



Rikk Unit 1H
Doddridge County WV
Northing: 14258782.29
Easting: 1754594.81
As Drilled



Azimuths to Grid North
 True North: -0.25°
 Magnetic North: -8.83°
 Magnetic Field
 Strength: 52319.38nT
 Dip Angle: 66.82°
 Date: 12/17/2013
 Model: IGRF2010

To convert Magnetic North to Grid, Subtract 8.83°
 To convert True North to Grid, Subtract 0.25°

WELL DETAILS Rikk Unit 1H			
Ground Level: 1318.0			
+N/-S	+E/-W	Northing	Longitude
0.0	0.0	14258782.29	80° 35' 47.747" W
		Easting	Latitude
		1754594.81	15° 55.036" N

PROJECT DETAILS: Doddridge County WV
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

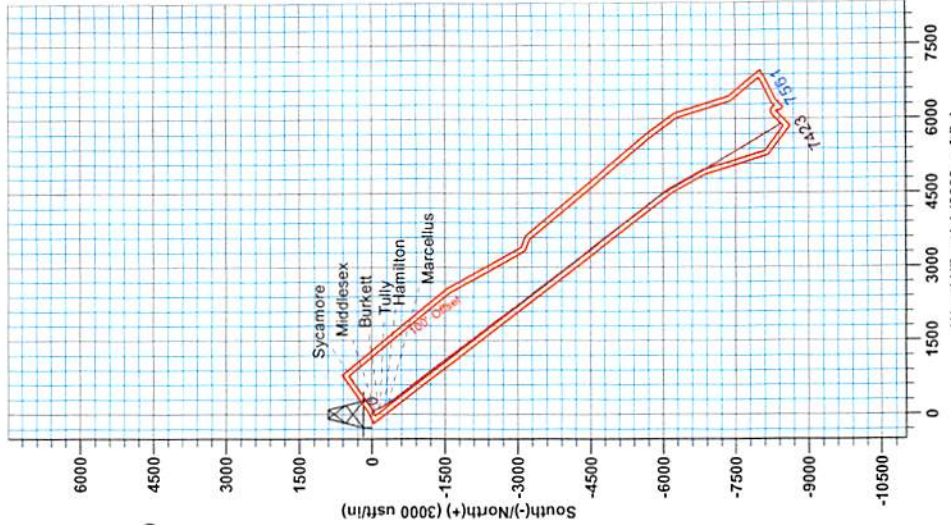
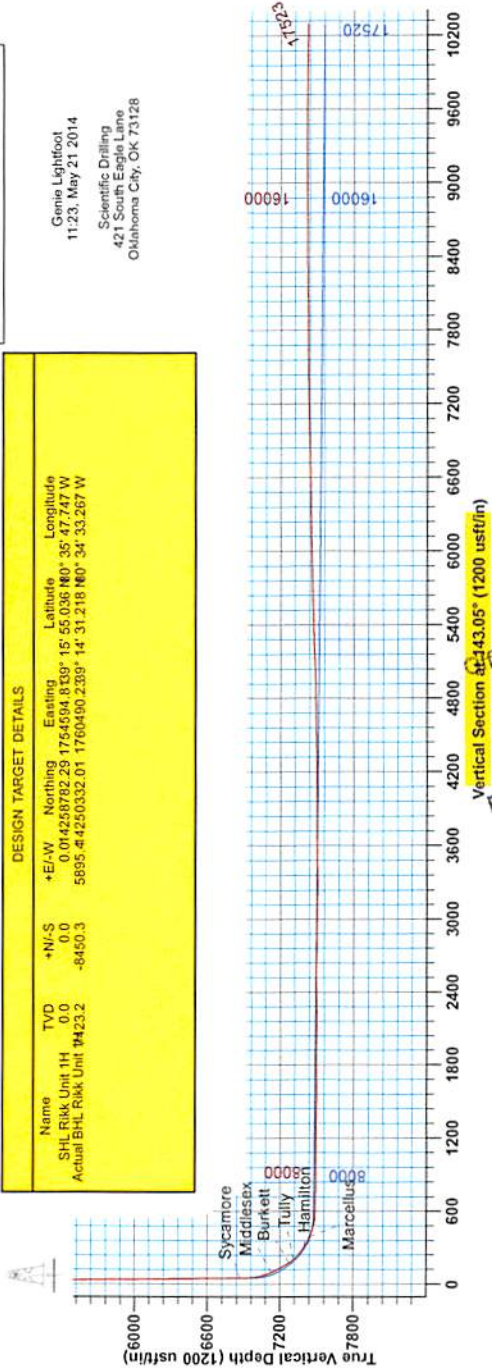
LEGEND

