



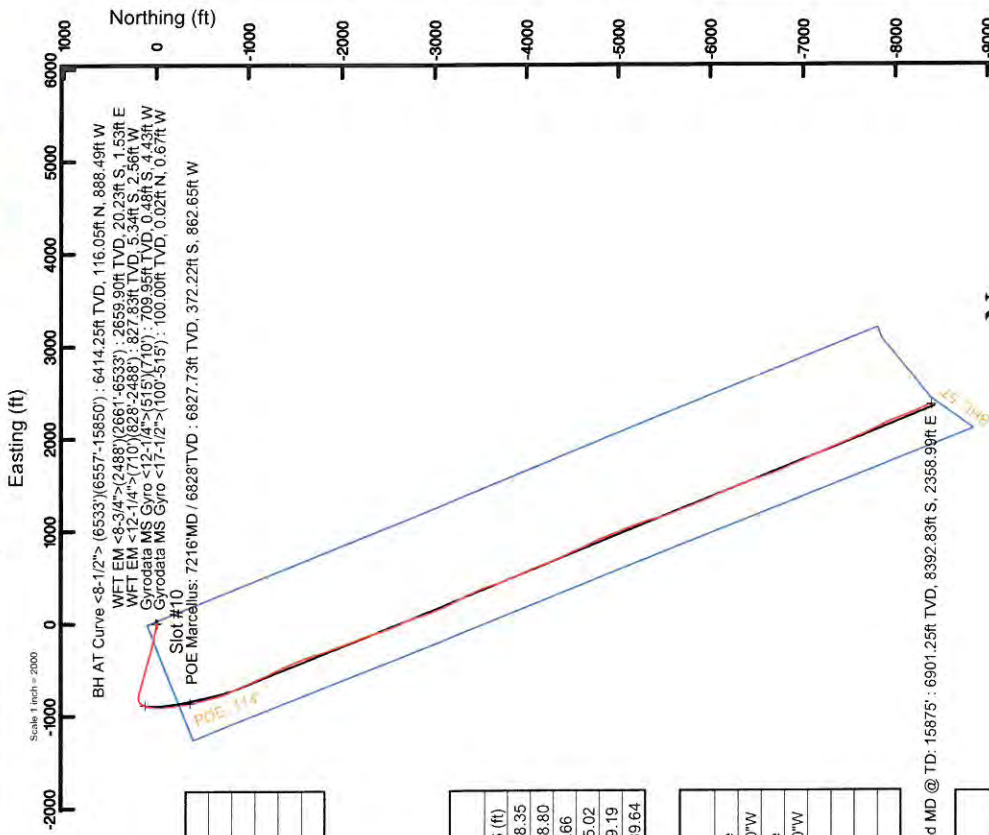
# ANTERO RESOURCES CORPORATION

Location: Doddridge Co., WV  
 Field: Doddridge  
 Facility: Alexander Pad

Slot: Slot #10  
 Well: Northrop Unit 1H  
 Wellbore: Northrop Unit 1H PWB



**API: 47-017-06791-0000**  
**BH Job #: 9102804**  
**Rig: Patterson 342**  
**Duration: 04/13/18 - 04/16/18**



Plot reference wellpath is Northrop Unit 1H PWB Rev-B.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Patterson 342 (RKB)	North Reference: Grid north
Measured depths are referenced to Patterson 342 (RKB)	Scale: True distance
Patterson 342 (RKB) to Mean Sea Level: 1206 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #10): -1181 feet	Created by: micrebit on 2018-05-16
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defin

Gyrodata MS Gyro <17-1/2>(100-515) : 1.03° Inc, 100.00ft MD, 100.00ft TVD, -0.27ft VS

Gyrodata MS Gyro <12-1/4>(515-710) : 1.32° Inc, 710.00ft MD, 709.95ft TVD, -1.22ft VS  
 WFT EM <12-1/4>(710)(828-2488) : 3.75° Inc, 828.00ft MD, 827.83ft TVD, 3.99ft VS

### Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6533.00	25.070	202.030	6392.66	125.89	-884.90	7.83	-448.35
Proj. To Bottom	6611.00	30.760	186.050	6461.65	90.66	-893.22	11.99	-418.80
POE	7197.47	71.438	167.601	6824.00	-350.71	-847.17	7.30	7.66
Landing Pt.	7452.79	90.000	167.601	6865.00	-595.75	-793.30	7.27	255.02
On Azimuth	7808.63	90.000	157.994	6865.00	-935.27	-688.19	2.70	609.19
BHL	15889.08	90.000	157.994	6865.00	-8427.02	2339.58	0.00	8689.64

WFT EM <8-3/4>(2488)(2661-6533) : 1.51° Inc, 2661.00ft MD, 2659.90ft TVD, 19.33ft VS

### Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Alexander Pad	1703908.855	14284263.322	39°20'08.720"N	80°46'31.620"W
Slot	Local N (ft)	Local E (ft)	Latitude	Longitude
Slot #10	-45.48	19.76	39°20'08.270"N	80°46'31.370"W

Projected MD @ TD: 15875' : 6901.25ft TVD, 8392.83ft S, 2358.99ft E

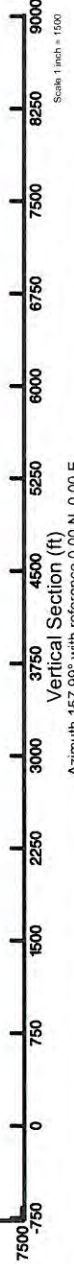
### Well Data

Slot	Well	Wellbore	Wellpath
Slot #10	Northrop Unit 1H	Northrop Unit 1H AWB	Northrop Unit 1H AWP Proj: 15875
Slot #10	Northrop Unit 1H	Northrop Unit 1H PWB	Northrop Unit 1H PWB Rev-B.0

BH AT Curve <8-1/2> (6533)(6557-15850) : 26.71° Inc, 6557.00ft MD, 6414.25ft TVD, -440.57ft VS

POE Marcellus: 7216MD / 6828TVD : 72.67° Inc, 7216.00ft MD, 6827.73ft TVD, 21.80ft VS

Projected MD @ TD: 15875' : 90.77° Inc, 15875.00ft MD, 6901.25ft TVD, 8665.22ft VS



User specified Dip: 66.57° Field: 52067 nT  
 Magnetic North is 7.66 degrees West of True North (at 4/12/2018)  
 Grid North is 0.14 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.14 degrees  
 To correct azimuth from Magnetic to Grid subtract 7.80 degrees

05/03/2019





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'

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REFERENCE WELLPATH IDENTIFICATION		
Operator	ANTERO RESOURCES CORPORATION	Slot #10
Area	Doddridge Co., WV	Northrop Unit 1H
Field	Doddridge	Northrop Unit 1H AWB
Facility	Alexander Pad	

