



Antero

Doddridge County WV

Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad

Stella Unit 1H

ST2 Wellpath

Design: ST2 As Drilled

EOW Completion Report

17 March, 2015





Company:	Antero	Local Co-ordinate Reference:	Well Stella Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Site:	Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad	MD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Project	Doddridge County WV, McClellan District		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad				
Site Position:		Northing:	14,249,870.09 usft	Latitude:	39° 14' 29.095 N
From:	Map	Easting:	1,682,112.06 usft	Longitude:	80° 51' 9.848 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.09 °

Well	Stella Unit 1H, Marcellas					
Well Position	+N/-S	0.0 usft	Northing:	14,249,839.66 usft	Latitude:	39° 14' 28.794 N
	+E/-W	0.0 usft	Easting:	1,682,085.57 usft	Longitude:	80° 51' 10.185 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,027.0 usft	Ground Level:	1,008.0 usft

Wellbore	ST2 Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	3/6/2015	-8.43	66.78	52,152

Design	ST2 As Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	10,033.0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.0	0.0	0.0	154.46

Survey Program		Date			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
59.0	89.0	Survey #1 Gyro SS (Original Wellpath)	KPR-SS	SDC Keeper single shots	
109.0	352.0	Survey #2 Def Gyro to Motor (Original We	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
359.0	5,860.0	Survey #5 Final Gyro to KOP (ST1 Wellpa	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
5,860.0	10,033.0	Survey #6 MWD (ST1 Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	
10,074.0	17,008.0	Survey #1 MWD (ST2 Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
59.0	0.38	172.23	59.0	-0.2	0.0	0.2	0.64
89.0	0.41	181.81	89.0	-0.4	0.0	0.4	0.24
109.0	0.25	129.64	109.0	-0.5	0.1	0.5	1.62
134.0	0.09	130.44	134.0	-0.5	0.1	0.5	0.64
159.0	0.21	108.52	159.0	-0.6	0.2	0.6	0.52
184.0	0.17	134.13	184.0	-0.6	0.3	0.7	0.37
209.0	0.24	131.36	209.0	-0.7	0.3	0.7	0.28



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Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
234.0	0.15	215.58	234.0	-0.7	0.3	0.8	1.08	
259.0	0.08	207.22	259.0	-0.8	0.3	0.8	0.29	
284.0	0.23	188.21	284.0	-0.8	0.3	0.9	0.63	
309.0	0.14	213.12	309.0	-0.9	0.3	0.9	0.47	
334.0	0.05	250.20	334.0	-0.9	0.2	1.0	0.42	
352.0	0.14	339.32	352.0	-0.9	0.2	0.9	0.81	
359.0	0.18	331.84	359.0	-0.9	0.2	0.9	0.66	
384.0	1.48	339.23	384.0	-0.6	0.1	0.6	5.21	
409.0	2.41	337.01	409.0	0.2	-0.2	-0.3	3.73	
434.0	3.00	337.68	434.0	1.3	-0.7	-1.5	2.36	
459.0	3.64	338.11	458.9	2.6	-1.2	-2.9	2.56	
484.0	4.12	337.02	483.9	4.2	-1.9	-4.6	1.94	
509.0	4.62	337.58	508.8	6.0	-2.6	-6.5	2.01	
534.0	5.02	337.66	533.7	7.9	-3.4	-8.6	1.60	
559.0	5.14	336.86	558.6	9.9	-4.3	-10.8	0.56	
584.0	5.20	336.42	583.5	12.0	-5.2	-13.1	0.29	
609.0	5.27	336.58	608.4	14.1	-6.1	-15.3	0.29	
634.0	5.33	336.76	633.3	16.2	-7.0	-17.7	0.25	
659.0	5.37	337.06	658.2	18.4	-7.9	-20.0	0.20	
684.0	5.38	336.05	683.1	20.5	-8.8	-22.3	0.38	
709.0	5.49	336.29	707.9	22.7	-9.8	-24.7	0.45	
734.0	5.54	336.30	732.8	24.9	-10.8	-27.1	0.20	
759.0	5.52	336.02	757.7	27.1	-11.7	-29.5	0.13	
784.0	5.20	336.09	782.6	29.2	-12.7	-31.8	1.28	
809.0	4.71	333.26	807.5	31.2	-13.6	-34.0	2.19	
834.0	4.28	332.74	832.4	32.9	-14.5	-35.9	1.73	
859.0	3.99	333.74	857.4	34.5	-15.3	-37.7	1.20	
884.0	3.87	333.49	882.3	36.1	-16.1	-39.5	0.48	
909.0	3.62	332.61	907.3	37.5	-16.8	-41.1	1.03	
934.0	3.18	331.97	932.2	38.8	-17.5	-42.6	1.77	
959.0	3.01	332.50	957.2	40.0	-18.1	-43.9	0.69	
984.0	2.83	330.85	982.1	41.1	-18.7	-45.2	0.79	
1,009.0	2.61	329.75	1,007.1	42.2	-19.3	-46.4	0.90	
1,034.0	2.32	332.18	1,032.1	43.1	-19.8	-47.5	1.23	
1,059.0	2.27	333.20	1,057.1	44.0	-20.3	-48.5	0.26	
1,084.0	2.39	329.33	1,082.1	44.9	-20.8	-49.5	0.79	
1,109.0	2.25	330.40	1,107.0	45.8	-21.3	-50.5	0.59	
1,134.0	2.14	334.57	1,132.0	46.6	-21.7	-51.4	0.78	
1,159.0	1.78	335.62	1,157.0	47.4	-22.1	-52.3	1.45	
1,184.0	1.70	334.89	1,182.0	48.1	-22.4	-53.0	0.33	
1,209.0	1.71	332.43	1,207.0	48.8	-22.7	-53.8	0.30	
1,234.0	1.57	337.03	1,232.0	49.4	-23.0	-54.5	0.77	
1,259.0	1.30	337.53	1,257.0	50.0	-23.3	-55.1	1.08	
1,284.0	1.31	331.95	1,282.0	50.5	-23.5	-55.7	0.51	

