



ANTERO RESOURCES CORPORATION



Location: Tyler County, WV
Field: Tyler
Facility: Beech Run Pad

Slot: Slot B
Well: Crystal Unit 2H
Wellbore: Crystal Unit 2H PWB

Easting (ft)

Plot reference wellpath is Crystal Unit 2H PWB Rev-C.0	Grid System: NAD2011 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 317 (RKB)	North Reference: Grid point
Reference wellbore measured depths are referenced to H&P 317 (RKB)	Scale: True distance
H&P 317 (RKB) to Mean Sea Level: 1247.5 feet	Coordinates are in feet referenced to GRS
Mean Sea Level to Ground level (At Slot Slot B): -1222 feet	Depth are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: esawyer on 2022-10-14. Database: WA_WPL_EASTERNUS_Defn

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
Beech Run Pad	1701783.750	14354455.970	39°31'42.7528"N	80°46'56.5204"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot B	-29.23	-6.63	1701777.120	14354426.750	39°31'42.5640"N	80°46'56.6060"W

Comment: Crystal Unit 2H
H&P 317 (RKB) to Ground level (At Slot Slot B): 25.5ft
Mean Sea Level to Ground level (At Slot Slot B): -1222ft
H&P 317 (RKB) to Mean Sea Level: 1247.5ft

Gyrodatta MS Gyro <17-1/2"> (100'-900') : 0.05° Inc, 100.00ft MD, 100.00ft TVD, 0.01ft VS

Well Data

Slot	Well	Wellbore	Wellpath
Slot B	Crystal Unit 2H	Crystal Unit 2H AAWB	Crystal Unit 2H AWP Proj: 17932'
Slot B	Crystal Unit 2H	Crystal Unit 2H PWB	Crystal Unit 2H PWP Rev-C.0

Gyrodatta MS Gyro <12-1/4"> (900')(1000'-1011') : 0.36° Inc, 1000.00ft MD, 999.98ft TVD, -4.31ft VS

APS EM <12-1/4"> (1011')(1327'-3293') : 0.50° Inc, 1327.00ft MD, 1326.98ft TVD, -6.48ft VS

Well Profile Data

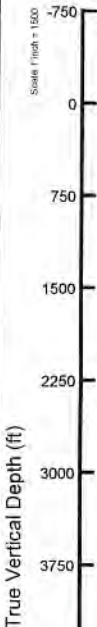
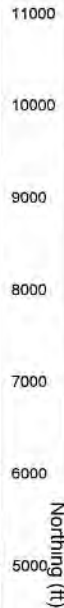
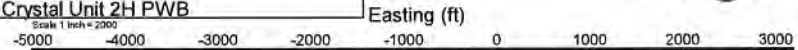
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	3293.00	0.690	80.940	3292.86	-17.89	14.66	0.41	-21.67
Proj. to Bottom	3370.00	0.690	80.940	3369.85	-17.73	15.58	0.00	-21.83
KOP 1	3450.00	0.690	80.940	3449.85	-17.58	16.53	0.00	-22.00
End of 3D Arc	4268.77	21.116	100.941	4249.62	-45.09	167.81	2.50	-97.17
Curve KOP	6247.22	21.116	100.941	6095.22	-180.37	867.62	0.00	-452.48
POE	7295.08	72.944	341.043	6888.00	360.01	895.52	8.00	49.52
Landing Pt	7485.59	80.000	341.043	6916.00	536.61	834.86	8.00	236.25
BHL	17929.50	90.000	341.043	6916.00	10411.24	-2556.93	0.00	10677.15

APS EM <8-3/4"> (3293')(3410'-5496') : 0.47° Inc, 3410.00ft MD, 3409.85ft TVD, -21.89ft VS

RECEIVED
Office of Oil and Gas
JUN 23 2022
WV Department of Environmental Protection

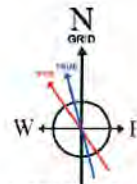
BH AT Curve <8-1/2"> (5496')(5544'-17904') : 22.89° Inc, 5544.00ft MD, 5436.73ft TVD, -289.63ft VS

Marcellus POE: 7301' MD : 74.95° Inc, 7301.00ft MD, 6889.49ft TVD, 43.23ft VS



BHL 6W'

Projected MD at TD: 17932' : 6898.58ft TVD, 10397.22ft N, 2562.46ft W



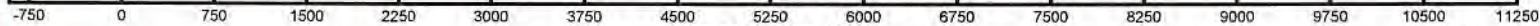
User specified (HDGM) Dip: 66.39° Field: 51719 nT
Magnetic North is 7.59 degrees West of True North (at 11/17/2022)
Grid North is 0.14 degrees East of True North
To correct azimuth from True to Grid subtract 0.14 degrees
To correct azimuth from Magnetic to Grid subtract 7.73 degrees

API: 47-095-02800-0000
BH Job #: 111519917
Rig: H&P 317
Duration: 11/19/2022-11/24/2022

Marcellus POE: 7301' MD : 6889.49ft TVD, 361.81ft N, 920.10ft E

Slot B
Gyrodatta MS Gyro <17-1/2"> (100'-900') : 100.00ft TVD, 0.02ft N, 0.03ft E
Gyrodatta MS Gyro <12-1/4"> (900')(1000'-1011') : 999.98ft TVD, 3.76ft S, 2.31ft E
APS EM <12-1/4"> (1011')(1327'-3293') : 1326.98ft TVD, 5.78ft S, 3.13ft E
APS EM <8-3/4"> (3293')(3410'-5496') : 3409.85ft TVD, 17.7ft S, 15.83ft E
BH AT Curve <8-1/2"> (5496')(5544'-17904') : 5436.73ft TVD, 97.78ft S, 606.80ft E

Projected MD at TD: 17932' : 89.88° Inc, 17932.00ft MD, 6898.58ft TVD, 10665.69ft VS



Azimuth 341.04° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'
Page 1 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Crystal Unit 2H
Field	Tyler	API	47-095-02800-0000
Facility	Beech Run Pad	Wellbore	Crystal Unit 2H AWB
Slot	Slot B		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Edsaryar
Scale	0.999604	Report Generated	12/14/2022 at 3:07:29 PM
Convergence at slot	0.14° East	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-29.23	-6.63	1701777.12	14354426.75	39°31'42.5040"N	80°46'56.6060"W
Facility Reference Pt			1701783.75	14354455.97	39°31'42.7928"N	80°46'56.5204"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.3013"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 317 (RKB) to Facility Vertical Datum	1247.50ft
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level	1247.50ft
Vertical Reference Pt	H&P 317 (RKB)	H&P 317 (RKB) to Ground Level at Slot (Slot B)	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	341.04°

RECEIVED
 Office of Oil and Gas
 WV Department of
 Environmental Protection
 JUN 23 2023



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'
Page 2 of 10



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Crystal Unit 2H
Field	Tyler		API	47-095-02800-0000
Facility	Beech Run Pad		Wellbore	Crystal Unit 2H AWB
Slot	Slot B			

