



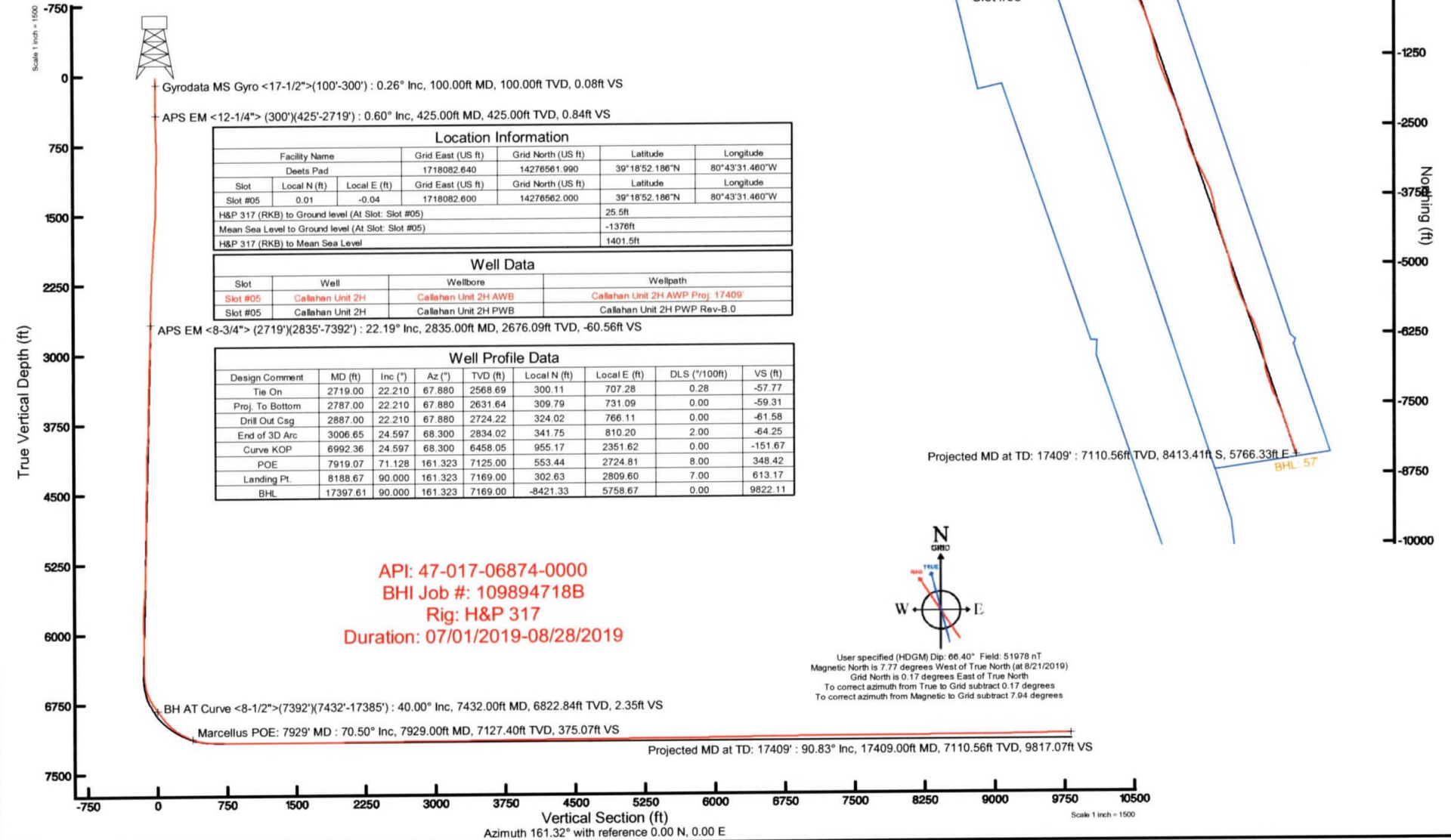
# ANTERO RESOURCES CORPORATION



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

Slot: Slot #05  
 Well: Callahan Unit 2H  
 Wellbore: Callahan Unit 2H PWB

Plot reference wellpath is Callahan Unit 2H PWP Rev-B.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 317 (RKB)	North Reference: Grid north
Measured depths are referenced to H&P 317 (RKB)	Scale: True distance
H&P 317 (RKB) to Mean Sea Level: 1401.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #05): -1376 feet	Created by: delaset on 2019-09-05
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Defn



Gyrodata MS Gyro <17-1/2">(100'-300') : 0.26° Inc, 100.00ft MD, 100.00ft TVD, 0.08ft VS  
 APS EM <12-1/4"> (300')(425'-2719') : 0.60° Inc, 425.00ft MD, 425.00ft TVD, 0.84ft VS

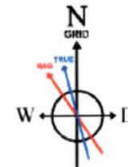
Location Information					
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Deets Pad		1718082.640	14276561.990	39°18'52.186"N	80°43'31.460"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
Slot #05	0.01	-0.04	1718082.600	14276562.000	39°18'52.186"N
H&P 317 (RKB) to Ground level (At Slot: Slot #05)				25.5ft	
Mean Sea Level to Ground level (At Slot: Slot #05)				-1376ft	
H&P 317 (RKB) to Mean Sea Level				1401.5ft	

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #05	Callahan Unit 2H	Callahan Unit 2H AWB	Callahan Unit 2H AWP Proj: 17409'
Slot #05	Callahan Unit 2H	Callahan Unit 2H PWB	Callahan Unit 2H PWP Rev-B.0

APS EM <8-3/4"> (2719')(2835'-7392') : 22.19° Inc, 2835.00ft MD, 2676.09ft TVD, -60.56ft VS

Well Profile Data								
Design Comment	MD (ft)	Inc (")	Az (")	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	2719.00	22.210	67.880	2568.69	300.11	707.28	0.28	-57.77
Proj. To Bottom	2787.00	22.210	67.880	2631.64	309.79	731.09	0.00	-59.31
Drill Out Csg	2887.00	22.210	67.880	2724.22	324.02	766.11	0.00	-61.58
End of 3D Arc	3006.65	24.597	68.300	2834.02	341.75	810.20	2.00	-64.25
Curve KOP	6992.36	24.597	68.300	6458.05	955.17	2351.62	0.00	-151.67
POE	7919.07	71.128	161.323	7125.00	553.44	2724.81	8.00	348.42
Landing Pt.	8188.67	90.000	161.323	7169.00	302.63	2809.60	7.00	613.17
BHL	17397.61	90.000	161.323	7169.00	-8421.33	5758.67	0.00	9822.11

API: 47-017-06874-0000  
 BHI Job #: 109894718B  
 Rig: H&P 317  
 Duration: 07/01/2019-08/28/2019



User specified (HDGM) Dip: 66.40° Field: 51978 nT  
 Magnetic North is 7.77 degrees West of True North (at 8/21/2019)  
 Grid North is 0.17 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.17 degrees  
 To correct azimuth from Magnetic to Grid subtract 7.94 degrees

