



Antero
 Berry Unit 2H
 Tyler County WV
 Northing: 14316230.86
 Easting: 1715415.59
 As Drilled

WELL DETAILS:
 Berry Unit 2H
 Ground Level: 1164.0
 Longitude: 80° 44' 3.921 W
 Latitude: 39° 25' 24.466 N
 Easting: 1715415.59
 Northing: 14316230.86

REFERENCE INFORMATION
 Coordinates (NAD 83) Reference: Tyler County WV, Great North
 Station (NAD 83) Reference: State Plane (NAD 83) - 164° 1' 18" W @ 11620.044
 Magnitude: 164° 1' 18" W @ 11620.044
 Distribution Method: Minimum Curvature

PROJECT DETAILS: Tyler County WV
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1983 (NAD80 CONUS)
 Ellipsoid: Clarke 1866 (84 W to 78 W)
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

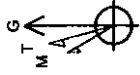
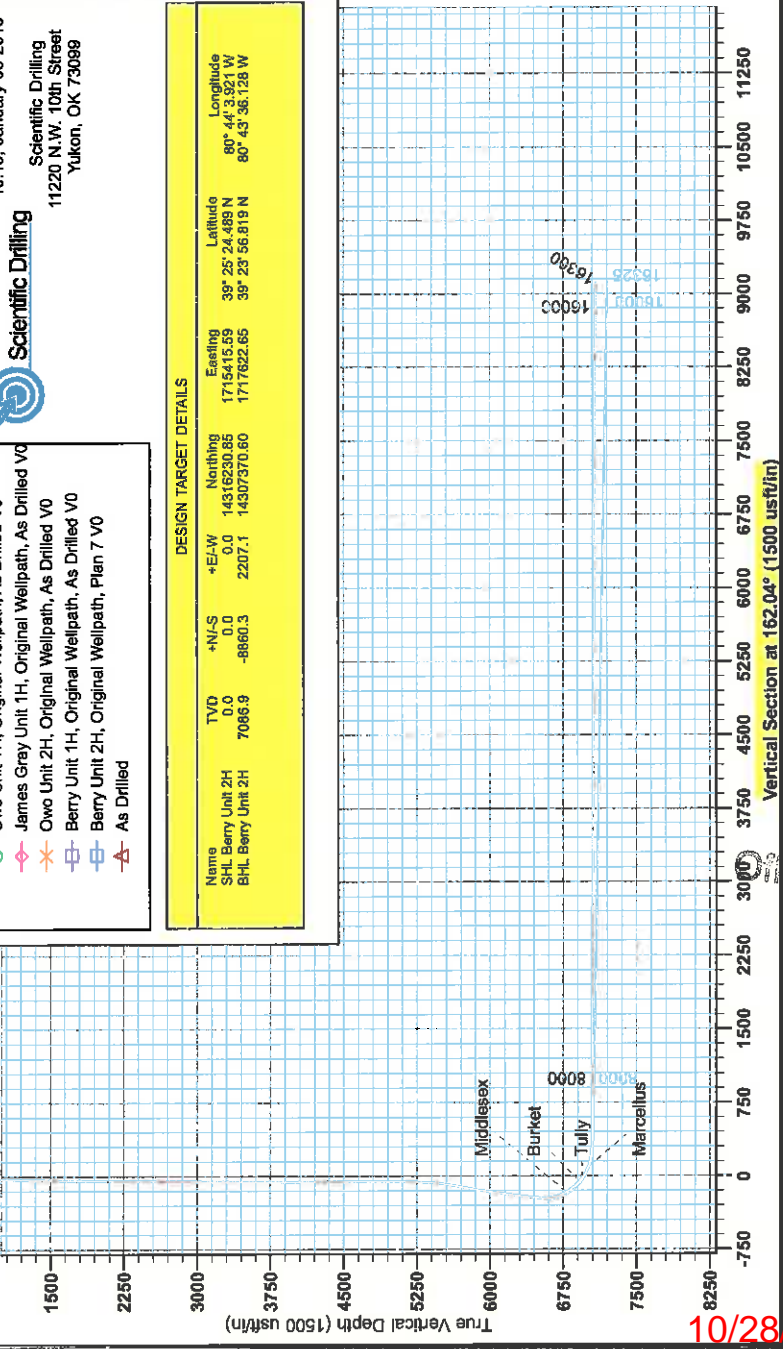
Genie Lightfoot
 10:15, January 08 2015
 Scientific Drilling
 11220 N.W. 10th Street
 Yukon, OK 73099



LEGEND

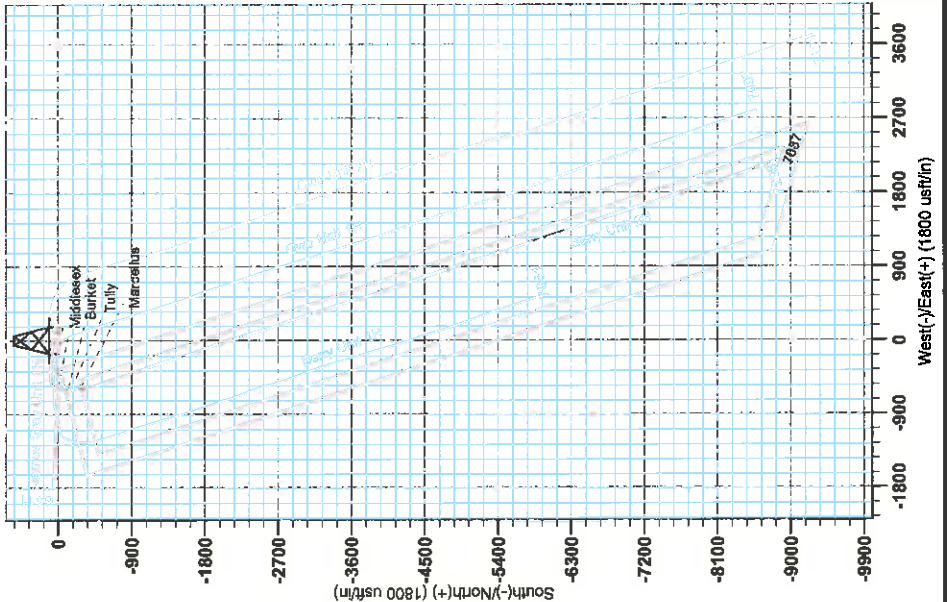
- Owo Unit 1H, Original Wellpath, As Drilled V0
- ◇ James Gray Unit 1H, Original Wellpath, As Drilled V0
- × Owo Unit 2H, Original Wellpath, As Drilled V0
- Berry Unit 1H, Original Wellpath, As Drilled V0
- ▣ Berry Unit 2H, Original Wellpath, Plan 7 V0
- △ As Drilled