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Mccrerib
Scale	0.999605	Report Generated	5/16/2018 at 12:54:16 PM
Convergence at slot	0.14° East	Database/Source file	WA_MPL_EASTERNUS_Defn\Northrop_Unit_1H_AWP_Proj_15875_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-45.48	19.76	1703928.60	14284217.86	39°20'08.270"N	80°46'31.370"W
Facility Reference Pt			1703908.86	14284263.32	39°20'08.720"N	80°46'31.620"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM		
Calculation method	Minimum curvature	Patterson 342 (RKB) to Facility Vertical Datum
Horizontal Reference Pt	Slot	Patterson 342 (RKB) to Mean Sea Level
Vertical Reference Pt	Patterson 342 (RKB)	Patterson 342 (RKB) to Ground Level at Slot (Slot #10)
MD Reference Pt	Patterson 342 (RKB)	Section Origin
Field Vertical Reference	Mean Sea Level	Section Azimuth
		25.00ft
		1206.00ft
		25.00ft
		N 0.00, E 0.00 ft
		157.99°

05/03/2019





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'  
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #10
Operator	ANTERO RESOURCES CORPORATION	Well	Northrop Unit 1H
Area	Doddridge Co., WV	Wellbore	Northrop Unit 1H AWB
Field	Doddridge		
Facility	Alexander Pad		

WELLPATH DATA (200 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	0.00	271.770	0.00	0.00	0.00	0.00	1703928.60	14284217.86	39°20'08.270"N	80°46'31.370"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.00	271.770	25.00	0.00	0.00	0.00	1703928.60	14284217.86	39°20'08.270"N	80°46'31.370"W	0.00	0.000	0.00	0.00	0.00	
100.00	1.030	271.770	100.00	-0.27	0.02	-0.67	1703927.93	14284217.88	39°20'08.270"N	80°46'31.379"W	0.67	271.770	1.37	1.37	-17.64	Gyrodata MS Gyro <17-1/2">(100'-515')
125.00	1.070	273.540	124.99	-0.46	0.04	-1.13	1703927.47	14284217.92	39°20'08.270"N	80°46'31.384"W	1.13	272.135	0.21	0.16	7.08	
150.00	0.650	271.220	149.99	-0.62	0.06	-1.51	1703927.10	14284217.90	39°20'08.271"N	80°46'31.389"W	1.51	272.266	1.69	-1.68	-9.28	
175.00	0.620	259.330	174.99	-0.70	0.04	-1.78	1703926.82	14284217.90	39°20'08.270"N	80°46'31.393"W	1.78	271.209	0.54	-0.12	-47.56	
200.00	0.750	276.760	199.99	-0.81	0.03	-2.08	1703926.53	14284217.89	39°20'08.270"N	80°46'31.396"W	2.08	270.877	0.98	0.52	69.72	
225.00	0.680	285.210	224.98	-0.98	0.09	-2.38	1703926.22	14284217.95	39°20'08.271"N	80°46'31.400"W	2.38	272.163	0.51	-0.28	33.80	
250.00	0.760	284.830	249.98	-1.17	0.17	-2.69	1703925.92	14284218.03	39°20'08.272"N	80°46'31.404"W	2.69	273.651	0.32	0.32	-1.52	
275.00	0.780	289.770	274.98	-1.38	0.27	-3.01	1703925.60	14284218.13	39°20'08.273"N	80°46'31.408"W	3.02	275.158	0.28	0.08	19.76	
300.00	0.880	292.530	299.98	-1.63	0.40	-3.34	1703925.26	14284218.26	39°20'08.274"N	80°46'31.413"W	3.37	276.864	0.43	0.40	11.04	
325.00	0.950	295.750	324.97	-1.91	0.57	-3.71	1703924.90	14284218.42	39°20'08.276"N	80°46'31.417"W	3.75	278.681	0.35	0.28	12.88	
350.00	0.580	296.770	349.97	-2.18	0.71	-4.01	1703924.60	14284218.57	39°20'08.277"N	80°46'31.421"W	4.07	280.091	1.48	-1.48	4.08	
425.00	0.170	300.770	424.97	-2.33	0.81	-4.22	1703924.39	14284218.67	39°20'08.278"N	80°46'31.424"W	4.29	280.889	0.42	-0.40	-14.84	
400.00	0.280	303.980	399.97	-2.46	0.89	-4.36	1703924.24	14284218.75	39°20'08.279"N	80°46'31.426"W	4.45	281.482	0.85	-0.80	43.68	
450.00	0.220	285.870	449.97	-2.60	0.97	-4.52	1703924.08	14284218.83	39°20'08.280"N	80°46'31.428"W	4.63	282.120	0.28	0.20	-59.60	
475.00	0.370	299.710	474.97	-2.69	1.02	-4.64	1703923.97	14284218.88	39°20'08.280"N	80°46'31.429"W	4.75	282.452	0.66	0.60	55.36	
500.00	0.380	310.600	499.97	-2.83	1.12	-4.77	1703923.83	14284218.98	39°20'08.281"N	80°46'31.431"W	4.90	283.189	0.29	0.04	43.56	
515.00	0.380	306.500	514.97	-2.91	1.18	-4.85	1703923.76	14284219.04	39°20'08.282"N	80°46'31.432"W	4.99	283.678	0.18	0.00	-27.33	
710.00	1.320	155.310	709.95	-1.22	-0.48	-4.43	1703924.17	14284217.38	39°20'08.285"N	80°46'31.426"W	4.46	263.874	0.85	0.48	-77.53	Gyrodata MS Gyro <12-1/4">(515')(710')
828.00	3.750	160.210	827.83	3.99	-5.34	-2.56	1703926.05	14284212.52	39°20'08.217"N	80°46'31.403"W	5.92	205.585	2.07	2.06	4.15	WFT EM <12-1/4">(710')(828'-2488')
923.00	5.210	160.820	922.54	11.41	-12.34	-0.09	1703928.52	14284205.52	39°20'08.148"N	80°46'31.372"W	12.34	180.412	1.54	1.54	0.64	
1018.00	4.120	155.930	1017.22	19.13	-19.53	2.72	1703931.32	14284198.34	39°20'08.077"N	80°46'31.336"W	19.72	172.070	1.22	-1.15	-5.15	
1112.00	1.900	149.090	1111.09	24.04	-23.95	4.90	1703933.50	14284193.92	39°20'08.033"N	80°46'31.308"W	24.45	168.442	2.39	-2.36	-7.28	
1206.00	0.880	152.350	1205.06	26.30	-25.93	6.03	1703934.64	14284191.94	39°20'08.014"N	80°46'31.294"W	26.62	166.899	1.09	-1.09	3.47	
1300.00	0.260	121.380	1299.05	27.20	-26.69	6.56	1703935.17	14284191.18	39°20'08.006"N	80°46'31.287"W	27.48	166.180	0.70	-0.64	-32.95	
1394.00	0.260	6.430	1393.05	27.20	-26.53	6.78	1703935.39	14284191.28	39°20'08.007"N	80°46'31.284"W	27.45	165.688	0.48	-0.02	-122.29	
1489.00	0.570	331.440	1488.05	26.54	-25.96	6.58	1703935.18	14284191.91	39°20'08.013"N	80°46'31.287"W	26.79	165.773	0.41	0.33	-36.83	
1583.00	0.800	314.630	1582.04	25.47	-25.09	5.89	1703934.49	14284192.78	39°20'08.022"N	80°46'31.296"W	25.78	166.785	0.32	0.24	-17.88	





