



ANTERO RESOURCES CORPORATION

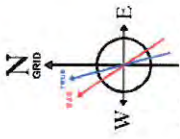
Location: Ritchie County, WV
 Field: Ritchie
 Facility: Mulvay Pad
 Slot: Slot #02
 Well: Niley Unit 2H
 Wellbore: Niley Unit 2H PWB

API: 47-085-10251-0000

BHI Job #: 8577844

Rig: Frontier 22

Duration: 05/31/2017-06/02/2017



User specified Dip: 66.60° Field: 52916 °T
 Magnetic North is 7.68 degrees West of True North (at 30/May/2017)
 Grid North is 0.08 degrees East of True North
 To correct azimuth from True to Grid subtract 0.08 degrees
 To correct azimuth from Magnetic to Grid subtract 7.74 degrees

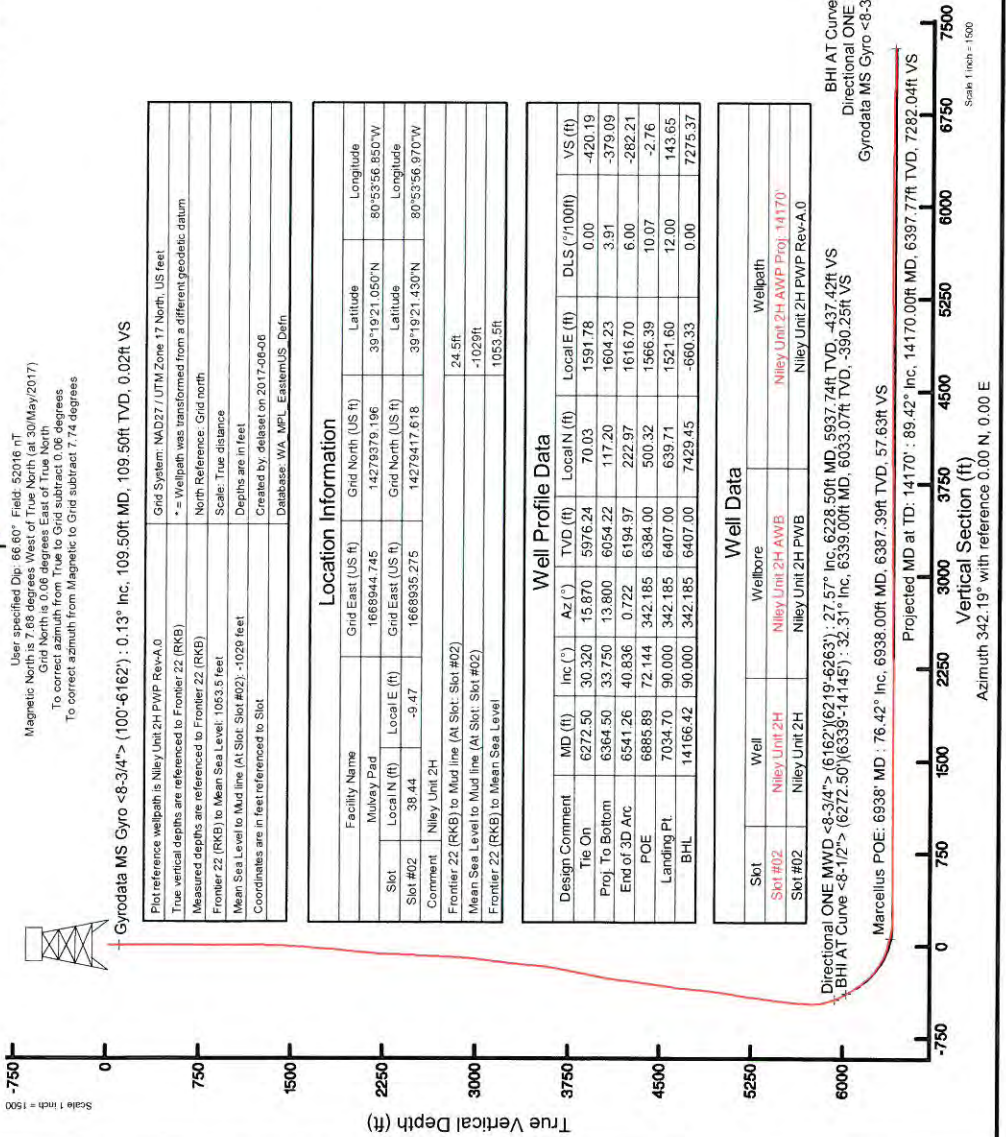
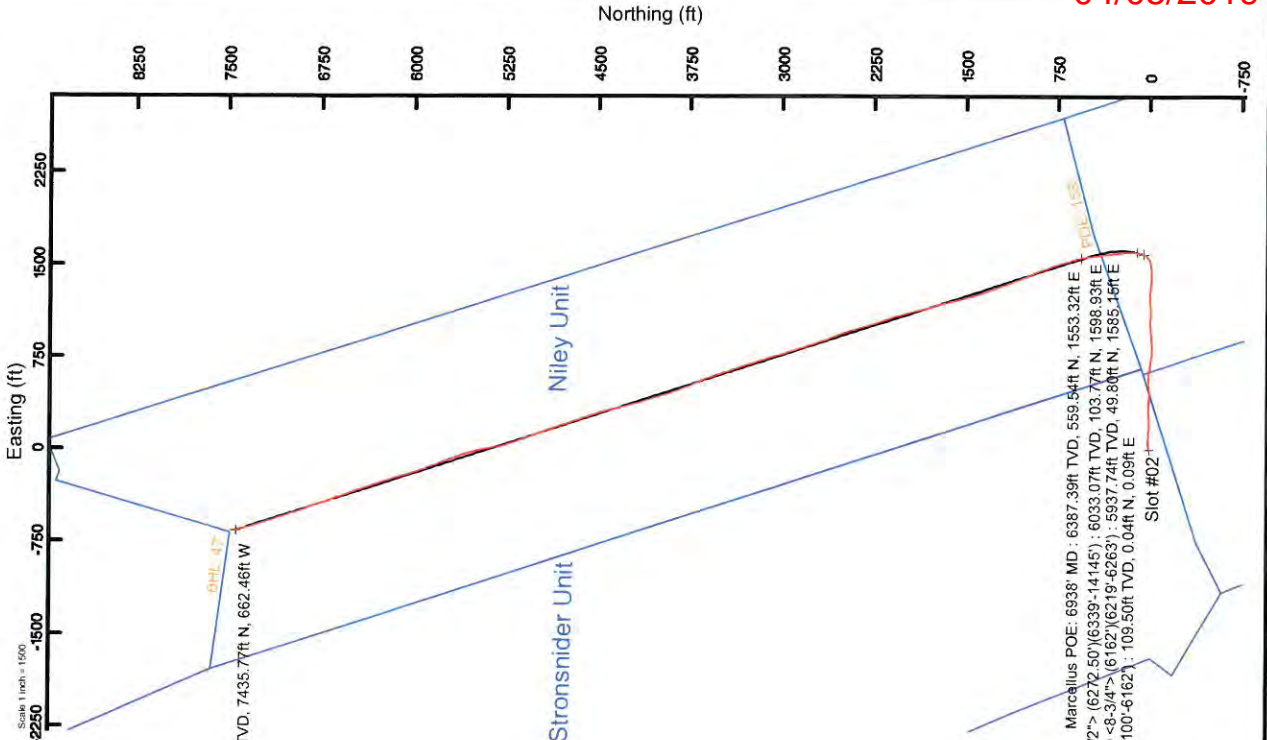
Gyrodata MS Gyro <math>-8.3/4^{\circ}>; 0.13° Inc. 109.50ft MD, 109.50ft TVD, 0.02ft VS