DESIGN TARGET DETAILS					
Name	TVD	+N/S	+E/W	Northing	Longitude
SHL Berry Unit 2H	0.0	0.0	0.0	14316230.86	80° 44' 3.921 W
BHL Berry Unit 2H	7086.9	-8860.3	2207.1	14307370.60	80° 43' 36.128 W



To convert Magnetic North to Grid, Subtract 8.70°
 To convert True North to Grid, Subtract 0.17°

Admiralty to Grid North
 Magnetic North: -8.70°
 Magnetics Field
 Strength: 52288.7anT
 Dip Angle: 86.95°
 Date: 8/16/2014
 Model: BOGIM2014



Received
 Office of Oil & Gas
 JUL 05 2016

10/28/2016



Antero

Tyler County WV
Coastal 1 Pad: Berry/Gray/Owo
Berry Unit 2H
Original Wellpath

Design: As Drilled

EOW Completion Report

08 January, 2015

Received
Office of Oil & Gas
JUL 05 2016



10/28/2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522: GL 1164' + 18' KB @ 1182 0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + 18' KB @ 1182 0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Project	Tyler County WV, Tyler Co West Virginia		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Coastal 1 Pad Berry/Gray/Owo		
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Site Position:		Northing:	14,316,233.70 usft	Latitude:	39° 25' 24.517 N
From:	Map	Easting:	1,715,406.00 usft	Longitude:	80° 44' 4.043 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.17 °

Well	Berry Unit 2H, Marcellus				
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Well Position	+N/-S	0.0 usft	Northing:	14,316,230.86 usft	Latitude:	39° 25' 24.489 N
	+E/-W	0.0 usft	Easting:	1,715,415.59 usft	Longitude:	80° 44' 3.921 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,182.0 usft	Ground Level:	1,164.0 usft

Wellbore	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	8/18/2014	-8.53	66.95	52,297

Design	As Drilled				
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Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	162.04	

Survey Program		Date			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
30.0	6,405.1	Survey #12 Final Gyro (Original Wellpath)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
6,451.0	16,300.0	Survey #13 MWD (Original 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
30.0	0.12	137.21	30.0	0.0	0.0	0.0	0.40
55.0	0.23	137.21	55.0	-0.1	0.1	0.1	0.44
80.0	0.35	137.21	80.0	-0.2	0.2	0.2	0.48
105.0	0.45	140.16	105.0	-0.3	0.3	0.4	0.41
130.0	0.45	143.08	130.0	-0.5	0.4	0.6	0.09
155.0	0.42	129.72	155.0	-0.6	0.5	0.7	0.42
180.0	0.41	129.83	180.0	-0.7	0.7	0.9	0.04
205.0	0.33	132.60	205.0	-0.8	0.8	1.0	0.33
230.0	0.27	136.46	230.0	-0.9	0.9	1.1	0.25
255.0	0.22	137.81	255.0	-1.0	1.0	1.2	0.20



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522' GL 1164' + 18' KB @ 1182 Ousft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522' GL 1164' + 18' KB @ 1182 Ousft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
280.0	0.29	139.89	280.0	-1.1	1.0	1.3	0.28
305.0	0.27	146.05	305.0	-1.2	1.1	1.4	0.14
330.0	0.26	145.28	330.0	-1.3	1.2	1.6	0.04
355.0	0.25	138.18	355.0	-1.3	1.2	1.7	0.13
380.0	0.22	138.84	380.0	-1.4	1.3	1.8	0.12
405.0	0.23	72.46	405.0	-1.4	1.4	1.8	0.99
430.0	0.95	30.66	430.0	-1.3	1.5	1.7	3.17
455.0	1.70	23.31	455.0	-0.7	1.8	1.3	3.07
480.0	2.27	20.98	480.0	0.1	2.1	0.6	2.30
505.0	2.78	18.75	504.9	1.1	2.5	-0.3	2.08
530.0	3.19	16.65	529.9	2.3	2.9	-1.3	1.70
555.0	3.31	16.81	554.9	3.7	3.3	-2.5	0.48
580.0	3.39	16.78	579.8	5.1	3.7	-3.7	0.32
605.0	3.67	17.75	604.8	6.6	4.2	-5.0	1.15
630.0	4.13	18.66	629.7	8.2	4.7	-6.3	1.86
655.0	4.18	18.67	654.7	9.9	5.3	-7.8	0.20
680.0	4.16	18.66	679.6	11.6	5.9	-9.3	0.08
705.0	4.22	18.46	704.5	13.4	6.4	-10.7	0.25
730.0	4.21	18.34	729.5	15.1	7.0	-12.2	0.05
755.0	4.27	18.83	754.4	16.9	7.6	-13.7	0.28
780.0	4.04	18.25	779.3	18.6	8.2	-15.1	0.94
805.0	3.45	15.76	804.3	20.1	8.7	-16.5	2.45
830.0	3.24	14.45	829.2	21.5	9.0	-17.7	0.89
855.0	3.16	13.59	854.2	22.9	9.4	-18.9	0.37
880.0	2.98	11.12	879.2	24.2	9.7	-20.0	0.89
905.0	2.58	4.82	904.1	25.4	9.8	-21.1	2.01
930.0	2.41	2.04	929.1	26.5	9.9	-22.1	0.83
955.0	2.35	1.74	954.1	27.5	9.9	-23.1	0.25
980.0	2.26	1.49	979.1	28.5	10.0	-24.1	0.36
1,005.0	2.17	0.32	1,004.0	29.5	10.0	-25.0	0.40
1,030.0	1.99	0.87	1,029.0	30.4	10.0	-25.8	0.72
1,055.0	1.92	0.44	1,054.0	31.3	10.0	-26.6	0.29
1,080.0	1.93	0.60	1,079.0	32.1	10.0	-27.4	0.05
1,105.0	1.84	1.31	1,104.0	32.9	10.0	-28.2	0.37
1,130.0	1.75	0.29	1,129.0	33.7	10.0	-29.0	0.38
1,155.0	1.71	0.05	1,154.0	34.5	10.0	-29.7	0.16
1,180.0	1.64	359.61	1,178.9	35.2	10.0	-30.4	2.86
1,205.0	1.54	358.14	1,203.9	35.9	10.0	-31.0	0.43
1,230.0	1.48	359.11	1,228.9	36.5	10.0	-31.7	0.26
1,255.0	1.44	2.72	1,253.9	37.2	10.0	-32.3	0.40
1,280.0	1.43	1.86	1,278.9	37.8	10.0	-32.9	0.09
1,305.0	1.36	0.29	1,303.9	38.4	10.1	-33.4	0.32
1,330.0	1.29	3.03	1,328.9	39.0	10.1	-34.0	0.38
1,355.0	1.26	3.70	1,353.9	39.5	10.1	-34.5	0.13