WELLPATH DATA (194 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	61.670	0.00	0.00	0.00	0.00	1701777.12	14354426.75	39°31'42.5040"N	80°46'56.6060"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	61.670	25.50	0.00	0.00	0.00	1701777.12	14354426.75	39°31'42.5040"N	80°46'56.6060"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.050	61.670	100.00	0.01	0.02	0.03	1701777.15	14354426.77	39°31'42.5042"N	80°46'56.6056"W	0.03	61.670	0.07	0.07	0.00	Gyrodata MS Gyro <17-1/2"> (100'-900')
200.00	0.150	3.990	200.00	0.13	0.17	0.08	1701777.20	14354426.92	39°31'42.5057"N	80°46'56.6050"W	0.18	24.543	0.13	0.10	-57.68	
300.00	0.330	161.430	300.00	-0.03	0.02	0.18	1701777.30	14354426.77	39°31'42.5043"N	80°46'56.6037"W	0.18	82.177	0.47	0.18	157.44	
400.00	0.350	165.660	400.00	-0.63	-0.54	0.34	1701777.46	14354426.21	39°31'42.4986"N	80°46'56.6016"W	0.64	147.698	0.03	0.02	4.23	
500.00	0.440	169.200	500.00	-1.31	-1.22	0.49	1701777.61	14354425.53	39°31'42.4920"N	80°46'56.5998"W	1.31	158.003	0.09	0.09	3.54	
600.00	0.360	165.540	599.99	-2.00	-1.90	0.64	1701777.76	14354424.85	39°31'42.4853"N	80°46'56.5979"W	2.00	161.313	0.08	-0.08	-3.66	
700.00	0.510	137.120	699.99	-2.72	-2.53	1.02	1701778.14	14354424.22	39°31'42.4790"N	80°46'56.5930"W	2.73	157.968	0.26	0.15	-28.42	
800.00	0.300	124.520	799.99	-3.34	-3.00	1.54	1701778.66	14354423.75	39°31'42.4743"N	80°46'56.5864"W	3.38	152.825	0.23	-0.21	-12.60	
900.00	0.310	126.340	899.99	-3.77	-3.31	1.98	1701779.09	14354423.44	39°31'42.4713"N	80°46'56.5809"W	3.86	149.186	0.01	0.01	1.82	
1000.00	0.360	157.320	999.98	-4.31	-3.76	2.31	1701779.43	14354422.99	39°31'42.4668"N	80°46'56.5766"W	4.42	148.400	0.19	0.05	30.98	Gyrodata MS Gyro <12-1/4"> (900')(1000'-1011')
1011.00	0.290	176.100	1010.98	-4.37	-3.82	2.33	1701779.45	14354422.93	39°31'42.4662"N	80°46'56.5764"W	4.48	148.635	1.15	-0.64	170.73	
1327.00	0.500	147.100	1326.98	-6.48	-5.78	3.13	1701780.25	14354420.97	39°31'42.4469"N	80°46'56.5662"W	6.57	151.529	0.09	0.07	-9.18	APS EM <12-1/4"> (1011')(1327'-3293')
1422.00	0.570	151.770	1421.97	-7.35	-6.54	3.58	1701780.70	14354420.21	39°31'42.4393"N	80°46'56.5605"W	7.46	151.298	0.09	0.07	4.92	
1516.00	0.630	146.290	1515.97	-8.31	-7.38	4.09	1701781.21	14354419.37	39°31'42.4310"N	80°46'56.5540"W	8.44	151.018	0.09	0.06	-5.83	
1611.00	0.570	155.960	1610.96	-9.29	-8.25	4.57	1701781.69	14354418.50	39°31'42.4224"N	80°46'56.5479"W	9.43	151.004	0.12	-0.06	10.18	
1705.00	0.680	145.510	1704.96	-10.29	-9.14	5.08	1701782.20	14354417.62	39°31'42.4136"N	80°46'56.5415"W	10.45	150.933	0.17	0.12	-11.12	
1800.00	0.780	155.030	1799.95	-11.48	-10.19	5.67	1701782.79	14354416.57	39°31'42.4032"N	80°46'56.5339"W	11.66	150.898	0.17	0.11	10.02	
1895.00	1.240	207.940	1894.94	-12.82	-11.68	5.46	1701782.58	14354415.07	39°31'42.3885"N	80°46'56.5366"W	12.90	154.940	1.04	0.48	55.69	
1990.00	1.200	108.950	1989.92	-14.14	-12.91	5.92	1701783.04	14354413.84	39°31'42.3763"N	80°46'56.5308"W	14.21	155.366	1.95	-0.04	-104.20	
2084.00	1.460	98.930	2083.90	-15.30	-13.42	8.04	1701785.15	14354413.34	39°31'42.3712"N	80°46'56.5039"W	15.64	149.086	0.37	0.28	-10.66	
2179.00	0.500	128.240	2178.88	-16.22	-13.86	9.56	1701786.67	14354412.89	39°31'42.3668"N	80°46'56.4845"W	16.84	145.420	1.11	-1.01	30.85	
2274.00	0.550	140.020	2273.88	-16.99	-14.47	10.18	1701787.29	14354412.29	39°31'42.3608"N	80°46'56.4766"W	17.69	144.884	0.12	0.05	12.40	
2368.00	0.170	131.900	2367.88	-17.53	-14.91	10.57	1701787.68	14354411.85	39°31'42.3564"N	80°46'56.4716"W	18.27	144.666	0.41	-0.40	-8.64	
2463.00	0.380	157.080	2462.88	-17.97	-15.29	10.80	1701787.91	14354411.46	39°31'42.3526"N	80°46'56.4687"W	18.72	144.778	0.25	0.22	26.51	
2558.00	0.260	142.720	2557.87	-18.49	-15.75	11.05	1701788.17	14354411.00	39°31'42.3481"N	80°46'56.4655"W	19.24	144.955	0.15	-0.13	-15.12	
2652.00	0.340	144.180	2651.87	-18.96	-16.15	11.34	1701788.46	14354410.61	39°31'42.3442"N	80°46'56.4617"W	19.73	144.920	0.09	0.09	1.55	
2747.00	0.370	173.770	2746.87	-19.53	-16.68	11.54	1701788.66	14354410.07	39°31'42.3389"N	80°46'56.4592"W	20.29	145.327	0.19	0.03	31.15	
2842.00	0.380	125.600	2841.87	-20.08	-17.17	11.83	1701788.95	14354409.59	39°31'42.3340"N	80°46'56.4556"W	20.85	145.437	0.32	0.01	-50.71	

RECEIVED
Office of Oil and Gas
JUN 23 2023
WV Department of
Environmental Protection



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'

Page 3 of 10



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Crystal Unit 2H
Field	Tyler		API	47-095-02800-0000
Facility	Beech Run Pad		Wellbore	Crystal Unit 2H AWB
Slot	Slot B			