Location Information	
Facility Name	Mulvay Pad
Slot	Niley Unit 2H
Slot #02	39.44
Comment	Niley Unit 2H
Frontier 22 (RKB) to Mud line (At Slot: Slot #02)	24.5ft
Mean Sea Level to Mud line (At Slot: Slot #02)	-1029ft
Frontier 22 (RKB) to Mean Sea Level	1053.5ft

Well Profile Data	
Design Comment	Tie On
MD (ft)	30.320
Local N (ft)	13.800
Proj. To Bottom	6541.26
End of 3D Arc	6885.89
POE	7034.70
Landing PL	14166.42
BHL	14166.42
VS (ft)	-420.19
DLS (/100ft)	0.00
Local E (ft)	1591.78
Local N (ft)	117.20
Local E (ft)	222.97
Local N (ft)	500.32
DLS (/100ft)	12.00
DLS (/100ft)	0.00

Well Data	
Well	Niley Unit 2H PWB
Wellbore	Niley Unit 2H AWB
Slot #02	Niley Unit 2H
Slot #02	Niley Unit 2H PWB
Wellpath	Niley Unit 2H PWB Rev-A.0

Directional ONE MWD <math>-8.3/4^{\circ}>; (6162') (6219'-6263'); 27.57° Inc. 6228.50ft MD, 5937.74ft TVD, -437.42ft VS
 BHI AT Curve <math>-8.1/2^{\circ}>; (6272.50') (6338'-14145'); 32.31° Inc. 6339.00ft MD, 6033.07ft TVD, -390.25ft VS
 Marcellus POE: 6938' MD; 76.42° Inc. 6938.00ft MD, 6387.39ft TVD, 57.63ft VS
 Projected MD at TD: 14170'; 89.42° Inc. 14170.00ft MD, 6397.77ft TVD, 7282.04ft VS



REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Ritchie County, WV
Field	Ritchie
Facility	Mulway Pad
Slot	Slot #02
Well	Niley Unit 2H
Wellbore	Niley Unit 2H AWB

REPORT SETUP INFORMATION	
Projection System	NAD27 / UTM Zone 17 North, US feet
North Reference	Grid
Scale	0.999601
Convergence at slot	0.06° East
Software System	WellArchitect® 5.0
User	Delaset
Report Generated	06/Jun/2017 at 08:34
Database/Source file	WA_MPL_EasternUS_Defn\Niley_Unit_2H_AWP_Proj_14170_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	38.44	-9.47	1668935.28	14279417.62	39°19'21.430"N	80°53'56.970"W
Facility Reference Pt			1668944.75	14279379.20	39°19'21.050"N	80°53'56.850"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM	
Calculation method	Minimum curvature
Horizontal Reference Pt	Slot
Vertical Reference Pt	Frontier 22 (RKB)
MD Reference Pt	Frontier 22 (RKB)
Field Vertical Reference	Mean Sea Level
	Frontier 22 (RKB) to Facility Vertical Datum
	Frontier 22 (RKB) to Mean Sea Level
	Frontier 22 (RKB) to Mud Line at Slot (Slot #02)
	Section Origin
	Section Azimuth
	24.50ft
	1053.50ft
	24.50ft
	N 0.00, E 0.00 ft
	342.19°



Actual Wellpath Report

Niley Unit 2H AWP Proj: 14170'
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REFERENCE WELLPATH IDENTIFICATION		Slot #02
Operator	ANTERO RESOURCES CORPORATION	Niley Unit 2H
Area	Ritchie County, WV	Niley Unit 2H AWB
Field	Ritchie	
Facility	Mulvay Pad	