Record
Office of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + 18' KB @ 1182.0usft
Site:	Coastal 1 Pad Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + 18' KB @ 1182.0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	N/S (usft)	EW (usft)	V Sec (usft)	DLeg (°/100usft)	
1,380.0	1.17	2.50		1,378.9	40.1	10.1	-35.0		0.37
1,405.0	1.06	3.55		1,403.9	40.6	10.2	-35.4		0.45
1,430.0	1.03	2.30		1,428.9	41.0	10.2	-35.9		0.15
1,455.0	1.05	1.82		1,453.9	41.5	10.2	-36.3		0.09
1,480.0	1.05	2.87		1,478.9	41.9	10.2	-36.7		0.08
1,505.0	1.11	3.51		1,503.9	42.4	10.2	-37.2		0.24
1,530.0	0.99	3.64		1,528.9	42.8	10.3	-37.6		0.48
1,555.0	0.98	4.16		1,553.9	43.3	10.3	-38.0		0.05
1,580.0	1.08	7.51		1,578.9	43.7	10.3	-38.4		0.47
1,605.0	0.94	4.72		1,603.8	44.2	10.4	-38.8		0.59
1,630.0	0.91	0.75		1,628.8	44.6	10.4	-39.2		0.28
1,655.0	0.90	0.26		1,653.8	45.0	10.4	-39.6		0.05
1,680.0	0.89	5.51		1,678.8	45.3	10.4	-39.9		0.33
1,705.0	0.85	2.10		1,703.8	45.7	10.5	-40.3		0.26
1,730.0	0.76	7.08		1,728.8	46.1	10.5	-40.6		0.46
1,755.0	0.71	4.48		1,753.8	46.4	10.5	-40.9		0.24
1,780.0	0.77	6.92		1,778.8	46.7	10.6	-41.2		0.27
1,805.0	0.72	6.11		1,803.8	47.0	10.6	-41.5		0.20
1,830.0	0.64	9.41		1,828.8	47.3	10.6	-41.7		0.36
1,855.0	0.68	10.66		1,853.8	47.6	10.7	-42.0		0.17
1,880.0	0.72	10.79		1,878.8	47.9	10.7	-42.3		0.16
1,905.0	0.68	5.42		1,903.8	48.2	10.8	-42.5		0.31
1,930.0	0.70	358.64		1,928.8	48.5	10.8	-42.8		0.34
1,955.0	0.70	0.00		1,953.8	48.8	10.8	-43.1		0.07
1,980.0	0.79	359.43		1,978.8	49.1	10.8	-43.4		0.36
2,005.0	0.86	4.17		2,003.8	49.5	10.8	-43.8		0.39
2,030.0	0.78	5.01		2,028.8	49.9	10.8	-44.1		0.32
2,055.0	0.78	358.86		2,053.8	50.2	10.8	-44.4		0.33
2,080.0	0.72	359.78		2,078.8	50.5	10.8	-44.7		0.24
2,105.0	0.66	358.35		2,103.8	50.8	10.8	-45.0		0.25
2,130.0	0.61	359.15		2,128.8	51.1	10.8	-45.3		0.20
2,155.0	0.62	0.13		2,153.8	51.4	10.8	-45.5		0.06
2,180.0	0.65	358.20		2,178.8	51.7	10.8	-45.8		0.15
2,205.0	0.57	4.40		2,203.8	51.9	10.8	-46.1		0.41
2,230.0	0.61	2.19		2,228.8	52.2	10.8	-46.3		0.18
2,255.0	0.67	356.07		2,253.8	52.5	10.8	-46.6		0.36
2,280.0	0.60	357.35		2,278.8	52.7	10.8	-46.8		0.29
2,305.0	0.55	354.43		2,303.8	53.0	10.8	-47.1		0.23
2,330.0	0.56	355.61		2,328.8	53.2	10.8	-47.3		0.06
2,355.0	0.62	356.72		2,353.8	53.5	10.8	-47.6		0.24
2,380.0	0.68	3.37		2,378.8	53.8	10.8	-47.8		0.39
2,405.0	0.63	11.26		2,403.8	54.0	10.8	-48.1		0.41
2,430.0	0.52	11.75		2,428.8	54.3	10.8	-48.3		0.44
2,455.0	0.51	6.14		2,453.8	54.5	10.9	-48.5		0.21
2,480.0	0.53	1.88		2,478.8	54.7	10.9	-48.7		0.17