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Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
1,309.0	1.14	332.24	1,306.9	51.0	-23.8	-56.2	0.68	
1,334.0	1.07	332.96	1,331.9	51.4	-24.0	-56.7	0.29	
1,359.0	1.12	329.27	1,356.9	51.8	-24.2	-57.2	0.35	
1,384.0	0.95	326.28	1,381.9	52.2	-24.5	-57.6	0.71	
1,409.0	0.88	328.85	1,406.9	52.5	-24.7	-58.0	0.32	
1,434.0	0.82	331.26	1,431.9	52.8	-24.9	-58.4	0.28	
1,459.0	0.68	327.64	1,456.9	53.1	-25.0	-58.7	0.59	
1,484.0	0.57	325.63	1,481.9	53.4	-25.2	-59.0	0.45	
1,509.0	0.45	333.48	1,506.9	53.5	-25.3	-59.2	0.55	
1,534.0	0.44	326.29	1,531.9	53.7	-25.4	-59.4	0.23	
1,559.0	0.29	326.76	1,556.9	53.8	-25.5	-59.6	0.60	
1,584.0	0.20	348.99	1,581.9	53.9	-25.5	-59.7	0.52	
1,609.0	0.28	320.51	1,606.9	54.0	-25.6	-59.8	0.57	
1,634.0	0.22	304.96	1,631.9	54.1	-25.7	-59.9	0.36	
1,659.0	0.17	334.71	1,656.9	54.2	-25.7	-60.0	0.44	
1,684.0	0.19	320.95	1,681.9	54.2	-25.7	-60.0	0.19	
1,709.0	0.09	238.34	1,706.9	54.3	-25.8	-60.1	0.80	
1,734.0	0.14	176.13	1,731.9	54.2	-25.8	-60.0	0.51	
1,759.0	0.14	168.52	1,756.9	54.2	-25.8	-60.0	0.07	
1,784.0	0.24	164.81	1,781.9	54.1	-25.8	-59.9	0.40	
1,809.0	0.26	193.24	1,806.9	54.0	-25.8	-59.8	0.50	
1,834.0	0.39	181.89	1,831.9	53.8	-25.8	-59.7	0.58	
1,859.0	0.35	185.33	1,856.9	53.7	-25.8	-59.6	0.18	
1,884.0	0.38	175.26	1,881.9	53.5	-25.8	-59.4	0.28	
1,909.0	0.42	176.49	1,906.9	53.3	-25.8	-59.2	0.16	
1,934.0	0.41	170.83	1,931.9	53.2	-25.8	-59.1	0.17	
1,959.0	0.53	180.11	1,956.9	53.0	-25.8	-58.9	0.57	
1,984.0	0.37	176.46	1,981.9	52.8	-25.8	-58.7	0.65	
2,009.0	0.37	166.94	2,006.9	52.6	-25.7	-58.6	0.25	
2,034.0	0.38	178.40	2,031.9	52.4	-25.7	-58.4	0.30	
2,059.0	0.38	177.91	2,056.9	52.3	-25.7	-58.2	0.01	
2,084.0	0.26	172.83	2,081.9	52.1	-25.7	-58.1	0.49	
2,109.0	0.33	168.53	2,106.9	52.0	-25.7	-58.0	0.29	
2,134.0	0.32	158.55	2,131.9	51.9	-25.6	-57.9	0.23	
2,159.0	0.29	168.25	2,156.9	51.7	-25.6	-57.7	0.24	
2,184.0	0.24	167.18	2,181.9	51.6	-25.6	-57.6	0.20	
2,209.0	0.24	169.22	2,206.9	51.5	-25.5	-57.5	0.03	
2,234.0	0.26	151.44	2,231.9	51.4	-25.5	-57.4	0.32	
2,259.0	0.34	172.79	2,256.9	51.3	-25.5	-57.3	0.54	
2,284.0	0.22	188.68	2,281.9	51.2	-25.5	-57.2	0.57	
2,309.0	0.23	152.77	2,306.9	51.1	-25.5	-57.1	0.56	
2,334.0	0.18	152.62	2,331.9	51.0	-25.4	-57.0	0.20	
2,359.0	0.18	203.64	2,356.9	50.9	-25.4	-56.9	0.62	
2,384.0	0.17	227.39	2,381.9	50.9	-25.5	-56.9	0.29	