- Rikk Unit 1H, Original Wellpath, Plan 5 V0
- As Drilled

PATT 317, Rikk 1H 1318 GL + 22.5 OL @ 1340.5usft
 Gr. 1318.0

DESIGN TARGET DETAILS

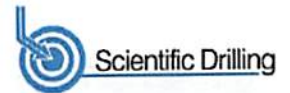
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Rikk Unit 1H	0.0	0.0	0.0	14258782.29	1754594.81	15° 55.036' 10"	80° 35' 47.747" W
Actual BHL Rikk Unit 1H	1423.2	-8450.3	5895.4	4259332.01	1760490.239	14° 31' 21.8" 10"	84° 33.257" W



SITE DETAILS: Rikk/Pratt/Blackwood/Irons
 Site Center Rikk Unit 1H
 Site Centre Northing: 14258782.29
 Easting: 1754594.81
 Positional Uncertainty: 2.8
 Convergence: 0.26
 Local North: Grid

Genie Lightfoot
 11.23, May 21 2014
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK 73128

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 WV Department of
 Environmental Protection



Company:	Antero Resources	Local Co-ordinate Reference:	Well Rikk Unit 1H
Project:	Doddridge County WV	TVD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Site:	Rikk/Pratt/Blackwood/Irons	MD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Well:	Rikk Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Project	Doddridge County WV, McClellan District		
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	Rikk/Pratt/Blackwood/Irons				
Site Position:		Northing:	14,258,782.29 usft	Latitude:	39° 15' 55.036 N
From:	Map	Easting:	1,754,594.81 usft	Longitude:	80° 35' 47.747 W
Position Uncertainty:	2.8 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.26 °

Well	Rikk Unit 1H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,258,782.29 usft	Latitude:	39° 15' 55.036 N
	+E/-W	0.0 usft	Easting:	1,754,594.81 usft	Longitude:	80° 35' 47.747 W
Position Uncertainty		2.8 usft	Wellhead Elevation:	1,340.5 usft	Ground Level:	1,318.0 usft

Wellbore	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/17/2013	-8.58	66.82	52,319

Design	As Drilled				
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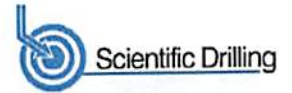
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	143.05

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Survey Program	Date 5/21/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
109.5	6,861.0	Survey #1 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
6,911.0	17,523.0	Survey #2 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
109.5	0.11	228.35	109.5	-0.1	-0.1	0.0	0.10
209.5	0.17	189.86	209.5	-0.3	-0.2	0.1	0.11
309.5	0.26	161.32	309.5	-0.6	-0.1	0.4	0.14
409.5	0.07	217.55	409.5	-0.9	-0.1	0.7	0.23
509.5	0.12	176.86	509.5	-1.1	-0.1	0.8	0.08
609.5	0.14	185.35	609.5	-1.3	-0.1	0.9	0.03
709.5	0.21	182.06	709.5	-1.6	-0.1	1.2	0.07
809.5	0.23	172.98	809.5	-2.0	-0.1	1.5	0.04
909.5	0.33	164.54	909.5	-2.4	0.0	1.9	0.11
1,009.5	0.34	143.73	1,009.5	-3.0	0.2	2.5	0.12