WELLPATH DATA (163 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	63.070	0.00	0.00	0.00	0.00	1668935.27	14279417.62	39°19'21.430"N	80°53'56.970"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	63.070	24.50	0.00	0.00	0.00	1668935.27	14279417.62	39°19'21.430"N	80°53'56.970"W	0.00	0.000	0.00	0.00	0.00	
109.50	0.130	63.070	109.50	0.02	0.04	0.09	1668935.36	14279417.66	39°19'21.430"N	80°53'56.969"W	0.10	63.070	0.15	0.15	74.20	Syrodada MS Gyro <8.3/4"> (100-.6162')
209.50	0.200	61.700	209.50	0.07	0.18	0.34	1668935.62	14279417.80	39°19'21.432"N	80°53'56.966"W	0.38	62.448	0.07	0.07	-1.37	
309.50	0.200	58.920	309.50	0.14	0.35	0.64	1668935.92	14279417.97	39°19'21.433"N	80°53'56.962"W	0.73	61.431	0.01	0.00	-2.78	
409.50	0.320	138.830	409.50	-0.08	0.23	0.98	1668936.25	14279417.85	39°19'21.432"N	80°53'56.958"W	1.00	76.727	0.35	0.12	79.91	
509.50	0.330	137.990	509.50	-0.60	-0.19	1.35	1668936.63	14279417.42	39°19'21.428"N	80°53'56.953"W	1.37	98.141	0.01	0.01	-0.84	
709.50	0.370	129.340	709.49	-1.69	-1.05	2.27	1668937.55	14279416.57	39°19'21.424"N	80°53'56.947"W	1.89	109.315	0.05	0.04	-5.54	
809.50	0.230	116.100	809.49	-2.10	-1.34	2.70	1668937.98	14279416.28	39°19'21.417"N	80°53'56.936"W	3.02	116.392	0.16	-0.14	-13.24	
909.50	0.960	56.660	909.49	-2.02	-0.97	3.58	1668938.86	14279416.65	39°19'21.420"N	80°53'56.924"W	3.71	105.133	0.87	0.73	-59.45	
1009.50	2.920	66.560	1009.42	-1.54	0.50	6.62	1668941.89	14279418.12	39°19'21.435"N	80°53'56.886"W	6.64	85.645	1.98	1.96	9.93	
1109.50	4.530	70.550	1109.21	-1.18	2.83	12.68	1668947.95	14279420.45	39°19'21.458"N	80°53'56.809"W	12.99	77.413	1.63	1.61	3.97	
1209.50	5.990	76.150	1208.79	-1.43	5.40	21.47	1668956.74	14279423.01	39°19'21.483"N	80°53'56.697"W	22.14	75.894	1.55	1.46	5.60	
1309.50	7.240	81.220	1308.12	-2.78	7.61	32.77	1668968.03	14279425.22	39°19'21.505"N	80°53'56.553"W	33.64	76.930	1.38	1.25	5.07	
1409.50	8.560	84.540	1407.17	-5.36	9.28	46.40	1668981.66	14279426.89	39°19'21.521"N	80°53'56.379"W	47.32	78.694	1.40	1.32	3.32	
1509.50	10.230	89.940	1505.83	-9.66	9.99	62.69	1668997.94	14279427.61	39°19'21.528"N	80°53'56.172"W	63.48	80.942	1.89	1.67	5.40	
1609.50	11.570	95.200	1604.02	-16.29	9.09	81.56	1669016.80	14279426.71	39°19'21.519"N	80°53'55.932"W	82.07	83.637	1.67	1.34	5.26	
1709.50	11.900	95.740	1701.93	-24.33	7.15	101.81	1669037.04	14279424.77	39°19'21.500"N	80°53'55.674"W	102.06	85.980	0.35	0.33	0.54	
1809.50	12.740	94.530	1799.63	-32.64	5.25	123.06	1669058.28	14279422.87	39°19'21.481"N	80°53'55.404"W	123.17	87.556	0.88	0.84	-1.21	
1909.50	13.210	93.890	1897.07	-41.05	3.61	145.45	1669080.67	14279421.22	39°19'21.464"N	80°53'55.119"W	145.49	88.580	0.49	0.47	-0.64	
2009.50	14.250	93.690	1994.22	-49.79	2.04	169.13	1669104.34	14279419.66	39°19'21.448"N	80°53'54.818"W	169.14	89.309	1.04	1.04	-0.20	
2109.50	14.570	93.800	2091.07	-58.93	0.41	193.96	1669129.16	14279418.03	39°19'21.432"N	80°53'54.502"W	193.96	89.878	0.32	0.32	0.11	
2209.50	11.710	90.080	2188.44	-66.68	-0.43	216.67	1669151.86	14279417.18	39°19'21.423"N	80°53'54.213"W	216.67	90.115	2.98	-2.86	-3.72	
2309.50	11.260	86.700	2286.44	-72.25	0.11	236.56	1669171.74	14279417.73	39°19'21.429"N	80°53'53.960"W	236.56	89.973	0.81	-0.45	-3.38	
2409.50	11.010	84.360	2384.56	-76.71	1.61	255.81	1669190.98	14279419.23	39°19'21.443"N	80°53'53.715"W	255.82	89.639	0.52	-0.25	-2.34	
2509.50	10.980	84.540	2482.72	-80.76	3.46	274.80	1669209.96	14279421.07	39°19'21.461"N	80°53'53.473"W	274.82	89.279	0.05	-0.03	0.18	
2609.50	10.610	86.120	2580.95	-85.01	4.99	293.46	1669228.62	14279422.60	39°19'21.476"N	80°53'53.236"W	293.50	89.026	0.47	-0.37	1.58	
2709.50	10.100	88.260	2679.33	-89.65	5.88	311.41	1669246.56	14279423.49	39°19'21.485"N	80°53'53.007"W	311.47	88.919	0.64	-0.51	2.14	
2809.50	10.120	89.860	2777.77	-94.75	6.16	328.96	1669254.10	14279423.78	39°19'21.487"N	80°53'52.784"W	329.02	88.927	0.29	0.02	1.62	



Actual Wellpath Report

Niley Unit 2H AWP Proj: 14170'

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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Ritchie County, WV
Field	Ritchie
Facility	Mulway Pad
Slot	Slot #02
Well	Niley Unit 2H
Wellbore	Niley Unit 2H AWP