WELLPATH DATA (194 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
2938.00	0.340	126.690	2937.87	-20.58	-17.53	12.32	1701789.43	14354409.23	39°31'42.3305"N	80°46'56.4493"W	21.42	144.903	0.04	-0.04	1.14	
3033.00	0.150	125.750	3032.87	-20.91	-17.77	12.64	1701789.76	14354408.99	39°31'42.3281"N	80°46'56.4452"W	21.81	144.564	0.20	-0.20	-0.99	
3128.00	0.570	101.040	3127.86	-21.25	-17.93	13.21	1701790.32	14354408.83	39°31'42.3265"N	80°46'56.4380"W	22.27	143.624	0.46	0.44	-26.01	
3222.00	0.400	82.590	3221.86	-21.55	-17.98	13.99	1701791.11	14354408.78	39°31'42.3260"N	80°46'56.4280"W	22.78	142.106	0.24	-0.18	-19.63	
3293.00	0.690	80.940	3292.86	-21.67	-17.88	14.66	1701791.78	14354408.88	39°31'42.3270"N	80°46'56.4194"W	23.12	140.648	0.41	0.41	-2.32	
3410.00	0.470	82.840	3409.85	-21.89	-17.71	15.83	1701792.95	14354409.05	39°31'42.3286"N	80°46'56.4045"W	23.75	138.201	0.19	-0.19	1.62	APS EM <8-3/4"> (3293')(3410'-5496')
3504.00	3.380	92.060	3503.79	-22.96	-17.76	18.99	1701796.10	14354409.00	39°31'42.3281"N	80°46'56.3643"W	26.00	133.090	3.10	3.10	9.81	
3599.00	7.770	88.970	3598.32	-25.95	-17.75	28.21	1701805.32	14354409.01	39°31'42.3280"N	80°46'56.2465"W	33.33	122.172	4.63	4.62	-3.25	
3693.00	10.450	99.280	3691.13	-31.94	-19.01	42.98	1701820.08	14354407.75	39°31'42.3152"N	80°46'56.0581"W	46.99	113.856	3.33	2.85	10.97	
3788.00	9.260	101.920	3784.73	-39.94	-21.97	58.96	1701836.06	14354404.78	39°31'42.2855"N	80°46'55.8542"W	62.92	110.440	1.34	-1.25	2.78	
3882.00	8.690	94.660	3877.58	-46.67	-24.11	73.44	1701850.53	14354402.65	39°31'42.2640"N	80°46'55.6695"W	77.30	108.177	1.35	-0.61	-7.72	
3977.00	10.500	99.080	3971.25	-53.61	-26.06	89.14	1701866.23	14354400.70	39°31'42.2443"N	80°46'55.4692"W	92.87	106.298	2.06	1.91	4.65	
4071.00	11.890	94.740	4063.46	-61.53	-28.21	107.25	1701884.33	14354398.55	39°31'42.2226"N	80°46'55.2381"W	110.90	104.739	1.73	1.48	-4.62	
4166.00	14.440	85.310	4155.96	-68.39	-28.05	128.82	1701905.88	14354398.71	39°31'42.2237"N	80°46'54.9629"W	131.84	102.287	3.50	2.68	-9.93	
4260.00	17.950	84.640	4246.22	-74.68	-25.74	154.93	1701931.98	14354401.02	39°31'42.2459"N	80°46'54.6296"W	157.05	99.434	3.74	3.73	-0.71	
4355.00	19.720	90.900	4336.14	-83.57	-24.63	185.53	1701962.58	14354402.13	39°31'42.2562"N	80°46'54.2390"W	187.16	97.561	2.83	1.86	6.59	
4450.00	25.540	92.590	4423.79	-96.55	-25.81	222.05	1701999.08	14354400.96	39°31'42.2437"N	80°46'53.7730"W	223.54	96.629	6.16	6.13	1.78	
4544.00	29.020	95.780	4507.32	-113.54	-29.02	264.99	1702042.01	14354397.74	39°31'42.2109"N	80°46'53.2251"W	266.57	96.249	4.01	3.70	3.39	
4639.00	32.380	110.550	4589.11	-139.41	-40.29	311.82	1702088.81	14354386.48	39°31'42.0984"N	80°46'52.6279"W	314.41	97.362	8.67	3.54	15.55	
4734.00	28.260	117.020	4671.12	-171.79	-59.45	355.70	1702132.68	14354367.33	39°31'41.9080"N	80°46'52.0684"W	360.63	99.488	5.53	-4.34	6.81	
4828.00	22.050	121.890	4756.18	-201.51	-78.90	390.54	1702167.51	14354347.88	39°31'41.7149"N	80°46'51.6243"W	398.43	101.421	6.96	-6.81	5.18	
4923.00	15.200	112.390	4846.17	-223.60	-93.08	417.24	1702194.19	14354333.70	39°31'41.5741"N	80°46'51.2841"W	427.50	102.576	7.86	-7.21	-10.00	
5018.00	15.080	97.160	4937.91	-237.27	-99.37	441.02	1702217.97	14354327.42	39°31'41.5114"N	80°46'50.9808"W	452.08	102.698	4.18	-0.13	-16.03	
5113.00	16.660	88.110	5029.30	-246.71	-100.46	466.90	1702243.84	14354326.33	39°31'41.4999"N	80°46'50.6505"W	477.59	102.143	3.09	1.66	-9.53	
5209.00	17.950	88.140	5120.95	-255.10	-99.53	495.44	1702272.37	14354327.26	39°31'41.5085"N	80°46'50.2863"W	505.34	101.359	1.34	1.34	0.03	
5303.00	18.490	87.680	5210.24	-263.63	-98.45	524.81	1702301.72	14354328.33	39°31'41.5184"N	80°46'49.9114"W	533.97	100.625	0.59	0.57	-0.49	
5398.00	18.270	86.550	5300.39	-271.92	-96.95	554.73	1702331.63	14354329.84	39°31'41.5326"N	80°46'49.5296"W	563.14	99.913	0.44	-0.23	-1.19	
5496.00	22.070	92.870	5392.38	-282.88	-96.95	588.47	1702365.35	14354329.84	39°31'41.5318"N	80°46'49.0990"W	596.40	99.355	4.46	3.88	6.45	
5544.00	22.890	92.360	5436.73	-289.63	-97.78	606.80	1702383.68	14354329.01	39°31'41.5231"N	80°46'48.8651"W	614.63	99.154	1.76	1.71	-1.06	BH AT Curve <8-1/2"> (5496')(5544'-17904')
5607.00	22.130	95.220	5494.93	-298.95	-99.37	630.86	1702407.73	14354327.42	39°31'41.5068"N	80°46'48.5581"W	638.64	98.951	2.12	-1.21	4.54	

RECEIVED
Office of Oil and Gas
JUN 23 2023
WV Department of
Environmental Protection



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'
Page 4 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Crystal Unit 2H
Field	Tyler	API	47-095-02800-0000
Facility	Beech Run Pad	Wellbore	Crystal Unit 2H AWP
Slot	Slot B		