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'  
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #10
Operator	ANTERO RESOURCES CORPORATION		
Area	Doddridge Co., WV		
Field	Doddridge		
Facility	Alexander Pad		
	Well	Northrop Unit 1H	
	Wellbore	Northrop Unit 1H AWB	

WELLPATH DATA (200 stations)																
MD ft	Inclination °	Azimuth °	TVD ft	Vert Sect ft	North ft	East ft	Grid East IUS ft	Grid North IUS ft	Latitude	Longitude	Closure Dist ft	Closure Dir °	DLS °/100ft	Build Rate °/100ft	Turn Rate °/100ft	Comments
1677.00	0.730	290.200	1676.03	24.47	-24.42	4.86	1703933.47	14284193.44	39°20'08.028"N	80°46'31.309"W	24.90	168.739	0.35	-0.07	-25.99	
1772.00	0.600	174.970	1771.03	24.54	-24.71	4.34	1703932.94	14284193.16	39°20'08.026"N	80°46'31.316"W	25.09	170.041	1.18	-0.14	-121.29	
1866.00	1.240	143.880	1865.02	25.99	-26.02	4.98	1703933.58	14284191.85	39°20'08.013"N	80°46'31.307"W	26.50	169.163	0.84	0.68	-33.07	
1961.00	0.860	100.860	1960.00	27.38	-26.99	6.29	1703934.89	14284190.88	39°20'08.003"N	80°46'31.291"W	27.71	166.885	0.89	-0.40	-45.28	
2055.00	1.070	27.340	2053.99	27.19	-26.34	7.29	1703935.99	14284191.53	39°20'08.009"N	80°46'31.277"W	27.36	164.341	1.24	0.22	-78.21	
2149.00	1.010	1.860	2147.98	25.86	-24.73	7.81	1703936.41	14284193.14	39°20'08.025"N	80°46'31.271"W	25.94	162.468	0.49	-0.06	-27.11	
2243.00	0.900	335.790	2241.97	24.36	-23.23	7.54	1703936.14	14284194.64	39°20'08.040"N	80°46'31.275"W	24.42	162.024	0.47	-0.12	-27.73	
2338.00	0.860	325.060	2336.95	22.92	-21.97	6.82	1703935.43	14284195.90	39°20'08.053"N	80°46'31.284"W	23.00	162.744	0.18	-0.04	-11.29	
2432.00	0.660	293.540	2430.95	21.85	-21.17	5.92	1703934.53	14284196.63	39°20'08.061"N	80°46'31.295"W	21.99	164.370	0.48	-0.21	-33.53	
2488.00	0.950	282.150	2486.94	21.36	-20.95	5.17	1703933.78	14284196.92	39°20'08.063"N	80°46'31.305"W	21.58	166.125	0.59	0.52	-20.34	
2661.00	1.510	280.560	2659.90	19.33	-20.23	1.53	1703930.13	14284197.64	39°20'08.070"N	80°46'31.351"W	20.28	175.671	0.32	0.32	-0.92	WFT EM <-8-3/4">(-2488)(2661-6533)
2755.00	1.640	284.880	2753.87	17.85	-19.65	-0.99	1703927.62	14284198.21	39°20'08.076"N	80°46'31.383"W	19.68	182.874	0.19	0.14	4.60	
2850.00	1.880	286.040	2848.83	16.18	-18.92	-3.64	1703924.97	14284198.95	39°20'08.083"N	80°46'31.417"W	19.27	190.886	0.05	0.04	1.22	
2944.00	1.650	286.130	2942.79	14.49	-18.16	-6.26	1703922.34	14284199.70	39°20'08.091"N	80°46'31.450"W	19.21	199.025	0.03	-0.03	0.10	
3039.00	1.580	282.740	3037.75	12.90	-17.49	-8.85	1703919.75	14284200.37	39°20'08.097"N	80°46'31.483"W	19.61	206.845	0.12	-0.07	-3.57	
3132.00	2.300	296.390	3130.69	10.78	-16.38	-11.78	1703916.83	14284201.48	39°20'08.108"N	80°46'31.520"W	20.18	215.711	0.91	0.77	14.68	
3231.00	3.780	290.780	3229.55	7.07	-14.34	-16.61	1703912.00	14284203.52	39°20'08.129"N	80°46'31.582"W	21.94	229.187	1.52	1.49	-5.67	
3326.00	5.530	295.890	3324.24	1.55	-11.23	-23.65	1703904.96	14284206.63	39°20'08.160"N	80°46'31.671"W	26.19	244.600	1.89	1.84	5.38	
3420.00	7.280	290.530	3417.65	-5.84	-7.17	-33.31	1703895.31	14284210.70	39°20'08.200"N	80°46'31.794"W	34.07	257.859	1.97	1.86	-5.70	
3514.00	9.480	288.670	3510.64	-14.91	-2.60	-46.22	1703882.40	14284215.26	39°20'08.245"N	80°46'31.958"W	46.29	266.783	2.36	2.34	-1.98	
3609.00	12.020	286.770	3603.96	-26.21	2.76	-63.11	1703865.52	14284220.62	39°20'08.299"N	80°46'32.173"W	63.17	272.506	2.70	2.67	-2.00	
3704.00	14.310	281.770	3696.46	-38.94	8.01	-84.07	1703844.56	14284225.87	39°20'08.351"N	80°46'32.440"W	84.45	275.443	2.69	2.41	-5.26	
3798.00	16.320	281.620	3787.14	-52.67	13.03	-108.32	1703820.33	14284230.88	39°20'08.401"N	80°46'32.748"W	109.10	276.858	2.04	2.04	-0.16	
3894.00	17.250	282.030	3879.07	-68.07	18.70	-135.38	1703793.28	14284236.55	39°20'08.458"N	80°46'33.092"W	136.66	277.863	1.07	1.06	0.43	
3988.00	16.790	281.700	3968.95	-83.41	24.35	-162.30	1703766.36	14284242.20	39°20'08.515"N	80°46'33.435"W	164.12	278.534	0.50	-0.49	-0.35	
4082.00	16.830	282.070	4058.94	-98.57	29.95	-188.91	1703739.77	14284247.80	39°20'08.571"N	80°46'33.773"W	191.27	279.010	0.12	0.04	0.39	
4177.00	17.340	283.200	4149.74	-114.44	36.06	-216.14	1703712.55	14284253.91	39°20'08.632"N	80°46'34.120"W	219.13	279.472	0.64	0.54	1.19	
4270.00	16.870	282.890	4238.63	-130.15	42.24	-242.79	1703685.91	14284260.08	39°20'08.693"N	80°46'34.459"W	246.43	279.869	0.51	-0.51	-0.33	
4365.00	17.380	284.560	4329.42	-146.49	48.88	-269.96	1703658.76	14284266.72	39°20'08.760"N	80°46'34.804"W	274.35	280.263	0.75	0.54	1.76	
4459.00	17.070	284.830	4419.20	-163.12	55.94	-296.88	1703631.84	14284273.78	39°20'08.830"N	80°46'35.147"W	302.11	280.671	0.34	-0.33	0.29	