WELLPATH DATA (163 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
2909.50	11.420	90.070	2876.01	-100.46	6.17	347.65	1669282.78	14279423.78	39°19'21.487"N	80°53'52.646"W	347.70	88.984	1.30	1.30	0.19	
3009.50	14.210	93.630	2973.51	-107.99	5.38	369.80	1669304.93	14279422.99	39°19'21.479"N	80°53'52.264"W	369.84	89.167	2.90	2.79	3.56	
3109.50	17.330	96.580	3069.74	-118.63	2.89	396.85	1669331.97	14279420.51	39°19'21.454"N	80°53'51.920"W	396.86	89.582	3.22	3.12	2.95	
3209.50	19.880	91.950	3164.51	-130.53	0.61	428.65	1669363.75	14279418.23	39°19'21.431"N	80°53'51.516"W	428.65	89.919	2.95	2.55	-4.63	
3309.50	21.890	87.790	3257.94	-141.29	0.75	464.27	1669399.36	14279418.37	39°19'21.432"N	80°53'51.062"W	464.27	89.908	2.50	2.01	-4.16	
3409.50	24.150	85.960	3349.97	-151.17	2.91	503.31	1669438.38	14279420.53	39°19'21.453"N	80°53'50.566"W	503.32	89.669	2.37	2.26	-1.83	
3509.50	23.320	85.110	3441.51	-160.47	6.04	543.44	1669478.50	14279423.65	39°19'21.484"N	80°53'50.055"W	543.47	89.363	0.90	-0.83	-0.85	
3609.50	19.970	90.160	3534.45	-170.17	7.68	580.25	1669515.29	14279425.29	39°19'21.499"N	80°53'49.587"W	580.30	89.242	3.83	-3.35	5.05	
3709.50	20.440	96.530	3628.31	-182.63	5.64	614.68	1669549.71	14279423.26	39°19'21.479"N	80°53'49.148"W	614.71	89.474	2.25	0.47	6.37	
3809.50	22.130	100.150	3721.49	-198.66	0.34	650.57	1669585.59	14279417.96	39°19'21.426"N	80°53'48.682"W	650.57	89.970	2.14	1.69	3.62	
3909.50	23.700	100.330	3813.60	-216.97	-6.59	688.89	1669623.89	14279411.03	39°19'21.357"N	80°53'48.204"W	688.92	90.548	1.57	1.57	0.18	
4009.50	25.480	98.310	3904.53	-235.92	-13.30	729.95	1669664.93	14279404.32	39°19'21.290"N	80°53'47.882"W	730.07	91.044	1.97	1.78	-2.02	
4109.50	26.540	94.140	3994.40	-253.75	-18.02	773.52	1669708.48	14279399.60	39°19'21.243"N	80°53'47.128"W	773.73	91.335	2.11	1.06	-4.17	
4209.50	26.670	88.760	4083.83	-268.50	-19.15	818.25	1669753.19	14279398.48	39°19'21.232"N	80°53'46.559"W	818.47	91.341	2.41	0.13	-5.38	
4309.50	28.080	85.980	4172.63	-280.51	-17.01	864.16	1669799.09	14279400.61	39°19'21.252"N	80°53'45.974"W	864.33	91.128	1.90	1.41	-2.78	
4409.50	28.640	87.760	4260.63	-292.55	-14.43	911.59	1669846.50	14279403.20	39°19'21.277"N	80°53'45.371"W	911.70	90.907	1.01	0.56	1.78	
4509.50	27.000	84.780	4349.07	-303.94	-11.42	958.15	1669893.04	14279406.20	39°19'21.306"N	80°53'44.778"W	958.22	90.683	2.15	-1.64	-2.98	
4609.50	25.740	85.080	4438.67	-313.73	-7.50	1002.39	1669937.26	14279410.12	39°19'21.345"N	80°53'44.215"W	1002.42	90.428	1.27	-1.26	0.30	
4709.50	25.070	92.420	4529.02	-325.90	-6.53	1045.20	1669980.06	14279411.09	39°19'21.354"N	80°53'43.670"W	1045.22	90.358	3.22	-0.67	7.34	
4809.50	23.310	92.570	4620.23	-340.12	-8.31	1086.14	1670020.98	14279409.31	39°19'21.336"N	80°53'43.150"W	1086.17	90.438	1.76	-1.76	0.15	
4909.50	20.520	89.240	4713.00	-352.15	-8.96	1123.44	1670058.26	14279408.66	39°19'21.329"N	80°53'42.675"W	1123.47	90.457	3.05	-2.79	-3.33	
5009.50	20.800	87.250	4806.57	-361.90	-7.88	1158.70	1670093.51	14279409.74	39°19'21.339"N	80°53'42.226"W	1158.72	90.390	0.76	0.28	-1.99	
5109.50	20.750	85.350	4900.07	-370.55	-5.59	1194.09	1670128.89	14279412.03	39°19'21.361"N	80°53'41.776"W	1194.10	90.268	0.68	-0.05	-1.90	
5209.50	22.210	90.070	4993.13	-380.39	-4.18	1230.65	1670165.43	14279413.44	39°19'21.375"N	80°53'41.311"W	1230.66	90.195	2.26	1.46	4.72	
5309.50	23.940	94.500	5085.13	-393.89	-5.79	1269.78	1670204.55	14279411.83	39°19'21.358"N	80°53'40.813"W	1269.80	90.261	2.45	1.73	4.43	
5409.50	24.150	94.640	5176.46	-409.41	-9.04	1310.40	1670245.15	14279408.58	39°19'21.326"N	80°53'40.296"W	1310.43	90.395	0.22	0.21	0.14	
5509.50	22.430	93.030	5268.31	-424.01	-11.70	1349.84	1670284.58	14279405.92	39°19'21.299"N	80°53'39.794"W	1349.89	90.497	1.83	-1.72	-1.61	
5609.50	20.680	93.040	5361.31	-437.08	-13.65	1386.53	1670321.25	14279403.82	39°19'21.279"N	80°53'39.327"W	1386.60	90.564	1.75	-1.75	0.01	
5709.50	21.000	90.690	5454.77	-449.05	-14.80	1422.08	1670356.78	14279402.87	39°19'21.268"N	80°53'38.875"W	1422.16	90.596	0.90	0.32	-2.35	
5809.50	22.260	85.290	5547.73	-459.03	-13.46	1458.88	1670393.57	14279404.16	39°19'21.280"N	80°53'38.407"W	1458.94	90.529	2.35	1.26	-5.40	



Actual Wellpath Report

Niley Unit 2H AWP Proj: 14170'

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04/05/2019

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot #02
ANTERO RESOURCES CORPORATION	Niley Unit 2H
Area	Well
Field	Wellbore
Facility	Niley Unit 2H AWP