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Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
2,409.0	0.24	188.05	2,406.9	50.8	-25.5	-56.8	0.61	
2,434.0	0.14	150.95	2,431.9	50.7	-25.5	-56.8	0.61	
2,459.0	0.27	139.30	2,456.9	50.7	-25.4	-56.7	0.54	
2,484.0	0.33	165.43	2,481.9	50.5	-25.4	-56.5	0.59	
2,509.0	0.16	164.23	2,506.9	50.4	-25.3	-56.4	0.68	
2,534.0	0.18	164.19	2,531.9	50.4	-25.3	-56.4	0.08	
2,559.0	0.20	171.04	2,556.9	50.3	-25.3	-56.3	0.12	
2,584.0	0.20	171.55	2,581.9	50.2	-25.3	-56.2	0.01	
2,609.0	0.18	189.19	2,606.9	50.1	-25.3	-56.1	0.25	
2,634.0	0.18	168.70	2,631.9	50.0	-25.3	-56.1	0.26	
2,659.0	0.20	169.42	2,656.9	50.0	-25.3	-56.0	0.08	
2,684.0	0.24	174.20	2,681.9	49.9	-25.3	-55.9	0.18	
2,709.0	0.22	173.31	2,706.9	49.8	-25.3	-55.8	0.08	
2,734.0	0.19	178.28	2,731.9	49.7	-25.2	-55.7	0.14	
2,759.0	0.16	161.31	2,756.9	49.6	-25.2	-55.6	0.24	
2,784.0	0.17	167.50	2,781.9	49.5	-25.2	-55.6	0.08	
2,809.0	0.21	154.69	2,806.9	49.4	-25.2	-55.5	0.23	
2,834.0	0.25	165.42	2,831.9	49.4	-25.2	-55.4	0.23	
2,859.0	0.14	147.45	2,856.9	49.3	-25.1	-55.3	0.50	
2,884.0	0.15	170.51	2,881.9	49.2	-25.1	-55.2	0.24	
2,909.0	0.10	149.15	2,906.9	49.2	-25.1	-55.2	0.27	
2,934.0	0.15	172.72	2,931.9	49.1	-25.1	-55.1	0.28	
2,959.0	0.20	160.24	2,956.9	49.0	-25.1	-55.1	0.25	
2,984.0	0.14	163.32	2,981.9	49.0	-25.0	-55.0	0.24	
3,009.0	0.21	168.22	3,006.9	48.9	-25.0	-54.9	0.29	
3,034.0	0.17	184.32	3,031.9	48.8	-25.0	-54.8	0.27	
3,059.0	0.19	171.68	3,056.9	48.7	-25.0	-54.8	0.18	
3,084.0	0.24	178.46	3,081.9	48.6	-25.0	-54.7	0.22	
3,109.0	0.15	197.20	3,106.9	48.6	-25.0	-54.6	0.44	
3,134.0	0.15	196.45	3,131.9	48.5	-25.0	-54.5	0.01	
3,159.0	0.19	185.80	3,156.9	48.4	-25.0	-54.5	0.20	
3,184.0	0.22	188.95	3,181.9	48.3	-25.0	-54.4	0.13	
3,209.0	0.21	190.70	3,206.9	48.2	-25.1	-54.3	0.05	
3,234.0	0.20	188.08	3,231.9	48.2	-25.1	-54.3	0.05	
3,259.0	0.20	175.81	3,256.9	48.1	-25.1	-54.2	0.17	
3,284.0	0.33	178.91	3,281.9	48.0	-25.1	-54.1	0.52	
3,309.0	0.24	184.88	3,306.9	47.8	-25.1	-54.0	0.38	
3,334.0	0.03	174.49	3,331.9	47.8	-25.1	-53.9	0.84	
3,359.0	0.28	186.22	3,356.9	47.7	-25.1	-53.9	1.00	
3,384.0	0.37	178.35	3,381.9	47.6	-25.1	-53.7	0.40	
3,409.0	0.23	168.81	3,406.9	47.4	-25.1	-53.6	0.59	
3,434.0	0.23	155.91	3,431.9	47.3	-25.0	-53.5	0.21	
3,459.0	0.30	172.49	3,456.9	47.2	-25.0	-53.4	0.41	
3,484.0	0.28	162.59	3,481.9	47.1	-25.0	-53.3	0.22	

