



Antero
Hawkeys Unit 1H
Tyler County WV
Northing: 14331731.07
Easting: 1681949.62
As Drilled

WELL DETAILS: Hawkeys Unit 1H
 Ground Level: 814.0
 Easting: 1681949.62
 Northing: 14331731.07
 Latitude: 39° 27' 58.902 N
 Longitude: 80° 51' 10.218 W

REFERENCE INFORMATION
 Database: HUS/Reference: USGS
 Horizontal Datum: NAD 83
 Vertical Datum: Mean Sea Level
 Projection: UTM
 Zone: 18N
 Spheroid: GRS 80
 Datum: NAD 83
 Ellipsoid: GRS 80
 Units: Meter
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Tyler County WV
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 83 (NAD83 CONUS)
 Ellipsoid: GRS 80 (6399.5924 m)
 Zone: Zone 18N (84 W to 78 W)
 System Datum: Mean Sea Level

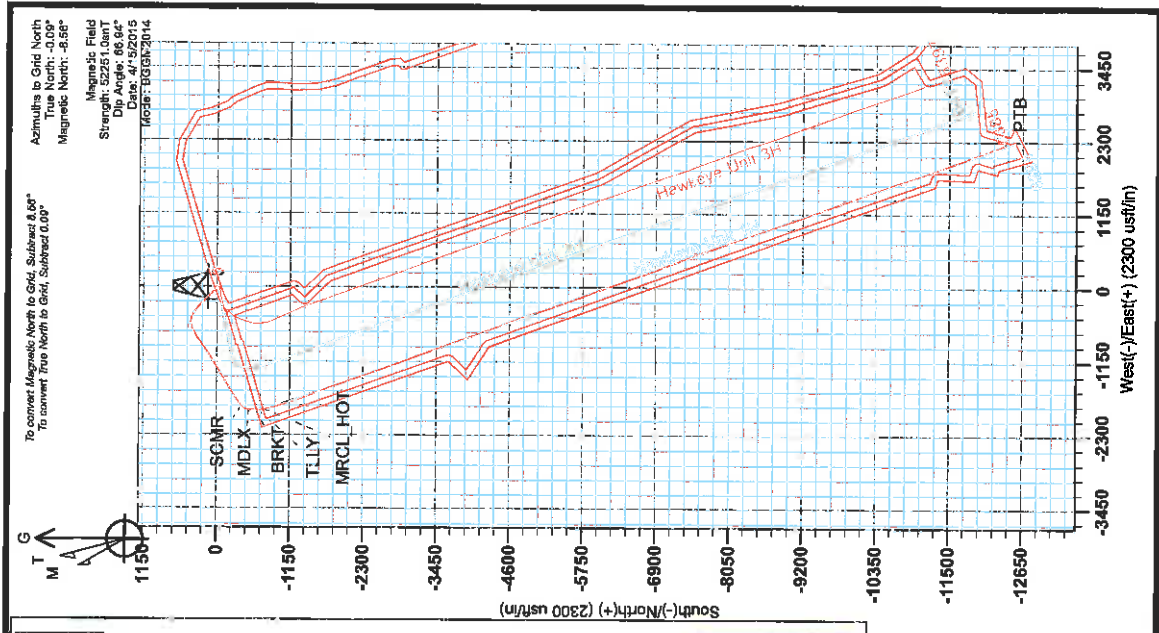
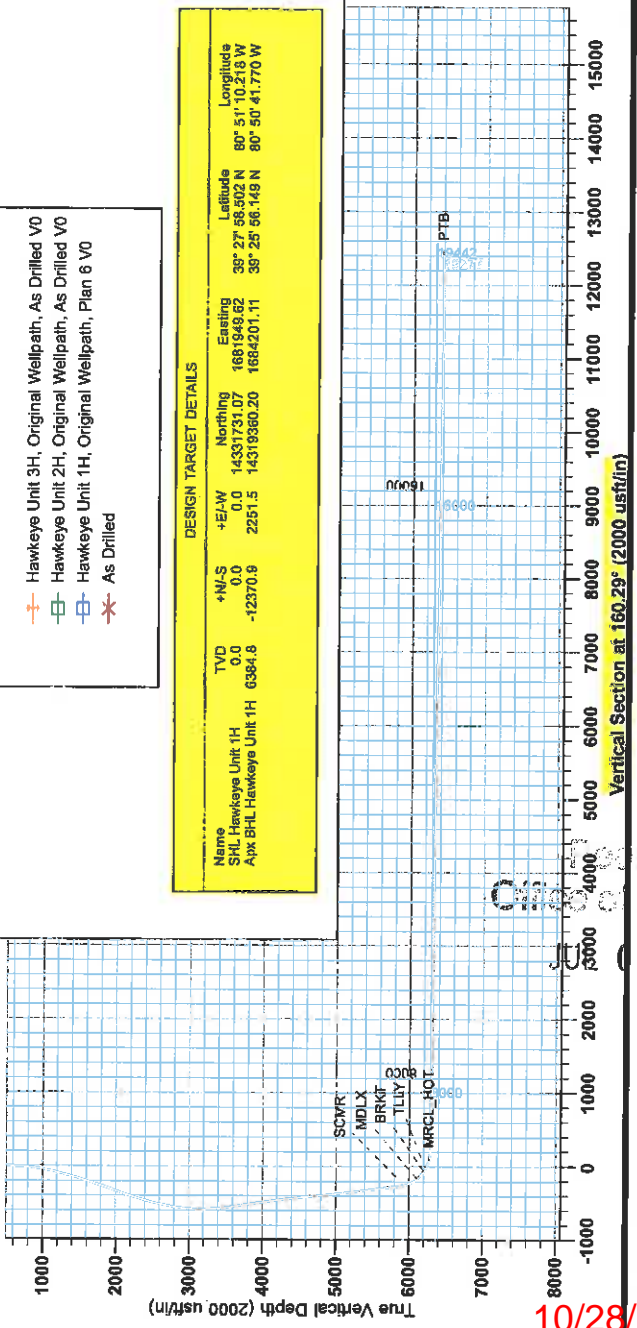
Scientific Drilling
 Genie Lightfoot
 10-45, June 16 2015
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK