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522. GL 1164' + 18' KB @ 1182.0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522. GL 1164' + 18' KB @ 1182.0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,505.0	0.49	1.58	2,503.8	55.0	10.9	-48.9	0.16
2,530.0	0.43	5.17	2,528.8	55.2	10.9	-49.1	0.27
2,555.0	0.43	4.97	2,553.8	55.4	10.9	-49.3	0.01
2,580.0	0.42	11.29	2,578.8	55.5	11.0	-49.4	0.19
2,605.0	0.40	18.29	2,603.8	55.7	11.0	-49.6	0.22
2,630.0	0.32	14.41	2,628.8	55.9	11.1	-49.7	0.33
2,655.0	0.25	7.10	2,653.8	56.0	11.1	-49.8	0.31
2,680.0	0.27	356.35	2,678.8	56.1	11.1	-49.9	0.21
2,705.0	0.28	341.16	2,703.8	56.2	11.1	-50.1	0.29
2,730.0	0.28	332.80	2,728.8	56.3	11.0	-50.2	0.16
2,755.0	0.20	347.11	2,753.8	56.4	11.0	-50.3	0.40
2,780.0	0.25	331.10	2,778.8	56.5	10.9	-50.4	0.32
2,805.0	0.31	314.44	2,803.8	56.6	10.9	-50.5	0.40
2,830.0	0.29	320.50	2,828.8	56.7	10.8	-50.6	0.15
2,855.0	0.35	321.46	2,853.8	56.8	10.7	-50.7	0.24
2,880.0	0.40	317.65	2,878.8	56.9	10.6	-50.9	0.22
2,905.0	0.38	315.76	2,903.8	57.1	10.5	-51.1	0.10
2,930.0	0.37	314.04	2,928.8	57.2	10.3	-51.2	0.06
2,955.0	0.41	312.69	2,953.8	57.3	10.2	-51.3	0.16
2,980.0	0.43	310.99	2,978.8	57.4	10.1	-51.5	0.09
3,005.0	0.41	309.58	3,003.8	57.5	9.9	-51.7	0.09
3,030.0	0.45	304.57	3,028.8	57.6	9.8	-51.8	0.22
3,055.0	0.50	303.51	3,053.8	57.8	9.6	-52.0	0.20
3,080.0	0.46	302.61	3,078.8	57.9	9.4	-52.1	0.16
3,105.0	0.47	304.28	3,103.8	58.0	9.3	-52.3	0.07
3,130.0	0.53	308.71	3,128.8	58.1	9.1	-52.5	0.29
3,155.0	0.56	307.13	3,153.8	58.3	8.9	-52.7	0.13
3,180.0	0.57	304.29	3,178.8	58.4	8.7	-52.9	0.12
3,205.0	0.54	301.29	3,203.8	58.5	8.5	-53.1	0.17
3,230.0	0.56	306.02	3,228.8	58.7	8.3	-53.2	0.20
3,255.0	0.54	306.87	3,253.8	58.8	8.1	-53.4	0.09
3,280.0	0.52	303.45	3,278.8	58.9	7.9	-53.6	0.15
3,305.0	0.52	301.45	3,303.8	59.1	7.7	-53.8	0.07
3,330.0	0.54	300.49	3,328.8	59.2	7.5	-54.0	0.09
3,355.0	0.60	302.79	3,353.8	59.3	7.3	-54.2	0.26
3,380.0	0.59	301.16	3,378.8	59.5	7.1	-54.4	0.08
3,405.0	0.56	306.11	3,403.8	59.6	6.9	-54.6	0.23
3,430.0	0.61	304.91	3,428.8	59.7	6.7	-54.8	0.21
3,455.0	0.63	302.55	3,453.8	59.9	6.5	-55.0	0.16
3,480.0	0.58	305.67	3,478.8	60.0	6.2	-55.2	0.24
3,505.0	0.53	302.15	3,503.7	60.2	6.0	-55.4	0.24
3,530.0	0.45	300.71	3,528.7	60.3	5.9	-55.5	0.32
3,555.0	0.44	296.28	3,553.7	60.4	5.7	-55.7	0.14
3,580.0	0.45	291.01	3,578.7	60.5	5.5	-55.8	0.17