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #10
Operator	ANTERO RESOURCES CORPORATION	Well	Northrop Unit 1H
Area	Doddridge Co., WV	Wellbore	Northrop Unit 1H AWB
Field	Doddridge		
Facility	Alexander Pad		

WELLPATH DATA (200 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (IUS ft)	Grid North (IUS ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
4553.00	17.200	285.830	4509.03	-179.92	63.26	-323.59	1703605.14	14284281.10	39°20'08.903"N	80°46'35.486"W	329.72	281.062	0.34	0.14	0.14	1.06
4647.00	16.700	286.010	4598.95	-196.77	70.78	-349.94	1703578.80	14284288.61	39°20'08.978"N	80°46'35.821"W	357.03	281.434	0.53	-0.53	0.19	0.19
4741.00	17.260	286.320	4688.85	-213.74	78.42	-376.31	1703552.44	14284296.25	39°20'09.054"N	80°46'36.157"W	384.39	281.772	0.60	0.60	0.33	0.33
4836.00	18.260	286.490	4779.32	-231.74	86.61	-404.11	1703524.66	14284304.43	39°20'09.136"N	80°46'36.510"W	413.28	282.097	1.05	1.05	0.18	0.18
4930.00	17.790	286.680	4868.71	-249.89	94.91	-431.98	1703496.79	14284312.73	39°20'09.219"N	80°46'36.865"W	442.29	282.391	0.50	-0.50	0.20	0.20
5024.00	16.860	286.530	4958.44	-267.36	102.91	-458.81	1703469.98	14284320.73	39°20'09.298"N	80°46'37.206"W	470.21	282.642	0.99	-0.99	-0.16	-0.16
5119.00	17.020	284.190	5049.32	-284.15	110.24	-485.49	1703443.30	14284328.05	39°20'09.371"N	80°46'37.545"W	497.85	282.793	0.74	0.17	-2.46	-2.46
5213.00	16.660	281.580	5139.29	-299.73	116.31	-512.03	1703416.78	14284334.13	39°20'09.432"N	80°46'37.883"W	525.08	282.798	0.89	-0.38	-2.78	-2.78
5307.00	17.300	285.640	5229.20	-315.72	122.79	-538.69	1703390.13	14284340.60	39°20'09.497"N	80°46'38.222"W	552.51	282.840	1.43	0.68	4.32	4.32
5401.00	17.750	286.500	5318.83	-333.18	130.63	-565.89	1703362.94	14284348.43	39°20'09.575"N	80°46'38.568"W	580.77	282.988	0.55	0.48	0.91	0.91
5496.00	17.760	286.390	5409.31	-351.20	138.83	-593.68	1703335.16	14284356.63	39°20'09.657"N	80°46'38.921"W	609.69	283.162	0.04	0.01	-0.12	-0.12
5590.00	17.640	285.390	5498.86	-368.76	146.65	-621.16	1703307.69	14284364.45	39°20'09.735"N	80°46'39.271"W	638.24	283.284	0.35	-0.13	-1.06	-1.06
5685.00	18.470	285.040	5589.18	-386.57	154.38	-649.57	1703279.29	14284372.17	39°20'09.812"N	80°46'39.632"W	667.67	283.369	0.88	0.87	-0.37	-0.37
5779.00	18.070	284.880	5678.44	-404.25	161.94	-678.06	1703250.82	14284379.73	39°20'09.887"N	80°46'39.994"W	697.12	283.432	0.44	-0.43	-0.38	-0.38
5874.00	18.180	284.150	5768.73	-421.79	169.29	-706.68	1703222.21	14284387.08	39°20'09.960"N	80°46'40.358"W	726.67	283.472	0.21	0.12	-0.56	-0.56
5968.00	17.670	284.130	5858.16	-438.86	176.36	-734.73	1703194.16	14284394.15	39°20'10.031"N	80°46'40.715"W	755.60	283.497	0.54	-0.54	-0.02	-0.02
6062.00	18.090	282.710	5947.62	-455.59	183.05	-762.80	1703166.10	14284400.84	39°20'10.098"N	80°46'41.072"W	784.46	283.494	0.64	0.45	-1.51	-1.51
6156.00	19.770	278.920	6036.54	-472.07	188.73	-792.75	1703136.17	14284406.51	39°20'10.155"N	80°46'41.453"W	814.90	283.391	2.21	1.79	-4.03	-4.03
6203.00	18.470	271.810	6080.95	-479.17	190.20	-808.05	1703120.88	14284407.98	39°20'10.170"N	80°46'41.648"W	830.13	283.245	5.67	-2.77	-15.13	-15.13
6251.00	16.940	258.230	6126.70	-483.48	189.01	-822.50	1703106.43	14284406.79	39°20'10.158"N	80°46'41.832"W	843.94	282.942	9.15	-3.19	-28.29	-28.29
6298.00	16.450	247.360	6171.73	-484.63	185.05	-835.35	1703093.59	14284402.84	39°20'10.119"N	80°46'41.995"W	855.60	282.491	6.72	-1.04	-23.13	-23.13
6392.00	18.150	224.340	6261.57	-479.09	169.84	-858.21	1703070.74	14284398.57	39°20'10.058"N	80°46'42.148"W	865.94	281.915	6.20	1.21	-21.13	-21.13
6440.00	20.600	213.900	6306.86	-471.36	157.48	-868.14	1703060.80	14284375.28	39°20'09.948"N	80°46'42.287"W	874.85	281.194	8.73	2.40	-27.86	-27.86
6487.00	22.550	208.410	6350.57	-460.98	142.69	-877.05	1703051.91	14284360.49	39°20'09.702"N	80°46'42.414"W	882.31	280.282	8.82	5.10	-21.75	-21.75
6533.00	25.070	202.030	6392.66	-448.35	125.89	-884.90	1703044.06	14284343.70	39°20'09.536"N	80°46'42.528"W	888.58	279.241	5.97	4.15	-11.68	-11.68
6557.00	26.710	198.160	6414.25	-440.57	116.05	-888.49	1703040.47	14284333.87	39°20'09.439"N	80°46'42.628"W	893.81	278.097	7.83	5.48	-13.87	-13.87
6604.00	31.610	190.860	6455.29	-422.14	93.90	-894.11	1703034.85	14284311.72	39°20'09.220"N	80°46'42.746"W	899.02	277.442	9.81	6.83	-16.13	-16.13
6651.00	35.340	189.430	6494.49	-400.19	68.38	-898.66	1703030.30	14284286.21	39°20'08.968"N	80°46'42.805"W	901.25	274.352	8.11	7.94	-3.04	-3.04
6698.00	37.730	186.760	6532.25	-375.98	40.69	-902.58	1703026.39	14284258.53	39°20'08.694"N	80°46'42.856"W	903.49	272.581	6.11	5.09	-5.68	-5.68

05/03/2019

5/16/2018





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Doddridge Co., Wv	Well	Northrop Unit 1H
Field	Doddridge	Wellbore	Northrop Unit 1H AWB
Facility	Alexander Pad		

