



Antero Resources
 Anna Unit 2H
 Ritchie County WV
 Northing: 14283550.00
 Easting: 1662998.00
 Original Wellpath

WELL DETAILS: Anna Unit 2H

N/S	+E/W	Northing	Ground Level	970.0	Latitude	80° 59' 12.502 W	Site
0.0	0.0	14283550.00	Easting	38 20 2 348 N	Longitude	12 502 W	
		1662998.00					

PROJECT DETAILS: Ritchie County WV

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

NOI SERVICE INFORMATION

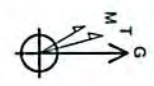
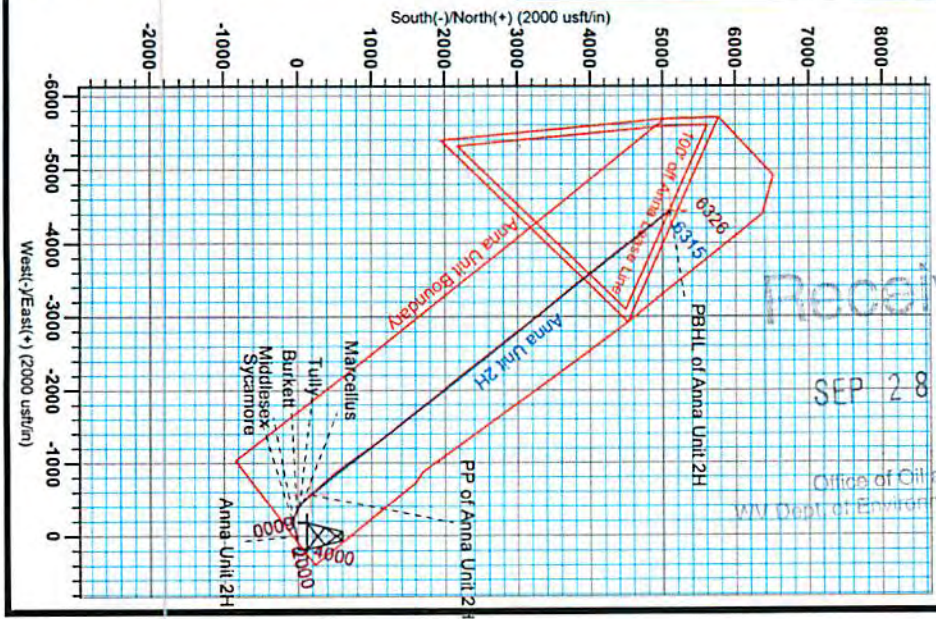
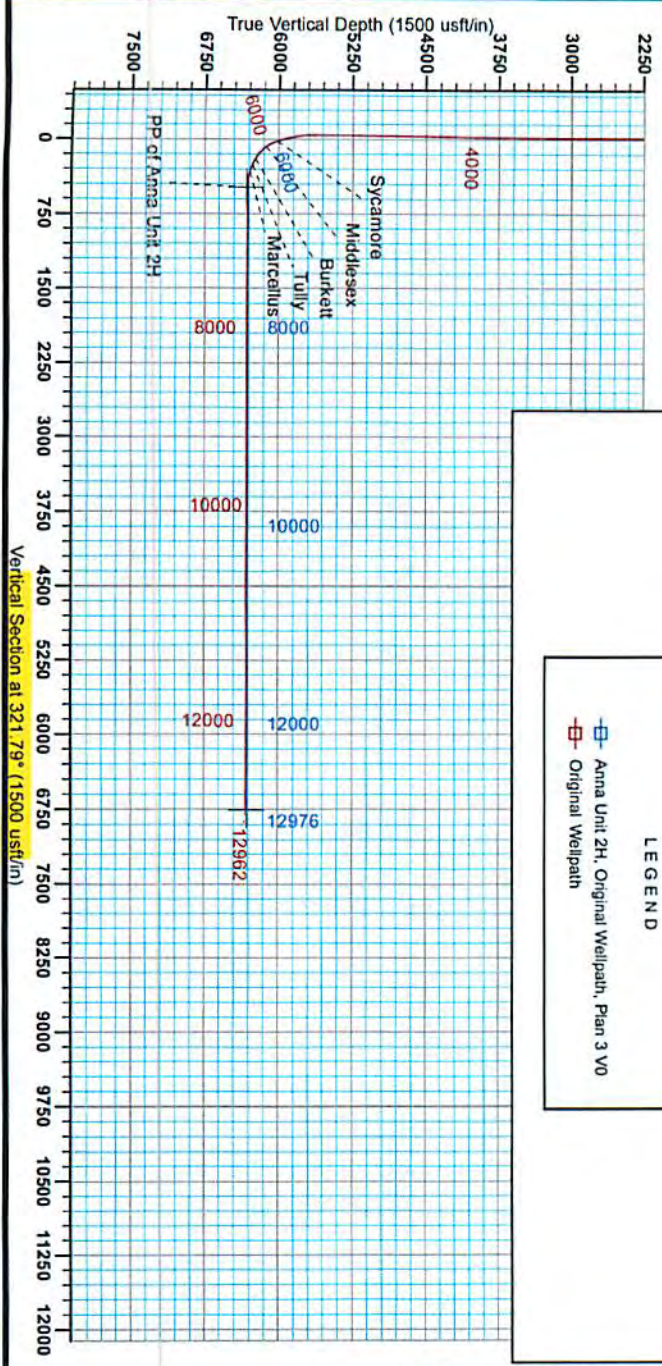
Customer: ANR Resources, West Anna Unit 2H, 421 South Eagle Lane, South, Ritchie County, West Virginia, 26042
 Requested Date: 07/20/2012
 Requested Time: 08:00 AM
 Requested Location: Anna Unit 2H, 421 South Eagle Lane, South, Ritchie County, West Virginia, 26042
 Requested Service: Well Path