Company:	Antero Resources	Local Co-ordinate Reference:	Well Rikk Unit 1H
Project:	Doddridge County WV	TVD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Site:	Rikk/Pratt/Blackwood/Irons	MD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Well:	Rikk Unit 1H	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)	
1,109.5	0.30	125.68	1,109.5	-3.4	0.6	3.0	0.11	
1,209.5	0.07	183.07	1,209.5	-3.6	0.8	3.3	0.27	
1,309.5	0.19	179.29	1,309.5	-3.8	0.8	3.5	0.12	
1,409.5	0.23	167.42	1,409.5	-4.2	0.9	3.8	0.06	
1,509.5	0.34	178.28	1,509.5	-4.7	0.9	4.3	0.12	
1,609.5	0.38	157.11	1,609.5	-5.3	1.1	4.8	0.14	
1,709.5	0.21	165.99	1,709.5	-5.7	1.2	5.3	0.18	
1,809.5	0.23	141.73	1,809.5	-6.1	1.4	5.7	0.09	
1,909.5	0.39	177.89	1,909.5	-6.6	1.5	6.2	0.25	
2,009.5	0.20	143.08	2,009.5	-7.0	1.7	6.6	0.25	
2,109.5	0.39	171.14	2,109.5	-7.5	1.8	7.1	0.23	
2,209.5	0.44	165.68	2,209.5	-8.2	2.0	7.8	0.06	
2,309.5	0.48	157.07	2,309.5	-9.0	2.2	8.5	0.08	
2,409.5	0.31	127.24	2,409.5	-9.5	2.6	9.2	0.26	
2,509.5	0.35	137.49	2,509.5	-9.9	3.0	9.7	0.07	
2,609.5	0.64	162.60	2,609.5	-10.7	3.4	10.6	0.36	
2,709.5	0.67	158.08	2,709.5	-11.8	3.8	11.7	0.06	
2,809.5	0.68	140.83	2,809.5	-12.8	4.4	12.8	0.20	
2,909.5	0.41	135.55	2,909.5	-13.5	5.0	13.8	0.27	
3,009.5	0.34	127.14	3,009.4	-13.9	5.5	14.4	0.09	
3,109.5	0.37	128.17	3,109.4	-14.3	6.0	15.0	0.03	
3,209.5	0.58	148.32	3,209.4	-14.9	6.5	15.8	0.27	
3,309.5	0.26	106.03	3,309.4	-15.4	7.0	16.5	0.43	
3,409.5	0.14	165.92	3,409.4	-15.6	7.2	16.8	0.23	
3,509.5	0.07	69.39	3,509.4	-15.7	7.3	16.9	0.16	
3,609.5	0.19	23.73	3,609.4	-15.5	7.4	16.9	0.15	
3,709.5	0.13	106.73	3,709.4	-15.4	7.6	16.9	0.22	
3,809.5	0.26	110.75	3,809.4	-15.5	7.9	17.2	0.13	
3,909.5	0.36	85.84	3,909.4	-15.6	8.5	17.5	0.17	
4,009.5	0.29	84.14	4,009.4	-15.5	9.0	17.8	0.07	
4,109.5	0.48	111.77	4,109.4	-15.7	9.7	18.3	0.26	
4,209.5	0.44	131.16	4,209.4	-16.1	10.3	19.1	0.16	
4,309.5	0.35	135.11	4,309.4	-16.5	10.8	19.7	0.09	
4,409.5	0.25	109.71	4,409.4	-16.8	11.3	20.2	0.16	
4,509.5	0.47	82.96	4,509.4	-16.8	11.9	20.6	0.27	
4,609.5	0.80	75.21	4,609.4	-16.6	13.0	21.1	0.34	
4,709.5	1.00	86.26	4,709.4	-16.4	14.5	21.8	0.26	
4,809.5	0.95	90.11	4,809.4	-16.3	16.2	22.8	0.08	
4,909.5	1.21	84.94	4,909.4	-16.2	18.1	23.8	0.28	
5,009.5	1.05	91.56	5,009.4	-16.2	20.1	25.0	0.21	
5,109.5	1.36	99.20	5,109.3	-16.4	22.1	26.4	0.35	
5,209.5	1.30	97.87	5,209.3	-16.7	24.4	28.1	0.07	
5,309.5	1.37	106.00	5,309.3	-17.2	26.7	29.8	0.20	
5,409.5	1.44	102.96	5,409.2	-17.8	29.1	31.7	0.10	