LEGEND

- Hawkeys Unit 3H, Original Wellpath, As Drilled V0
- Hawkeys Unit 2H, Original Wellpath, As Drilled V0
- Hawkeys Unit 1H, Original Wellpath, Plan 6 V0
- As Drilled

DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL Hawkeys Unit 1H	0.0	0.0	0.0	14331731.07	1681949.62	39° 27' 58.902 N	80° 51' 10.218 W
ApX BHL Hawkeys Unit 1H	6384.8	-12370.8	2251.5	14319360.20	1684201.11	39° 25' 56.148 N	80° 50' 41.770 W



Azimuths to Grid North
 True North: 0.09°
 Magnetic North: -8.58°
 Magnetic Field
 Strength: 52251.0auT
 Dip Angle: 66.94°
 Date: 4/15/2015
 MG35: 03/08/2014

To convert Magnetic North to Grid, Subtract 8.60°
 To convert True North to Grid, Subtract 0.09°

10/28/2016

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Antero

Tyler County WV

Weigle East Pad: Dean/Goodfellow/Hawkeye/Scardina

Hawkeye Unit 1H

Original Wellpath

Design: As Drilled

EOW Completion Report

16 June, 2015

Received
Office of Oil & Gas
JUL 05 2016



10/28/2016



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Well:	Hawkeye Unit 1H	North Reference:	Grd
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 Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Weigle East Pad Dean/Goodfellow/Hawkeye/Scardina		
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Site Position:	Northing:	14,331,712.20 usft	Latitude:	39° 27' 58.315 N	
From: Map	Easting:	1,681,956.94 usft	Longitude:	80° 51' 10.125 W	
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.09 °

Well	Hawkeye Unit 1H, Marcellus			
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Well Position	+N/-S	0.0 usft	Northing:	14,331,731.07 usft	Latitude:	39° 27' 58.502 N
	+E/-W	0.0 usft	Easting:	1,681,949.62 usft	Longitude:	80° 51' 10.218 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	833.0 usft	Ground Level:	814.0 usft

Wellbore	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	4/15/2015	-8.47	66.94	52,251

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	160.29	

Survey Program	Date 6/16/2015			
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From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
106.0	6,006.4	Survey #6 Final Gyro (Original Wellpath)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
6,037.0	19,277.0	Survey #7 MWD SDI (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1