## WELLPATH DATA (200 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6745.00	40.630	183.710	6569.46	-349.02	10.50	-905.32	1703023.65	14284228.35	39°20'08.396"N	80°46'42.891"W	905.38	270.664	7.25	6.04	-6.35	
6794.00	44.390	180.220	6604.84	-319.38	-21.90	-906.39	1703022.57	14284198.97	39°20'08.076"N	80°46'42.906"W	906.66	268.616	7.24	7.83	-7.27	
6840.00	47.090	178.290	6636.95	-288.68	-54.84	-905.95	1703023.01	14284163.04	39°20'07.750"N	80°46'42.902"W	907.61	266.536	6.59	5.87	-4.20	
6887.00	50.160	176.630	6668.01	-255.43	-90.06	-904.38	1703024.59	14284127.83	39°20'07.402"N	80°46'42.883"W	908.85	264.313	7.05	6.53	-3.53	
6934.00	53.020	174.200	6697.21	-220.30	-126.77	-901.42	1703027.54	14284091.14	39°20'07.039"N	80°46'42.846"W	910.29	261.995	7.31	6.08	-5.17	
6981.00	56.600	172.710	6724.29	-183.28	-164.92	-897.03	1703031.93	14284053.01	39°20'06.662"N	80°46'42.791"W	912.07	259.583	8.05	7.62	-3.17	
7029.00	59.570	172.180	6749.66	-143.83	-205.30	-891.67	1703037.29	14284012.64	39°20'06.263"N	80°46'42.725"W	915.08	257.034	6.26	6.19	-1.10	
7030.00†	59.618	172.158	6750.17	-143.00	-206.16	-891.55	1703037.40	14284011.79	39°20'06.254"N	80°46'42.723"W	915.08	256.980	5.17	4.82	-2.17	Burket: 7030MD / 6750TVD
7076.00	61.840	171.180	6772.66	-104.01	-245.86	-885.74	1703043.22	14283972.10	39°20'05.452"N	80°46'42.650"W	919.23	254.487	5.17	4.83	-2.13	
7090.00†	62.704	171.047	6779.17	-91.94	-258.10	-883.82	1703045.13	14283959.86	39°20'05.741"N	80°46'42.626"W	920.74	253.721	6.23	6.17	-0.95	Tully: 7090MD / 6779TVD
7123.00	64.740	170.740	6793.78	-63.10	-287.31	-879.14	1703049.81	14283930.66	39°20'05.032"N	80°46'42.568"W	924.90	251.902	6.23	6.17	-0.93	
7170.00	68.490	169.020	6812.44	-20.89	-329.77	-871.55	1703057.40	14283888.22	39°20'05.032"N	80°46'42.472"W	931.85	249.275	8.66	7.98	-3.66	
7188.00†	70.123	168.341	6818.80	-4.35	-346.28	-868.25	1703060.70	14283871.72	39°20'04.869"N	80°46'42.431"W	934.75	248.257	9.73	9.07	-3.77	Hamilton: 7188MD / 6819TVD
7216.00†	72.668	167.312	6827.73	21.80	-372.22	-862.65	1703066.30	14283845.79	39°20'04.612"N	80°46'42.360"W	939.53	246.661	9.73	9.05	-3.67	POE Marcellus: 7216MD / 6828TVD
7218.00	72.850	167.240	6828.32	23.68	-374.08	-862.23	1703066.72	14283843.93	39°20'04.594"N	80°46'42.355"W	939.88	246.546	9.73	9.10	-3.62	
7265.00	76.400	167.850	6840.78	68.36	-418.33	-852.46	1703076.48	14283799.70	39°20'04.156"N	80°46'42.232"W	949.57	243.861	7.66	7.55	1.30	
7312.00	78.380	167.700	6851.04	113.56	-463.15	-842.75	1703086.19	14283754.89	39°20'03.713"N	80°46'42.110"W	961.63	241.208	4.22	4.21	-0.32	
7359.00	82.840	166.450	6858.71	159.34	-508.33	-832.37	1703096.56	14283709.73	39°20'03.266"N	80°46'41.979"W	975.32	238.588	9.85	9.49	-2.66	
7408.00	88.030	166.280	6862.61	207.64	-555.78	-820.86	1703108.07	14283662.30	39°20'02.797"N	80°46'41.834"W	991.32	235.899	10.60	10.58	-0.35	
7502.00	89.170	165.110	6864.90	300.78	-646.84	-797.65	1703131.28	14283571.28	39°20'01.896"N	80°46'41.542"W	1026.96	230.960	1.74	1.21	-1.24	
7597.00	89.230	159.930	6866.23	395.43	-737.41	-769.12	1703159.79	14283480.74	39°20'01.000"N	80°46'41.181"W	1065.52	226.206	5.45	5.06	-5.45	
7691.00	89.230	155.630	6867.50	489.39	-824.40	-733.59	1703195.31	14283393.78	39°20'00.140"N	80°46'40.732"W	1103.54	221.664	4.57	0.00	-4.57	
7785.00	89.170	156.070	6868.81	583.32	-910.17	-695.13	1703233.75	14283308.05	39°19'59.291"N	80°46'40.245"W	1145.26	217.370	0.47	-0.06	0.47	
7880.00	89.140	156.970	6870.21	678.28	-997.29	-657.29	1703271.58	14283220.96	39°19'58.429"N	80°46'39.766"W	1194.41	213.388	0.95	-0.03	0.95	
7975.00	89.350	155.180	6871.46	773.21	-1084.12	-618.76	1703310.09	14283134.17	39°19'57.570"N	80°46'39.279"W	1248.27	209.716	1.90	0.22	-1.88	
8069.00	89.260	156.620	6872.60	867.14	-1169.92	-580.39	1703348.45	14283048.41	39°19'56.721"N	80°46'38.793"W	1305.97	206.386	1.53	-0.10	1.53	
8164.00	89.480	154.090	6873.65	962.03	-1256.25	-540.78	1703388.04	14282962.11	39°19'55.867"N	80°46'38.292"W	1367.70	203.290	2.67	0.23	-2.66	
8260.00	89.050	154.230	6874.88	1057.80	-1342.64	-498.94	1703429.86	14282875.75	39°19'55.012"N	80°46'37.762"W	1432.35	200.386	0.47	-0.45	0.15	
8355.00	89.110	155.740	6876.40	1152.86	-1428.72	-458.77	1703470.01	14282789.71	39°19'54.160"N	80°46'37.254"W	1500.57	197.802	1.59	0.06	1.59	
8450.00	89.010	156.650	6877.96	1247.60	-1515.62	-420.43	1703508.34	14282702.84	39°19'53.300"N	80°46'36.768"W	1572.86	195.504	0.96	-0.11	0.96	





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Doddridge Co., WV	Well	Northrop Unit 1H
Field	Doddridge	Wellbore	Northrop Unit 1H AWB
Facility	Alexander Pad		