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Company:	Antero Resources	Local Co-ordinate Reference:	Well Rikk Unit 1H
Project:	Doddridge County WV	TVD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Site:	Rikk/Pratt/Blackwood/Irons	MD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Well:	Rikk Unit 1H	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)	
5,509.5	1.39	99.95	5,509.2	-18.3	31.5	33.6	0.09	
5,609.5	1.24	94.37	5,609.2	-18.6	33.8	35.2	0.20	
5,709.5	1.17	90.94	5,709.2	-18.7	35.9	36.5	0.10	
5,809.5	1.17	89.35	5,809.1	-18.7	37.9	37.7	0.03	
5,909.5	1.16	88.54	5,909.1	-18.7	39.9	38.9	0.02	
6,009.5	1.06	89.42	6,009.1	-18.6	41.9	40.1	0.10	
6,109.5	0.86	94.78	6,109.1	-18.7	43.6	41.1	0.22	
6,209.5	0.81	104.43	6,209.1	-18.9	45.0	42.2	0.15	
6,309.5	0.84	110.34	6,309.1	-19.4	46.4	43.3	0.09	
6,409.5	0.77	108.26	6,409.1	-19.8	47.7	44.5	0.08	
6,509.5	0.71	124.70	6,509.1	-20.4	48.8	45.6	0.22	
6,609.5	0.66	108.33	6,609.0	-20.9	49.9	46.7	0.20	
6,709.5	0.83	127.74	6,709.0	-21.5	51.0	47.9	0.30	
6,809.5	0.67	125.57	6,809.0	-22.3	52.1	49.1	0.16	
6,861.0	0.77	118.72	6,860.5	-22.7	52.6	49.7	0.26	
6,864.0	0.76	118.37	6,863.5	-22.7	52.6	49.8	0.33	
Sycamore								
6,911.0	0.63	111.68	6,910.5	-22.9	53.2	50.3	0.33	
6,973.0	6.17	126.80	6,972.4	-25.1	56.1	53.8	8.97	
7,005.0	10.46	128.09	7,004.0	-27.9	59.8	58.2	13.42	
7,036.0	14.13	135.68	7,034.3	-32.3	64.7	64.7	12.91	
7,068.0	16.53	145.14	7,065.2	-38.9	70.0	73.1	10.81	
7,099.0	18.47	149.10	7,094.8	-46.7	75.0	82.4	7.34	
7,131.0	20.93	151.56	7,124.9	-56.1	80.4	93.1	8.11	
7,136.0	21.49	152.14	7,129.5	-57.7	81.2	94.9	11.91	
Middlesex								
7,163.0	24.53	154.81	7,154.4	-67.1	85.9	105.3	11.91	
7,194.0	27.26	156.22	7,182.3	-79.4	91.5	118.5	9.03	
7,226.0	29.90	156.92	7,210.4	-93.5	97.6	133.4	8.32	
7,257.0	33.59	157.19	7,236.7	-108.5	104.0	149.2	11.91	
7,289.0	36.40	156.92	7,263.0	-125.4	111.1	167.0	8.79	
7,303.0	37.52	156.64	7,274.1	-133.1	114.4	175.2	8.05	
Burkett								
7,321.0	38.95	156.31	7,288.3	-143.3	118.9	186.0	8.05	
7,346.0	41.65	156.02	7,307.3	-158.1	125.4	201.8	10.83	
Tully								
7,352.0	42.30	155.95	7,311.8	-161.8	127.1	205.7	10.83	
7,384.0	45.64	156.22	7,334.8	-182.1	136.1	227.3	10.45	
7,415.0	48.54	155.60	7,355.9	-202.8	145.3	249.4	9.47	
7,447.0	52.14	153.14	7,376.4	-225.0	156.0	273.6	12.71	
7,479.0	56.45	151.82	7,395.0	-248.1	168.0	299.2	13.88	
7,488.0	57.24	151.60	7,399.9	-254.7	171.6	306.7	9.03	
Hamilton								
7,510.0	59.18	151.09	7,411.5	-271.1	180.5	325.2	9.03	
7,542.0	62.28	150.89	7,427.2	-295.5	180.5	352.8	9.70	