WELLPATH DATA (194 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
5701.00	22.390	101.610	5581.94	-315.31	-104.58	666.03	1702442.89	14354322.21	39°31'41.4544"N	80°46'48.1094"W	674.20	98.924	2.59	0.28	6.80	
5793.00	22.840	108.550	5666.88	-335.09	-113.79	700.13	1702476.97	14354313.01	39°31'41.3626"N	80°46'47.6745"W	709.32	99.231	2.94	0.49	7.54	
5888.00	21.740	106.790	5754.78	-356.60	-124.74	734.46	1702511.28	14354302.06	39°31'41.2536"N	80°46'47.2368"W	744.97	99.639	1.35	-1.16	-1.85	
5982.00	21.920	100.500	5842.05	-375.40	-132.96	768.38	1702545.19	14354293.84	39°31'41.1714"N	80°46'46.8041"W	779.80	99.818	2.49	0.19	-6.69	
6076.00	20.690	102.130	5929.63	-392.61	-139.65	801.87	1702578.67	14354287.15	39°31'41.1045"N	80°46'46.3770"W	813.94	99.879	1.45	-1.31	1.73	
6171.00	19.240	101.330	6018.91	-409.17	-146.25	833.62	1702610.41	14354280.55	39°31'41.0385"N	80°46'45.9719"W	846.36	99.951	1.55	-1.53	-0.84	
6266.00	17.220	101.670	6109.14	-424.23	-152.17	862.75	1702639.52	14354274.64	39°31'40.9793"N	80°46'45.6004"W	876.06	100.003	2.13	-2.13	0.36	
6360.00	18.280	83.980	6198.73	-434.63	-153.44	891.06	1702667.82	14354273.37	39°31'40.9661"N	80°46'45.2392"W	904.17	99.771	5.82	1.13	-18.82	
6455.00	17.440	60.160	6289.27	-435.28	-144.79	918.26	1702695.01	14354282.02	39°31'41.0510"N	80°46'44.8918"W	929.60	98.960	7.69	-0.88	-25.07	
6550.00	17.300	40.090	6380.02	-425.32	-126.88	939.72	1702716.47	14354299.92	39°31'41.2274"N	80°46'44.6173"W	948.25	97.689	6.28	-0.15	-21.13	
6645.00	20.990	19.360	6469.86	-404.67	-99.98	954.48	1702731.22	14354326.81	39°31'41.4929"N	80°46'44.4281"W	959.70	95.980	8.08	3.88	-21.82	
6739.00	27.770	7.740	6555.47	-371.85	-62.33	963.03	1702739.76	14354364.44	39°31'41.8648"N	80°46'44.3179"W	965.04	93.703	8.80	7.21	-12.36	
6758.00†	28.997	6.794	6572.19	-363.74	-53.37	964.17	1702740.90	14354373.40	39°31'41.9533"N	80°46'44.3030"W	965.64	93.168	6.88	6.46	-4.98	Sycamore: 6758' MD
6834.00	33.960	3.640	6636.99	-327.53	-13.87	967.70	1702744.43	14354412.89	39°31'42.3437"N	80°46'44.2568"W	967.80	90.821	6.88	6.53	-4.15	
6904.00†	41.506	1.324	6692.31	-287.66	28.90	969.48	1702746.21	14354455.63	39°31'42.7663"N	80°46'44.2327"W	969.91	88.293	10.97	10.78	-3.31	Middlesex: 6904' MD
6929.00	44.210	0.660	6710.64	-271.68	45.90	969.77	1702746.50	14354472.63	39°31'42.9343"N	80°46'44.2284"W	970.85	87.290	10.97	10.82	-2.66	
7023.00	54.080	356.650	6772.07	-203.97	116.86	967.92	1702744.65	14354543.56	39°31'43.6356"N	80°46'44.2499"W	974.95	83.116	10.98	10.50	-4.27	
7054.00†	56.374	354.661	6789.75	-179.33	142.24	965.98	1702742.72	14354568.94	39°31'43.8866"N	80°46'44.2738"W	976.40	81.623	9.08	7.40	-6.42	Burkett: 7054' MD
7118.00	61.200	350.870	6822.91	-125.76	196.50	959.05	1702735.79	14354623.18	39°31'44.4231"N	80°46'44.3606"W	978.97	78.421	9.08	7.54	-5.92	Tully: 7118' MD
7213.00	69.430	346.950	6862.56	-40.34	281.10	942.37	1702719.11	14354707.74	39°31'45.2595"N	80°46'44.5708"W	983.40	73.391	9.44	8.66	-4.13	
7301.00†	74.947	342.280	6889.49	43.23	361.81	920.10	1702696.86	14354788.41	39°31'46.0577"N	80°46'44.8524"W	988.68	68.534	8.05	6.27	-5.31	Marcellus POE: 7301' MD
7308.00	75.390	341.920	6891.28	49.99	368.24	918.02	1702694.78	14354794.85	39°31'46.1214"N	80°46'44.8787"W	989.13	68.143	8.05	6.33	-5.14	
7402.00	82.380	340.980	6909.39	142.17	455.63	888.69	1702665.46	14354882.20	39°31'46.9858"N	80°46'45.2503"W	998.68	62.856	7.50	7.44	-1.00	
7497.00	90.120	342.610	6915.60	236.88	545.61	859.10	1702635.88	14354972.15	39°31'47.8758"N	80°46'45.6251"W	1017.72	57.581	8.33	8.15	1.72	
7592.00	89.630	338.520	6915.80	331.86	635.18	827.50	1702604.29	14355061.68	39°31'48.7618"N	80°46'46.0256"W	1043.17	52.491	4.34	-0.52	-4.31	
7686.00	90.000	338.740	6916.11	425.77	722.72	793.25	1702570.05	14355149.18	39°31'49.6278"N	80°46'46.4600"W	1073.11	47.664	0.46	0.39	0.23	
7781.00	89.510	341.390	6916.51	520.75	812.02	760.86	1702537.68	14355238.44	39°31'50.5111"N	80°46'46.8706"W	1112.78	43.137	2.84	-0.52	2.79	
7876.00	90.650	339.030	6916.38	615.73	901.40	728.70	1702505.53	14355327.79	39°31'51.3953"N	80°46'47.2783"W	1159.10	38.952	2.76	1.20	-2.48	
7971.00	89.780	341.250	6916.02	710.71	990.74	696.43	1702473.27	14355417.10	39°31'52.2791"N	80°46'47.6873"W	1211.02	35.105	2.51	-0.92	2.34	
8066.00	89.820	339.010	6916.36	805.69	1080.08	664.14	1702441.00	14355506.40	39°31'53.1628"N	80°46'48.0966"W	1267.93	31.587	2.36	0.04	-2.36	

RECEIVED
Office of Oil and Gas
JUN 23 2022
WV Department of Environmental Protection



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'
Page 5 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Crystal Unit 2H
Field	Tyler	API	47-095-02800-0000
Facility	Beech Run Pad	Wellbore	Crystal Unit 2H AWP
Slot	Slot B		