BH AT Curve <8-1/2">(7392')(7432'-17385') : 40.00° Inc, 7432.00ft MD, 6822.84ft TVD, 2.35ft VS

Marcellus POE: 7929' MD : 70.50° Inc, 7929.00ft MD, 7127.40ft TVD, 375.07ft VS

Projected MD at TD: 17409' : 90.83° Inc, 17409.00ft MD, 7110.56ft TVD, 9817.07ft VS

Vertical Section (ft)  
 Azimuth 161.32° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500



# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

## REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999607	Report Generated	9/5/2019 at 5:42:22 PM
Convergence at slot	0.17° East	Database/Source file	WA_MPL_EasternUS_Defn/Callahan_Unit_2H_AWP_Proj_17409_.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.01	-0.04	1718082.60	14276562.00	39°18'52.186"N	80°43'31.460"W
Facility Reference Pt			1718082.64	14276561.99	39°18'52.186"N	80°43'31.460"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

## WELLPATH DATUM

Calculation method	Minimum curvature	H&P 317 (RKB) to Facility Vertical Datum	25.50ft
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level	1401.50ft
Vertical Reference Pt	H&P 317 (RKB)	H&P 317 (RKB) to Ground Level at Slot (Slot #05)	25.50ft
MD Reference Pt	H&P 317 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	161.32°





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

WELLPATH DATA (204 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	224.380	0.00	0.00	0.00	0.00	1718082.60	14276562.00	39°18'52.186"N	80°43'31.460"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	224.380	25.50	0.00	0.00	0.00	1718082.60	14276562.00	39°18'52.186"N	80°43'31.460"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.260	224.380	100.00	0.08	-0.12	-0.12	1718082.48	14276561.88	39°18'52.185"N	80°43'31.462"W	0.17	224.380	0.35	0.35	-182.04	Gyrodata MS Gyro <17-1/2">(100'-300')
125.00	0.170	228.000	125.00	0.12	-0.19	-0.19	1718082.41	14276561.81	39°18'52.184"N	80°43'31.462"W	0.26	224.891	0.36	-0.36	14.48	
150.00	0.130	221.380	150.00	0.15	-0.23	-0.23	1718082.37	14276561.77	39°18'52.184"N	80°43'31.463"W	0.33	224.939	0.17	-0.16	-26.48	
175.00	0.130	256.200	175.00	0.16	-0.26	-0.26	1718082.32	14276561.74	39°18'52.183"N	80°43'31.464"W	0.38	226.888	0.31	0.00	139.28	
200.00	0.100	216.090	200.00	0.17	-0.28	-0.32	1718082.28	14276561.72	39°18'52.183"N	80°43'31.464"W	0.43	228.202	0.34	-0.12	-160.44	
225.00	0.060	213.020	225.00	0.19	-0.31	-0.34	1718082.26	14276561.69	39°18'52.183"N	80°43'31.464"W	0.46	227.208	0.16	-0.16	-12.28	
250.00	0.050	181.330	250.00	0.21	-0.34	-0.35	1718082.25	14276561.66	39°18'52.183"N	80°43'31.464"W	0.48	225.894	0.13	-0.04	-126.76	
275.00	0.110	149.110	275.00	0.24	-0.37	-0.33	1718082.27	14276561.63	39°18'52.182"N	80°43'31.464"W	0.50	222.308	0.29	0.24	-128.88	
300.00	0.020	152.940	300.00	0.27	-0.39	-0.32	1718082.28	14276561.61	39°18'52.182"N	80°43'31.464"W	0.51	219.237	0.36	-0.36	15.32	
425.00	0.600	128.280	425.00	0.84	-0.82	0.20	1718082.80	14276561.18	39°18'52.178"N	80°43'31.457"W	0.84	165.949	0.47	0.46	-19.73	APS EM <12-1/4"> (300')(425'-2719')
505.00	3.200	101.290	504.95	2.31	-1.51	2.72	1718085.32	14276560.49	39°18'52.171"N	80°43'31.425"W	3.12	119.054	3.35	3.25	-33.74	
575.00	5.910	93.830	574.72	4.66	-2.14	8.24	1718090.83	14276559.86	39°18'52.165"N	80°43'31.355"W	8.51	104.540	3.95	3.87	-10.66	
700.00	11.140	77.360	698.31	8.40	0.08	26.45	1718109.04	14276562.08	39°18'52.186"N	80°43'31.123"W	26.45	89.831	4.58	4.18	-13.18	
793.00	12.520	73.080	789.34	9.65	4.98	44.87	1718127.45	14276566.98	39°18'52.234"N	80°43'30.889"W	45.14	83.669	1.76	1.48	-4.60	
888.00	13.360	69.010	881.93	9.53	11.91	64.97	1718147.54	14276573.90	39°18'52.302"N	80°43'30.633"W	66.05	79.614	1.30	0.88	-4.28	
982.00	14.840	66.910	973.09	8.16	20.52	86.18	1718168.75	14276582.51	39°18'52.386"N	80°43'30.363"W	88.59	76.608	1.67	1.57	-2.23	
1077.00	16.790	67.490	1064.49	6.31	30.54	110.05	1718192.61	14276592.53	39°18'52.485"N	80°43'30.059"W	114.21	74.488	2.06	2.05	0.61	
1172.00	18.080	68.060	1155.12	4.56	41.31	136.40	1718218.95	14276603.29	39°18'52.590"N	80°43'29.723"W	142.52	73.152	1.37	1.36	0.60	
1267.00	21.040	69.850	1244.63	3.28	52.69	166.09	1718248.62	14276614.67	39°18'52.702"N	80°43'29.345"W	174.25	72.399	3.18	3.12	1.88	
1362.00	23.260	68.810	1332.62	2.02	65.35	199.59	1718282.12	14276627.32	39°18'52.826"N	80°43'28.918"W	210.02	71.872	2.37	2.34	-1.09	
1457.00	23.510	65.570	1419.82	-0.70	79.96	234.34	1718316.84	14276641.93	39°18'52.969"N	80°43'28.475"W	247.60	71.159	1.38	0.26	-3.41	
1552.00	24.370	64.960	1506.64	-4.77	96.10	269.35	1718351.84	14276658.06	39°18'53.128"N	80°43'28.029"W	285.98	70.365	0.94	0.91	-0.64	
1646.00	25.480	64.570	1591.89	-9.29	112.99	305.18	1718387.66	14276674.94	39°18'53.294"N	80°43'27.573"W	325.42	69.684	1.19	1.18	-0.41	
1741.00	25.250	62.210	1677.73	-14.90	131.21	341.56	1718424.02	14276693.16	39°18'53.473"N	80°43'27.109"W	365.89	68.986	1.09	-0.24	-2.48	
1836.00	25.230	62.880	1763.66	-21.08	149.89	377.51	1718459.96	14276711.83	39°18'53.656"N	80°43'26.651"W	406.17	68.345	0.30	-0.02	0.71	
1930.00	25.130	64.320	1848.73	-26.46	167.67	413.33	1718495.76	14276729.60	39°18'53.831"N	80°43'26.195"W	446.04	67.920	0.66	-0.11	1.53	
2025.00	25.300	65.010	1934.68	-31.14	184.99	449.90	1718532.33	14276746.91	39°18'54.001"N	80°43'25.729"W	486.45	67.649	0.36	0.18	0.73	
2120.00	24.790	62.960	2020.75	-36.27	202.62	486.04	1718568.45	14276764.54	39°18'54.174"N	80°43'25.268"W	526.58	67.370	1.06	-0.54	-2.16	