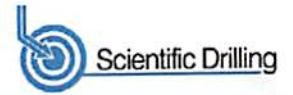
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Company:	Antero Resources	Local Co-ordinate Reference:	Well Rikk Unit 1H
Project:	Doddridge County WV	TVD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Site:	Rikk/Pratt/Blackwood/Irons	MD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Well:	Rikk Unit 1H	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)	
7,574.0	66.30	150.77	7,441.1	-320.7	208.1	381.4	12.57	
7,582.0	66.89	150.36	7,444.2	-327.1	211.7	388.7	8.76	
Marcellus								
7,605.0	68.59	149.19	7,453.0	-345.5	222.4	409.8	8.76	
7,637.0	71.40	148.75	7,463.9	-371.2	237.9	439.7	8.88	
7,668.0	75.71	148.57	7,472.7	-396.6	253.4	469.3	13.91	
7,700.0	80.50	147.52	7,479.3	-423.2	270.0	500.5	15.31	
7,759.0	86.00	142.24	7,486.2	-471.1	303.7	559.0	12.88	
7,791.0	86.17	141.37	7,488.4	-496.1	323.4	590.9	2.76	
7,886.0	89.63	141.38	7,491.9	-570.3	382.7	685.8	3.64	
7,981.0	89.34	141.54	7,492.7	-644.6	441.9	780.8	0.35	
8,075.0	88.90	140.93	7,494.2	-717.9	500.7	874.7	0.80	
8,171.0	90.57	141.89	7,494.6	-792.9	560.6	970.6	2.01	
8,265.0	89.69	141.19	7,494.4	-866.5	619.0	1,064.6	1.20	
8,360.0	90.13	142.33	7,494.5	-941.1	677.8	1,159.6	1.29	
8,455.0	90.57	143.83	7,494.0	-1,017.1	734.9	1,254.6	1.65	
8,550.0	89.08	142.33	7,494.3	-1,093.0	792.0	1,349.6	2.23	
8,645.0	88.46	141.63	7,496.3	-1,167.9	850.5	1,444.5	0.98	
8,740.0	89.34	140.93	7,498.1	-1,242.0	909.9	1,539.5	1.18	
8,835.0	90.48	141.54	7,498.3	-1,316.0	969.4	1,634.4	1.36	
8,930.0	91.71	142.77	7,496.5	-1,391.0	1,027.6	1,729.4	1.83	
9,024.0	90.92	143.83	7,494.3	-1,466.4	1,083.8	1,823.4	1.41	
9,119.0	89.06	143.95	7,494.3	-1,543.1	1,139.8	1,918.3	1.96	
9,214.0	88.46	142.60	7,496.4	-1,619.3	1,196.6	2,013.3	1.55	
9,309.0	89.25	142.07	7,498.3	-1,694.4	1,254.6	2,108.3	1.00	
9,404.0	90.84	145.50	7,498.2	-1,771.1	1,310.7	2,203.3	3.98	
9,499.0	90.87	145.43	7,496.8	-1,849.3	1,364.6	2,298.2	0.08	
9,593.0	90.31	144.53	7,495.8	-1,926.3	1,418.5	2,392.1	1.13	
9,688.0	90.22	144.79	7,495.4	-2,003.8	1,473.5	2,487.1	0.29	
9,783.0	90.22	143.91	7,495.0	-2,081.0	1,528.8	2,582.1	0.93	
9,878.0	88.55	142.77	7,496.0	-2,157.2	1,585.5	2,677.0	2.13	
9,973.0	88.55	142.77	7,498.4	-2,232.8	1,643.0	2,772.0	0.00	
10,067.0	88.46	142.16	7,500.9	-2,307.3	1,700.3	2,866.0	0.66	
10,162.0	88.90	141.19	7,503.1	-2,381.8	1,759.2	2,960.9	1.12	
10,257.0	89.87	141.63	7,504.1	-2,456.1	1,818.4	3,055.9	1.12	
10,352.0	90.40	142.95	7,503.9	-2,531.2	1,876.5	3,150.9	1.50	
10,447.0	89.34	142.68	7,504.1	-2,606.9	1,933.9	3,245.9	1.15	
10,542.0	90.04	144.53	7,504.6	-2,683.4	1,990.3	3,340.8	2.08	
10,637.0	90.22	144.70	7,504.4	-2,760.8	2,045.3	3,435.8	0.26	
10,731.0	91.45	146.46	7,503.0	-2,838.4	2,098.4	3,529.7	2.28	
10,826.0	90.92	145.50	7,501.0	-2,917.1	2,151.6	3,624.6	1.15	
10,922.0	89.96	144.09	7,500.3	-2,995.5	2,206.9	3,720.5	1.78	
11,016.0	88.64	141.98	7,501.5	-3,070.6	2,263.4	3,814.5	2.65	
11,107.0	91.45	142.51	7,501.4	-3,142.5	2,319.5	3,905.5	3.14	
11,199.0	89.96	141.98	7,500.2	-3,215.3	2,375.5	3,997.5	1.72	