Received
Case of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + 18' KB @ 1182.0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + 18' KB @ 1182.0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
3,605.0	0.43	286.58	3,603.7	60.5	5.3	-55.9	0.16
3,630.0	0.46	286.10	3,628.7	60.6	5.1	-56.0	0.12
3,655.0	0.60	282.70	3,653.7	60.6	4.9	-56.2	0.57
3,680.0	0.62	286.64	3,678.7	60.7	4.7	-56.3	0.19
3,705.0	0.58	287.03	3,703.7	60.8	4.4	-56.4	0.16
3,730.0	0.54	285.51	3,728.7	60.8	4.2	-56.6	0.17
3,755.0	0.53	287.21	3,753.7	60.9	4.0	-56.7	0.08
3,780.0	0.52	288.31	3,778.7	61.0	3.7	-56.9	0.06
3,805.0	0.52	288.91	3,803.7	61.0	3.5	-57.0	0.02
3,830.0	0.51	283.70	3,828.7	61.1	3.3	-57.1	0.19
3,855.0	0.54	279.42	3,853.7	61.2	3.1	-57.2	0.20
3,880.0	0.52	281.35	3,878.7	61.2	2.9	-57.3	0.11
3,905.0	0.49	280.33	3,903.7	61.2	2.6	-57.4	0.13
3,930.0	0.50	278.93	3,928.7	61.3	2.4	-57.5	0.06
3,955.0	0.51	279.74	3,953.7	61.3	2.2	-57.6	0.05
3,980.0	0.49	285.53	3,978.7	61.4	2.0	-57.8	0.22
4,005.0	0.51	286.84	4,003.7	61.4	1.8	-57.9	0.09
4,030.0	0.56	285.92	4,028.7	61.5	1.6	-58.0	0.20
4,055.0	0.56	287.39	4,053.7	61.6	1.3	-58.1	0.06
4,080.0	0.53	286.53	4,078.7	61.6	1.1	-58.3	0.12
4,105.0	0.42	284.77	4,103.7	61.7	0.9	-58.4	0.44
4,130.0	0.42	283.55	4,128.7	61.7	0.7	-58.5	0.04
4,155.0	0.36	281.48	4,153.7	61.8	0.6	-58.6	0.25
4,180.0	0.26	287.61	4,178.7	61.8	0.4	-58.7	0.42
4,205.0	0.20	284.07	4,203.7	61.8	0.3	-58.7	0.25
4,230.0	0.19	280.11	4,228.7	61.8	0.2	-58.8	0.07
4,255.0	0.20	287.44	4,253.7	61.9	0.2	-58.8	0.11
4,280.0	0.20	282.57	4,278.7	61.9	0.1	-58.8	0.07
4,305.0	0.14	269.14	4,303.7	61.9	0.0	-58.9	0.29
4,330.0	0.09	307.55	4,328.7	61.9	0.0	-58.9	0.36
4,355.0	0.06	303.62	4,353.7	61.9	-0.1	-58.9	0.12
4,380.0	0.01	66.61	4,378.7	61.9	-0.1	-58.9	0.26
4,405.0	0.06	45.42	4,403.7	61.9	-0.1	-58.9	0.20
4,430.0	0.06	33.00	4,428.7	62.0	0.0	-59.0	0.05
4,455.0	0.05	7.46	4,453.7	62.0	0.0	-59.0	0.10
4,480.0	0.05	350.10	4,478.7	62.0	0.0	-59.0	0.06
4,505.0	0.04	35.63	4,503.7	62.0	0.0	-59.0	0.14
4,530.0	0.07	51.10	4,528.7	62.0	0.0	-59.0	0.13
4,555.0	0.10	70.59	4,553.7	62.1	0.0	-59.0	0.17
4,580.0	0.12	88.42	4,578.7	62.1	0.1	-59.0	0.16
4,605.0	0.09	86.85	4,603.7	62.1	0.1	-59.0	0.12
4,630.0	0.10	93.42	4,628.7	62.1	0.1	-59.0	0.06
4,655.0	0.18	106.21	4,653.7	62.1	0.2	-59.0	0.34
4,680.0	0.17	118.73	4,678.7	62.0	0.3	-58.9	0.16

Registered
Office of Oil & Gas
JUL 09 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + 18' KB @ 1182 0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + 18' KB @ 1182 0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
4,705.0	0.07	103.06	4,703.7	62.0	0.3	-58.9	0.42
4,730.0	0.10	119.77	4,728.7	62.0	0.4	-58.9	0.15
4,755.0	0.16	119.34	4,753.7	62.0	0.4	-58.8	0.24
4,780.0	0.18	119.29	4,778.7	61.9	0.5	-58.8	0.08
4,805.0	0.26	127.40	4,803.7	61.9	0.6	-58.7	0.34
4,830.0	0.18	132.94	4,828.7	61.8	0.6	-58.6	0.33
4,855.0	0.11	122.69	4,853.7	61.8	0.7	-58.6	0.30
4,880.0	0.20	131.43	4,878.7	61.7	0.7	-58.5	0.37
4,905.0	0.24	124.95	4,903.7	61.7	0.8	-58.4	0.19
4,930.0	0.19	129.34	4,928.7	61.6	0.9	-58.3	0.21
4,955.0	0.24	127.69	4,953.7	61.6	1.0	-58.3	0.20
4,980.0	0.20	127.25	4,978.7	61.5	1.0	-58.2	0.16
5,005.0	0.33	113.60	5,003.7	61.4	1.1	-58.1	0.57
5,030.0	0.27	104.55	5,028.7	61.4	1.3	-58.0	0.31
5,055.0	0.22	117.74	5,053.7	61.4	1.4	-58.0	0.30
5,080.0	0.24	98.73	5,078.7	61.3	1.4	-57.9	0.31
5,105.0	0.44	261.66	5,103.7	61.3	1.4	-57.9	2.69
5,130.0	0.97	270.54	5,128.7	61.3	1.1	-58.0	2.16
5,155.0	1.74	272.82	5,153.7	61.3	0.5	-58.2	3.09
5,180.0	2.57	273.16	5,178.7	61.4	-0.4	-58.5	3.32
5,205.0	3.41	273.45	5,203.7	61.4	-1.7	-59.0	3.36
5,230.0	4.18	274.00	5,228.6	61.6	-3.4	-59.6	3.08
5,255.0	5.02	275.78	5,253.5	61.7	-5.4	-60.4	3.41
5,280.0	5.57	277.56	5,278.4	62.0	-7.7	-61.3	2.30
5,305.0	6.32	278.00	5,303.3	62.3	-10.2	-62.5	3.01
5,330.0	6.92	278.36	5,328.1	62.8	-13.1	-63.7	2.41
5,355.0	8.00	278.27	5,352.9	63.2	-16.3	-65.2	4.32
5,380.0	8.91	278.19	5,377.6	63.8	-19.9	-66.8	3.64
5,405.0	9.93	278.61	5,402.3	64.3	-24.0	-68.6	4.09
5,430.0	10.89	279.41	5,426.9	65.1	-28.4	-70.7	3.88
5,455.0	12.01	280.02	5,451.4	65.9	-33.3	-73.0	4.51
5,480.0	13.08	280.20	5,475.8	66.9	-38.7	-75.5	4.28
5,505.0	13.93	280.51	5,500.1	67.9	-44.4	-78.3	3.41
5,530.0	14.99	280.51	5,524.3	69.0	-50.6	-81.3	4.24
5,555.0	16.29	281.17	5,548.4	70.3	-57.2	-84.5	5.25
5,580.0	17.14	281.53	5,572.3	71.7	-64.2	-88.0	3.43
5,605.0	18.10	281.48	5,596.1	73.2	-71.7	-91.8	3.84
5,630.0	19.32	280.33	5,619.8	74.7	-79.5	-95.6	5.10
5,655.0	20.23	280.00	5,643.4	76.2	-87.9	-99.6	3.67
5,680.0	20.82	279.87	5,666.8	77.8	-96.5	-103.7	2.37
5,705.0	21.35	279.98	5,690.1	79.3	-105.3	-107.9	2.13
5,730.0	21.65	279.77	5,713.3	80.9	-114.4	-112.2	1.24
5,755.0	22.30	278.95	5,736.5	82.4	-123.6	-116.5	2.88
5,780.0	22.82	278.07	5,759.6	83.8	-133.1	-120.8	2.48