Genie Lightfoot
 9.37, December 07 2012
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK

LEGEND

- Anna Unit 2H, Original Wellpath, Plan 3 V0
- - - Original Wellpath



To convert a Magnetic Declination to a Grid Declination, Subtract 6.37°
 To convert a True Declination to a Grid Declination, Subtract 0.07°

Magnetic Field Strength: 52535.44nT
 Dip Angle: 87.02°
 Date: 10/23/2012
 Model: IGRF2010

Received
 SEP 28 2015

Office of Oil and Gas
 WV Dept. of Environmental Protection

10/30/2015

85.09963

85-09963



Scientific Drilling

Antero Resources

Ritchie County WV
Anna Pad
Anna Unit 2H
Original Wellpath

Design: Original Wellpath

EOW Completion Report

07 December, 2012

Received

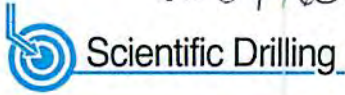
SEP 28 2015

Office of Oil and Gas
WV Dept. of Environmental Protection



10/30/2015

85-09963



Scientific Drilling International
EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Anna Unit 2H
Project:	Ritchie County WV	TVD Reference:	Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Site:	Anna Pad	MD Reference:	Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Well:	Anna Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellpath	Database:	EDMOKC

Project	Ritchie County WV, Ritchie County WV, WV North		
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	Anna Pad				
Site Position:		Northing:	14,283,550.00 usft	Latitude:	39° 20' 2.348 N
From:	Map	Easting:	1,662,998.00 usft	Longitude:	80° 55' 12.502 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.05 °

Well	Anna Unit 2H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,283,550.00 usft	Latitude:	39° 20' 2.348 N
	+E/-W	0.0 usft	Easting:	1,662,998.00 usft	Longitude:	80° 55' 12.502 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	993.0 usft	Ground Level:	970.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/23/2012	-8.32	67.02	52,535

Design	Original Wellpath				
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	321.79

Received

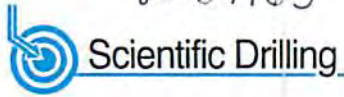
SEP 28 2015

Office of Oil and Gas
WV Dept. of Environmental Protection

Survey Program	Date	12/07/2012			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	5,565.9	Survey #1 Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
5,610.0	12,962.0	Survey #2 Def MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

Survey									
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		
100.0	0.65	136.97	100.0	-0.4	0.4	-0.6	0.65		
200.0	0.74	143.29	200.0	-1.3	1.2	-1.8	0.12		
300.0	0.73	151.99	300.0	-2.4	1.8	-3.0	0.11		
400.0	0.76	174.04	400.0	-3.6	2.2	-4.2	0.29		
500.0	0.80	179.34	500.0	-5.0	2.3	-5.4	0.08		
600.0	0.79	191.88	600.0	-6.4	2.2	-6.3	0.17		
700.0	0.73	189.89	699.9	-7.7	1.9	-7.2	0.07		
800.0	0.74	184.63	799.9	-9.0	1.7	-8.1	0.07		
900.0	0.67	183.33	899.9	-10.2	1.7	-9.0	0.07		
1,000.0	0.72	190.31	999.9	-11.4	1.5	-9.9	0.10		