WELLPATH DATA (163 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
5909.50	20.390	85.310	5640.88	-467.28	-10.48	1495.12	1670429.80	14279407.14	39°19'21.309"N	80°53'37.946"W	1495.16	90.402	1.87	-1.87	0.02	
6009.50	19.520	76.530	5734.90	-472.50	-5.16	1528.74	1670463.40	14279412.46	39°19'21.362"N	80°53'37.518"W	1528.75	90.194	3.12	-0.87	-8.78	
6109.50	20.880	49.450	5828.95	-466.86	10.35	1558.59	1670493.24	14279427.96	39°19'21.515"N	80°53'37.138"W	1558.63	89.620	9.37	1.36	-27.08	
6171.50	23.820	34.170	5886.34	-454.87	27.91	1574.04	1670508.68	14279445.51	39°19'21.688"N	80°53'36.941"W	1574.28	88.984	10.46	4.74	-24.65	
6228.50	27.570	20.600	5937.74	-437.42	49.80	1585.15	1670519.79	14279467.40	39°19'21.904"N	80°53'36.799"W	1585.94	88.200	12.20	6.58	-23.81	Directional ONE MWD <-8-3/4"> (6162)(6219-6263)
6272.50	30.320	15.870	5976.24	-420.19	70.03	1591.78	1670526.41	14279487.61	39°19'22.104"N	80°53'36.714"W	1593.32	87.481	8.13	6.25	-10.75	
6339.00	32.310	5.280	6033.07	-390.25	103.77	1598.93	1670533.56	14279512.35	39°19'22.438"N	80°53'36.623"W	1602.29	86.287	6.64	2.99	-11.41	BHI AT Curve <-8-1/2"> (6272.50)(6339-14145)
6428.00	35.510	1.230	6107.18	-344.82	152.83	1603.11	1670537.74	14279570.39	39°19'22.922"N	80°53'36.588"W	1610.37	84.554	6.88	4.81	-8.72	
6475.00	37.800	358.310	6144.88	-318.08	180.88	1602.97	1670537.61	14279598.43	39°19'23.200"N	80°53'36.570"W	1613.15	83.562	6.12	4.87	-6.21	
6522.00	40.030	356.000	6181.45	-289.56	210.36	1601.50	1670536.13	14279627.89	39°19'23.491"N	80°53'36.559"W	1615.25	82.517	5.66	4.74	-4.91	
6567.00†	44.697	353.873	6214.70	-259.98	240.55	1598.78	1670533.41	14279658.07	39°19'23.789"N	80°53'36.623"W	1616.77	81.444	10.88	10.37	-4.86	Middlesex: 6567 MD
6617.00	49.470	352.830	6248.72	-224.05	276.91	1594.49	1670529.12	14279694.42	39°19'24.149"N	80°53'36.677"W	1618.35	80.148	9.58	9.49	-1.81	
6665.00	53.810	352.950	6278.47	-187.05	314.28	1589.83	1670524.46	14279731.77	39°19'24.518"N	80°53'36.736"W	1620.59	78.818	9.25	9.25	0.25	
6712.00	57.590	352.520	6304.92	-148.88	352.81	1584.91	1670519.55	14279770.28	39°19'24.899"N	80°53'36.798"W	1623.71	77.450	7.87	7.83	-0.91	
6751.00†	61.514	352.495	6324.68	-115.79	386.14	1580.53	1670515.17	14279803.60	39°19'25.229"N	80°53'36.853"W	1627.01	76.271	10.06	10.06	-0.06	Burket: 6751 MD
6807.00	62.420	352.490	6328.91	-107.98	394.01	1579.49	1670514.13	14279811.47	39°19'25.306"N	80°53'36.866"W	1627.89	75.993	10.06	10.06	-0.06	
6856.00	67.820	352.740	6348.68	-66.06	436.28	1574.01	1670508.66	14279853.72	39°19'25.724"N	80°53'36.935"W	1633.36	74.508	11.50	11.49	0.53	
6882.00†	70.304	352.145	6357.61	-43.08	459.42	1570.94	1670505.59	14279876.86	39°19'25.953"N	80°53'36.974"W	1636.74	73.698	10.18	9.94	-2.31	Tully: 6832 MD
6856.00	72.690	351.590	6365.23	-20.65	481.95	1567.72	1670502.37	14279899.38	39°19'26.176"N	80°53'37.014"W	1640.13	72.911	10.18	9.94	-2.31	
6903.00	74.360	349.330	6378.56	23.95	526.39	1560.25	1670494.90	14279943.80	39°19'26.615"N	80°53'37.109"W	1646.65	71.357	5.82	3.55	-4.81	
6938.00†	76.420	347.070	6387.39	57.63	569.54	1553.32	1670487.97	14279976.93	39°19'26.943"N	80°53'37.197"W	1651.02	70.190	8.63	5.88	-6.52	Marcellus POE: 6938 MD
6998.00	77.190	346.210	6390.35	70.24	571.85	1550.39	1670485.04	14279989.24	39°19'27.064"N	80°53'37.234"W	1652.49	69.754	8.63	5.93	-6.44	
6998.00	81.570	343.980	6399.01	116.37	616.48	1538.50	1670473.16	14280003.85	39°19'27.506"N	80°53'37.384"W	1657.42	68.164	10.42	9.32	-4.74	
7045.00	83.340	342.050	6405.19	162.95	661.04	1524.91	1670459.57	14280078.39	39°19'27.946"N	80°53'37.556"W	1662.02	66.563	5.48	3.77	-4.02	
7092.00	87.230	342.420	6409.05	209.78	705.64	1510.63	1670445.30	14280122.98	39°19'28.387"N	80°53'37.737"W	1667.32	64.962	8.31	8.28	0.70	
7140.00	90.430	342.670	6410.03	257.76	751.42	1496.24	1670430.92	14280168.73	39°19'28.840"N	80°53'37.920"W	1674.33	63.334	6.69	6.67	0.52	
7235.00	90.490	339.990	6409.26	352.74	841.41	1465.83	1670400.52	14280258.89	39°19'29.730"N	80°53'38.305"W	1690.16	60.144	2.82	0.06	-2.82	
7330.00	90.550	338.280	6408.40	447.60	930.17	1432.00	1670366.70	14280347.42	39°19'30.607"N	80°53'38.735"W	1707.58	56.984	1.80	0.06	-1.80	



Actual Wellpath Report

Niley Unit 2H AWP Proj: 14170'
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04/05/2019

REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #02
Operator	ANTERO RESOURCES CORPORATION	Well	Niley Unit 2H
Area	Ritchie County, WV	Wellbore	Niley Unit 2H AWP
Field	Ritchie		
Facility	Mulvay Pad		