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

WELLPATH DATA (204 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
2215.00	23.680	63.570	2107.37	-41.74	220.16	520.87	1718603.26	14276782.08	39°18'54.346"N	80°43'24.824"W	565.49	67.087	1.20	-1.17	0.64	
2309.00	23.890	64.900	2193.39	-46.41	236.64	555.01	1718637.39	14276798.55	39°18'54.508"N	80°43'24.389"W	603.35	66.908	0.61	0.22	1.41	
2404.00	24.410	67.800	2280.08	-49.77	252.22	590.60	1718672.97	14276814.12	39°18'54.661"N	80°43'23.936"W	642.20	66.875	1.36	0.55	3.05	
2499.00	24.610	68.420	2366.52	-51.98	266.91	627.17	1718709.53	14276828.80	39°18'54.805"N	80°43'23.470"W	681.61	66.947	0.34	0.21	0.65	
2594.00	23.290	66.730	2453.34	-54.48	281.61	662.82	1718745.16	14276843.49	39°18'54.949"N	80°43'23.016"W	720.16	66.981	1.57	-1.39	-1.78	
2689.00	22.290	67.820	2540.92	-57.08	295.83	696.76	1718779.09	14276857.71	39°18'55.089"N	80°43'22.584"W	756.96	66.995	1.14	-1.05	1.15	
2719.00	22.210	67.880	2568.69	-57.77	300.11	707.28	1718789.60	14276861.99	39°18'55.131"N	80°43'22.450"W	768.32	67.008	0.28	-0.27	0.20	
2835.00	22.190	67.450	2676.09	-60.56	316.77	747.82	1718830.13	14276878.64	39°18'55.294"N	80°43'21.933"W	812.14	67.043	0.14	-0.02	-0.37	APS EM <8-3/4"> (2719')(2835'-7392')
2930.00	22.030	65.140	2764.10	-63.69	331.14	780.56	1718862.85	14276893.00	39°18'55.435"N	80°43'21.516"W	847.89	67.012	0.93	-0.17	-2.43	
3025.00	25.550	69.690	2851.03	-66.20	345.74	815.95	1718898.23	14276907.61	39°18'55.579"N	80°43'21.065"W	886.18	67.036	4.18	3.71	4.79	
3119.00	25.840	68.610	2935.73	-67.74	360.25	854.04	1718936.30	14276922.11	39°18'55.721"N	80°43'20.580"W	926.91	67.129	0.59	0.31	-1.15	
3214.00	25.770	66.830	3021.26	-70.34	375.93	892.30	1718974.55	14276937.78	39°18'55.875"N	80°43'20.093"W	968.26	67.154	0.82	-0.07	-1.87	
3309.00	24.720	63.470	3107.19	-74.67	392.93	929.06	1719011.29	14276954.77	39°18'56.041"N	80°43'19.624"W	1008.73	67.075	1.87	-1.11	-3.54	
3404.00	24.190	69.380	3193.68	-78.04	408.66	965.05	1719047.27	14276970.49	39°18'56.196"N	80°43'19.166"W	1048.01	67.050	2.63	-0.56	6.22	
3500.00	23.280	68.810	3281.56	-79.54	422.44	1001.15	1719083.36	14276984.27	39°18'56.331"N	80°43'18.706"W	1086.63	67.123	0.98	-0.95	-0.59	
3595.00	22.100	66.990	3369.20	-81.71	436.21	1035.11	1719117.30	14276998.04	39°18'56.466"N	80°43'18.273"W	1123.27	67.149	1.45	-1.24	-1.92	
3689.00	22.620	67.560	3456.14	-84.23	450.02	1068.09	1719150.27	14277011.85	39°18'56.602"N	80°43'17.853"W	1159.02	67.153	0.60	0.55	0.61	
3784.00	22.720	69.940	3543.80	-85.87	463.29	1102.21	1719184.37	14277025.11	39°18'56.732"N	80°43'17.419"W	1195.62	67.202	0.97	0.11	2.51	
3879.00	21.470	68.350	3631.82	-87.21	476.00	1135.60	1719217.75	14277037.81	39°18'56.856"N	80°43'16.993"W	1231.33	67.259	1.46	-1.32	-1.67	
3976.00	27.190	71.600	3720.17	-88.02	489.55	1173.16	1719255.30	14277051.36	39°18'56.989"N	80°43'16.515"W	1271.21	67.350	6.05	5.90	3.35	
4071.00	27.130	68.600	3804.70	-88.94	504.31	1213.93	1719296.05	14277066.11	39°18'57.134"N	80°43'15.995"W	1314.52	67.440	1.44	-0.06	-3.16	
4166.00	26.770	66.510	3889.39	-91.77	520.74	1253.72	1719335.82	14277082.54	39°18'57.295"N	80°43'15.489"W	1357.56	67.444	1.07	-0.38	-2.20	
4261.00	26.070	63.550	3974.47	-96.38	538.57	1292.03	1719374.12	14277100.35	39°18'57.470"N	80°43'15.000"W	1399.79	67.372	1.57	-0.74	-3.12	
4356.00	26.900	66.780	4059.50	-100.91	556.34	1330.47	1719412.55	14277118.12	39°18'57.644"N	80°43'14.511"W	1442.11	67.308	1.75	0.87	3.40	
4450.00	28.200	72.350	4142.86	-102.19	571.46	1371.19	1719453.25	14277133.24	39°18'57.793"N	80°43'13.992"W	1485.51	67.375	3.07	1.38	5.93	
4545.00	28.350	71.830	4226.52	-101.59	585.30	1414.01	1719496.05	14277147.07	39°18'57.928"N	80°43'13.447"W	1530.36	67.514	0.30	0.16	-0.55	
4640.00	26.740	69.930	4310.75	-101.90	599.67	1455.52	1719537.54	14277161.43	39°18'58.069"N	80°43'12.918"W	1574.21	67.608	1.93	-1.69	-2.00	
4735.00	25.300	67.700	4396.12	-103.70	614.71	1494.38	1719576.39	14277176.46	39°18'58.216"N	80°43'12.423"W	1615.87	67.640	1.83	-1.52	-2.35	
4829.00	24.040	62.970	4481.55	-107.75	631.03	1530.02	1719612.02	14277192.78	39°18'58.377"N	80°43'11.969"W	1655.04	67.587	2.49	-1.34	-5.03	
4924.00	24.090	68.170	4568.30	-111.63	647.04	1565.26	1719647.24	14277208.78	39°18'58.534"N	80°43'11.520"W	1693.72	67.541	2.23	0.05	5.47	