85-09963



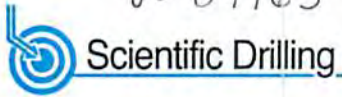
Scientific Drilling International
EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Anna Unit 2H
Project:	Ritchie County WV	TVD Reference:	Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Site:	Anna Pad	MD Reference:	Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Well:	Anna Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellpath	Database:	EDMOKC

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
1,100.0	0.62	194.87	1,099.9	-12.5	1.3	-10.6	0.11	
1,200.0	0.41	198.39	1,199.9	-13.4	1.0	-11.1	0.21	
1,300.0	0.55	202.08	1,299.9	-14.2	0.7	-11.6	0.14	
1,400.0	0.48	202.58	1,399.9	-15.0	0.4	-12.0	0.07	
1,500.0	0.40	210.93	1,499.9	-15.7	0.0	-12.3	0.10	
1,600.0	0.37	206.73	1,599.9	-16.3	-0.3	-12.6	0.04	
1,700.0	0.36	197.52	1,699.9	-16.9	-0.5	-12.9	0.06	
1,800.0	0.15	190.40	1,799.9	-17.3	-0.6	-13.2	0.21	
1,900.0	0.57	186.51	1,899.9	-17.9	-0.7	-13.6	0.42	
2,000.0	0.09	164.14	1,999.9	-18.5	-0.8	-14.1	0.49	
2,100.0	0.12	201.09	2,099.9	-18.7	-0.8	-14.2	0.07	
2,200.0	0.20	201.65	2,199.9	-18.9	-0.9	-14.3	0.08	
2,300.0	0.22	194.34	2,299.9	-19.3	-1.0	-14.5	0.03	
2,400.0	0.15	190.31	2,399.9	-19.6	-1.1	-14.7	0.07	
2,500.0	0.13	201.87	2,499.9	-19.8	-1.1	-14.9	0.03	
2,600.0	0.18	208.94	2,599.9	-20.1	-1.2	-15.0	0.05	
2,700.0	0.24	215.66	2,699.9	-20.4	-1.4	-15.1	0.06	
2,800.0	0.23	213.05	2,799.9	-20.7	-1.7	-15.2	0.01	
2,900.0	0.19	170.88	2,899.9	-21.0	-1.8	-15.4	0.16	
3,000.0	0.16	163.20	2,999.9	-21.3	-1.7	-15.7	0.04	
3,100.0	0.33	165.04	3,099.9	-21.7	-1.6	-16.1	0.17	
3,200.0	0.27	137.28	3,199.9	-22.2	-1.3	-16.6	0.16	
3,300.0	0.27	109.62	3,299.9	-22.4	-1.0	-17.0	0.13	
3,400.0	0.25	108.86	3,399.9	-22.6	-0.5	-17.4	0.02	
3,500.0	0.42	110.94	3,499.9	-22.8	0.0	-17.9	0.17	
3,600.0	0.54	98.18	3,599.9	-23.0	0.8	-18.6	0.16	
3,700.0	0.60	96.81	3,699.9	-23.1	1.8	-19.3	0.06	
3,800.0	0.83	100.90	3,799.9	-23.3	3.0	-20.2	0.24	
3,900.0	0.99	98.38	3,899.9	-23.6	4.6	-21.4	0.16	
4,000.0	1.46	103.21	3,999.8	-24.0	6.7	-23.0	0.48	
4,100.0	1.54	101.71	4,099.8	-24.6	9.3	-25.0	0.09	
4,200.0	1.40	88.78	4,199.8	-24.8	11.8	-26.8	0.36	
4,300.0	1.44	83.93	4,299.7	-24.7	14.3	-28.2	0.13	
4,400.0	1.70	81.61	4,399.7	-24.3	17.0	-29.6	0.27	
4,500.0	1.61	79.85	4,499.7	-23.8	19.8	-31.0	0.10	
4,600.0	1.58	76.61	4,599.6	-23.3	22.6	-32.2	0.10	
4,700.0	1.60	72.57	4,699.6	-22.5	25.2	-33.3	0.11	
4,800.0	1.31	78.38	4,799.5	-21.9	27.7	-34.3	0.33	
4,900.0	1.28	73.52	4,899.5	-21.3	29.9	-35.2	0.11	
5,000.0	1.34	75.11	4,999.5	-20.7	32.1	-36.1	0.07	
5,100.0	1.29	68.12	5,099.5	-20.0	34.2	-36.9	0.17	
5,200.0	1.11	66.97	5,199.4	-19.2	36.2	-37.5	0.18	
5,300.0	0.95	74.04	5,299.4	-18.6	37.9	-38.0	0.20	
5,400.0	0.94	64.60	5,399.4	-18.0	39.4	-38.5	0.16	