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Site:	Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad	MD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
3,509.0	0.30	171.76	3,506.9	47.0	-25.0	-53.2	0.20	
3,534.0	0.22	170.95	3,531.9	46.9	-24.9	-53.0	0.32	
3,559.0	0.16	150.37	3,556.9	46.8	-24.9	-53.0	0.36	
3,584.0	0.16	155.34	3,581.9	46.7	-24.9	-52.9	0.06	
3,609.0	0.19	169.17	3,606.9	46.7	-24.9	-52.8	0.21	
3,634.0	0.13	184.45	3,631.9	46.6	-24.9	-52.8	0.29	
3,659.0	0.14	181.60	3,656.9	46.5	-24.9	-52.7	0.05	
3,684.0	0.26	179.31	3,681.9	46.4	-24.9	-52.6	0.48	
3,709.0	0.15	188.31	3,706.9	46.4	-24.9	-52.5	0.46	
3,734.0	0.25	182.68	3,731.9	46.3	-24.9	-52.5	0.41	
3,759.0	0.23	179.54	3,756.9	46.2	-24.9	-52.4	0.10	
3,784.0	0.35	179.29	3,781.9	46.0	-24.9	-52.3	0.48	
3,809.0	0.28	168.32	3,806.9	45.9	-24.9	-52.1	0.37	
3,834.0	0.24	169.91	3,831.9	45.8	-24.8	-52.0	0.16	
3,859.0	0.26	169.54	3,856.9	45.7	-24.8	-51.9	0.08	
3,884.0	0.28	162.64	3,881.9	45.6	-24.8	-51.8	0.15	
3,909.0	0.23	165.18	3,906.9	45.5	-24.8	-51.7	0.20	
3,934.0	0.24	175.56	3,931.9	45.4	-24.7	-51.6	0.17	
3,959.0	0.25	166.92	3,956.9	45.3	-24.7	-51.5	0.15	
3,984.0	0.25	183.77	3,981.9	45.1	-24.7	-51.4	0.29	
4,009.0	0.27	172.52	4,006.9	45.0	-24.7	-51.3	0.22	
4,034.0	0.30	151.50	4,031.9	44.9	-24.7	-51.2	0.43	
4,059.0	0.36	143.58	4,056.9	44.8	-24.6	-51.0	0.30	
4,084.0	0.34	117.31	4,081.9	44.7	-24.5	-50.9	0.64	
4,109.0	0.44	125.24	4,106.9	44.6	-24.3	-50.7	0.45	
4,134.0	0.43	128.77	4,131.9	44.5	-24.2	-50.6	0.11	
4,159.0	0.41	114.76	4,156.9	44.4	-24.0	-50.4	0.42	
4,184.0	0.45	123.23	4,181.9	44.3	-23.9	-50.3	0.30	
4,209.0	0.56	120.50	4,206.9	44.2	-23.7	-50.1	0.45	
4,234.0	0.56	122.86	4,231.9	44.1	-23.5	-49.9	0.09	
4,259.0	0.61	118.04	4,256.9	43.9	-23.3	-49.7	0.28	
4,284.0	0.63	120.51	4,281.9	43.8	-23.0	-49.4	0.13	
4,309.0	0.64	122.71	4,306.9	43.7	-22.8	-49.2	0.11	
4,334.0	0.51	114.95	4,331.9	43.5	-22.6	-49.0	0.61	
4,359.0	0.61	122.62	4,356.9	43.4	-22.4	-48.8	0.50	
4,384.0	0.62	115.50	4,381.9	43.3	-22.1	-48.6	0.31	
4,409.0	0.78	128.36	4,406.9	43.1	-21.9	-48.3	0.89	
4,434.0	0.73	118.28	4,431.9	42.9	-21.6	-48.1	0.57	
4,459.0	0.87	129.70	4,456.9	42.7	-21.3	-47.8	0.85	
4,484.0	0.78	123.78	4,481.9	42.5	-21.0	-47.4	0.50	
4,509.0	0.82	125.46	4,506.9	42.3	-20.7	-47.1	0.19	
4,534.0	0.86	129.59	4,531.9	42.1	-20.4	-46.8	0.29	
4,559.0	0.94	132.91	4,556.9	41.8	-20.1	-46.4	0.38	
4,584.0	1.00	134.94	4,581.9	41.6	-19.8	-46.0	0.28	
4,609.0	0.97	133.80	4,606.9	41.3	-19.5	-45.6	0.14	



