6441.64	11344.94	-10419.66	4495.03	1651057.49	14260334.79	39°16'12.880"N	80°57'44.648"W	11347.89	156.665	0.83	0.13	-0.82	
17993.00	89.290	154.660	6442.88	11438.78	-10504.64	4535.18	1651097.63	14260249.84	39°16'12.040"N	80°57'44.137"W	11441.83	156.649	0.14	0.10	-0.11	
18087.00	89.200	158.250	6444.12	11532.73	-10590.79	4572.72	1651135.16	14260163.72	39°16'11.189"N	80°57'43.661"W	11535.80	156.647	3.82	-0.10	3.82	
18181.00	90.220	163.850	6444.60	11626.55	-10679.66	4603.24	1651165.66	14260074.89	39°16'10.310"N	80°57'43.273"W	11629.49	156.683	6.06	1.09	5.96	
18240.00	90.150	170.250	6444.41	11684.78	-10737.13	4616.45	1651178.87	14260017.44	39°16'09.742"N	80°57'43.105"W	11687.50	156.735	10.85	-0.12	10.85	
18265.00	90.150	170.250	6444.34	11709.21	-10761.77	4620.69	1651183.10	14259992.82	39°16'09.499"N	80°57'43.052"W	11711.81	156.763	0.00	0.00	0.00	Projected MD at TD: 18265'

HOLE & CASING SECTIONS - Ref Wellbore: Western Unit 3H ST01 Ref Wellpath: Western Unit 3H ST01 AWP Proj: 18265'									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
20in Conductor	25.00	65.00	40.00	25.00	65.00	0.00	0.00	0.02	-0.10
17.5in Open Hole	65.00	366.00	301.00	65.00	365.97	0.02	-0.10	2.33	-3.40
13.375in Casing Surface	25.00	366.00	341.00	25.00	365.97	0.00	0.00	2.33	-3.40
12.25in Open Hole	366.00	2489.00	2123.00	365.97	2482.14	2.33	-3.40	82.33	20.26
9.625in Casing Intermediate	25.00	2489.00	2464.00	25.00	2482.14	0.00	0.00	82.33	20.26
8.75in Open Hole	2489.00	5594.00	3105.00	2482.14	5551.52	82.33	20.26	351.36	68.08
8.5in Open Hole	5594.00	8951.00	3357.00	5551.52	6430.92	351.36	68.08	-2125.21	1176.00
8.5in Open Hole	8951.00	18265.00	9314.00	6430.92	6444.34	-2125.21	1176.00	-10761.77	4620.69
5.5in Casing Production	25.00	18265.00	18240.00	25.00	6444.34	0.00	0.00	-10761.77	4620.69

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Actual Wellpath Report

Western Unit 3H ST01 AWP Proj: 18265'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Ritchie County, WV	Well	Western Unit 3H ST01
Field	Ritchie	Wellbore	Western Unit 3H ST01
Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Western Unit 3H ST01 BHL Rev-1	6430.40	-10787.79	4633.15	1651195.56	14259966.81	39°16'09.241"N	80°57'42.893"W	point
Western Unit 3H ST01 On Azimuth Rev-1	6430.40	-2799.70	1400.13	1647963.83	14267951.69	39°17'28.205"N	80°58'23.971"W	point

WELLPATH COMPOSITION - Ref Wellbore: Western Unit 3H ST01 Ref Wellpath: Western Unit 3H ST01 AWP Proj: 18265'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	5421.00	Gyrodata standard - Drop gyro or Multi-shot	03 Gyrodata MS Gyro <8-3/4">(100'-5409')	Western Unit 3H AWB
5421.00	8951.00	BHI AutoTrak Curve (Short)	04 BHI AT Curve <8-1/2"> (5421')(5465'-18242')	Western Unit 3H AWB
8951.00	18240.00	BHI AutoTrak Curve (Short)	01 BHI AT Curve <8-1/2"> (8951')(8969'-18240')	Western Unit 3H ST01
18240.00	18265.00	Blind Drilling (std)	Projection to bit	Western Unit 3H ST01

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Facility	Noland Pad	Sidetrack from	Western Unit 3H AWP Proj: 18265' at 8951.00 MD

COMMENTS
<p>Wellpath general comments API: 47-085-10295-0100 BHI Job #: 8401916A Rig: Patterson 343 Duration: 03/12/2017-03/17/2017 BHI AT Curve <8-1/2"> (8951')(8969'-18240') Middlesex: 6351' MD Burket: 6533' MD Tully: 6607' MD Marcellus POE: 6669' MD Projected MD at TD: 18265' API: 47-085-10295-0000 BHI Job #: 8401916 Rig: Patterson 343 Duration: 03/03/2017-03/07/2017 Gyrodatta MS Gyro <8-3/4"> (100'-5421') BHI AT Curve <8-1/2"> (5421')(5465'-18242') Middlesex: 6351' MD Burket: 6531' MD Tully: 6605' MD Marcellus POE: 6667' MD Top Of Fish: 16618' MD Bottom Of Fish: 16960' MD Projected MD at TD: 18265'</p>

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