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

WELLPATH DATA (204 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
5019.00	22.620	66.030	4655.52	-114.38	661.67	1599.95	1719681.92	14277223.41	39°18'58.677"N	80°43'11.078"W	1731.38	67.532	1.79	-1.55	-2.25	
5114.00	21.800	71.820	4743.48	-115.91	674.60	1633.41	1719715.37	14277236.33	39°18'58.804"N	80°43'10.652"W	1767.23	67.559	2.46	-0.86	6.09	
5209.00	21.260	74.870	4831.85	-114.69	684.60	1666.80	1719748.74	14277246.33	39°18'58.902"N	80°43'10.226"W	1801.91	67.671	1.31	-0.57	3.21	
5304.00	22.590	73.720	4919.98	-112.86	694.21	1700.94	1719782.87	14277255.93	39°18'58.996"N	80°43'09.792"W	1837.15	67.798	1.47	1.40	-1.21	
5398.00	25.100	71.230	5005.95	-112.13	705.69	1737.16	1719819.07	14277267.41	39°18'59.108"N	80°43'09.330"W	1875.02	67.891	2.88	2.67	-2.65	
5493.00	24.540	66.640	5092.18	-113.77	720.00	1774.35	1719856.25	14277281.71	39°18'59.248"N	80°43'08.857"W	1914.86	67.914	2.11	-0.59	-4.83	
5588.00	22.430	64.800	5179.31	-117.44	735.54	1808.86	1719890.75	14277297.25	39°18'59.401"N	80°43'08.417"W	1952.69	67.872	2.35	-2.22	-1.94	
5683.00	24.420	64.820	5266.48	-121.72	751.61	1843.04	1719924.91	14277313.31	39°18'59.559"N	80°43'07.981"W	1990.40	67.814	2.09	2.09	0.02	
5780.00	26.280	68.980	5354.14	-124.87	767.85	1881.23	1719963.09	14277329.54	39°18'59.718"N	80°43'07.495"W	2031.90	67.797	2.65	1.92	4.29	
5875.00	24.850	66.360	5439.84	-127.46	783.40	1919.15	1720001.00	14277345.09	39°18'59.870"N	80°43'07.012"W	2072.89	67.795	1.92	-1.51	-2.76	
5970.00	24.050	64.360	5526.32	-131.53	799.78	1954.89	1720036.72	14277361.46	39°19'00.031"N	80°43'06.556"W	2112.17	67.750	1.21	-0.84	-2.11	
6064.00	22.570	61.230	5612.65	-137.01	816.75	1987.98	1720069.79	14277378.43	39°19'00.198"N	80°43'06.135"W	2149.22	67.665	2.05	-1.57	-3.33	
6159.00	23.930	63.740	5699.94	-142.75	834.05	2021.24	1720103.04	14277395.72	39°19'00.368"N	80°43'05.711"W	2186.56	67.577	1.77	1.43	2.64	
6254.00	25.700	66.550	5786.16	-147.00	850.77	2057.42	1720139.21	14277412.44	39°19'00.532"N	80°43'05.250"W	2226.38	67.534	2.24	1.86	2.96	
6349.00	24.450	71.170	5872.22	-148.77	865.32	2094.93	1720176.70	14277426.98	39°19'00.675"N	80°43'04.772"W	2266.61	67.557	2.44	-1.32	4.86	
6444.00	25.770	76.540	5958.25	-146.94	876.47	2133.63	1720215.39	14277438.13	39°19'00.784"N	80°43'04.279"W	2306.64	67.668	2.77	1.39	5.65	
6539.00	24.110	73.460	6044.39	-144.33	886.80	2172.32	1720254.06	14277448.45	39°19'00.885"N	80°43'03.787"W	2346.36	67.793	2.22	-1.75	-3.24	
6633.00	23.720	71.130	6130.32	-143.68	898.38	2208.61	1720290.34	14277460.03	39°19'00.998"N	80°43'03.324"W	2384.34	67.865	1.09	-0.41	-2.48	
6728.00	24.810	69.610	6216.93	-144.34	911.51	2245.38	1720327.09	14277473.15	39°19'01.127"N	80°43'02.856"W	2423.34	67.905	1.32	1.15	-1.60	
6823.00	24.790	71.770	6303.17	-144.78	924.68	2282.98	1720364.68	14277486.32	39°19'01.256"N	80°43'02.377"W	2463.13	67.950	0.95	-0.02	2.27	
6918.00	25.560	72.300	6389.14	-144.27	937.15	2321.42	1720403.10	14277498.78	39°19'01.378"N	80°43'01.887"W	2503.44	68.016	0.84	0.81	0.56	
7013.00	25.190	79.680	6475.00	-140.98	947.00	2360.84	1720442.51	14277508.63	39°19'01.474"N	80°43'01.385"W	2543.70	68.143	3.35	-0.39	7.77	
7108.00	29.910	93.250	6559.29	-129.18	949.28	2404.45	1720486.10	14277510.91	39°19'01.495"N	80°43'00.831"W	2585.06	68.456	8.24	4.97	14.28	
7202.00	35.010	106.080	6638.67	-105.00	940.47	2453.85	1720535.48	14277502.10	39°19'01.406"N	80°43'00.202"W	2627.90	69.030	9.09	5.43	13.65	
7297.00	36.670	120.410	6715.82	-67.96	918.52	2504.59	1720586.20	14277480.16	39°19'01.188"N	80°42'59.558"W	2667.71	69.860	8.99	1.75	15.08	
7392.00	37.650	135.060	6791.68	-20.41	883.55	2549.64	1720631.24	14277445.21	39°19'00.841"N	80°42'58.986"W	2698.40	70.887	9.36	1.03	15.42	
7432.00	40.000	137.830	6822.84	2.35	865.38	2566.91	1720648.49	14277427.03	39°19'00.661"N	80°42'58.767"W	2708.85	71.370	7.30	5.87	6.93	BH AT Curve <8-1/2">(7392')(7432'-17385')
7477.00	40.060	140.430	6857.30	29.14	843.49	2585.84	1720667.42	14277405.16	39°19'00.444"N	80°42'58.527"W	2719.94	71.934	3.72	0.13	5.78	
7500.00†	39.998	140.444	6874.91	42.96	832.09	2595.26	1720676.84	14277393.76	39°19'00.331"N	80°42'58.407"W	2725.39	72.223	0.27	-0.27	0.06	Middlesex: 7500' MD
7525.00	39.930	140.460	6894.07	57.97	819.71	2605.49	1720687.06	14277381.38	39°19'00.208"N	80°42'58.278"W	2731.39	72.536	0.27	-0.27	0.06	