Company:	Antero	Local Co-ordinate Reference:	Well Stella Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Site:	Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad	MD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
4,634.0	1.01	132.83	4,631.9	41.0	-19.2	-45.2	0.17	
4,659.0	1.05	137.00	4,656.9	40.6	-18.9	-44.8	0.34	
4,684.0	1.04	131.68	4,681.8	40.3	-18.6	-44.4	0.39	
4,709.0	1.18	136.45	4,706.8	40.0	-18.2	-43.9	0.67	
4,734.0	1.12	137.55	4,731.8	39.6	-17.9	-43.5	0.26	
4,759.0	1.14	139.88	4,756.8	39.2	-17.6	-43.0	0.20	
4,784.0	1.14	135.10	4,781.8	38.9	-17.2	-42.5	0.38	
4,809.0	1.16	134.98	4,806.8	38.5	-16.9	-42.0	0.08	
4,834.0	1.18	136.74	4,831.8	38.2	-16.5	-41.6	0.16	
4,859.0	1.17	133.77	4,856.8	37.8	-16.2	-41.1	0.25	
4,884.0	1.22	133.65	4,881.8	37.4	-15.8	-40.6	0.20	
4,909.0	1.28	133.37	4,906.8	37.1	-15.4	-40.1	0.24	
4,934.0	1.35	133.15	4,931.8	36.7	-15.0	-39.5	0.28	
4,959.0	1.24	130.18	4,956.8	36.3	-14.5	-39.0	0.52	
4,984.0	1.31	135.95	4,981.8	35.9	-14.1	-38.5	0.58	
5,009.0	1.37	135.02	5,006.8	35.5	-13.7	-37.9	0.26	
5,034.0	1.35	132.53	5,031.8	35.1	-13.3	-37.4	0.25	
5,059.0	1.35	128.91	5,056.8	34.7	-12.9	-36.9	0.34	
5,084.0	1.33	130.67	5,081.8	34.3	-12.4	-36.3	0.18	
5,109.0	1.51	131.73	5,106.7	33.9	-11.9	-35.8	0.73	
5,134.0	1.45	130.94	5,131.7	33.5	-11.5	-35.2	0.25	
5,159.0	1.43	126.69	5,156.7	33.1	-11.0	-34.6	0.43	
5,184.0	1.51	129.30	5,181.7	32.7	-10.5	-34.0	0.42	
5,209.0	1.51	129.60	5,206.7	32.3	-10.0	-33.4	0.03	
5,234.0	1.45	128.03	5,231.7	31.9	-9.5	-32.8	0.29	
5,259.0	1.51	127.69	5,256.7	31.5	-8.9	-32.3	0.24	
5,284.0	1.59	127.92	5,281.7	31.1	-8.4	-31.7	0.32	
5,309.0	1.57	129.90	5,306.7	30.6	-7.9	-31.0	0.23	
5,334.0	1.57	124.37	5,331.7	30.2	-7.3	-30.4	0.61	
5,359.0	1.60	124.71	5,356.7	29.8	-6.8	-29.8	0.13	
5,384.0	1.69	125.58	5,381.7	29.4	-6.2	-29.2	0.37	
5,409.0	1.71	127.55	5,406.6	29.0	-5.6	-28.5	0.25	
5,434.0	1.78	126.25	5,431.6	28.5	-5.0	-27.9	0.32	
5,459.0	1.77	126.85	5,456.6	28.1	-4.3	-27.2	0.08	
5,484.0	1.90	131.50	5,481.6	27.5	-3.7	-26.5	0.79	
5,509.0	1.82	129.88	5,506.6	27.0	-3.1	-25.7	0.38	
5,534.0	1.73	128.86	5,531.6	26.5	-2.5	-25.0	0.38	
5,559.0	1.74	127.40	5,556.6	26.1	-1.9	-24.3	0.18	
5,584.0	1.84	131.29	5,581.6	25.6	-1.3	-23.6	0.63	
5,609.0	1.62	132.80	5,606.5	25.1	-0.7	-22.9	0.90	
5,634.0	1.64	131.48	5,631.5	24.6	-0.2	-22.3	0.17	
5,659.0	1.65	133.30	5,656.5	24.1	0.3	-21.6	0.21	
5,684.0	1.59	129.63	5,681.5	23.6	0.8	-21.0	0.48	
5,709.0	1.57	135.03	5,706.5	23.2	1.3	-20.3	0.60	