## WELLPATH DATA (200 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
8545.00	88.710	158.910	6879.85	1342.57	-1603.55	-384.52	1703544.24	142825214.95	39°19'52.431"N	80°46'36.314"W	1649.00	193.484	2.40	-0.32	2.38	
8639.00	88.580	162.080	6882.07	1436.44	-1692.12	-353.15	1703575.60	14282626.42	39°19'51.554"N	80°46'35.918"W	1728.57	191.788	3.37	-0.14	3.37	
8734.00	89.080	164.260	6884.01	1531.03	-1783.02	-325.65	1703603.09	14282435.55	39°19'50.655"N	80°46'35.571"W	1812.52	190.350	2.95	0.53	2.29	
8829.00	89.200	159.220	6885.44	1625.79	-1873.20	-295.89	1703632.83	14282345.41	39°19'49.763"N	80°46'35.195"W	1896.42	188.976	5.31	0.13	-5.31	
8924.00	89.200	160.340	6886.77	1720.73	-1962.33	-263.06	1703665.65	14282256.31	39°19'48.881"N	80°46'34.780"W	1979.89	187.635	1.18	0.00	1.18	
9019.00	89.200	158.630	6888.09	1815.68	-2051.30	-229.77	1703698.92	14282167.38	39°19'48.001"N	80°46'34.359"W	2064.13	186.391	1.80	0.00	-1.80	
9113.00	89.050	157.450	6889.53	1909.67	-2138.46	-194.63	1703734.05	14282080.24	39°19'47.139"N	80°46'33.914"W	2147.30	185.200	1.27	-0.16	-1.26	
9208.00	89.050	158.810	6891.11	2004.65	-2226.61	-159.25	1703769.42	14281992.13	39°19'46.267"N	80°46'33.467"W	2232.30	184.091	1.43	0.00	1.43	
9302.00	89.350	159.870	6892.42	2098.62	-2314.56	-126.08	1703802.57	14281904.22	39°19'45.397"N	80°46'33.048"W	2317.99	183.118	1.17	0.32	1.13	
9397.00	90.340	163.210	6892.67	2193.42	-2404.66	-96.01	1703832.63	14281814.16	39°19'44.506"N	80°46'32.668"W	2406.57	182.266	3.67	1.04	3.52	
9491.00	89.540	160.720	6892.77	2287.19	-2494.03	-66.91	1703861.72	14281724.82	39°19'43.622"N	80°46'32.300"W	2494.93	181.537	2.78	-0.85	-2.65	
9586.00	90.220	156.270	6892.97	2382.16	-2582.39	-32.09	1703896.53	14281636.49	39°19'42.747"N	80°46'31.860"W	2582.99	180.712	4.74	0.72	-4.68	
9681.00	89.380	153.440	6893.30	2477.00	-2668.38	8.27	1703936.87	14281550.54	39°19'41.897"N	80°46'31.349"W	2668.39	179.822	3.11	-0.88	-2.98	
9775.00	89.690	159.170	6894.07	2570.92	-2754.42	46.03	1703974.61	14281464.54	39°19'41.045"N	80°46'30.871"W	2754.80	179.043	6.10	0.33	6.10	
9869.00	89.720	163.590	6894.55	2664.73	-2843.47	76.03	1704004.61	14281375.51	39°19'40.164"N	80°46'30.492"W	2844.49	178.468	4.70	0.03	4.70	
9964.00	89.720	159.630	6895.02	2759.52	-2933.60	106.00	1704034.56	14281285.42	39°19'39.273"N	80°46'30.114"W	2935.52	177.931	4.17	0.00	-4.17	
10058.00	89.110	158.300	6895.98	2853.50	-3021.33	139.74	1704068.28	14281197.73	39°19'38.405"N	80°46'29.687"W	3024.56	177.352	1.56	-0.65	-1.41	
10153.00	89.380	156.710	6897.23	2948.49	-3109.09	176.08	1704104.61	14281110.00	39°19'37.537"N	80°46'29.228"W	3114.08	176.759	1.70	0.28	-1.67	
10248.00	89.450	154.260	6898.20	3043.38	-3195.52	215.49	1704144.01	14281023.61	39°19'36.681"N	80°46'28.729"W	3202.78	176.142	2.58	0.07	-2.58	
10343.00	89.170	153.840	6899.34	3138.15	-3280.93	257.06	1704185.56	14280938.23	39°19'35.836"N	80°46'28.203"W	3290.99	175.520	0.53	-0.29	-0.44	
10437.00	89.140	153.700	6900.73	3231.89	-3365.25	298.60	1704227.09	14280853.95	39°19'35.002"N	80°46'27.677"W	3378.47	174.929	0.15	-0.03	-0.15	
10531.00	88.890	155.070	6902.34	3325.69	-3449.99	339.23	1704267.70	14280769.24	39°19'34.163"N	80°46'27.162"W	3466.63	174.384	1.48	-0.27	1.46	
10625.00	89.510	159.620	6903.66	3419.65	-3536.71	375.43	1704303.88	14280682.56	39°19'33.305"N	80°46'26.705"W	3556.58	173.941	4.88	0.66	4.84	
10720.00	89.170	163.570	6904.75	3514.43	-3626.82	405.41	1704333.86	14280592.48	39°19'32.414"N	80°46'26.326"W	3649.41	173.622	4.17	-0.36	4.16	
10815.00	89.540	158.990	6905.82	3609.24	-3716.77	435.99	1704364.32	14280502.57	39°19'31.524"N	80°46'25.941"W	3742.24	173.311	4.84	0.39	-4.82	
10910.00	89.170	163.570	6906.89	3704.23	-3804.93	471.25	1704399.67	14280414.44	39°19'30.652"N	80°46'25.494"W	3834.00	172.940	1.82	-0.39	-1.78	
11005.00	89.140	156.800	6908.29	3799.21	-3892.40	508.29	1704436.69	14280327.00	39°19'29.786"N	80°46'25.025"W	3925.45	172.560	0.53	-0.03	-0.53	
11099.00	89.110	156.670	6909.73	3893.18	-3978.75	545.42	1704473.80	14280240.69	39°19'28.932"N	80°46'24.555"W	4015.96	172.194	0.14	-0.03	-0.14	
11193.00	89.230	157.560	6911.09	3987.16	-4065.34	581.97	1704510.34	14280154.13	39°19'28.075"N	80°46'24.093"W	4106.78	171.853	0.96	0.13	0.95	
11288.00	89.480	158.850	6912.16	4082.15	-4153.54	617.24	1704545.60	14280065.97	39°19'27.203"N	80°46'23.647"W	4199.15	171.547	1.38	0.26	1.36	





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'

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**REFERENCE WELLPATH IDENTIFICATION**

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Doddridge Co., WY	Well	Northrop Unit 1H
Field	Doddridge	Wellbore	Northrop Unit 1H AWB
Facility	Alexander Pad		