WELLPATH DATA (194 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
8160.00	89.170	338.130	6917.18	899.60	1167.57	629.80	1702406.67	14355593.86	39°31'54.0284"N	80°46'48.5322"W	1326.60	28.343	1.16	-0.69	-0.94	
8255.00	89.750	341.350	6918.08	994.56	1256.68	596.91	1702373.79	14355682.93	39°31'54.9098"N	80°46'48.9491"W	1391.24	25.407	3.44	0.61	3.39	
8350.00	90.550	339.310	6917.83	1089.55	1346.13	564.93	1702341.83	14355772.35	39°31'55.7947"N	80°46'49.3544"W	1459.87	22.766	2.31	0.84	-2.15	
8444.00	88.710	340.280	6918.44	1183.52	1434.34	532.47	1702309.38	14355860.52	39°31'56.6672"N	80°46'49.7660"W	1529.99	20.366	2.21	-1.96	1.03	
8539.00	88.890	341.230	6920.43	1278.49	1524.01	501.16	1702278.08	14355950.15	39°31'57.5542"N	80°46'50.1628"W	1604.30	18.203	1.02	0.19	1.00	
8634.00	90.340	341.110	6921.07	1373.49	1613.92	470.50	1702247.44	14356040.03	39°31'58.4436"N	80°46'50.5513"W	1681.11	16.253	1.53	1.53	-0.13	
8729.00	89.080	338.900	6921.55	1468.46	1703.19	438.02	1702214.97	14356129.26	39°31'59.3266"N	80°46'50.9631"W	1758.61	14.423	2.68	-1.33	-2.33	
8824.00	90.090	342.370	6922.24	1563.44	1792.80	406.53	1702183.49	14356218.83	39°32'0.2130"N	80°46'51.3622"W	1838.31	12.776	3.80	1.06	3.65	
8918.00	88.860	341.560	6923.10	1657.43	1882.17	377.43	1702154.40	14356308.17	39°32'1.0970"N	80°46'51.7309"W	1919.64	11.339	1.57	-1.31	-0.86	
9013.00	91.450	343.220	6922.84	1752.39	1972.71	348.69	1702125.67	14356398.67	39°32'1.9925"N	80°46'52.0948"W	2003.29	10.024	3.24	2.73	1.75	
9108.00	90.920	338.110	6920.87	1847.33	2062.30	317.25	1702094.25	14356488.23	39°32'2.8787"N	80°46'52.4933"W	2086.56	8.746	5.41	-0.56	-5.38	
9203.00	89.780	335.040	6920.29	1942.03	2149.46	279.49	1702056.50	14356575.35	39°32'3.7410"N	80°46'52.9725"W	2167.55	7.409	3.45	-1.20	-3.23	
9297.00	89.480	339.130	6920.90	2035.78	2236.02	242.90	1702019.92	14356661.88	39°32'4.5974"N	80°46'53.4369"W	2249.17	6.200	4.36	-0.32	4.35	
9392.00	89.450	341.040	6921.79	2130.76	2325.33	210.54	1701987.58	14356751.15	39°32'5.4809"N	80°46'53.8471"W	2334.84	5.174	2.01	-0.03	2.01	
9487.00	90.550	340.970	6921.79	2225.76	2415.15	179.62	1701956.67	14356840.94	39°32'6.3694"N	80°46'54.2389"W	2421.83	4.253	1.16	1.16	-0.07	
9581.00	89.720	337.090	6921.57	2319.68	2502.91	145.99	1701923.05	14356928.67	39°32'7.2375"N	80°46'54.6655"W	2507.17	3.338	4.22	-0.88	-4.13	
9676.00	89.780	341.260	6921.98	2414.61	2591.68	112.22	1701889.30	14357017.40	39°32'8.1157"N	80°46'55.0937"W	2594.11	2.479	4.39	0.06	4.39	
9770.00	90.220	341.590	6921.98	2508.61	2680.79	82.28	1701859.37	14357106.47	39°32'8.9970"N	80°46'55.4731"W	2682.05	1.758	0.59	0.47	0.35	
9865.00	90.680	337.710	6921.23	2603.56	2769.84	49.25	1701826.35	14357195.49	39°32'9.8779"N	80°46'55.8919"W	2770.28	1.019	4.11	0.48	-4.08	
9960.00	90.340	335.480	6920.39	2698.26	2857.01	11.52	1701788.63	14357282.63	39°32'10.7404"N	80°46'56.3708"W	2857.04	0.231	2.37	-0.36	-2.35	
10054.00	88.770	339.060	6921.12	2792.04	2943.69	-24.79	1701752.34	14357369.27	39°32'11.5980"N	80°46'56.8316"W	2943.80	359.517	4.16	-1.67	3.81	
10149.00	89.720	340.520	6922.37	2887.01	3032.83	-57.61	1701719.53	14357458.38	39°32'12.4797"N	80°46'57.2477"W	3033.38	358.912	1.83	1.00	1.54	
10244.00	91.420	342.640	6921.43	2981.99	3122.95	-87.62	1701689.53	14357548.46	39°32'13.3711"N	80°46'57.6280"W	3124.18	358.393	2.86	1.79	2.23	
10339.00	90.220	343.350	6920.07	3076.92	3213.79	-115.40	1701661.76	14357639.26	39°32'14.2695"N	80°46'57.9798"W	3215.86	357.943	1.47	-1.26	0.75	
10433.00	90.830	341.910	6919.21	3170.88	3303.49	-143.46	1701633.71	14357728.93	39°32'15.1568"N	80°46'58.3352"W	3306.61	357.513	1.66	0.65	-1.53	
10528.00	90.150	336.580	6918.39	3265.79	3392.29	-177.12	1701600.07	14357817.69	39°32'16.0352"N	80°46'58.7620"W	3396.91	357.011	5.66	-0.72	-5.61	
10622.00	90.180	336.380	6918.12	3359.42	3478.15	-215.38	1701561.83	14357903.52	39°32'16.8847"N	80°46'59.2477"W	3484.81	356.457	1.28	0.03	-1.28	
10717.00	90.370	336.240	6917.67	3454.03	3564.81	-254.30	1701522.92	14357990.14	39°32'17.7421"N	80°46'59.7419"W	3573.87	355.920	0.93	0.20	0.91	
10812.00	90.250	337.800	6917.15	3548.79	3652.26	-291.39	1701485.84	14358077.56	39°32'18.6073"N	80°47'0.2125"W	3663.87	355.438	1.65	-0.13	1.64	
10907.00	90.400	343.200	6916.61	3643.75	3741.78	-323.09	1701454.16	14358167.04	39°32'19.4928"N	80°47'0.6144"W	3755.70	355.065	5.69	0.16	5.68	

RECEIVED
Office of Oil and Gas
JUN 23 2023
WV Department of
Environmental Protection



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'
Page 6 of 10



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Crystal Unit 2H
Field	Tyler		API	47-095-02800-0000
Facility	Beech Run Pad		Wellbore	Crystal Unit 2H AWB
Slot	Slot B			