Company:	Antero	Local Co-ordinate Reference:	Well Stella Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Site:	Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad	MD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
5,734.0	1.51	136.19	5,731.5	22.7	1.8	-19.7	0.27	
5,759.0	1.42	135.88	5,756.5	22.2	2.3	-19.1	0.36	
5,784.0	1.33	138.24	5,781.5	21.8	2.7	-18.5	0.43	
5,809.0	1.34	143.83	5,806.5	21.3	3.0	-17.9	0.52	
5,834.0	1.09	131.43	5,831.5	20.9	3.4	-17.4	1.45	
5,859.0	1.32	139.40	5,856.5	20.6	3.8	-16.9	1.14	
5,860.0	1.33	139.66	5,857.5	20.6	3.8	-16.9	1.16	
5,881.0	1.41	146.52	5,878.5	20.2	4.1	-16.4	0.87	
5,926.0	1.32	146.43	5,923.4	19.3	4.7	-15.4	0.20	
5,971.0	2.02	104.16	5,968.4	18.6	5.7	-14.3	3.04	
6,016.0	7.12	86.05	6,013.3	18.6	9.3	-12.8	11.64	
6,061.0	12.66	82.62	6,057.6	19.5	16.9	-10.2	12.38	
6,106.0	17.41	85.26	6,101.0	20.6	28.6	-6.3	10.66	
6,150.0	21.81	87.11	6,142.5	21.6	43.3	-0.8	10.10	
6,195.0	26.56	86.67	6,183.5	22.6	61.7	6.2	10.56	
6,240.0	31.13	88.95	6,222.9	23.4	83.4	14.8	10.44	
6,285.0	35.44	89.57	6,260.5	23.7	108.1	25.2	9.61	
6,330.0	40.36	90.18	6,296.0	23.8	135.7	37.1	10.96	
6,374.0	45.81	91.06	6,328.1	23.4	165.7	50.3	12.46	
6,419.0	50.93	92.57	6,358.0	22.4	199.3	65.8	11.65	
6,464.0	56.98	90.80	6,384.5	21.3	235.7	82.4	13.81	
6,509.0	59.62	93.08	6,408.1	20.0	273.9	100.1	7.28	
6,554.0	61.11	97.74	6,430.4	16.3	312.9	120.2	9.59	
6,599.0	64.63	101.61	6,450.9	9.5	352.3	143.3	10.94	
6,643.0	68.59	104.60	6,468.4	0.4	391.6	168.5	10.95	
6,688.0	69.38	106.97	6,484.5	-11.0	432.1	196.2	5.22	
6,733.0	70.26	111.28	6,500.1	-24.9	472.0	225.9	9.20	
6,778.0	71.93	117.16	6,514.7	-42.4	510.8	258.4	12.91	
6,823.0	74.04	121.38	6,527.8	-63.4	548.3	293.6	10.12	
6,867.0	76.85	126.13	6,538.9	-87.1	583.7	330.2	12.24	
6,912.0	79.05	131.23	6,548.3	-114.6	618.0	369.8	12.11	
6,957.0	80.72	136.50	6,556.2	-145.2	649.9	411.3	12.11	
7,002.0	83.54	141.42	6,562.4	-178.9	679.2	454.2	12.51	
7,047.0	85.86	146.03	6,566.5	-215.0	705.7	498.2	11.43	
7,092.0	87.93	148.72	6,569.0	-252.8	729.9	542.8	7.54	
7,118.0	88.39	151.44	6,569.8	-275.3	742.9	568.7	10.60	
7,163.0	88.72	152.85	6,570.9	-315.1	763.9	613.6	3.22	
7,252.0	88.90	155.84	6,572.8	-395.3	802.4	702.6	3.36	
7,342.0	89.16	156.19	6,574.3	-477.5	839.0	792.6	0.48	
7,432.0	89.16	156.54	6,575.6	-560.0	875.0	882.5	0.39	
7,521.0	89.96	156.54	6,576.3	-641.6	910.5	971.4	0.90	
7,611.0	90.04	156.54	6,576.3	-724.2	946.3	1,061.4	0.09	
7,700.0	90.75	156.80	6,575.7	-805.9	981.6	1,150.3	0.85	
7,790.0	89.52	155.84	6,575.5	-888.3	1,017.7	1,240.3	1.73	