**WELLPATH DATA (200 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
11382.00	89.940	159.350	6912.63	4176.13	-4241.36	650.77	1704579.12	14279878.19	39°19'26.334"N	80°46'23.223"W	4290.99	171.277	0.72	0.49	0.53	
11475.00	90.520	158.050	6912.26	4289.12	-4328.00	684.55	1704612.88	14279891.58	39°19'25.477"N	80°46'22.796"W	4381.80	171.012	1.53	0.62	-1.40	
11569.00	89.200	155.180	6912.49	4363.08	-4414.27	721.86	1704650.17	14279805.35	39°19'24.623"N	80°46'22.324"W	4472.90	170.713	3.36	-1.40	-3.05	
11663.00	89.420	154.690	6913.62	4456.94	-4499.41	761.87	1704689.98	14279720.24	39°19'23.781"N	80°46'21.820"W	4563.42	170.392	0.57	0.23	-0.52	
11757.00	89.170	155.850	6914.78	4550.82	-4584.78	801.00	1704729.28	14279634.90	39°19'22.936"N	80°46'21.323"W	4654.22	170.090	1.26	-0.27	1.23	
11851.00	89.170	153.910	6916.14	4644.67	-4669.88	840.89	1704769.16	14279549.84	39°19'22.094"N	80°46'20.818"W	4744.98	169.792	2.06	0.00	-2.06	
11945.00	88.830	155.410	6917.78	4738.49	-4754.82	881.12	1704809.37	14279464.93	39°19'21.253"N	80°46'20.309"W	4835.77	169.502	1.64	-0.36	1.60	
12039.00	89.170	158.610	6919.42	4832.45	-4841.33	917.82	1704846.06	14279379.46	39°19'20.397"N	80°46'19.844"W	4927.56	169.265	3.42	0.36	3.40	
12133.00	89.170	158.200	6920.78	4926.44	-4928.72	952.41	1704880.64	14279291.10	39°19'19.533"N	80°46'19.407"W	5019.90	169.063	0.44	0.00	-0.44	
12227.00	89.170	158.470	6922.15	5020.43	-5016.07	987.11	1704915.32	14279203.78	39°19'18.669"N	80°46'18.988"W	5112.27	168.867	0.29	0.00	0.29	
12321.00	89.200	158.770	6923.48	5114.41	-5103.59	1021.38	1704949.57	14279116.30	39°19'17.803"N	80°46'18.535"W	5204.79	168.683	0.32	0.03	0.32	
12414.00	89.510	158.760	6924.53	5207.40	-5190.27	1055.06	1704983.24	14279029.65	39°19'16.945"N	80°46'18.109"W	5296.42	168.510	0.33	0.33	-0.01	
12509.00	89.510	159.480	6925.34	5302.38	-5279.03	1088.92	1705017.09	14278940.93	39°19'16.067"N	80°46'17.681"W	5390.17	168.345	0.76	0.00	0.76	
12604.00	89.420	166.240	6926.23	5396.97	-5369.75	1116.90	1705045.06	14278850.24	39°19'15.170"N	80°46'17.328"W	5484.68	168.250	7.12	-0.03	7.12	
12698.00	90.150	162.630	6926.58	5490.36	-5460.29	1142.11	1705070.26	14278759.74	39°19'14.274"N	80°46'17.010"W	5578.46	168.186	3.92	0.78	-3.84	
12792.00	89.510	159.290	6926.86	5584.22	-5549.13	1172.78	1705100.91	14278670.93	39°19'13.395"N	80°46'16.623"W	5671.71	168.066	3.62	-0.68	-3.55	
12885.00	89.450	158.940	6927.71	5677.20	-5636.02	1205.93	1705134.05	14278584.08	39°19'12.536"N	80°46'16.204"W	5763.59	167.923	0.38	-0.06	-0.38	
12979.00	90.090	159.160	6928.08	5771.18	-5723.80	1239.54	1705167.65	14278496.33	39°19'11.667"N	80°46'15.779"W	5856.48	167.781	0.72	0.68	0.23	
13074.00	90.150	158.010	6927.89	5866.18	-5812.24	1274.22	1705202.32	14278407.92	39°19'10.792"N	80°46'15.341"W	5950.28	167.635	1.21	0.06	-1.21	
13168.00	90.120	158.680	6927.66	5960.17	-5899.61	1308.91	1705236.99	14278320.59	39°19'09.928"N	80°46'14.902"W	6043.06	167.491	0.71	-0.03	0.71	
13262.00	90.250	157.640	6927.36	6054.17	-5986.86	1343.88	1705271.95	14278233.38	39°19'09.065"N	80°46'14.460"W	6135.84	167.348	1.11	0.14	-1.11	
13356.00	90.060	154.150	6927.11	6148.09	-6072.65	1382.28	1705310.32	14278147.62	39°19'08.216"N	80°46'13.974"W	6227.98	167.177	3.72	-0.20	-3.71	
13450.00	90.030	154.920	6927.03	6241.92	-6157.52	1422.68	1705350.72	14278062.79	39°19'07.376"N	80°46'13.463"W	6319.73	166.990	0.82	-0.03	0.82	
13546.00	89.970	158.120	6927.03	6337.88	-6245.56	1460.92	1705388.95	14277974.78	39°19'06.505"N	80°46'12.979"W	6414.15	166.834	3.33	-0.06	3.33	
13640.00	90.150	157.750	6926.93	6431.88	-6332.67	1496.24	1705424.25	14277887.70	39°19'05.643"N	80°46'12.533"W	6507.03	166.706	0.44	0.19	-0.39	
13733.00	90.150	159.350	6926.69	6524.87	-6419.23	1530.24	1705458.24	14277801.18	39°19'04.787"N	80°46'12.103"W	6599.10	166.592	1.72	0.00	1.72	
13827.00	90.490	162.310	6926.17	6618.74	-6508.00	1561.11	1705489.09	14277712.44	39°19'03.909"N	80°46'11.713"W	6692.62	166.511	3.17	0.36	3.15	
13921.00	90.620	161.980	6925.25	6712.49	-6597.47	1589.93	1705517.90	14277623.01	39°19'03.024"N	80°46'11.349"W	6786.35	166.451	0.38	0.14	-0.35	
14015.00	90.400	158.380	6924.42	6806.40	-6685.88	1621.79	1705549.75	14277534.63	39°19'02.149"N	80°46'10.947"W	6879.77	166.365	3.84	-0.23	-3.83	
14109.00	90.460	156.750	6923.71	6900.40	-6772.77	1657.66	1705585.61	14277447.79	39°19'01.289"N	80°46'10.493"W	6972.67	166.247	1.74	0.06	-1.73	





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Doddridge Co., WV	Well	Northrop Unit 1H
Field	Doddridge	Wellbore	Northrop Unit 1H AWB
Facility	Alexander Pad		