WELLPATH DATA (163 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
7425.00	90.090	338.470	6407.87	542.39	1018.48	1396.99	1670331.71	14280435.69	39°19'31.481"N	80°53'39.179"W	1728.84	53.906	0.52	-0.48	0.20	
7520.00	90.490	340.160	6407.39	637.26	1107.35	1383.44	1670298.16	14280524.53	39°19'32.359"N	80°53'39.605"W	1756.47	50.917	1.83	0.42	1.78	
7614.00	90.060	338.250	6406.94	731.13	1195.23	1330.07	1670284.81	14280612.36	39°19'33.228"N	80°53'40.028"W	1788.19	48.056	2.08	-0.46	-2.03	
7709.00	90.090	340.050	6406.82	825.99	1284.00	1296.25	1670231.01	14280701.10	39°19'34.106"N	80°53'40.457"W	1824.54	45.272	1.89	0.03	1.89	
7804.00	90.060	343.150	6406.69	920.98	1374.13	1266.27	1670201.04	14280791.20	39°19'34.997"N	80°53'40.837"W	1868.61	42.661	3.26	-0.03	3.26	
7899.00	90.150	343.880	6406.52	1015.95	1465.23	1239.31	1670174.09	14280882.26	39°19'35.898"N	80°53'41.179"W	1919.06	40.225	0.77	0.09	0.77	
7994.00	90.090	345.280	6406.32	1110.87	1556.80	1214.03	1670148.82	14280973.79	39°19'36.803"N	80°53'41.795"W	1974.21	37.948	1.44	-0.06	1.44	
8089.00	90.120	346.280	6406.14	1205.68	1648.88	1190.67	1670125.47	14281065.84	39°19'37.714"N	80°53'42.434"W	2033.84	35.833	1.08	0.03	1.08	
8183.00	90.620	344.510	6405.54	1299.53	1739.84	1166.97	1670101.78	14281156.76	39°19'38.613"N	80°53'42.095"W	2094.96	33.851	1.96	0.53	-1.88	
8278.00	89.480	343.120	6405.45	1394.48	1831.07	1140.49	1670075.31	14281247.95	39°19'39.515"N	80°53'42.745"W	2157.20	31.917	1.89	-1.20	-1.46	
8373.00	90.120	346.610	6405.79	1489.36	1922.76	1115.69	1670050.52	14281339.60	39°19'40.421"N	80°53'42.434"W	2223.01	30.125	3.73	0.67	3.67	
8468.00	90.060	345.800	6405.64	1584.13	2015.02	1093.04	1670027.88	14281431.83	39°19'41.333"N	80°53'43.032"W	2292.38	28.477	0.85	-0.06	-0.85	
8563.00	90.030	342.480	6405.56	1679.06	2106.39	1067.08	1670001.93	14281523.16	39°19'42.237"N	80°53'43.361"W	2361.26	26.866	3.49	-0.03	-3.49	
8658.00	90.000	339.130	6405.54	1774.02	2196.09	1035.85	1669970.71	14281612.83	39°19'43.124"N	80°53'43.757"W	2428.13	25.252	3.53	-0.03	-3.53	
8752.00	90.120	342.690	6405.44	1867.98	2284.91	1005.11	1669939.98	14281701.61	39°19'44.002"N	80°53'44.147"W	2496.21	23.744	3.79	0.13	3.79	
8847.00	90.150	345.620	6405.21	1962.92	2376.29	979.18	1669914.06	14281792.95	39°19'44.905"N	80°53'44.476"W	2570.12	22.395	3.08	0.03	3.08	
8942.00	90.090	340.950	6405.02	2057.87	2467.25	951.86	1669886.75	14281883.88	39°19'45.805"N	80°53'44.822"W	2644.50	21.097	4.92	-0.06	-4.92	
9037.00	90.000	338.420	6404.94	2152.77	2556.33	918.88	1669853.79	14281972.93	39°19'46.686"N	80°53'45.240"W	2716.47	19.771	2.66	-0.09	-2.66	
9132.00	90.220	340.610	6404.76	2247.66	2645.32	885.64	1669820.56	14282061.88	39°19'47.566"N	80°53'45.662"W	2789.64	18.510	2.32	0.23	2.31	
9227.00	90.250	342.380	6404.37	2342.65	2735.40	855.49	1669790.42	14282151.93	39°19'48.456"N	80°53'46.044"W	2866.06	17.367	1.86	0.03	1.86	
9322.00	90.400	341.510	6403.83	2437.65	2825.72	826.04	1669760.99	14282242.21	39°19'49.349"N	80°53'46.418"W	2943.99	16.295	0.93	0.16	-0.92	
9416.00	90.370	342.400	6403.20	2531.65	2915.10	796.93	1669731.88	14282331.55	39°19'50.233"N	80°53'46.787"W	3022.07	15.290	0.95	-0.03	0.95	
9511.00	90.370	343.550	6402.58	2626.63	3005.93	769.11	1669704.08	14282422.34	39°19'51.131"N	80°53'47.140"W	3102.77	14.352	1.21	0.00	1.21	
9606.00	90.550	343.510	6401.82	2721.60	3097.03	742.18	1669677.16	14282513.41	39°19'52.032"N	80°53'47.481"W	3184.72	13.476	0.19	0.19	-0.04	
9701.00	90.430	341.770	6401.01	2816.59	3187.70	713.84	1669648.83	14282604.04	39°19'52.928"N	80°53'47.840"W	3266.64	12.622	1.84	-0.13	-1.83	
9796.00	90.370	341.810	6400.35	2911.59	3277.94	684.15	1669619.15	14282694.24	39°19'53.820"N	80°53'48.217"W	3348.57	11.789	0.08	-0.06	0.04	
9890.00	90.340	341.930	6399.76	3005.59	3367.27	654.90	1669589.91	14282783.53	39°19'54.704"N	80°53'48.588"W	3430.36	11.006	0.13	-0.03	0.13	
9986.00	90.370	340.870	6399.17	3101.57	3458.25	624.28	1669559.31	14282874.48	39°19'55.603"N	80°53'48.976"W	3514.15	10.233	1.10	0.03	-1.10	
10082.00	90.310	341.710	6398.60	3197.56	3549.17	593.49	1669528.52	14282965.37	39°19'56.502"N	80°53'49.367"W	3598.45	9.493	0.88	-0.06	0.87	
10177.00	90.370	337.880	6398.04	3292.46	3638.31	560.68	1669495.73	14283054.47	39°19'57.384"N	80°53'49.783"W	3681.26	8.761	4.03	0.06	-4.03	



Actual Wellpath Report

Niley Unit 2H AWP Proj: 14170'
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04/05/2019

REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Ritchie County, WV
Field	Ritchie
Facility	Mulway Pad
Slot	Slot #02
Well	Niley Unit 2H
Wellbore	Niley Unit 2H AWB