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

WELLPATH DATA (204 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
7572.00	41.780	141.850	6929.62	86.83	795.76	2624.76	1720706.33	14277357.44	39°18'59.971"N	80°42'58.034"W	2742.74	73.134	4.39	3.94	2.96	
7620.00	45.410	144.740	6964.38	118.30	769.22	2644.52	1720726.07	14277330.91	39°18'59.708"N	80°42'57.783"W	2754.12	73.782	8.63	7.56	6.02	
7667.00	49.070	147.870	6996.29	151.62	740.50	2663.63	1720745.18	14277302.21	39°18'59.424"N	80°42'57.541"W	2764.65	74.464	9.19	7.79	6.66	
7713.00†	52.853	151.212	7025.26	186.59	709.70	2681.71	1720763.25	14277271.42	39°18'59.119"N	80°42'57.312"W	2774.03	75.177	9.97	8.22	7.27	Burkett: 7713' MD
7715.00	53.020	151.350	7026.47	188.16	708.30	2682.48	1720764.02	14277270.02	39°18'59.105"N	80°42'57.303"W	2774.41	75.209	9.97	8.33	6.88	
7760.00†	56.944	154.602	7052.29	224.61	675.48	2699.19	1720780.73	14277237.21	39°18'58.780"N	80°42'57.091"W	2782.43	75.950	10.54	8.72	7.23	Tully: 7760' MD
7762.00	57.120	154.740	7053.38	226.28	673.96	2699.91	1720781.44	14277235.69	39°18'58.765"N	80°42'57.082"W	2782.76	75.984	10.54	8.82	6.88	
7810.00	60.390	156.200	7078.27	267.10	636.63	2716.94	1720798.46	14277198.38	39°18'58.395"N	80°42'56.867"W	2790.53	76.812	7.29	6.81	3.04	
7857.00	64.590	156.970	7099.98	308.63	598.38	2733.49	1720815.01	14277160.15	39°18'58.017"N	80°42'56.658"W	2798.22	77.652	9.05	8.94	1.64	
7905.00	68.650	158.680	7119.02	352.60	557.59	2750.11	1720831.62	14277119.37	39°18'57.613"N	80°42'56.448"W	2806.07	78.539	9.07	8.46	3.56	
7929.00†	70.500	159.857	7127.40	375.07	536.55	2758.07	1720839.58	14277098.34	39°18'57.405"N	80°42'56.348"W	2809.77	78.991	8.97	7.71	4.90	Marcellus POE: 7929' MD
7952.00	72.280	160.960	7134.74	396.86	516.02	2765.38	1720846.88	14277077.82	39°18'57.202"N	80°42'56.256"W	2813.11	79.430	8.97	7.74	4.80	
7999.00	76.580	163.580	7147.35	442.12	472.91	2779.15	1720860.65	14277034.72	39°18'56.775"N	80°42'56.082"W	2819.10	80.343	10.61	9.15	5.57	
8046.00	80.420	165.150	7156.72	488.10	428.56	2791.55	1720873.05	14276990.39	39°18'56.336"N	80°42'55.926"W	2824.26	81.272	8.80	8.17	3.34	
8094.00	84.820	166.400	7162.89	535.54	382.43	2803.25	1720884.74	14276944.28	39°18'55.880"N	80°42'55.779"W	2829.21	82.231	9.52	9.17	2.60	
8141.00	86.310	165.740	7166.52	582.24	336.95	2814.53	1720896.01	14276898.82	39°18'55.430"N	80°42'55.637"W	2834.62	83.173	3.47	3.17	-1.40	
8189.00	89.600	166.740	7168.23	630.03	290.37	2825.93	1720907.42	14276852.25	39°18'54.970"N	80°42'55.494"W	2840.81	84.133	7.16	6.85	2.08	
8284.00	89.690	167.640	7168.82	724.53	197.73	2847.00	1720928.47	14276759.65	39°18'54.053"N	80°42'55.230"W	2853.86	86.027	0.95	0.09	0.95	
8379.00	89.720	165.750	7169.31	819.10	105.29	2868.86	1720950.33	14276667.25	39°18'53.139"N	80°42'54.956"W	2870.79	87.898	1.99	0.03	-1.99	
8474.00	89.970	166.220	7169.57	913.79	13.12	2891.87	1720973.32	14276575.11	39°18'52.227"N	80°42'54.666"W	2891.90	89.740	0.56	0.26	0.49	
8568.00	89.720	165.320	7169.82	1007.50	-78.00	2914.97	1720996.42	14276484.03	39°18'51.326"N	80°42'54.376"W	2916.01	91.533	0.99	-0.27	-0.96	
8663.00	90.220	162.660	7169.87	1102.39	-169.30	2941.17	1721022.61	14276392.76	39°18'50.423"N	80°42'54.046"W	2946.04	93.295	2.85	0.53	-2.80	
8758.00	90.180	159.360	7169.54	1197.38	-259.12	2972.08	1721053.51	14276302.98	39°18'49.534"N	80°42'53.657"W	2983.35	94.983	3.47	-0.04	-3.47	
8853.00	88.860	155.940	7170.34	1292.16	-346.97	3008.20	1721089.61	14276215.17	39°18'48.665"N	80°42'53.201"W	3028.14	96.579	3.86	-1.39	-3.60	
8948.00	89.420	156.850	7171.76	1386.80	-434.01	3046.23	1721127.63	14276128.16	39°18'47.803"N	80°42'52.720"W	3076.99	98.109	1.12	0.59	0.96	
9043.00	90.120	158.140	7172.14	1481.58	-521.77	3082.59	1721163.98	14276040.44	39°18'46.935"N	80°42'52.261"W	3126.44	99.607	1.54	0.74	1.36	
9137.00	90.370	159.490	7171.74	1575.49	-609.41	3116.56	1721197.93	14275952.83	39°18'46.067"N	80°42'51.833"W	3175.59	101.064	1.46	0.27	1.44	
9232.00	90.150	160.150	7171.31	1670.46	-698.58	3149.33	1721230.69	14275863.70	39°18'45.185"N	80°42'51.419"W	3225.88	102.507	0.73	-0.23	0.69	
9327.00	90.550	163.850	7170.73	1765.43	-788.91	3178.69	1721260.03	14275773.40	39°18'44.291"N	80°42'51.050"W	3275.12	103.939	3.92	0.42	3.89	
9422.00	90.400	165.620	7169.94	1860.26	-880.55	3203.70	1721285.03	14275681.79	39°18'43.385"N	80°42'50.735"W	3322.51	105.369	1.87	-0.16	1.86	