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Company:	Antero Resources	Local Co-ordinate Reference:	Well Rikk Unit 1H
Project:	Doddridge County WV	TVD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Site:	Rikk/Pratt/Blackwood/Irons	MD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Well:	Rikk Unit 1H	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)
11,290.0	90.57	142.33	7,499.8	-3,287.1	2,431.3	4,088.4	0.77
11,381.0	91.45	145.41	7,498.2	-3,360.6	2,484.9	4,179.4	3.52
11,472.0	90.57	143.74	7,496.6	-3,434.8	2,537.7	4,270.4	2.07
11,563.0	90.22	143.74	7,496.0	-3,508.1	2,591.5	4,361.3	0.38
11,655.0	91.28	142.51	7,494.8	-3,581.7	2,646.7	4,453.3	1.76
11,746.0	91.36	142.68	7,492.7	-3,654.0	2,701.9	4,544.3	0.21
11,837.0	90.40	141.54	7,491.3	-3,725.8	2,757.8	4,635.3	1.64
11,929.0	91.10	142.16	7,490.1	-3,798.1	2,814.7	4,727.3	1.02
12,021.0	91.54	143.56	7,488.0	-3,871.4	2,870.2	4,819.2	1.59
12,111.0	90.84	142.24	7,486.1	-3,943.2	2,924.5	4,909.2	1.66
12,206.0	91.01	141.63	7,484.6	-4,018.0	2,983.0	5,004.2	0.67
12,301.0	93.65	143.65	7,480.7	-4,093.4	3,040.6	5,099.1	3.50
12,396.0	92.15	144.09	7,475.9	-4,170.1	3,096.6	5,193.9	1.65
12,491.0	90.59	140.49	7,473.6	-4,245.2	3,154.6	5,288.9	4.13
12,586.0	92.24	142.07	7,471.3	-4,319.3	3,214.0	5,383.8	2.40
12,680.0	91.80	140.84	7,468.0	-4,392.7	3,272.6	5,477.7	1.39
12,775.0	91.28	139.52	7,465.4	-4,465.7	3,333.4	5,572.6	1.49
12,870.0	91.45	140.22	7,463.2	-4,538.3	3,394.6	5,667.4	0.76
12,964.0	92.59	142.33	7,459.8	-4,611.6	3,453.4	5,761.3	2.55
13,059.0	92.59	144.79	7,455.5	-4,687.9	3,509.7	5,856.2	2.59
13,154.0	92.42	145.41	7,451.4	-4,765.8	3,564.0	5,951.0	0.68
13,249.0	90.13	142.95	7,449.3	-4,842.8	3,619.6	6,046.0	3.54
13,344.0	90.31	143.56	7,448.9	-4,918.9	3,676.4	6,141.0	0.67
13,438.0	90.48	143.56	7,448.3	-4,994.5	3,732.3	6,235.0	0.18
13,533.0	90.04	141.98	7,447.8	-5,070.1	3,789.8	6,329.9	1.73
13,628.0	91.28	143.83	7,446.7	-5,145.9	3,847.0	6,424.9	2.34
13,723.0	91.80	144.09	7,444.2	-5,222.7	3,902.9	6,519.9	0.61
13,818.0	91.28	143.74	7,441.6	-5,299.4	3,958.8	6,614.8	0.66
13,913.0	91.01	143.03	7,439.7	-5,375.7	4,015.5	6,709.8	0.80
14,008.0	90.66	143.74	7,438.4	-5,451.9	4,072.2	6,804.8	0.83
14,103.0	91.63	143.47	7,436.5	-5,528.4	4,128.5	6,899.8	1.06
14,198.0	90.92	143.47	7,434.3	-5,604.7	4,185.0	6,994.8	0.75
14,293.0	90.40	141.89	7,433.2	-5,680.2	4,242.6	7,089.7	1.75
14,388.0	90.75	140.22	7,432.3	-5,754.1	4,302.3	7,184.7	1.80
14,483.0	91.17	140.34	7,430.7	-5,827.2	4,363.0	7,279.6	0.46
14,578.0	92.95	144.70	7,427.3	-5,902.5	4,420.8	7,374.5	4.95
14,673.0	90.84	147.17	7,424.1	-5,981.1	4,474.0	7,469.3	3.42
14,768.0	90.48	148.84	7,423.0	-6,061.7	4,524.3	7,563.9	1.80
14,863.0	89.96	151.21	7,422.7	-6,144.0	4,571.8	7,658.2	2.55
14,958.0	89.87	151.38	7,422.8	-6,227.3	4,617.4	7,752.2	0.20
15,053.0	89.34	150.07	7,423.5	-6,310.2	4,663.8	7,846.4	1.49
15,148.0	90.13	151.47	7,423.9	-6,393.1	4,710.2	7,940.5	1.69
15,243.0	90.48	151.56	7,423.4	-6,476.6	4,755.5	8,034.5	0.28
15,337.0	91.24	152.39	7,422.0	-6,559.5	4,799.7	8,127.3	0.20