WELLPATH DATA (163 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
10272.00	90.310	337.310	6397.47	3387.15	3726.14	524.47	1669459.54	14283142.26	39°19'58.252"N	80°53'50.242"W	3762.87	8.012	0.60	-0.06	-0.60	
10367.00	90.310	339.820	6396.96	3481.95	3814.56	489.76	1669424.84	14283230.65	39°19'59.126"N	80°53'50.683"W	3845.87	7.316	2.64	0.00	2.64	
10461.00	90.370	341.270	6396.40	3575.91	3903.19	458.45	1669393.54	14283319.24	39°20'00.003"N	80°53'51.080"W	3930.02	6.699	1.54	0.06	1.54	
10556.00	90.340	342.850	6395.81	3670.90	3993.56	429.19	1669364.30	14283409.58	39°20'00.896"N	80°53'51.451"W	4016.56	6.134	1.66	-0.03	1.66	
10651.00	90.370	343.780	6395.22	3765.88	4084.56	401.92	1669337.03	14283500.54	39°20'01.796"N	80°53'51.797"W	4104.29	5.620	0.98	0.03	0.98	
10746.00	90.340	344.640	6394.63	3860.82	4175.97	376.07	1669311.19	14283591.92	39°20'02.700"N	80°53'52.125"W	4192.87	5.146	0.91	-0.03	0.91	
10840.00	90.280	344.210	6394.13	3954.75	4266.52	350.83	1669285.96	14283682.43	39°20'03.595"N	80°53'52.445"W	4280.92	4.701	0.46	-0.06	-0.46	
10935.00	89.820	345.500	6394.04	4049.64	4358.22	326.01	1669261.15	14283774.09	39°20'04.501"N	80°53'52.759"W	4370.39	4.278	1.44	-0.48	-1.36	
11031.00	90.150	345.480	6394.07	4145.48	4451.16	301.96	1669237.11	14283866.99	39°20'05.420"N	80°53'53.064"W	4461.39	3.881	0.34	-0.02	-0.34	
11126.00	90.740	341.710	6393.33	4240.43	4542.27	275.13	1669210.30	14283958.07	39°20'06.321"N	80°53'53.404"W	4550.59	3.466	4.02	0.62	-3.97	
11221.00	89.940	341.160	6392.77	4335.42	4632.32	244.89	1669180.07	14284048.08	39°20'07.212"N	80°53'53.788"W	4638.79	3.026	1.02	-0.84	-0.58	
11315.00	90.120	341.510	6392.72	4429.41	4721.38	214.81	1669149.99	14284137.10	39°20'08.092"N	80°53'54.169"W	4726.26	2.605	0.42	0.19	0.37	
11411.00	90.090	341.780	6392.54	4525.41	4812.49	184.57	1669119.78	14284228.18	39°20'08.993"N	80°53'54.553"W	4816.03	2.196	0.28	-0.03	0.28	
11506.00	90.000	341.290	6392.47	4620.40	4902.60	154.49	1669089.70	14284318.25	39°20'09.884"N	80°53'54.934"W	4905.04	1.805	0.52	-0.09	-0.52	
11601.00	90.000	341.000	6392.47	4715.38	4992.51	123.78	1669059.01	14284408.12	39°20'10.773"N	80°53'55.324"W	4994.04	1.420	0.31	0.00	-0.31	
11696.00	90.060	340.400	6392.42	4810.35	5082.17	92.39	1669027.62	14284497.75	39°20'11.659"N	80°53'55.722"W	5083.01	1.041	0.63	0.06	-0.63	
11792.00	90.220	340.660	6392.18	4906.31	5172.68	60.39	1668995.64	14284588.22	39°20'12.554"N	80°53'56.128"W	5173.03	0.669	0.32	0.17	0.27	
11887.00	90.550	344.420	6391.54	5001.29	5263.28	31.89	1668967.15	14284678.79	39°20'13.450"N	80°53'56.489"W	5263.38	0.347	3.97	0.35	3.96	
11982.00	90.120	349.510	6390.99	5095.93	5355.80	10.47	1668945.74	14284771.27	39°20'14.365"N	80°53'56.761"W	5355.81	0.112	5.38	-0.45	5.36	
12077.00	91.480	349.520	6389.66	5190.14	5449.20	-6.82	1668928.46	14284864.64	39°20'15.288"N	80°53'56.979"W	5449.21	359.928	1.43	1.43	0.01	
12172.00	91.450	342.890	6387.23	5284.82	5541.38	-29.45	1668905.84	14284956.78	39°20'16.199"N	80°53'57.266"W	5541.46	359.696	6.98	-0.03	-6.98	
12267.00	89.940	341.180	6386.08	5379.81	5631.74	-58.75	1668876.55	14285047.10	39°20'17.093"N	80°53'57.638"W	5632.04	359.402	2.40	-1.59	-1.80	
12362.00	89.850	340.120	6386.25	5474.77	5721.37	-90.22	1668845.09	14285136.69	39°20'17.979"N	80°53'58.037"W	5722.08	359.097	1.12	-0.09	-1.12	
12457.00	89.820	338.300	6386.52	5569.64	5810.18	-123.94	1668811.38	14285225.47	39°20'18.857"N	80°53'58.465"W	5811.50	358.778	1.92	-0.03	-1.92	
12552.00	89.690	339.260	6386.93	5664.47	5898.74	-158.33	1668777.01	14285313.99	39°20'19.733"N	80°53'58.901"W	5900.86	358.463	1.02	-0.14	1.01	
12647.00	89.780	342.280	6387.37	5759.43	5988.42	-189.61	1668745.74	14285403.64	39°20'20.620"N	80°53'59.298"W	5991.43	358.186	3.18	0.09	3.18	
12742.00	89.850	343.830	6387.68	5854.42	6079.30	-217.30	1668718.06	14285494.48	39°20'21.518"N	80°53'59.649"W	6083.18	357.953	1.63	0.07	1.63	
12837.00	89.850	343.360	6387.93	5949.39	6170.43	-244.13	1668689.25	14285585.57	39°20'22.419"N	80°53'59.990"W	6175.26	357.734	0.49	0.00	-0.49	
12932.00	89.820	342.240	6388.20	6044.38	6261.18	-272.22	1668663.16	14285676.28	39°20'23.316"N	80°54'00.348"W	6267.09	357.510	1.18	-0.03	-1.18	
13026.00	89.850	341.430	6388.47	6138.38	6350.49	-301.52	1668633.87	14285765.56	39°20'24.199"N	80°54'00.718"W	6357.65	357.282	0.86	0.03	-0.86	



Actual Wellpath Report

Niley Unit 2H AWP Proj: 14170'

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot #02
ANTERO RESOURCES CORPORATION	Niley Unit 2H
Ritchie County, WV	Niley Unit 2H AWB
Ritchie	
Mulvay Pad	