85-09963



Scientific Drilling International

EOW Completion Report

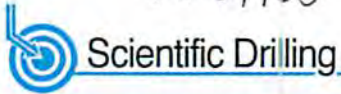


Company:	Antero Resources	Local Co-ordinate Reference:	Well Anna Unit 2H
Project:	Ritchie County WV	TVD Reference:	Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Site:	Anna Pad	MD Reference:	Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Well:	Anna Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellpath	Database:	EDMOKC

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
5,500.0	0.89	57.90	5,499.4	-17.3	40.8	-38.8	0.12
5,565.9	0.94	80.00	5,565.3	-16.9	41.8	-39.1	0.54
5,610.0	0.95	104.23	5,609.4	-16.9	42.5	-39.6	0.90
5,642.0	0.69	105.15	5,641.4	-17.0	42.9	-39.9	0.81
5,674.0	1.95	232.42	5,673.4	-17.4	42.7	-40.1	7.60
5,706.0	4.68	244.93	5,705.3	-18.3	41.1	-39.8	8.78
5,739.0	8.09	254.16	5,738.1	-19.5	37.6	-38.6	10.76
5,771.0	11.99	264.37	5,769.6	-20.4	32.1	-35.9	13.35
5,803.0	15.81	270.83	5,800.7	-20.7	24.5	-31.4	12.87
5,835.0	18.83	266.08	5,831.2	-21.0	15.0	-25.7	10.41
5,867.0	21.81	263.56	5,861.2	-22.0	3.9	-19.7	9.70
5,899.0	24.59	263.41	5,890.6	-23.5	-8.6	-13.1	8.69
5,931.0	27.24	261.80	5,919.4	-25.3	-22.5	-5.9	8.57
5,964.0	30.07	259.43	5,948.4	-27.9	-38.1	1.7	9.24
5,996.0	32.75	256.77	5,975.7	-31.3	-54.4	9.1	9.43
6,028.0	36.51	256.40	6,002.0	-35.5	-72.1	16.7	11.77
6,045.0	38.22	256.89	6,015.5	-37.9	-82.1	21.0	10.21
Sycamore							
6,060.0	39.73	257.29	6,027.2	-40.0	-91.3	25.0	10.21
6,092.0	42.92	257.52	6,051.2	-44.6	-112.0	34.2	9.98
6,124.0	46.70	258.50	6,073.9	-49.3	-134.0	44.2	12.01
6,156.0	48.92	261.68	6,095.4	-53.4	-157.4	55.4	10.11
6,189.0	50.45	267.10	6,116.8	-55.8	-182.4	69.0	13.35
6,207.0	51.09	270.25	6,128.1	-56.1	-196.3	77.3	14.00
Middlesex							
6,221.0	51.65	272.65	6,136.9	-55.9	-207.3	84.3	14.00
6,253.0	52.31	278.37	6,156.6	-53.4	-232.3	101.7	14.23
6,285.0	51.93	284.28	6,176.3	-48.5	-257.1	120.9	14.62
6,317.0	53.73	289.54	6,195.6	-41.1	-281.5	141.8	14.25
6,349.0	57.08	293.15	6,213.8	-31.5	-306.0	164.5	13.99
6,382.0	60.84	296.10	6,230.8	-19.7	-331.7	189.7	13.73
6,393.0	62.16	297.15	6,236.0	-15.3	-340.3	198.4	14.66
Burkett							
6,414.0	64.71	299.08	6,245.4	-6.5	-356.9	215.6	14.66
6,446.0	67.66	301.78	6,258.4	8.4	-382.1	242.9	12.02
6,466.0	68.51	303.09	6,265.8	18.3	-397.8	260.4	7.41
Tully							
6,478.0	69.02	303.87	6,270.2	24.5	-407.1	271.0	7.41
6,510.0	71.49	307.48	6,281.0	42.0	-431.5	300.0	13.13
6,541.0	74.89	311.58	6,289.9	60.9	-454.4	328.9	16.75
Marcellus							
6,542.0	75.00	311.71	6,290.2	61.6	-455.1	329.9	16.75
6,574.0	77.53	315.06	6,297.8	82.9	-477.7	360.6	12.88
6,607.0	78.14	315.65	6,304.8	105.9	-500.4	392.7	2.54
6,639.0	81.42	317.08	6,310.4	128.7	-522.1	424.0	11.15