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Company:	Antero Resources	Local Co-ordinate Reference:	Well Rikk Unit 1H
Project:	Doddridge County WV	TVD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Site:	Rikk/Pratt/Blackwood/Irons	MD Reference:	PATT 317: Rikk 1H 1318 GL + 22.5 GL @ 1340.5
Well:	Rikk Unit 1H	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)
15,432.0	90.04	150.86	7,420.9	-6,643.1	4,844.8	8,221.2	2.05
15,527.0	90.13	150.15	7,420.8	-6,725.8	4,891.6	8,315.4	0.75
15,622.0	90.66	152.00	7,420.1	-6,809.0	4,937.6	8,409.5	2.03
15,717.0	90.04	148.04	7,419.6	-6,891.2	4,985.0	8,503.8	4.22
15,812.0	90.31	147.87	7,419.3	-6,971.7	5,035.4	8,598.4	0.34
15,907.0	90.92	149.45	7,418.3	-7,052.9	5,084.8	8,693.0	1.78
16,002.0	89.87	148.04	7,417.6	-7,134.1	5,134.1	8,787.5	1.85
16,096.0	90.13	148.40	7,417.6	-7,214.0	5,183.6	8,881.1	0.47
16,191.0	90.74	149.63	7,416.9	-7,295.4	5,232.5	8,975.6	1.45
16,286.0	89.25	149.63	7,416.9	-7,377.4	5,280.6	9,070.0	1.57
16,381.0	90.40	151.21	7,417.2	-7,460.0	5,327.5	9,164.2	2.06
16,476.0	90.48	151.74	7,416.4	-7,543.5	5,372.8	9,258.1	0.56
16,571.0	89.43	150.95	7,416.5	-7,626.8	5,418.4	9,352.1	1.38
16,666.0	90.22	152.18	7,416.8	-7,710.4	5,463.6	9,446.1	1.54
16,761.0	89.69	149.71	7,416.9	-7,793.4	5,509.7	9,540.2	2.66
16,856.0	89.52	149.54	7,417.5	-7,875.4	5,557.8	9,634.6	0.25
16,950.0	89.70	149.49	7,418.2	-7,956.4	5,605.5	9,728.0	0.20
17,045.0	89.80	152.19	7,418.6	-8,039.3	5,651.7	9,822.1	2.84
17,140.0	90.40	151.47	7,418.4	-8,123.1	5,696.6	9,916.0	0.99
17,234.0	87.76	149.01	7,419.9	-8,204.6	5,743.2	10,009.2	3.84
17,329.0	89.43	147.63	7,422.3	-8,285.5	5,793.1	10,103.8	2.28
17,424.0	89.60	147.96	7,423.1	-8,365.8	5,843.7	10,198.4	0.39
17,464.0	90.04	148.48	7,423.2	-8,399.8	5,864.8	10,238.3	1.70
17,523.0	90.00	149.00	7,423.2	-8,450.3	5,895.4	10,297.0	0.88

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,864.0	6,863.5	-22.7	52.6	Sycamore
7,136.0	7,129.5	-57.7	81.2	Middlesex
7,303.0	7,274.1	-133.1	114.4	Burkett
7,346.0	7,307.3	-158.1	125.4	Tully
7,488.0	7,399.9	-254.7	171.6	Hamilton
7,582.0	7,444.2	-327.1	211.7	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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