Company:	Antero	Local Co-ordinate Reference:	Well Stella Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Site:	Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad	MD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
7,880.0	89.16	153.99	6,576.5	-969.8	1,055.8	1,330.3	2.09	
7,969.0	89.69	153.90	6,577.4	-1,049.8	1,094.9	1,419.2	0.60	
8,059.0	89.52	154.08	6,578.0	-1,130.6	1,134.4	1,509.2	0.28	
8,149.0	90.31	153.90	6,578.2	-1,211.5	1,173.9	1,599.2	0.90	
8,239.0	89.96	153.99	6,578.0	-1,292.4	1,213.4	1,689.2	0.40	
8,328.0	89.73	153.79	6,578.2	-1,372.3	1,252.6	1,778.2	0.34	
8,418.0	89.34	153.73	6,578.9	-1,453.0	1,292.4	1,868.2	0.44	
8,508.0	89.96	154.25	6,579.5	-1,533.9	1,331.8	1,958.2	0.90	
8,597.0	91.10	152.41	6,578.6	-1,613.4	1,371.8	2,047.2	2.43	
8,687.0	91.71	154.17	6,576.4	-1,693.8	1,412.2	2,137.1	2.07	
8,777.0	90.22	154.87	6,574.9	-1,775.0	1,450.9	2,227.1	1.83	
8,866.0	90.22	155.05	6,574.6	-1,855.7	1,488.6	2,316.1	0.20	
8,956.0	89.87	155.22	6,574.5	-1,937.3	1,526.4	2,406.1	0.43	
9,046.0	90.48	155.84	6,574.2	-2,019.2	1,563.7	2,496.1	0.97	
9,135.0	91.24	155.00	6,572.9	-2,100.1	1,600.7	2,585.1	1.27	
9,225.0	91.10	154.69	6,571.1	-2,181.6	1,639.0	2,675.0	0.38	
9,315.0	91.45	154.34	6,569.1	-2,262.8	1,677.7	2,765.0	0.55	
9,405.0	90.75	154.87	6,567.3	-2,344.1	1,716.3	2,855.0	0.98	
9,494.0	90.57	154.87	6,566.3	-2,424.7	1,754.1	2,944.0	0.20	
9,584.0	91.28	154.17	6,564.9	-2,505.9	1,792.8	3,034.0	1.11	
9,674.0	91.45	154.61	6,562.7	-2,587.0	1,831.7	3,124.0	0.52	
9,764.0	91.98	155.92	6,560.0	-2,668.7	1,869.3	3,213.9	1.57	
9,853.0	90.66	154.96	6,558.0	-2,749.7	1,906.3	3,302.9	1.83	
9,943.0	90.75	155.22	6,556.9	-2,831.3	1,944.2	3,392.9	0.31	
10,033.0	90.66	152.85	6,555.8	-2,912.2	1,983.6	3,482.8	2.64	
10,074.0	89.19	152.59	6,555.8	-2,948.6	2,002.4	3,523.8	3.64	
10,119.0	87.92	154.70	6,556.9	-2,988.9	2,022.4	3,568.8	5.47	
10,209.0	88.96	158.53	6,559.4	-3,071.5	2,058.1	3,658.7	4.41	
10,299.0	89.90	160.80	6,560.3	-3,155.9	2,089.3	3,748.3	2.73	
10,388.0	90.54	160.40	6,559.9	-3,239.8	2,118.9	3,836.8	0.85	
10,478.0	90.20	159.38	6,559.4	-3,324.3	2,149.8	3,926.4	1.19	
10,568.0	90.17	160.01	6,559.1	-3,408.7	2,181.1	4,016.0	0.70	
10,657.0	88.76	158.08	6,559.9	-3,491.8	2,212.9	4,104.7	2.69	
10,747.0	88.79	155.85	6,561.8	-3,574.6	2,248.1	4,194.6	2.48	
10,837.0	89.87	155.30	6,562.9	-3,656.6	2,285.3	4,284.6	1.35	
10,927.0	89.90	155.14	6,563.1	-3,738.3	2,323.0	4,374.6	0.18	
11,016.0	90.00	154.62	6,563.1	-3,818.9	2,360.8	4,463.6	0.59	
11,106.0	90.94	155.04	6,562.4	-3,900.3	2,399.1	4,553.6	1.14	
11,200.0	90.07	155.15	6,561.6	-3,985.6	2,438.7	4,647.5	0.93	
11,294.0	90.54	154.54	6,561.1	-4,070.7	2,478.6	4,741.5	0.82	
11,387.0	89.87	154.01	6,560.7	-4,154.5	2,519.0	4,834.5	0.92	
11,481.0	90.60	153.89	6,560.4	-4,238.9	2,560.3	4,928.5	0.79	
11,574.0	90.50	155.10	6,559.5	-4,322.8	2,600.3	5,021.5	1.31	
11,668.0	90.17	156.08	6,558.9	-4,408.4	2,639.2	5,115.5	1.10	