Survey									
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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
106.0	0.41	88.72	106.0	0.0	0.4	0.1	0.39
131.0	0.40	92.53	131.0	0.0	0.6	0.2	0.11
156.0	0.38	100.87	156.0	0.0	0.7	0.3	0.24
181.0	0.41	100.09	181.0	0.0	0.9	0.3	0.12
206.0	0.40	101.52	206.0	-0.1	1.1	0.4	0.06
231.0	0.36	102.14	231.0	-0.1	1.2	0.5	0.16
256.0	0.28	107.95	256.0	-0.1	1.4	0.6	0.34
281.0	0.37	89.58	281.0	-0.2	1.5	0.7	0.55
306.0	0.33	104.97	306.0	-0.2	1.7	0.7	0.41
331.0	0.28	93.65	331.0	-0.2	1.8	0.8	0.31



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
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Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Well:	Hawkeye 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)
356.0	0.36	92.23	356.0	-0.2	1.9	0.8	0.32
381.0	0.32	78.98	381.0	-0.2	2.1	0.9	0.35
406.0	0.20	70.35	406.0	-0.2	2.2	0.9	0.50
431.0	0.20	58.74	431.0	-0.1	2.3	0.9	0.16
456.0	0.08	6.30	456.0	-0.1	2.3	0.9	0.66
481.0	0.16	320.66	481.0	-0.1	2.3	0.8	0.47
506.0	0.24	345.62	506.0	0.0	2.2	0.7	0.47
531.0	0.43	311.15	531.0	0.1	2.2	0.6	1.08
556.0	1.20	292.46	556.0	0.3	1.8	0.3	3.22
581.0	1.76	288.67	581.0	0.5	1.2	-0.1	2.27
606.0	2.41	287.51	606.0	0.8	0.4	-0.6	2.61
631.0	2.90	286.66	630.9	1.1	-0.7	-1.3	1.97
656.0	3.66	288.74	655.9	1.6	-2.1	-2.2	3.08
681.0	4.47	289.74	680.8	2.2	-3.8	-3.3	3.25
706.0	5.17	292.12	705.7	2.9	-5.7	-4.7	2.91
731.0	5.51	295.65	730.6	3.9	-7.9	-6.3	1.89
756.0	5.94	298.42	755.5	5.0	-10.1	-8.1	2.04
781.0	6.56	301.29	780.4	6.4	-12.4	-10.2	2.78
806.0	7.37	304.50	805.2	8.0	-15.0	-12.6	3.59
831.0	7.96	306.75	830.0	9.9	-17.7	-15.3	2.65
856.0	8.77	308.57	854.7	12.2	-20.6	-18.4	3.41
881.0	9.47	310.55	879.4	14.7	-23.6	-21.8	3.07
906.0	10.14	311.32	904.0	17.5	-26.8	-25.5	2.73
931.0	10.92	312.05	928.6	20.5	-30.2	-29.5	3.17
956.0	11.34	312.65	953.1	23.8	-33.8	-33.8	1.74
981.0	11.81	312.11	977.6	27.2	-37.5	-38.2	1.93
1,006.0	12.14	311.64	1,002.1	30.6	-41.4	-42.8	1.38
1,031.0	12.45	311.19	1,026.5	34.1	-45.4	-47.4	1.30
1,056.0	12.53	310.60	1,050.9	37.7	-49.5	-52.2	0.60
1,081.0	12.75	310.65	1,075.3	41.2	-53.6	-56.9	0.88
1,106.0	12.88	309.82	1,099.7	44.8	-57.8	-61.7	0.90
1,131.0	13.10	308.89	1,124.0	48.4	-62.2	-66.5	1.21
1,156.0	13.37	308.49	1,148.4	52.0	-66.6	-71.4	1.14
1,181.0	13.74	308.06	1,172.7	55.6	-71.2	-76.4	1.53
1,206.0	14.40	306.90	1,196.9	59.3	-76.1	-81.5	2.87
1,231.0	15.03	306.11	1,221.1	63.1	-81.2	-86.8	2.64
1,256.0	15.29	306.76	1,245.2	67.0	-86.4	-92.2	1.24
1,281.0	15.54	307.08	1,269.3	70.9	-91.7	-97.7	1.06
1,306.0	15.98	309.09	1,293.4	75.1	-97.1	-103.5	2.80
1,331.0	16.39	309.67	1,317.4	79.6	-102.5	-109.5	1.76
1,356.0	16.53	309.88	1,341.4	84.1	-107.9	-115.6	0.61
1,381.0	16.93	311.10	1,365.3	88.8	-113.4	-121.8	2.13
1,406.0	17.26	315.01	1,389.2	93.8	-118.8	-128.3	4.78
1,431.0	17.55	316.92	1,413.1	99.2	-124.0	-135.1	2.56