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + 18' KB @ 1182.0usft
Site:	Coastal 1 Pad. Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + 18' KB @ 1182.0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,805.0	23.30	276.47	5,782.6	85.1	-142.8	-124.9	3.16
5,830.0	23.39	275.80	5,805.6	86.1	-152.6	-129.0	1.12
5,855.0	23.55	275.24	5,828.5	87.1	-162.6	-133.0	1.10
5,880.0	23.37	274.50	5,851.4	87.9	-172.5	-136.8	1.38
5,905.0	23.35	274.22	5,874.4	88.7	-182.4	-140.6	0.45
5,930.0	23.41	273.74	5,897.3	89.4	-192.3	-144.3	0.80
5,955.0	23.28	273.26	5,920.3	90.0	-202.1	-147.9	0.92
5,980.0	23.27	272.83	5,943.3	90.5	-212.0	-151.4	0.68
6,005.0	23.53	272.01	5,966.2	90.9	-221.9	-154.9	1.67
6,030.0	23.49	271.63	5,989.1	91.2	-231.9	-158.3	0.63
6,055.0	23.19	271.30	6,012.1	91.5	-241.8	-161.6	1.31
6,080.0	23.35	270.99	6,035.0	91.7	-251.7	-164.8	0.81
6,105.0	23.55	271.10	6,058.0	91.9	-261.6	-168.0	0.82
6,130.0	23.37	271.06	6,080.9	92.0	-271.6	-171.3	0.72
6,155.0	22.97	270.62	6,103.9	92.2	-281.4	-174.5	1.74
6,180.0	22.98	270.42	6,126.9	92.3	-291.2	-177.6	0.31
6,205.0	23.23	270.09	6,149.9	92.3	-301.0	-180.6	1.13
6,230.0	23.17	269.75	6,172.9	92.3	-310.8	-183.6	0.59
6,255.0	22.99	269.86	6,195.9	92.3	-320.6	-186.6	0.74
6,280.0	23.24	269.52	6,218.9	92.2	-330.4	-189.6	1.13
6,305.0	23.61	269.31	6,241.8	92.1	-340.4	-192.6	1.52
6,330.0	23.70	269.28	6,264.7	92.0	-350.4	-195.6	0.36
6,355.0	23.69	269.08	6,287.6	91.8	-360.5	-198.5	0.32
6,380.0	24.26	269.22	6,310.5	91.7	-370.6	-201.5	2.29
6,405.0	24.96	268.84	6,333.2	91.5	-381.0	-204.5	2.87
6,405.1	24.96	268.84	6,333.2	91.5	-381.0	-204.6	0.00
6,451.0	24.33	267.89	6,375.0	91.0	-400.2	-209.9	1.62
6,541.0	23.29	266.91	6,457.3	89.3	-436.5	-219.6	1.24
6,575.0	23.29	266.08	6,488.6	88.5	-449.9	-222.9	0.97
6,605.0	23.43	261.75	6,516.1	87.2	-461.7	-225.4	5.74
6,636.0	24.03	253.98	6,544.5	84.6	-473.9	-226.6	10.26
6,667.0	25.32	246.79	6,572.7	80.3	-486.1	-226.2	10.53
6,698.0	26.13	239.85	6,600.6	74.2	-498.1	-224.2	10.06
6,729.0	26.94	233.66	6,628.3	66.6	-509.6	-220.5	9.29
6,760.0	27.78	226.65	6,655.9	57.5	-520.5	-215.2	10.73
6,791.0	28.58	219.98	6,683.2	46.9	-530.5	-208.2	10.48
6,822.0	29.52	214.55	6,710.3	34.9	-539.6	-199.6	9.03
6,853.0	31.49	209.16	6,737.0	21.5	-547.9	-189.4	10.87
6,883.0	33.68	204.95	6,762.3	7.1	-555.3	-178.0	10.50
6,911.0	35.07	200.58	6,785.4	-7.4	-561.4	-166.0	10.12
Middlesex							
6,914.0	35.23	200.13	6,787.9	-9.1	-562.0	-164.7	10.12
6,945.0	38.15	196.23	6,812.7	-26.6	-567.7	-149.7	12.05
6,976.0	40.39	193.13	6,836.7	-45.6	-572.7	-133.2	9.60