Company:	Antero	Local Co-ordinate Reference:	Well Stella Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Site:	Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad	MD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
11,763.0	91.21	155.12	6,557.8	-4,494.9	2,678.4	5,210.5	1.49	
11,856.0	91.04	153.83	6,555.9	-4,578.8	2,718.5	5,303.5	1.40	
11,951.0	90.17	153.50	6,554.9	-4,664.0	2,760.6	5,398.4	0.98	
12,044.0	90.67	154.30	6,554.3	-4,747.5	2,801.5	5,491.4	1.01	
12,138.0	91.37	154.69	6,552.6	-4,832.3	2,842.0	5,585.4	0.85	
12,231.0	91.07	154.72	6,550.6	-4,916.4	2,881.7	5,678.4	0.32	
12,321.0	91.88	155.07	6,548.3	-4,997.8	2,919.9	5,768.4	0.98	
12,411.0	91.64	154.92	6,545.5	-5,079.4	2,957.9	5,858.3	0.31	
12,501.0	91.31	152.28	6,543.2	-5,160.0	2,997.9	5,948.3	2.96	
12,590.0	91.00	155.33	6,541.4	-5,239.8	3,037.2	6,037.2	3.44	
12,680.0	91.88	155.12	6,539.2	-5,321.5	3,074.9	6,127.2	1.01	
12,769.0	91.84	154.53	6,536.3	-5,402.0	3,112.7	6,216.2	0.66	
12,859.0	92.01	153.55	6,533.2	-5,482.9	3,152.1	6,306.1	1.10	
12,949.0	92.05	153.14	6,530.1	-5,563.2	3,192.5	6,396.0	0.46	
13,038.0	91.65	153.22	6,527.2	-5,642.6	3,232.6	6,485.0	0.46	
13,128.0	91.75	151.25	6,524.5	-5,722.2	3,274.5	6,574.8	2.19	
13,218.0	90.87	149.32	6,522.5	-5,800.4	3,319.1	6,664.6	2.36	
13,307.0	91.01	148.96	6,521.0	-5,876.7	3,364.7	6,753.2	0.43	
13,397.0	91.78	147.06	6,518.8	-5,953.1	3,412.4	6,842.6	2.28	
13,487.0	91.34	148.99	6,516.3	-6,029.4	3,460.0	6,932.0	2.20	
13,577.0	91.84	152.36	6,513.9	-6,107.8	3,504.1	7,021.7	3.78	
13,667.0	91.81	152.20	6,511.0	-6,187.4	3,545.9	7,111.6	0.18	
13,756.0	91.38	151.66	6,508.5	-6,265.9	3,587.8	7,200.5	0.78	
13,846.0	91.41	154.33	6,506.3	-6,346.1	3,628.7	7,290.4	2.97	
13,936.0	91.14	153.85	6,504.3	-6,427.0	3,668.0	7,380.4	0.61	
14,025.0	91.41	156.28	6,502.3	-6,507.7	3,705.5	7,469.4	2.75	
14,115.0	91.51	155.83	6,500.0	-6,589.9	3,742.0	7,559.3	0.51	
14,204.0	91.41	155.72	6,497.8	-6,671.1	3,778.5	7,648.3	0.17	
14,294.0	90.87	155.09	6,496.0	-6,752.9	3,816.0	7,738.2	0.92	
14,383.0	90.23	154.64	6,495.1	-6,833.4	3,853.8	7,827.2	0.88	
14,473.0	92.15	157.74	6,493.3	-6,915.7	3,890.1	7,917.1	4.05	
14,563.0	91.14	154.53	6,490.7	-6,998.0	3,926.5	8,007.1	3.74	
14,652.0	90.67	154.54	6,489.3	-7,078.4	3,964.7	8,096.0	0.53	
14,742.0	90.57	154.68	6,488.3	-7,159.7	4,003.3	8,186.0	0.19	
14,831.0	91.11	154.58	6,487.0	-7,240.1	4,041.4	8,275.0	0.62	
14,921.0	91.08	154.21	6,485.3	-7,321.2	4,080.3	8,365.0	0.41	
15,010.0	90.64	152.18	6,483.9	-7,400.6	4,120.5	8,454.0	2.33	
15,100.0	90.07	151.76	6,483.4	-7,480.1	4,162.8	8,543.9	0.79	
15,190.0	90.44	153.09	6,483.0	-7,559.8	4,204.4	8,633.8	1.53	
15,279.0	90.60	152.74	6,482.2	-7,639.1	4,244.9	8,722.8	0.43	
15,369.0	91.44	156.19	6,480.6	-7,720.3	4,283.7	8,812.8	3.94	
15,458.0	92.41	155.21	6,477.6	-7,801.3	4,320.3	8,901.7	1.55	
15,548.0	90.94	154.59	6,474.9	-7,882.8	4,358.5	8,991.6	1.77	
15,638.0	90.60	154.21	6,473.7	-7,964.0	4,397.4	9,081.6	0.57	



Company:	Antero	Local Co-ordinate Reference:	Well Stella Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Site:	Primm Pad: Ahouse/Bierstadt/Callie/Stella Pad	MD Reference:	Precision 525: GL 1008 + KB 19' @ 1027.0usft
Well:	Stella Unit 1H	North Reference:	Grid
Wellbore:	ST2 Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	ST2 As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
15,728.0	91.28	155.84	6,472.3	-8,045.5	4,435.4	9,171.6	1.96	
15,817.0	91.18	154.63	6,470.3	-8,126.3	4,472.6	9,260.6	1.36	
15,907.0	91.41	154.08	6,468.3	-8,207.4	4,511.6	9,350.6	0.66	
15,996.0	91.98	154.62	6,465.7	-8,287.6	4,550.1	9,439.5	0.88	
16,086.0	91.01	154.38	6,463.3	-8,368.8	4,588.8	9,529.5	1.11	
16,176.0	90.94	152.90	6,461.8	-8,449.5	4,628.8	9,619.5	1.65	
16,266.0	90.64	155.07	6,460.6	-8,530.3	4,668.2	9,709.5	2.43	
16,355.0	91.61	155.16	6,458.8	-8,611.0	4,705.7	9,798.4	1.09	
16,445.0	92.08	154.76	6,455.9	-8,692.5	4,743.8	9,888.4	0.69	
16,535.0	90.00	152.22	6,454.3	-8,773.1	4,783.9	9,978.3	3.65	
16,625.0	90.77	152.75	6,453.7	-8,852.9	4,825.5	10,068.3	1.04	
16,714.0	91.21	152.87	6,452.1	-8,932.0	4,866.2	10,157.2	0.51	
16,804.0	91.78	152.40	6,449.8	-9,011.9	4,907.5	10,247.2	0.82	
16,894.0	91.68	155.03	6,447.1	-9,092.6	4,947.3	10,337.1	2.92	
16,948.0	91.98	154.52	6,445.3	-9,141.4	4,970.3	10,391.1	1.10	
17,008.0	91.98	154.52	6,443.3	-9,195.5	4,996.1	10,451.0	0.00	
PTB								

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
17,008.0	6,443.3	-9,195.5	4,996.1	PTB	

Checked By: _____	Approved By: _____	Date: _____
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