WELLPATH DATA (163 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert.Sect [ft]	North [ft]	East [ft]	Grid East [ft]	Grid North [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [ft/100ft]	Build Rate [ft/100ft]	Turn Rate [ft/100ft]	Comments
13121.00	89.820	340.430	6388.74	6233.35	6440.28	-332.56	1668602.85	14285855.31	39°20'25.087"N	80°54'01.111"W	6448.86	357.044	1.05	-0.03	-1.05	
13215.00	89.850	340.450	6389.01	6327.31	6528.85	-364.03	1668671.39	14285943.85	39°20'25.963"N	80°54'01.511"W	6538.99	356.809	0.04	0.03	0.02	
13310.00	89.720	340.000	6389.37	6422.25	6618.25	-396.17	1668539.26	14286033.21	39°20'26.847"N	80°54'01.918"W	6630.10	356.574	0.49	-0.14	-0.47	
13405.00	89.570	342.010	6389.96	6517.22	6708.07	-427.09	1668508.35	14286123.00	39°20'27.735"N	80°54'02.311"W	6721.65	356.357	2.12	-0.18	2.12	
13500.00	89.420	340.460	6390.80	6612.20	6798.01	-457.65	1668477.81	14286212.90	39°20'28.624"N	80°54'02.698"W	6813.40	356.149	1.64	-0.16	-1.63	
13595.00	89.320	340.230	6391.84	6707.15	6887.47	-489.60	1668445.87	14286302.33	39°20'29.509"N	80°54'03.104"W	6904.86	355.934	0.26	-0.11	-0.24	
13690.00	89.320	342.700	6392.97	6802.13	6977.53	-519.80	1668415.69	14286392.35	39°20'30.399"N	80°54'03.487"W	6996.87	355.740	2.60	0.00	2.60	
13785.00	89.450	342.570	6393.99	6897.12	7068.20	-548.15	1668387.35	14286482.98	39°20'31.296"N	80°54'03.846"W	7089.42	355.566	0.19	0.14	-0.14	
13879.00	89.450	341.470	6394.89	6991.11	7157.60	-577.16	1668358.34	14286572.35	39°20'32.179"N	80°54'04.215"W	7180.83	355.390	1.17	0.00	-1.17	
13975.00	89.420	342.320	6395.84	7087.11	7248.84	-606.99	1668328.52	14286663.55	39°20'33.082"N	80°54'04.593"W	7274.21	355.213	0.89	-0.03	0.89	
14069.00	89.450	343.490	6396.77	7181.09	7338.68	-634.62	1668300.90	14286753.36	39°20'33.970"N	80°54'04.943"W	7366.07	355.058	1.25	0.03	1.24	
14145.00	89.420	344.310	6397.51	7257.05	7411.70	-659.70	1668279.84	14286826.34	39°20'34.692"N	80°54'05.211"W	7440.65	354.944	1.08	-0.04	1.08	
14170.00	89.420	344.310	6397.77	7282.04	7435.77	-662.46	1668273.08	14286850.40	39°20'34.930"N	80°54'05.296"W	7465.22	354.909	0.00	0.00	0.00	Projected MD at TD: 14170'

HOLE & CASING SECTIONS - Ref Wellbore: Niley Unit 2H AWB Ref Wellpath: Niley Unit 2H AWP Proj: 14170'

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	24.50	104.50	80.00	24.50	104.50	0.00	0.00	0.04	0.08
17.5in Open Hole	104.50	567.50	463.00	104.50	567.50	0.04	0.08	-0.44	1.59
13.375in Casing Surface	24.50	567.50	543.00	24.50	567.50	0.00	0.00	-0.44	1.59
12.25in Open Hole	567.50	2577.50	2010.00	567.50	2549.51	-0.44	1.59	4.56	287.55
9.625in Casing Intermediate	24.50	2577.50	2553.00	24.50	2549.51	0.00	0.00	4.56	287.55
8.75in Open Hole	2577.50	6272.50	3695.00	2549.51	5976.24	4.56	287.55	70.03	1591.78
8.5in Open Hole	6272.50	14170.00	7897.50	5976.24	6397.77	70.03	1591.78	7435.77	-662.46
5.5in Casing Production	24.50	14170.00	14145.50	24.50	6397.77	0.00	0.00	7435.77	-662.46

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Actual Wellpath Report

Niley Unit 2H AWP Proj: 14170'
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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #02
ANTERO RESOURCES CORPORATION	Well	Niley Unit 2H
Ritchie County, WV	Wellbore	Niley Unit 2H AWB
Ritchie		
Mulvey Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Niley Unit 2H POE - Rev-1	6384.00	500.31	1566.39	1670501.04	14279917.73	39°19'26.357"N	80°53'37.031"W	point
Niley Unit 2H BHL - Rev-2	6407.00	7429.44	-660.33	1668275.21	14286844.08	39°20'34.867"N	80°54'05.269"W	point
Niley Unit 2H LP - Rev-1	6407.00	639.71	1521.60	1670456.27	14280057.07	39°19'27.735"N	80°53'37.599"W	point

WELLPATH COMPOSITION - Ref Wellbore: Niley Unit 2H AWB Ref Wellpath: Niley Unit 2H AWP Proj: 14170'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	6171.50	Gyrodata standard - Drop gyro or Multi-shot	05 Gyrodata MS Gyro <8-3/4">(100'-6162)	Niley Unit 2H AWB
6171.50	6272.50	ISCWSA MWD, Rev. 4 (Standard)	04 Directional ONE MWD <8-3/4"> (6162')(6219'-6263')	Niley Unit 2H AWB
6272.50	14145.00	BHI AutoTrak Curve (Long spacing)	06 BHI AT Curve <8-1/2">(6272.50')(6339'-14145)	Niley Unit 2H AWB
14145.00	14170.00	Blind Drilling (std)	Projection to bit	Niley Unit 2H AWB



Actual Wellpath Report

Niley Unit 2H AWP Proj: 14170'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #02
Area	Ritchie County, WV	Well	Niley Unit 2H
Field	Ritchie	Wellbore	Niley Unit 2H AWB
Facility	Mulvay Pad		

COMMENTS
<p>Wellpath general comments API: 47-085-10251-0000 BHI Job #: 8577844 Rig: Frontier 22 Duration: 05/31/2017-06/02/2017 Gyrodatta MS Gyro <8-3/4"> (100'-6162') Directional ONE MWD <8-3/4"> (6162')(6219'-6263') BHI AT Curve <8-1/2"> (6272.50')(6339'-14145') Middlesex: 6567' MD Burket: 6751' MD Tully: 6832' MD Marcellus POE: 6938' MD Projected MD at TD: 14170'</p>