## WELLPATH DATA (200 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (IUS ft)	Grid North (IUS ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
14202.00	90.520	155.690	6922.92	6993.37	-6858.19	1694.42	1705622.35	14277362.39	39°19'00.444"N	80°46'10.028"W	7064.41	166.122	0.09	0.06	-0.06	
14296.00	90.370	155.780	6922.19	7087.32	-6944.22	1732.30	1705660.21	14277276.40	39°18'59.593"N	80°46'09.549"W	7157.02	165.993	0.98	-0.16	-0.97	
14390.00	90.400	156.720	6921.56	7181.27	-7030.25	1770.15	1705698.05	14277190.40	39°18'58.742"N	80°46'09.070"W	7249.68	165.867	1.00	0.03	1.00	
14484.00	90.490	156.720	6920.82	7275.25	-7116.60	1807.30	1705735.19	14277104.09	39°18'57.887"N	80°46'08.600"W	7342.50	165.751	0.10	0.10	0.00	
14578.00	90.520	155.140	6920.00	7369.18	-7202.42	1845.64	1705773.51	14277018.30	39°18'57.038"N	80°46'08.115"W	7435.13	165.627	1.68	0.03	-1.68	
14673.00	90.460	155.970	6919.18	7464.09	-7288.90	1884.95	1705812.81	14276931.86	39°18'56.182"N	80°46'07.618"W	7528.68	165.501	0.88	-0.06	0.87	
14766.00	90.550	157.550	6918.36	7557.06	-7374.35	1921.64	1705849.48	14276846.44	39°18'55.337"N	80°46'07.154"W	7620.61	165.394	1.70	0.10	1.70	
14861.00	91.020	157.550	6917.06	7652.05	-7462.14	1957.92	1705885.75	14276758.69	39°18'54.468"N	80°46'06.695"W	7714.72	165.298	0.49	0.49	0.00	
14956.00	90.980	157.070	6915.40	7747.03	-7549.77	1994.56	1705922.37	14276671.09	39°18'53.601"N	80°46'06.232"W	7808.80	165.201	0.51	-0.04	-0.51	
15051.00	90.890	155.490	6913.85	7841.97	-7636.73	2032.77	1705960.56	14276584.16	39°18'52.741"N	80°46'05.749"W	7902.65	165.094	1.67	-0.09	-1.66	
15145.00	90.960	155.460	6912.32	7935.87	-7722.24	2071.78	1705999.56	14276498.69	39°18'51.895"N	80°46'05.255"W	7995.33	164.982	0.10	0.10	-0.03	
15238.00	90.800	153.740	6910.88	8028.69	-7806.24	2111.67	1706039.43	14276414.73	39°18'51.063"N	80°46'04.750"W	8086.81	164.863	1.86	-0.19	-1.85	
15333.00	90.830	153.940	6909.52	8123.43	-7891.50	2153.55	1706081.29	14276329.50	39°18'50.220"N	80°46'04.220"W	8180.07	164.736	0.21	0.03	0.21	
15426.00	90.950	158.090	6908.08	8216.35	-7976.44	2191.34	1706119.07	14276244.59	39°18'49.379"N	80°46'03.742"W	8271.97	164.638	4.46	0.13	4.46	
15520.00	90.950	159.280	6906.52	8310.32	-8063.99	2225.50	1706153.22	14276157.07	39°18'48.513"N	80°46'03.310"W	8365.46	164.572	1.27	0.00	1.27	
15614.00	90.890	159.110	6905.01	8404.29	-8151.85	2258.88	1706186.59	14276069.25	39°18'47.644"N	80°46'02.839"W	8459.03	164.512	0.19	-0.06	-0.18	
15707.00	90.890	156.110	6903.57	8497.27	-8237.82	2294.30	1706221.99	14275983.31	39°18'46.793"N	80°46'02.441"W	8551.35	164.437	3.23	0.00	-3.23	
15802.00	90.740	157.350	6902.22	8592.23	-8325.08	2331.83	1706259.50	14275896.08	39°18'45.930"N	80°46'01.966"W	8645.49	164.353	1.31	-0.16	1.31	
15850.00	90.770	158.550	6901.58	8640.23	-8369.57	2349.84	1706277.51	14275851.82	39°18'45.490"N	80°46'01.738"W	8693.18	164.317	2.50	0.06	2.50	
15875.00	90.770	158.550	6901.25	8685.22	-8392.83	2358.99	1706286.65	14275828.36	39°18'45.259"N	80°46'01.623"W	8718.05	164.301	0.00	0.00	0.00	Projected MD @ TD 15875'





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Doddridge Co., WV	Well	Northrop Unit 1H
Field	Doddridge	Wellbore	Northrop Unit 1H AWB
Facility	Alexander Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Northrop Unit 1H AWB Ref Wellpath: Northrop Unit 1H AWP Proj: 15875'									
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	105.00	80.00	25.00	105.00	0.00	0.00	0.02	-0.76
17.5in Open Hole	105.00	577.60	472.60	105.00	577.57	0.02	-0.76	1.18	-5.03
13.375in Casing Surface	25.00	577.60	552.60	25.00	577.57	0.00	0.00	1.18	-5.03
12.25in Open Hole	577.60	2572.00	1994.40	577.57	2570.93	1.18	-5.03	-20.63	3.61
9.625in Casing Intermediate	25.00	2572.00	2547.00	25.00	2570.93	0.00	0.00	-20.63	3.61
8.75in Open Hole	2572.00	6611.00	4039.00	2570.93	6461.24	-20.63	3.61	90.27	-894.80
8.5in Open Hole	6611.00	15875.00	9264.00	6461.24	6901.25	90.27	-894.80	-8392.83	2358.99
5.5in Casing Production	25.00	15875.00	15850.00	25.00	6901.25	0.00	0.00	-8392.83	2358.99

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Northrop Unit 1H POE -Rev-3	6824.00	-350.71	-847.17	1703081.77	14283867.28	39°20'04.824"N	80°46'42.163"W	point
Northrop Unit 1H BHL -Rev-2	6865.00	-8427.02	2339.58	1706267.25	14275794.19	39°18'44.922"N	80°46'01.871"W	point
Northrop Unit 1H LP -Rev-1	6865.00	-595.75	-793.30	1703135.62	14283622.35	39°20'02.401"N	80°46'41.485"W	point





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Doddridge Co., WV	Well	Northrop Unit 1H
Field	Doddridge	Wellbore	Northrop Unit 1H AWB
Facility	Alexander Pad		

WELLPATH COMPOSITION - Ref Wellbore: Northrop Unit 1H AWB Ref Wellpath: Northrop Unit 1H AWP Proj: 15875'			
Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Log Name/Comment
25.00	515.00	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(100'-515')
515.00	710.00	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4">(515')(710')
710.00	2488.00	ISCVSA MWD, Rev. 4 (Standard)	03 WFT EM <12-1/4">(710')(828'-2488')
2488.00	6533.00	ISCVSA MWD, Rev. 4 (Standard)	04 WFT EM <8-3/4">(2488')(6533')
6533.00	15850.00	BHI AutoTrak Curve (Short)	05 BH AT Curve <8-1/2"> (6533')(6557'-15850')
15850.00	15875.00	Blind Drilling (std)	Projection to bit

05/03/2019





# Actual Wellpath Report

Northrop Unit 1H AWP Proj: 15875'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #10
Area	Doddridge Co., WV	Well	Northrop Unit 1H
Field	Doddridge	Wellbore	Northrop Unit 1H AWB
Facility	Alexander Pad		

**COMMENTS**

Wellpath general comments  
 API: 47017067910000  
 BH Job #: 9102804  
 Rig: Patterson 342  
 Duration: 04/13/18 - 04/16/18  
 Gyrodatta MS Gyro <17-1/2">(100'-515')  
 Gyrodatta MS Gyro <12-1/4">(515')(710')  
 WFT EM <12-1/4">(710')(828'-2488')  
 WFT EM <8-3/4">(2488')(2661'-6533')  
 BH AT Curve <8-1/2">(6533')(6557'-15850')  
 Burket: 7030'MD / 6750'TVD  
 Tully: 7090'MD / 6779'TVD  
 Hamilton: 7188'MD / 6819'TVD  
 POE Marcellus: 7216'MD / 6828'TVD  
 Projected MD @ TD: 15875'

05/03/2019