WELLPATH DATA (194 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
11001.00	90.340	348.420	6916.00	3737.39	3832.88	-346.13	1701431.13	14358258.10	39°32'20.3937"N	80°47'0.9056"W	3848.48	354.840	5.55	-0.06	5.55	
11096.00	89.420	345.210	6916.20	3831.89	3925.36	-367.79	1701409.47	14358350.55	39°32'21.3082"N	80°47'1.1793"W	3942.55	354.647	3.51	-0.97	-3.38	
11190.00	91.600	348.760	6915.37	3925.36	4016.92	-388.96	1701388.32	14358442.08	39°32'22.2137"N	80°47'1.4467"W	4035.71	354.469	4.43	2.32	3.78	
11285.00	90.310	343.130	6913.78	4019.96	4109.03	-412.02	1701365.27	14358534.14	39°32'23.1245"N	80°47'1.7381"W	4129.63	354.274	6.08	-1.36	-5.93	
11379.00	90.710	343.920	6912.95	4113.87	4199.16	-438.67	1701338.82	14358624.24	39°32'24.0160"N	80°47'2.0756"W	4222.01	354.036	0.94	0.43	0.84	
11474.00	90.770	344.540	6911.72	4208.71	4290.58	-464.49	1701312.82	14358715.62	39°32'24.9201"N	80°47'2.4024"W	4315.65	353.821	0.66	0.06	0.65	
11569.00	90.680	342.880	6910.52	4303.60	4381.75	-491.13	1701286.18	14358806.76	39°32'25.8218"N	80°47'2.7397"W	4409.19	353.605	1.75	-0.09	-1.75	
11663.00	90.770	342.350	6909.33	4397.55	4471.45	-519.22	1701258.11	14358896.42	39°32'26.7090"N	80°47'3.0954"W	4501.50	353.377	0.57	0.10	-0.56	
11757.00	91.080	343.700	6907.81	4491.48	4561.34	-546.66	1701230.68	14358986.28	39°32'27.5980"N	80°47'3.4429"W	4593.98	353.166	1.47	0.33	1.44	
11852.00	90.000	343.120	6906.91	4586.40	4652.38	-573.78	1701203.57	14359077.28	39°32'28.4985"N	80°47'3.7863"W	4687.63	352.969	1.29	-1.14	-0.61	
11947.00	90.400	343.140	6906.58	4681.33	4743.29	-601.35	1701176.01	14359168.16	39°32'29.3976"N	80°47'4.1354"W	4781.26	352.775	0.42	0.42	0.02	
12041.00	90.220	344.020	6906.07	4775.24	4833.46	-627.92	1701149.45	14359258.29	39°32'30.2894"N	80°47'4.4718"W	4874.07	352.598	0.96	-0.19	0.94	
12136.00	91.140	342.640	6904.95	4870.15	4924.46	-655.17	1701122.21	14359349.25	39°32'31.1894"N	80°47'4.8168"W	4967.85	352.422	1.75	0.97	-1.45	
12230.00	89.600	339.990	6904.34	4964.14	5013.49	-685.28	1701092.11	14359438.25	39°32'32.0700"N	80°47'5.1985"W	5060.11	352.217	3.26	-1.64	-2.82	
12325.00	91.050	341.090	6903.80	5059.13	5103.06	-716.93	1701060.48	14359527.78	39°32'32.9560"N	80°47'5.5997"W	5153.17	352.003	1.92	1.53	1.16	
12420.00	90.150	342.450	6902.81	5154.11	5193.28	-746.64	1701030.78	14359617.97	39°32'33.8484"N	80°47'5.9763"W	5246.68	351.819	1.72	-0.95	1.43	
12514.00	90.310	340.930	6902.43	5248.10	5282.52	-776.17	1701001.26	14359707.17	39°32'34.7310"N	80°47'6.3505"W	5339.24	351.641	1.63	0.17	-1.62	
12609.00	90.340	342.000	6901.89	5343.10	5372.59	-806.37	1700971.07	14359797.20	39°32'35.6219"N	80°47'6.7332"W	5432.76	351.464	1.13	0.03	1.13	
12703.00	90.310	341.010	6901.36	5437.09	5461.73	-836.19	1700941.27	14359886.31	39°32'36.5036"N	80°47'7.1111"W	5525.37	351.296	1.05	-0.03	-1.05	
12798.00	90.340	341.640	6900.82	5532.09	5551.73	-866.61	1700910.86	14359976.27	39°32'37.3938"N	80°47'7.4966"W	5618.96	351.128	0.66	0.03	0.66	
12892.00	90.280	342.550	6900.31	5626.07	5641.17	-895.50	1700881.97	14360065.68	39°32'38.2785"N	80°47'7.8628"W	5711.81	350.980	0.97	-0.06	0.97	
12987.00	90.180	339.390	6899.93	5721.06	5730.97	-926.48	1700851.01	14360155.44	39°32'39.1667"N	80°47'8.2554"W	5805.37	350.817	3.33	-0.11	-3.33	
13082.00	90.000	341.400	6899.78	5816.05	5820.46	-958.35	1700819.15	14360244.89	39°32'40.0519"N	80°47'8.6596"W	5898.83	350.650	2.12	-0.19	2.12	
13176.00	91.320	340.590	6898.70	5910.04	5909.32	-988.96	1700788.56	14360333.72	39°32'40.9309"N	80°47'9.0476"W	5991.51	350.499	1.65	1.40	-0.86	
13271.00	89.750	339.920	6897.81	6005.02	5998.73	-1021.05	1700756.48	14360423.10	39°32'41.8153"N	80°47'9.4545"W	6085.01	350.340	1.80	-1.65	-0.71	
13366.00	91.110	340.430	6897.10	6100.00	6088.10	-1053.27	1700724.27	14360512.42	39°32'42.6993"N	80°47'9.8630"W	6178.53	350.185	1.53	1.43	0.54	
13460.00	90.550	341.340	6895.73	6193.99	6176.90	-1084.05	1700693.51	14360601.20	39°32'43.5777"N	80°47'10.2532"W	6271.31	350.046	1.14	-0.60	0.97	
13554.00	89.290	340.460	6895.86	6287.99	6265.72	-1114.80	1700662.76	14360689.98	39°32'44.4563"N	80°47'10.6432"W	6364.13	349.911	1.63	-1.34	-0.94	
13649.00	89.630	339.920	6896.76	6382.97	6355.10	-1147.00	1700630.58	14360779.32	39°32'45.3403"N	80°47'11.0514"W	6457.78	349.769	0.67	0.36	-0.57	
13744.00	89.820	340.110	6897.22	6477.96	6444.38	-1179.47	1700598.12	14360868.56	39°32'46.2235"N	80°47'11.4632"W	6551.42	349.628	0.28	0.20	0.20	

RECEIVED
Office of Oil and Gas
JUN 23 2023
WV Department of
Environmental Protection



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'
Page 7 of 10



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Crystal Unit 2H
Field	Tyler		API	47-095-02800-0000
Facility	Beech Run Pad		Wellbore	Crystal Unit 2H AWB
Slot	Slot B			