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

WELLPATH DATA (204 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
9516.00	90.460	168.420	7169.24	1953.78	-972.14	3224.81	1721306.13	14275590.24	39°18'42.479"N	80°42'50.470"W	3368.15	106.776	2.98	0.06	2.98	
9611.00	90.460	167.950	7168.47	2048.09	-1065.12	3244.26	1721325.58	14275497.30	39°18'41.559"N	80°42'50.226"W	3414.63	108.176	0.49	0.00	-0.49	
9706.00	90.430	165.410	7167.74	2142.67	-1157.56	3266.14	1721347.45	14275404.90	39°18'40.645"N	80°42'49.952"W	3465.20	109.515	2.67	-0.03	-2.67	
9801.00	90.740	166.610	7166.77	2237.34	-1249.73	3289.11	1721370.41	14275312.76	39°18'39.733"N	80°42'49.663"W	3518.53	110.805	1.30	0.33	1.26	
9895.00	90.370	163.780	7165.86	2331.11	-1340.60	3313.12	1721394.41	14275221.93	39°18'38.834"N	80°42'49.361"W	3574.07	112.030	3.04	-0.39	-3.01	
9990.00	90.370	161.020	7165.24	2426.09	-1431.14	3341.84	1721423.12	14275131.42	39°18'37.939"N	80°42'49.000"W	3635.39	113.183	2.91	0.00	-2.91	
10085.00	90.310	158.880	7164.68	2521.05	-1520.38	3374.41	1721455.68	14275042.22	39°18'37.056"N	80°42'48.589"W	3701.11	114.254	2.25	-0.06	-2.25	
10180.00	90.490	158.640	7164.02	2615.96	-1608.92	3408.83	1721490.08	14274953.71	39°18'36.179"N	80°42'48.155"W	3769.45	115.267	0.32	0.19	-0.25	
10275.00	90.430	158.250	7163.25	2710.83	-1697.28	3443.73	1721524.97	14274865.39	39°18'35.305"N	80°42'47.714"W	3839.27	116.237	0.42	-0.06	-0.41	
10370.00	90.370	156.900	7162.59	2805.62	-1785.09	3479.97	1721561.19	14274777.62	39°18'34.436"N	80°42'47.257"W	3911.10	117.156	1.42	-0.06	-1.42	
10464.00	90.370	158.140	7161.98	2899.41	-1871.94	3515.91	1721597.12	14274690.80	39°18'33.577"N	80°42'46.803"W	3983.19	118.032	1.32	0.00	1.32	
10559.00	90.400	156.730	7161.34	2994.19	-1959.66	3552.36	1721633.56	14274603.11	39°18'32.708"N	80°42'46.343"W	4057.04	118.883	1.48	0.03	-1.48	
10654.00	90.400	155.650	7160.68	3088.81	-2046.58	3590.71	1721671.89	14274516.23	39°18'31.848"N	80°42'45.858"W	4133.00	119.682	1.14	0.00	-1.14	
10749.00	90.310	155.950	7160.09	3183.36	-2133.23	3629.65	1721710.82	14274429.62	39°18'30.991"N	80°42'45.366"W	4210.11	120.444	0.33	-0.09	0.32	
10844.00	90.340	156.800	7159.55	3278.01	-2220.26	3667.72	1721748.87	14274342.62	39°18'30.129"N	80°42'44.886"W	4287.39	121.189	0.90	0.03	0.89	
10938.00	90.800	161.310	7158.62	3371.91	-2308.02	3701.31	1721782.45	14274254.89	39°18'29.261"N	80°42'44.462"W	4361.96	121.946	4.82	0.03	4.80	
11033.00	90.310	161.670	7157.70	3466.90	-2398.10	3731.47	1721812.60	14274164.84	39°18'28.369"N	80°42'44.082"W	4435.63	122.728	0.64	-0.52	0.38	
11128.00	90.550	164.610	7156.98	3561.84	-2489.01	3759.02	1721840.14	14274073.98	39°18'27.470"N	80°42'43.735"W	4508.37	123.510	3.10	0.25	3.09	
11223.00	91.450	168.790	7155.33	3656.39	-2581.42	3780.87	1721861.97	14273981.60	39°18'26.556"N	80°42'43.461"W	4578.07	124.324	4.50	0.95	4.40	
11318.00	90.620	167.260	7153.61	3750.72	-2674.34	3800.58	1721881.67	14273888.72	39°18'25.637"N	80°42'43.214"W	4647.20	125.133	1.83	-0.87	-1.61	
11412.00	90.620	163.460	7152.59	3844.46	-2765.26	3824.33	1721905.42	14273797.83	39°18'24.738"N	80°42'42.915"W	4719.34	125.870	4.04	0.00	-4.04	
11507.00	90.580	161.900	7151.60	3939.43	-2855.95	3852.61	1721933.69	14273707.18	39°18'23.840"N	80°42'42.559"W	4795.73	126.550	1.64	-0.04	-1.64	
11602.00	90.650	159.170	7150.58	4034.40	-2945.50	3884.26	1721965.33	14273617.66	39°18'22.954"N	80°42'42.160"W	4874.78	127.174	2.87	0.07	-2.87	
11697.00	90.650	155.940	7149.50	4129.18	-3033.29	3920.52	1722001.57	14273529.91	39°18'22.085"N	80°42'41.703"W	4956.95	127.729	3.40	0.00	-3.40	
11792.00	90.650	150.610	7148.42	4223.20	-3118.11	3963.23	1722044.26	14273445.13	39°18'21.246"N	80°42'41.163"W	5042.79	128.194	5.61	0.00	-5.61	
11886.00	90.770	150.160	7147.26	4315.49	-3199.82	4009.68	1722090.69	14273363.44	39°18'20.437"N	80°42'40.575"W	5129.95	128.591	0.50	0.13	-0.48	
11981.00	90.620	153.560	7146.10	4409.18	-3283.57	4054.47	1722135.47	14273279.72	39°18'19.608"N	80°42'40.009"W	5217.33	129.003	3.58	-0.16	3.58	
12076.00	90.520	154.770	7145.16	4503.43	-3369.07	4095.87	1722176.85	14273194.26	39°18'18.761"N	80°42'39.486"W	5303.47	129.439	1.28	-0.11	1.27	
12171.00	90.090	154.020	7144.65	4597.73	-3454.74	4136.92	1722217.89	14273108.62	39°18'17.913"N	80°42'38.967"W	5389.75	129.865	0.91	-0.45	-0.79	
12266.00	89.970	155.280	7144.60	4692.09	-3540.59	4177.59	1722258.54	14273022.81	39°18'17.063"N	80°42'38.453"W	5476.14	130.282	1.33	-0.13	1.33	