85-09963



Scientific Drilling International

EOW Completion Report

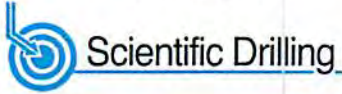


Company:	Antero Resources	Local Co-ordinate Reference:	Well Anna Unit 2H
Project:	Ritchie County WV	TVD Reference:	Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Site:	Anna Pad	MD Reference:	Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Well:	Anna Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellpath	Database:	EDMOKC

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
6,654.0	83.65	318.32	6,312.4	139.7	-532.1	438.9	16.98
6,725.0	88.90	317.70	6,317.0	192.3	-579.5	509.5	7.45
6,820.0	90.13	317.35	6,317.8	262.4	-643.6	604.3	1.35
6,916.0	89.52	317.00	6,318.1	332.8	-708.9	700.0	0.73
7,013.0	90.22	319.02	6,318.3	404.9	-773.8	796.8	2.20
7,109.0	90.13	320.52	6,318.0	478.2	-835.8	892.7	1.57
7,205.0	90.31	322.54	6,317.7	553.3	-895.5	988.7	2.11
7,301.0	89.52	322.63	6,317.8	629.6	-953.8	1,084.7	0.83
7,392.0	89.96	323.77	6,318.2	702.4	-1,008.4	1,175.6	1.34
7,483.0	90.04	325.88	6,318.2	776.8	-1,060.8	1,266.5	2.32
7,574.0	89.87	325.53	6,318.3	852.0	-1,112.0	1,357.3	0.43
7,665.0	89.87	324.38	6,318.5	926.5	-1,164.3	1,448.2	1.26
7,756.0	89.87	323.33	6,318.7	1,000.0	-1,218.0	1,539.1	1.15
7,848.0	89.52	323.94	6,319.2	1,074.1	-1,272.5	1,631.0	0.76
7,939.0	89.60	322.19	6,319.9	1,146.8	-1,327.2	1,722.0	1.93
8,030.0	89.87	321.84	6,320.3	1,218.5	-1,383.2	1,813.0	0.49
8,122.0	90.22	321.04	6,320.2	1,290.4	-1,440.6	1,905.0	0.95
8,213.0	90.22	320.08	6,319.9	1,360.7	-1,498.4	1,996.0	1.05
8,305.0	89.87	318.06	6,319.8	1,430.2	-1,558.6	2,087.9	2.23
8,396.0	88.64	321.31	6,321.0	1,499.6	-1,617.5	2,178.8	3.82
8,492.0	90.40	322.98	6,321.8	1,575.4	-1,676.4	2,274.8	2.53
8,589.0	90.66	321.84	6,320.9	1,652.2	-1,735.6	2,371.8	1.21
8,685.0	90.31	321.48	6,320.1	1,727.5	-1,795.1	2,467.8	0.52
8,782.0	90.48	321.75	6,319.4	1,803.6	-1,855.3	2,564.8	0.33
8,878.0	90.13	320.17	6,318.9	1,878.1	-1,915.8	2,660.8	1.69
8,975.0	89.87	320.08	6,318.9	1,952.6	-1,978.0	2,757.7	0.28
9,070.0	89.87	319.73	6,319.1	2,025.2	-2,039.2	2,852.7	0.37
9,167.0	90.22	322.01	6,319.0	2,100.5	-2,100.4	2,949.6	2.38
9,263.0	89.87	320.43	6,319.0	2,175.3	-2,160.5	3,045.6	1.69
9,359.0	89.78	323.51	6,319.3	2,250.9	-2,219.7	3,141.6	3.21
9,456.0	90.04	322.63	6,319.4	2,328.5	-2,277.9	3,238.6	0.95
9,552.0	90.04	322.98	6,319.4	2,404.9	-2,336.0	3,334.6	0.36
9,648.0	90.04	321.31	6,319.3	2,480.7	-2,394.9	3,430.6	1.74
9,745.0	90.22	320.87	6,319.1	2,556.2	-2,455.8	3,527.6	0.49
9,841.0	89.16	323.51	6,319.6	2,632.0	-2,514.6	3,623.6	2.96
9,937.0	90.31	322.54	6,320.0	2,708.7	-2,572.4	3,719.5	1.57
10,033.0	89.87	322.10	6,319.9	2,784.7	-2,631.1	3,815.5	0.65
10,129.0	89.96	319.99	6,320.0	2,859.4	-2,691.4	3,911.5	2.20
10,225.0	90.04	324.82	6,320.0	2,935.4	-2,750.0	4,007.5	5.03
10,322.0	89.87	323.68	6,320.1	3,014.1	-2,806.6	4,104.4	1.19
10,417.0	90.13	323.86	6,320.1	3,090.8	-2,862.8	4,199.3	0.33
10,514.0	89.69	322.63	6,320.2	3,168.5	-2,920.8	4,296.3	1.35
10,610.0	89.25	321.75	6,321.1	3,244.3	-2,979.7	4,392.3	1.02
10,706.0	89.43	320.60	6,322.2	3,319.1	-3,039.9	4,488.3	1.21
10,803.0	90.48	321.13	6,322.3	3,394.3	-3,101.1	4,585.3	1.21