WELLPATH DATA (194 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
13838.00	89.970	340.480	6897.39	6571.95	6532.87	-1211.16	1700566.44	14360957.02	39°32'47.0988"N	80°47'11.8651"W	6644.19	349.497	0.42	0.16	0.39	
13933.00	90.620	341.340	6896.90	6666.95	6622.64	-1242.23	1700535.39	14361046.76	39°32'47.9868"N	80°47'12.2590"W	6738.14	349.376	1.13	0.68	0.91	
14028.00	90.150	340.600	6896.26	6761.94	6712.45	-1273.20	1700504.42	14361136.53	39°32'48.8751"N	80°47'12.6516"W	6832.13	349.260	0.92	-0.49	-0.78	
14122.00	90.150	340.400	6896.01	6855.94	6801.06	-1304.58	1700473.06	14361225.10	39°32'49.7516"N	80°47'13.0495"W	6925.05	349.141	0.21	0.00	-0.21	
14217.00	90.280	339.860	6895.66	6950.93	6890.40	-1336.87	1700440.78	14361314.41	39°32'50.6353"N	80°47'13.4590"W	7018.89	349.020	0.58	0.14	-0.57	
14311.00	90.680	340.710	6894.87	7044.91	6978.89	-1368.58	1700409.09	14361402.86	39°32'51.5106"N	80°47'13.8611"W	7111.81	348.905	1.00	0.43	0.90	
14500.00	90.030	339.820	6893.70	7233.89	7156.78	-1432.40	1700345.29	14361580.68	39°32'53.2702"N	80°47'14.6704"W	7298.72	348.682	0.58	-0.34	-0.47	
14594.00	89.940	340.730	6893.72	7327.88	7245.26	-1464.12	1700313.58	14361669.13	39°32'54.1455"N	80°47'15.0727"W	7391.72	348.576	0.97	-0.10	0.97	
14689.00	90.680	342.450	6893.21	7422.87	7335.40	-1494.12	1700283.59	14361759.23	39°32'55.0370"N	80°47'15.4530"W	7486.02	348.487	1.97	0.78	1.81	
14784.00	91.050	341.130	6891.78	7517.85	7425.63	-1523.81	1700253.92	14361849.42	39°32'55.9294"N	80°47'15.8292"W	7580.36	348.403	1.44	0.39	-1.39	
14878.00	89.690	340.180	6891.17	7611.84	7514.31	-1554.94	1700222.80	14361938.07	39°32'56.8067"N	80°47'16.2240"W	7673.51	348.309	1.76	-1.45	-1.01	
14973.00	89.720	339.770	6891.66	7706.82	7603.57	-1587.47	1700190.28	14362027.29	39°32'57.6896"N	80°47'16.6366"W	7767.52	348.207	0.43	0.03	-0.43	
15068.00	90.400	340.620	6891.56	7801.81	7692.95	-1619.66	1700158.10	14362116.64	39°32'58.5737"N	80°47'17.0448"W	7861.60	348.111	1.15	0.72	0.89	
15162.00	90.490	340.770	6890.83	7895.81	7781.66	-1650.74	1700127.04	14362205.32	39°32'59.4512"N	80°47'17.4388"W	7954.82	348.023	0.19	0.10	0.16	
15257.00	89.820	340.790	6890.57	7990.81	7871.36	-1682.01	1700095.78	14362294.98	39°33'0.3385"N	80°47'17.8354"W	8049.07	347.938	0.71	-0.71	0.02	
15352.00	89.780	340.760	6890.90	8085.80	7961.07	-1713.29	1700064.51	14362384.65	39°33'1.2257"N	80°47'18.2320"W	8143.34	347.855	0.05	-0.04	-0.03	
15446.00	90.120	341.320	6890.99	8179.80	8049.96	-1743.83	1700033.98	14362473.51	39°33'2.1051"N	80°47'18.6192"W	8236.68	347.777	0.70	0.36	0.60	
15541.00	89.940	339.320	6890.94	8274.79	8139.41	-1775.82	1700002.00	14362562.92	39°33'2.9898"N	80°47'19.0249"W	8330.88	347.692	2.11	-0.19	-2.11	
15635.00	89.630	341.030	6891.29	8368.78	8227.84	-1807.70	1699970.14	14362651.31	39°33'3.8645"N	80°47'19.4292"W	8424.08	347.609	1.85	-0.33	1.82	
15730.00	90.370	340.690	6891.29	8463.78	8317.58	-1838.85	1699939.00	14362741.03	39°33'4.7522"N	80°47'19.8242"W	8518.43	347.534	0.86	0.78	-0.36	
15824.00	89.720	340.790	6891.21	8557.77	8406.32	-1869.86	1699908.01	14362829.73	39°33'5.6300"N	80°47'20.2174"W	8611.77	347.460	0.70	-0.69	0.11	
15919.00	90.000	340.810	6891.45	8652.77	8496.04	-1901.10	1699876.78	14362919.41	39°33'6.5174"N	80°47'20.6135"W	8706.14	347.387	0.30	0.29	0.02	
16013.00	89.820	340.280	6891.59	8746.77	8584.67	-1932.41	1699845.48	14363008.01	39°33'7.3941"N	80°47'21.0106"W	8799.47	347.314	0.60	-0.19	-0.56	
16108.00	89.850	340.510	6891.87	8841.76	8674.16	-1964.28	1699813.62	14363097.46	39°33'8.2793"N	80°47'21.4148"W	8893.79	347.240	0.24	0.03	0.24	
16202.00	90.000	340.560	6891.99	8935.76	8762.79	-1995.60	1699782.31	14363186.05	39°33'9.1559"N	80°47'21.8120"W	8987.15	347.170	0.17	0.16	0.05	
16297.00	90.060	340.470	6891.94	9030.75	8852.35	-2027.29	1699750.63	14363275.58	39°33'10.0418"N	80°47'22.2139"W	9081.52	347.101	0.11	0.06	-0.09	
16391.00	89.820	340.780	6892.04	9124.75	8941.03	-2058.48	1699719.46	14363364.22	39°33'10.9189"N	80°47'22.6094"W	9174.93	347.035	0.42	-0.26	0.33	
16486.00	89.720	340.830	6892.42	9219.75	9030.74	-2089.71	1699688.24	14363453.90	39°33'11.8063"N	80°47'23.0055"W	9269.37	346.971	0.12	-0.11	0.05	
16581.00	89.380	340.830	6893.17	9314.75	9120.47	-2120.91	1699657.06	14363543.60	39°33'12.6939"N	80°47'23.4010"W	9363.83	346.909	0.36	-0.36	0.00	
16676.00	89.170	340.920	6894.37	9409.74	9210.22	-2152.03	1699625.95	14363633.31	39°33'13.5816"N	80°47'23.7957"W	9458.30	346.848	0.24	-0.22	0.09	

RECEIVED
Office of Oil and Gas
JUN 23 2023
WV Department of
Environmental Protection



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'
Page 8 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Crystal Unit 2H
Field	Tyler	API	47-095-02800-0000
Facility	Beech Run Pad	Wellbore	Crystal Unit 2H AWB
Slot	Slot B		