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522: GL 1164' + 18' KB @ 1182.0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + 18' KB @ 1182.0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
7,007.0	43.52	189.50	6,859.8	-65.9	-576.7	-115.1	12.77	
7,038.0	46.57	185.85	6,881.7	-87.7	-579.6	-95.3	12.89	
7,069.0	49.31	182.16	6,902.5	-110.6	-581.2	-74.0	12.50	
7,094.0	51.05	180.42	6,918.5	-129.8	-581.6	-55.9	8.78	
Burket								
7,099.0	51.40	180.08	6,921.6	-133.7	-581.7	-52.2	8.78	
7,130.0	54.14	178.38	6,940.4	-158.4	-581.3	-28.6	9.86	
7,141.0	55.19	177.97	6,946.7	-167.4	-581.0	-20.0	9.99	
Tully								
7,161.0	57.09	177.24	6,957.9	-184.0	-580.3	-4.0	9.99	
7,192.0	60.57	176.66	6,973.9	-210.4	-578.9	21.7	11.34	
7,223.0	64.54	175.33	6,988.2	-237.9	-577.0	48.4	13.36	
7,254.0	67.50	173.32	7,000.8	-266.1	-574.2	76.0	11.24	
7,267.0	68.71	172.68	7,005.6	-278.0	-572.7	87.9	10.36	
Marcellus								
7,285.0	70.39	171.82	7,011.9	-294.7	-570.5	104.5	10.36	
7,316.0	73.41	171.33	7,021.6	-323.9	-566.1	133.5	9.86	
7,346.0	76.89	170.09	7,029.2	-352.5	-561.5	162.2	12.27	
7,377.0	79.91	169.12	7,035.5	-382.4	-556.0	192.3	10.21	
7,410.0	83.36	166.88	7,040.3	-414.3	-549.2	224.8	12.43	
7,478.0	87.76	161.45	7,045.5	-479.5	-530.7	292.5	10.26	
7,571.0	88.81	160.83	7,048.3	-567.4	-500.6	385.4	1.31	
7,663.0	90.13	161.54	7,049.2	-654.5	-471.0	477.4	1.63	
7,756.0	90.40	163.03	7,048.7	-743.1	-442.7	570.4	1.63	
7,848.0	90.13	160.48	7,048.3	-830.5	-413.9	662.4	2.79	
7,941.0	90.66	160.66	7,047.7	-918.2	-382.9	755.3	0.60	
8,034.0	88.81	160.04	7,048.1	-1,005.7	-351.7	848.3	2.10	
8,126.0	88.46	160.48	7,050.3	-1,092.3	-320.6	940.2	0.61	
8,219.0	89.78	160.48	7,051.7	-1,180.0	-289.5	1,033.2	1.42	
8,311.0	90.92	162.50	7,051.2	-1,267.2	-260.3	1,125.2	2.52	
8,404.0	91.19	162.33	7,049.5	-1,355.8	-232.2	1,218.2	0.34	
8,496.0	89.96	163.29	7,048.5	-1,443.7	-205.0	1,310.1	1.70	
8,589.0	91.45	163.73	7,047.4	-1,532.9	-178.6	1,403.1	1.67	
8,681.0	89.34	162.68	7,046.8	-1,620.9	-152.1	1,495.1	2.56	
8,774.0	89.96	161.01	7,047.3	-1,709.3	-123.1	1,588.1	1.92	
8,867.0	89.96	159.60	7,047.4	-1,796.9	-91.7	1,681.0	1.52	
8,959.0	89.60	157.23	7,047.7	-1,882.4	-57.9	1,772.8	2.61	
9,052.0	89.60	159.08	7,048.4	-1,968.7	-23.3	1,865.6	1.99	
9,144.0	90.40	162.33	7,048.4	-2,055.5	7.1	1,957.6	3.64	
9,237.0	90.04	164.08	7,048.0	-2,144.6	34.0	2,050.5	1.92	
9,329.0	90.22	164.96	7,047.8	-2,233.2	58.5	2,142.5	0.98	
9,422.0	89.43	163.73	7,048.1	-2,322.8	83.6	2,235.4	1.57	
9,514.0	89.69	163.47	7,048.8	-2,411.0	109.6	2,327.3	0.40	
9,607.0	89.78	163.03	7,049.2	-2,500.1	136.4	2,420.3	0.48	
9,699.0	89.87	161.18	7,049.5	-2,587.6	164.7	2,512.3	2.01	



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522: GL 1164' + 18' KB @ 1182.0usft
Site:	Coastal 1 Pad Berry/Gray/Owo	MD Reference:	Precision 522. GL 1164' + 18' KB @ 1182.0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
9,792.0	88.55	163.12	7,050.8	-2,676.1	193.2	2,605.3	2.52
9,886.0	88.81	162.15	7,053.0	-2,765.8	221.2	2,699.3	1.07
9,981.0	89.25	161.54	7,054.6	-2,856.1	250.8	2,794.3	0.79
10,075.0	90.31	163.56	7,054.9	-2,945.8	279.0	2,888.2	2.43
10,170.0	88.90	162.06	7,055.6	-3,036.5	307.1	2,983.2	2.17
10,264.0	88.99	161.54	7,057.3	-3,125.8	336.4	3,077.2	0.56
10,359.0	90.22	160.92	7,058.0	-3,215.7	367.0	3,172.2	1.45
10,453.0	90.66	161.98	7,057.3	-3,304.8	396.9	3,266.2	1.22
10,548.0	91.54	161.45	7,055.4	-3,395.0	426.7	3,361.2	1.08
10,642.0	90.94	162.93	7,053.4	-3,484.5	455.4	3,455.1	1.70
10,735.0	90.31	162.42	7,052.4	-3,573.3	483.1	3,548.1	0.87
10,830.0	88.99	165.32	7,053.0	-3,664.5	509.5	3,643.1	3.35
10,924.0	88.64	162.68	7,054.9	-3,754.9	535.4	3,737.0	2.83
11,016.0	88.90	162.68	7,056.9	-3,842.7	562.8	3,829.0	0.28
11,109.0	89.34	161.98	7,058.3	-3,931.3	591.0	3,921.9	0.89
11,202.0	90.04	161.80	7,058.8	-4,019.7	619.9	4,014.9	0.78
11,294.0	90.40	160.75	7,058.5	-4,106.8	649.5	4,106.9	1.21
11,387.0	90.22	162.06	7,058.0	-4,194.9	679.1	4,199.9	1.42
11,480.0	88.64	159.08	7,058.9	-4,282.6	710.0	4,292.9	3.63
11,572.0	89.25	160.57	7,060.6	-4,368.9	741.8	4,384.8	1.75
11,665.0	89.69	161.01	7,061.4	-4,456.8	772.4	4,477.8	0.67
11,757.0	89.60	162.06	7,062.0	-4,544.0	801.5	4,569.8	1.15
11,850.0	89.87	162.94	7,062.4	-4,632.7	829.5	4,662.7	0.99
11,942.0	89.25	162.33	7,063.2	-4,720.5	856.9	4,754.7	0.95
12,035.0	89.60	158.46	7,064.1	-4,808.1	888.1	4,847.7	4.18
12,128.0	88.90	159.34	7,065.3	-4,894.9	921.6	4,940.5	1.21
12,220.0	89.25	162.94	7,066.8	-4,981.9	951.3	5,032.5	3.93
12,313.0	89.96	165.14	7,067.4	-5,071.3	976.9	5,125.4	2.49
12,405.0	90.57	164.52	7,067.0	-5,160.1	1,001.0	5,217.3	0.95
12,498.0	89.69	165.40	7,066.8	-5,249.9	1,025.1	5,310.2	1.34
12,590.0	89.43	162.94	7,067.5	-5,338.4	1,050.2	5,402.1	2.69
12,683.0	90.22	162.06	7,067.8	-5,427.1	1,078.2	5,495.1	1.27
12,775.0	89.08	161.10	7,068.3	-5,514.4	1,107.2	5,587.1	1.62
12,868.0	89.78	162.24	7,069.3	-5,602.7	1,136.5	5,680.1	1.44
12,960.0	90.84	163.03	7,068.8	-5,690.5	1,163.9	5,772.1	1.44
13,053.0	89.52	164.08	7,068.5	-5,779.7	1,190.3	5,865.0	1.81
13,146.0	88.72	163.38	7,069.9	-5,868.9	1,216.3	5,958.0	1.14
13,238.0	89.16	161.54	7,071.6	-5,956.6	1,244.0	6,051.0	0.06
13,331.0	90.48	163.65	7,071.9	-6,045.4	1,271.9	6,143.0	2.68
13,423.0	90.04	161.54	7,071.5	-6,133.1	1,299.4	6,235.0	2.34
13,515.0	90.40	158.37	7,071.1	-6,219.6	1,330.9	6,326.9	3.47
13,608.0	88.99	159.34	7,071.6	-6,306.3	1,364.4	6,419.7	1.84
13,701.0	88.20	159.25	7,073.9	-6,393.3	1,397.3	6,512.6	0.85
13,793.0	88.64	159.69	7,076.4	-6,479.4	1,429.6	6,604.5	0.68