85-09963



Scientific Drilling International
EOW Completion Report



Company: Antero Resources	Local Co-ordinate Reference: Well Anna Unit 2H
Project: Ritchie County WV	TVD Reference: Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Site: Anna Pad	MD Reference: Anna Unit 2H GL 970' + 23' RKB @ 993.0usft (Ori
Well: Anna Unit 2H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: Original Wellpath	Database: EDMOKC

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
10,899.0	90.84	321.04	6,321.2	3,469.0	-3,161.4	4,681.2	0.39
10,996.0	91.28	321.31	6,319.4	3,544.6	-3,222.2	4,778.2	0.53
11,092.0	90.31	320.60	6,318.1	3,619.1	-3,282.7	4,874.2	1.25
11,189.0	90.22	319.73	6,317.6	3,693.6	-3,344.8	4,971.2	0.90
11,285.0	90.40	323.07	6,317.1	3,768.6	-3,404.7	5,067.1	3.48
11,381.0	90.92	323.07	6,316.0	3,845.4	-3,462.3	5,163.1	0.54
11,478.0	90.57	321.40	6,314.7	3,922.0	-3,521.7	5,260.1	1.76
11,574.0	89.43	321.13	6,314.7	3,996.9	-3,581.8	5,356.1	1.22
11,671.0	88.90	320.17	6,316.2	4,071.9	-3,643.3	5,453.1	1.13
11,767.0	89.78	321.57	6,317.3	4,146.4	-3,703.9	5,549.0	1.72
11,864.0	90.13	321.04	6,317.3	4,222.1	-3,764.5	5,646.0	0.65
11,959.0	88.81	323.42	6,318.2	4,297.2	-3,822.7	5,741.0	2.86
12,056.0	88.81	323.07	6,320.2	4,374.9	-3,880.7	5,838.0	0.36
12,152.0	89.69	322.71	6,321.5	4,451.4	-3,938.7	5,933.9	0.99
12,248.0	90.48	325.00	6,321.4	4,528.9	-3,995.3	6,029.9	2.52
12,345.0	89.60	322.19	6,321.3	4,607.0	-4,052.8	6,126.8	3.04
12,441.0	90.13	321.92	6,321.5	4,682.7	-4,111.9	6,222.8	0.62
12,537.0	89.43	322.19	6,321.9	4,758.4	-4,170.9	6,318.8	0.78
12,634.0	88.90	321.92	6,323.3	4,834.9	-4,230.5	6,415.8	0.61
12,730.0	89.16	321.48	6,324.9	4,910.2	-4,290.0	6,511.8	0.53
12,826.0	90.04	322.98	6,325.6	4,986.1	-4,348.8	6,607.8	1.81
12,916.0	89.97	320.63	6,325.6	5,056.8	-4,404.5	6,697.8	2.61
12,962.0	89.60	320.40	6,325.8	5,092.3	-4,433.7	6,743.8	0.95

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,045.0	6,015.5	-37.9	-82.1	Sycamore
6,207.0	6,128.1	-56.1	-196.3	Middlesex
6,393.0	6,236.0	-15.3	-340.3	Burkett
6,466.0	6,265.8	18.3	-397.8	Tully
6,541.0	6,289.9	60.9	-454.4	Marcellus

Checked By: _____ Approved By: _____ Date: _____