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

WELLPATH DATA (204 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
12361.00	89.910	156.140	7144.70	4786.63	-3627.18	4216.67	1722297.61	14272936.25	39°18'16.206"N	80°42'37.959"W	5562.08	130.702	0.91	-0.06	0.91	
12455.00	90.120	162.420	7144.68	4880.53	-3715.06	4249.91	1722330.83	14272848.41	39°18'15.337"N	80°42'37.540"W	5644.77	131.158	6.68	0.22	6.68	
12550.00	90.310	167.030	7144.32	4975.33	-3806.67	4274.93	1722355.85	14272756.83	39°18'14.430"N	80°42'37.225"W	5724.15	131.684	4.86	0.20	4.85	
12645.00	90.340	168.550	7143.78	5069.72	-3899.52	4295.03	1722375.93	14272664.02	39°18'13.512"N	80°42'36.974"W	5801.17	132.237	1.60	0.03	1.60	
12740.00	90.150	171.500	7143.38	5163.62	-3993.07	4311.48	1722392.38	14272570.50	39°18'12.587"N	80°42'36.768"W	5876.52	132.804	3.11	-0.20	3.11	
12835.00	90.180	168.710	7143.10	5257.49	-4086.65	4327.80	1722408.69	14272476.96	39°18'11.662"N	80°42'36.564"W	5952.36	133.358	2.94	0.03	-2.94	
12930.00	90.400	164.770	7142.62	5352.05	-4179.10	4349.59	1722430.47	14272384.55	39°18'10.747"N	80°42'36.291"W	6031.90	133.855	4.15	0.23	-4.15	
13024.00	90.430	164.560	7141.94	5445.89	-4269.75	4374.45	1722455.32	14272293.94	39°18'09.850"N	80°42'35.978"W	6112.82	134.306	0.23	0.03	-0.22	
13119.00	90.370	163.990	7141.28	5540.76	-4361.19	4400.19	1722481.06	14272202.53	39°18'08.946"N	80°42'35.655"W	6195.30	134.745	0.60	-0.06	-0.60	
13214.00	90.370	163.200	7140.66	5635.68	-4452.32	4427.02	1722507.87	14272111.44	39°18'08.044"N	80°42'35.317"W	6278.67	135.163	0.83	0.00	-0.83	
13309.00	90.310	161.340	7140.10	5730.66	-4542.80	4455.95	1722536.79	14272020.99	39°18'07.149"N	80°42'34.953"W	6363.38	135.553	1.96	-0.06	-1.96	
13404.00	90.430	161.900	7139.49	5825.66	-4632.96	4485.91	1722566.73	14271930.88	39°18'06.257"N	80°42'34.575"W	6448.85	135.924	0.60	0.13	0.59	
13498.00	90.340	162.750	7138.85	5919.64	-4722.52	4514.45	1722595.26	14271841.35	39°18'05.371"N	80°42'34.216"W	6533.17	136.290	0.91	-0.10	0.90	
13593.00	90.400	162.780	7138.24	6014.61	-4813.25	4542.59	1722623.40	14271750.65	39°18'04.473"N	80°42'33.862"W	6618.35	136.657	0.07	0.06	0.03	
13688.00	90.520	164.770	7137.48	6109.51	-4904.46	4569.13	1722649.93	14271659.48	39°18'03.571"N	80°42'33.528"W	6703.04	137.027	2.10	0.13	2.09	
13783.00	90.770	167.900	7136.41	6204.13	-4996.75	4591.57	1722672.36	14271567.22	39°18'02.658"N	80°42'33.246"W	6786.02	137.420	3.31	0.26	3.29	
13878.00	90.770	167.860	7135.13	6298.50	-5089.62	4611.52	1722692.30	14271474.39	39°18'01.740"N	80°42'32.996"W	6868.07	137.821	0.04	0.00	-0.04	
13973.00	90.800	166.730	7133.83	6392.97	-5182.29	4632.41	1722713.18	14271381.76	39°18'00.823"N	80°42'32.734"W	6950.92	138.207	1.19	0.03	-1.19	
14068.00	90.680	160.370	7132.60	6487.85	-5273.34	4659.30	1722740.05	14271290.74	39°17'59.922"N	80°42'32.396"W	7036.85	138.538	6.70	-0.13	-6.69	
14163.00	90.580	159.030	7131.56	6582.80	-5362.44	4692.25	1722773.00	14271201.68	39°17'59.041"N	80°42'31.980"W	7125.51	138.813	1.41	-0.11	-1.41	
14257.00	90.400	159.910	7130.75	6676.75	-5450.46	4725.22	1722805.95	14271113.69	39°17'58.170"N	80°42'31.565"W	7213.54	139.077	0.96	-0.19	0.94	
14352.00	90.620	158.390	7129.91	6771.67	-5539.24	4759.03	1722839.75	14271024.95	39°17'57.291"N	80°42'31.138"W	7302.84	139.333	1.62	0.23	-1.60	
14447.00	90.550	157.280	7128.94	6866.49	-5627.21	4794.86	1722875.57	14270937.01	39°17'56.420"N	80°42'30.686"W	7392.98	139.566	1.17	-0.07	-1.17	
14542.00	90.460	157.870	7128.10	6961.28	-5715.02	4831.10	1722911.79	14270849.24	39°17'55.551"N	80°42'30.229"W	7483.38	139.791	0.63	-0.09	0.62	
14637.00	90.340	154.410	7127.44	7055.88	-5801.89	4869.52	1722950.20	14270762.41	39°17'54.692"N	80°42'29.744"W	7574.57	139.993	3.64	-0.13	-3.64	
14732.00	90.370	151.530	7126.85	7149.86	-5886.50	4912.69	1722993.35	14270677.83	39°17'53.854"N	80°42'29.198"W	7667.16	140.153	3.03	0.03	-3.03	
14827.00	90.280	152.550	7126.31	7243.61	-5970.41	4957.23	1723037.87	14270593.95	39°17'53.023"N	80°42'28.635"W	7760.15	140.297	1.08	-0.09	1.07	
14922.00	90.280	155.480	7125.85	7337.83	-6055.79	4998.85	1723079.47	14270508.60	39°17'52.178"N	80°42'28.109"W	7852.46	140.461	3.08	0.00	3.08	
15016.00	90.400	159.480	7125.29	7431.60	-6142.61	5034.84	1723115.46	14270421.82	39°17'51.319"N	80°42'27.655"W	7942.37	140.660	4.26	0.13	4.26	
15111.00	89.910	161.650	7125.03	7526.58	-6232.19	5066.45	1723147.05	14270332.27	39°17'50.432"N	80°42'27.256"W	8031.76	140.891	2.34	-0.52	2.28	