Oil & Gas
05/2018



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 2H
Project:	Tyler County WV	TVD Reference:	Precision 522: GL 1164' + 18' KB @ 1182.0usft
Site:	Coastal 1 Pad. Berry/Gray/Owo	MD Reference:	Precision 522: GL 1164' + 18' KB @ 1182.0usft
Well:	Berry Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
13,885.0	89.60	161.01	7,077.9	-6,566.0	1,460.5	6,696.4	1.77
13,978.0	90.57	162.24	7,077.7	-6,654.3	1,489.8	6,789.4	1.68
14,070.0	91.36	161.54	7,076.2	-6,741.7	1,518.4	6,881.4	1.15
14,163.0	91.01	163.29	7,074.2	-6,830.3	1,546.5	6,974.4	1.92
14,255.0	90.48	162.50	7,073.1	-6,918.3	1,573.6	7,066.4	1.03
14,347.0	89.26	164.76	7,073.3	-7,006.5	1,599.5	7,158.3	2.79
14,440.0	89.25	163.12	7,074.5	-7,095.9	1,625.2	7,251.2	1.76
14,532.0	90.57	162.68	7,074.6	-7,183.8	1,652.3	7,343.2	1.51
14,625.0	91.45	162.77	7,073.0	-7,272.6	1,679.9	7,436.2	0.95
14,717.0	90.57	162.94	7,071.4	-7,360.5	1,707.0	7,528.2	0.97
14,809.0	89.60	160.57	7,071.2	-7,447.9	1,735.8	7,620.2	2.78
14,902.0	89.96	158.99	7,071.6	-7,535.1	1,767.9	7,713.1	1.74
14,994.0	89.34	160.83	7,072.1	-7,621.5	1,799.5	7,805.0	2.11
15,087.0	89.60	159.51	7,073.0	-7,709.0	1,831.1	7,898.0	1.45
15,179.0	89.69	163.91	7,073.6	-7,796.3	1,859.9	7,989.9	4.78
15,272.0	90.22	168.30	7,073.6	-7,886.6	1,882.3	8,082.7	4.75
15,364.0	90.13	167.69	7,073.4	-7,976.6	1,901.4	8,174.2	0.67
15,457.0	89.34	163.47	7,073.8	-8,066.6	1,924.6	8,267.0	4.62
15,550.0	88.81	164.35	7,075.3	-8,156.0	1,950.3	8,359.9	1.10
15,642.0	87.58	160.48	7,078.2	-8,243.6	1,978.1	8,451.9	4.41
15,735.0	88.46	159.69	7,081.4	-8,331.0	2,009.8	8,544.8	1.27
15,827.0	88.72	158.20	7,083.7	-8,416.8	2,042.8	8,636.6	1.64
15,920.0	89.43	158.64	7,085.2	-8,503.3	2,077.0	8,729.4	0.90
16,012.0	90.04	158.55	7,085.6	-8,588.9	2,110.6	8,821.2	0.67
16,105.0	90.66	160.39	7,085.0	-8,676.0	2,143.2	8,914.1	2.09
16,197.0	88.99	161.36	7,085.3	-8,762.9	2,173.3	9,006.1	2.10
16,242.0	89.16	160.75	7,086.0	-8,805.5	2,187.9	9,051.1	1.41
16,300.0	89.16	160.75	7,086.9	-8,860.3	2,207.1	9,109.1	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,911.0	6,785.4	-7.4	-561.4	Middlesex
7,094.0	6,918.5	-129.8	-581.6	Burket
7,141.0	6,946.7	-167.4	-581.0	Tully
7,267.0	7,005.6	-278.0	-572.7	Marcellus

Checked By: _____ Approved By: _____ Date: _____