WELLPATH DATA (194 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
16770.00	89.660	340.760	6895.33	9503.73	9299.01	-2182.88	1699595.11	14363722.06	39°33'14.4598"N	80°47'24.1869"W	9551.78	346.789	0.55	0.52	-0.17	
16865.00	89.510	340.930	6896.02	9598.73	9388.75	-2214.05	1699563.95	14363811.76	39°33'15.3475"N	80°47'24.5821"W	9646.27	346.731	0.24	-0.16	0.18	
16959.00	90.120	342.110	6896.32	9692.72	9477.90	-2243.84	1699534.17	14363900.88	39°33'16.2292"N	80°47'24.9599"W	9739.89	346.681	1.41	0.65	1.26	
17053.00	89.290	340.750	6896.80	9786.72	9567.00	-2273.78	1699504.25	14363989.94	39°33'17.1105"N	80°47'25.3394"W	9833.49	346.631	1.69	-0.88	-1.45	
17148.00	89.380	340.500	6897.91	9881.71	9656.61	-2305.29	1699472.75	14364079.52	39°33'17.9970"N	80°47'25.7390"W	9927.97	346.573	0.28	0.09	-0.26	
17243.00	89.850	340.620	6898.55	9976.70	9746.20	-2336.91	1699441.14	14364169.07	39°33'18.8830"N	80°47'26.1400"W	10022.45	346.516	0.51	0.49	0.13	
17337.00	89.970	340.950	6898.69	10070.70	9834.96	-2367.85	1699410.22	14364257.80	39°33'19.7610"N	80°47'26.5324"W	10115.98	346.463	0.37	0.13	0.35	
17432.00	90.180	341.430	6898.57	10165.70	9924.88	-2398.48	1699379.60	14364347.69	39°33'20.6505"N	80°47'26.9208"W	10210.58	346.414	0.55	0.22	0.51	
17526.00	90.150	340.770	6898.30	10259.70	10013.82	-2428.92	1699349.16	14364436.58	39°33'21.5301"N	80°47'27.3068"W	10304.18	346.366	0.70	-0.03	-0.70	
17621.00	89.940	341.300	6898.22	10354.70	10103.66	-2459.80	1699318.30	14364526.39	39°33'22.4188"N	80°47'27.6983"W	10398.77	346.317	0.60	-0.22	0.56	
17715.00	89.690	340.260	6898.53	10448.70	10192.42	-2490.74	1699287.37	14364615.11	39°33'23.2967"N	80°47'28.0908"W	10492.34	346.268	1.14	-0.27	-1.11	
17810.00	90.220	340.710	6898.60	10543.69	10281.96	-2522.48	1699255.65	14364704.62	39°33'24.1824"N	80°47'28.4933"W	10586.86	346.216	0.73	0.56	0.47	
17904.00	89.880	340.970	6898.52	10637.69	10370.75	-2553.33	1699224.81	14364793.38	39°33'25.0606"N	80°47'28.8845"W	10680.45	346.169	0.46	-0.36	0.28	
17932.00†	89.880	340.970	6898.58	10665.69	10397.22	-2562.46	1699215.68	14364819.84	39°33'25.3225"N	80°47'29.0003"W	10708.33	346.155	0.00	0.00	0.00	Projected MD at TD: 17932'

HOLE & CASING SECTIONS - Ref Wellbore: Crystal Unit 2H AWB Ref Wellpath: Crystal Unit 2H AWP Proj: 17932'									
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	126.00	100.50	25.50	126.00	0.00	0.00	0.03	0.05
17.5in Open Hole	126.00	994.00	868.00	126.00	993.98	0.03	0.05	-3.73	2.30
13.375in Casing Surface	25.50	974.00	948.50	25.50	973.98	0.00	0.00	-3.62	2.25
12.25in Open Hole	994.00	3370.00	2376.00	993.98	3369.85	-3.73	2.30	-17.76	15.48
9.625in Casing Intermediate	25.50	3350.00	3324.50	25.50	3349.85	0.00	0.00	-17.78	15.29
8.75in Open Hole	3370.00	5569.00	2199.00	3369.85	5459.79	-17.76	15.48	-98.27	616.45
8.5in Open Hole	5569.00	17932.00	12363.00	5459.79	6898.58	-98.27	616.45	10397.22	-2562.46
5.5in Casing Production	25.50	17912.00	17886.50	25.50	6898.54	0.00	0.00	10378.31	-2555.94

RECEIVED
 Office of Oil and Gas
 JUN 29 2023
 WV Department of
 Environmental Protection



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'
Page 9 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Crystal Unit 2H
Field	Tyler	API	47-095-02800-0000
Facility	Beech Run Pad	Wellbore	Crystal Unit 2H AWB
Slot	Slot B		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Crystal Unit 2H POE Rev-3	6888.00	360.01	895.52	1702672.28	14354786.62	39°31'46.0406"N	80°46'45.1662"W	point
Crystal Unit 2H BHL Rev-3	6916.00	10411.24	-2556.93	1699221.21	14364833.85	39°33'25.4609"N	80°47'28.9293"W	point
Crystal Unit 2H LP Rev-3	6916.00	536.61	834.86	1702611.65	14354963.15	39°31'47.7874"N	80°46'45.9348"W	point
Crystal Unit 2H 50' L/R Hard Line	7250.00	5385.63	-830.71	1700946.74	14359810.24	39°32'35.7514"N	80°47'7.0434"W	rectangle
2D Rectangle 10627.6 x 100.								

WELLPATH COMPOSITION - Ref Wellbore: Crystal Unit 2H AWB Ref Wellpath: Crystal Unit 2H AWP Proj: 17932'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
25.50	900.00	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata MS Gyro <17-1/2"> (100'-900')	Crystal Unit 2H AWB	11/5/2022
900.00	1011.00	Gyrodata 2015 - GC+WIR+DPIPE	02 Gyrodata MS Gyro <12-1/4"> (900')(1000'-1011')	Crystal Unit 2H AWB	11/7/2022
1011.00	3293.00	BH NaviTrak (2019) (Axial Corr+HRGM)	03 APS EM <12-1/4"> (1011')(1327'-3293')	Crystal Unit 2H AWB	11/5/2022
3293.00	5496.00	BH NaviTrak (2019) (Axial Corr+HRGM)	04 APS EM <8-3/4"> (3293')(3410'-5496')	Crystal Unit 2H AWB	11/17/2022
5496.00	17932.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	05 BH AT Curve <8-1/2"> (5496')(5544'-17904')	Crystal Unit 2H AWB	11/17/2022

RECEIVED
Office of Oil and Gas
JUN 23 2023
WV Department of
Environmental Protection



Actual Wellpath Report

Crystal Unit 2H AWP Proj: 17932'

Page 10 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Crystal Unit 2H
Field	Tyler	API	47-095-02800-0000
Facility	Beech Run Pad	Wellbore	Crystal Unit 2H AWB
Slot	Slot B		

COMMENTS
<p>Wellpath general comments API: 47-095-02800-0000 BH Job #: 111519917 Rig: H&P 317 Duration: 11/19/2022-11/24/2022 Gyrodata MS Gyro <17-1/2"> (100'-900') Gyrodata MS Gyro <12-1/4"> (900')(1000'-1011') APS EM <12-1/4"> (1011')(1327'-3293') APS EM <8-3/4"> (3293')(3410'-5496') BH AT Curve <8-1/2"> (5496')(5544'-17904') Sycamore: 6758' MD Middlesex: 6904' MD Burkett: 7054' MD Tully: 7118' MD Marcellus POE: 7301' MD Projected MD at TD: 17932'</p>

RECEIVED
 Office of Oil and Gas
 JUN 23 2023
 WV Department of
 Environmental Protection