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

WELLPATH DATA (204 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
15206.00	89.970	162.730	7125.13	7621.57	-6322.63	5095.51	1723176.10	14270241.86	39°17'49.537"N	80°42'26.890"W	8120.34	141.134	1.14	0.06	1.14	
15301.00	89.940	165.110	7125.20	7716.47	-6413.91	5121.82	1723202.40	14270150.62	39°17'48.634"N	80°42'26.560"W	8208.00	141.391	2.51	-0.03	2.51	
15396.00	89.690	167.220	7125.51	7811.12	-6506.15	5144.54	1723225.10	14270058.42	39°17'47.722"N	80°42'26.274"W	8294.35	141.666	2.24	-0.26	2.22	
15585.00	90.250	168.680	7125.61	7998.85	-6690.98	5183.99	1723264.54	14269873.67	39°17'45.894"N	80°42'25.780"W	8464.22	142.232	0.83	0.30	0.77	
15680.00	90.310	170.930	7125.15	8092.81	-6784.47	5200.80	1723281.35	14269780.21	39°17'44.969"N	80°42'25.570"W	8548.53	142.527	2.37	0.06	2.37	
15775.00	90.090	173.360	7124.81	8186.11	-6878.57	5213.79	1723294.33	14269686.15	39°17'44.039"N	80°42'25.409"W	8631.24	142.839	2.57	-0.23	2.56	
15870.00	90.710	165.170	7124.15	8280.11	-6971.83	5231.47	1723312.00	14269592.93	39°17'43.117"N	80°42'25.188"W	8716.34	143.116	8.65	0.65	-8.62	
15965.00	90.680	161.010	7123.00	8375.04	-7062.69	5259.09	1723339.61	14269502.10	39°17'42.218"N	80°42'24.840"W	8805.66	143.328	4.38	-0.03	-4.38	
16060.00	90.030	160.340	7122.41	8470.03	-7152.34	5290.53	1723371.04	14269412.49	39°17'41.331"N	80°42'24.444"W	8896.38	143.510	0.98	-0.68	-0.71	
16155.00	90.830	162.900	7121.70	8565.02	-7242.48	5320.48	1723400.98	14269322.38	39°17'40.439"N	80°42'24.067"W	8986.71	143.698	2.82	0.84	2.69	
16250.00	88.920	153.020	7121.90	8659.73	-7330.42	5356.08	1723436.57	14269234.47	39°17'39.568"N	80°42'23.618"W	9078.70	143.846	10.59	-2.01	-10.40	
16345.00	90.620	154.910	7122.28	8753.94	-7415.78	5397.78	1723478.24	14269149.15	39°17'38.724"N	80°42'23.091"W	9172.23	143.950	2.68	1.79	1.99	
16440.00	90.620	158.520	7121.26	8848.61	-7503.02	5435.32	1723515.77	14269061.94	39°17'37.860"N	80°42'22.617"W	9264.88	144.080	3.80	0.00	3.80	
16535.00	90.430	158.050	7120.39	8943.48	-7591.27	5470.47	1723550.91	14268973.72	39°17'36.987"N	80°42'22.173"W	9357.00	144.223	0.53	-0.20	-0.49	
16629.00	89.880	158.560	7120.13	9037.35	-7678.61	5505.22	1723585.64	14268886.42	39°17'36.122"N	80°42'21.735"W	9448.20	144.361	0.80	-0.59	0.54	
16724.00	90.800	159.460	7119.57	9132.26	-7767.31	5539.25	1723619.66	14268797.76	39°17'35.245"N	80°42'21.306"W	9540.14	144.505	1.35	0.97	0.95	
16819.00	90.770	160.930	7118.27	9227.23	-7856.68	5571.43	1723651.83	14268708.43	39°17'34.360"N	80°42'20.900"W	9631.63	144.658	1.55	-0.03	1.55	
16914.00	90.860	162.840	7116.91	9322.22	-7946.96	5600.96	1723681.35	14268618.18	39°17'33.467"N	80°42'20.528"W	9722.39	144.824	2.01	0.09	2.01	
17009.00	90.770	159.810	7115.56	9417.20	-8036.93	5631.38	1723711.75	14268528.24	39°17'32.577"N	80°42'20.145"W	9813.50	144.982	3.19	-0.09	-3.19	
17104.00	90.680	161.120	7114.36	9512.18	-8126.46	5663.14	1723743.50	14268438.75	39°17'31.691"N	80°42'19.745"W	9905.07	145.128	1.38	-0.09	1.38	
17199.00	90.650	160.950	7113.26	9607.17	-8216.29	5694.01	1723774.36	14268348.95	39°17'30.802"N	80°42'19.356"W	9996.46	145.277	0.18	-0.03	-0.18	
17293.00	90.710	160.070	7112.14	9701.15	-8304.90	5725.37	1723805.71	14268260.38	39°17'29.925"N	80°42'18.961"W	10087.18	145.418	0.94	0.06	-0.94	
17385.00	90.830	158.830	7110.91	9793.09	-8391.04	5757.66	1723837.99	14268174.28	39°17'29.073"N	80°42'18.554"W	10176.45	145.543	1.35	0.13	-1.35	
17409.00	90.830	158.830	7110.56	9817.07	-8413.41	5766.33	1723846.65	14268151.91	39°17'28.851"N	80°42'18.444"W	10199.81	145.574	0.00	0.00	0.00	Projected MD at TD: 17409'





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Callahan Unit 2H AWB Ref Wellpath: Callahan Unit 2H AWP Proj: 17409'									
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	25.50	105.50	80.00	25.50	105.50	0.00	0.00	-0.14	-0.14
17.5in Open Hole	105.50	405.00	299.50	105.50	405.00	-0.14	-0.14	-0.70	0.05
13.375in Casing Surface	25.50	390.50	365.00	25.50	390.50	0.00	0.00	-0.62	-0.04
12.25in Open Hole	405.00	2787.00	2382.00	405.00	2631.64	-0.70	0.05	309.84	731.07
9.625in Casing Intermediate	25.50	2771.00	2745.50	25.50	2616.83	0.00	0.00	307.54	725.47
8.75in Open Hole	2787.00	7456.00	4669.00	2631.64	6841.22	309.84	731.07	853.81	2577.13
8.5in Open Hole	7456.00	17409.00	9953.00	6841.22	7110.56	853.81	2577.13	-8413.41	5766.33
5.5in Casing Production	25.50	17409.00	17383.50	25.50	7110.56	0.00	0.00	-8413.41	5766.33

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Callahan Unit 2H - POE - Rev-2	7125.00	553.44	2724.81	1720806.34	14277115.22	39°18'57.573"N	80°42'56.770"W	point
Callahan Unit 2H - BHL - Rev-2	7169.00	-8421.33	5758.67	1723838.99	14268144.00	39°17'28.773"N	80°42'18.542"W	point
Callahan Unit 2H - LP - Rev-2	7169.00	302.63	2809.60	1720891.09	14276864.51	39°18'55.091"N	80°42'55.702"W	point





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

WELLPATH COMPOSITION - Ref Wellbore: Callahan Unit 2H AWB Ref Wellpath: Callahan Unit 2H AWP Proj: 17409'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.50	300.00	Gyrodatta standard - Drop gyro or Multi-shot	01 Gyrodatta MS Gyro <17-1/2">(100'-300')	Callahan Unit 2H AWB
300.00	2719.00	BHI NaviTrak (Axial)	02 APS EM <12-1/4"> (300')(425'-2719')	Callahan Unit 2H AWB
2719.00	7392.00	BHI NaviTrak (Axial)	03 APS EM <8-3/4"> (2719')(2835'-7392')	Callahan Unit 2H AWB
7392.00	17385.00	BHI NaviTrak (Axial)	04 BH AT Curve <8-1/2">(7392')(7432'-17385')	Callahan Unit 2H AWB
17385.00	17409.00	Blind Drilling (std)	Projection to bit	Callahan Unit 2H AWB





# Actual Wellpath Report

Callahan Unit 2H AWP Proj: 17409'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Callahan Unit 2H
Field	Doddridge	Wellbore	Callahan Unit 2H AWB
Facility	Deets Pad		

COMMENTS
<p><b>Wellpath general comments</b> API: 47-017-06874-0000 BHI Job #: 109894718B Rig: H&amp;P 317 Duration: 07/01/2019-08/28/2019 Gyrodata MS Gyro &lt;17-1/2"&gt;(100'-300') APS EM &lt;12-1/4"&gt; (300')(425'-2719') APS EM &lt;8-3/4"&gt; (2719')(2835'-7392') BH AT Curve &lt;8-1/2"&gt;(7392')(7432'-17385') Middlesex: 7500' MD Burkett: 7713' MD Tully: 7760' MD Marcellus POE: 7929' MD Projected MD at TD: 17409'</p>