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sca	MD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Well:	Hawkeye Unit 1H	North Reference:	Grd
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)
1,456.0	17.81	317.20	1,436.9	104.7	-129.1	-142.1	1.09
1,481.0	18.04	317.17	1,460.7	110.4	-134.4	-149.2	0.92
1,506.0	18.39	317.19	1,484.4	116.1	-139.7	-156.4	1.40
1,531.0	18.65	317.11	1,508.1	121.9	-145.1	-163.7	1.04
1,556.0	18.93	317.36	1,531.8	127.8	-150.5	-171.1	1.17
1,581.0	19.26	317.32	1,555.4	133.8	-156.1	-178.6	1.32
1,606.0	19.87	316.94	1,579.0	139.9	-161.7	-186.3	1.72
1,631.0	19.99	316.91	1,602.5	146.1	-167.5	-194.1	1.28
1,656.0	20.17	316.80	1,626.0	152.4	-173.4	-202.0	0.74
1,681.0	19.91	314.91	1,649.5	158.5	-179.4	-209.8	2.79
1,706.0	19.56	312.47	1,673.0	164.4	-185.5	-217.3	3.58
1,731.0	19.86	312.66	1,696.5	170.1	-191.7	-224.8	1.23
1,756.0	19.94	313.16	1,720.0	175.9	-197.9	-232.3	0.75
1,781.0	20.28	314.67	1,743.5	181.8	-204.1	-240.0	2.48
1,806.0	20.59	315.53	1,766.9	188.0	-210.3	-247.9	1.73
1,831.0	20.96	316.04	1,790.3	194.4	-216.5	-256.0	1.65
1,856.0	21.35	316.21	1,813.6	200.9	-222.7	-264.2	1.58
1,881.0	21.83	316.61	1,836.9	207.5	-229.0	-272.6	2.01
1,906.0	22.37	316.86	1,860.0	214.4	-235.5	-281.3	2.19
1,931.0	22.85	316.98	1,883.1	221.4	-242.1	-290.1	1.93
1,956.0	22.85	316.44	1,906.2	228.5	-248.7	-299.0	0.84
1,981.0	22.01	314.92	1,929.3	235.3	-255.4	-307.6	4.08
2,006.0	21.96	314.46	1,952.5	241.9	-262.0	-316.1	0.72
2,031.0	21.99	313.52	1,975.6	248.4	-268.8	-324.5	1.41
2,056.0	21.90	313.35	1,998.8	254.8	-275.5	-332.8	0.44
2,081.0	21.94	313.38	2,022.0	261.2	-282.3	-341.1	0.17
2,106.0	22.02	313.38	2,045.2	267.6	-289.1	-349.5	0.32
2,131.0	21.88	314.12	2,068.4	274.1	-295.9	-357.8	1.24
2,156.0	22.03	314.01	2,091.6	280.6	-302.6	-366.2	0.62
2,181.0	22.19	314.29	2,114.7	287.2	-309.4	-374.7	0.77
2,206.0	22.22	314.50	2,137.9	293.8	-316.1	-383.2	0.34
2,231.0	22.02	314.07	2,161.0	300.3	-322.8	-391.6	1.03
2,256.0	21.04	312.01	2,184.3	306.6	-329.5	-399.8	4.95
2,281.0	20.62	310.74	2,207.7	312.5	-336.2	-407.6	2.47
2,306.0	20.65	309.65	2,231.1	318.2	-342.9	-415.2	1.54
2,331.0	20.43	308.77	2,254.5	323.7	-349.7	-422.7	1.52
2,356.0	19.84	307.41	2,277.9	329.0	-356.5	-430.0	3.01
2,381.0	19.76	306.90	2,301.5	334.1	-363.3	-437.1	0.76
2,406.0	19.85	306.18	2,325.0	339.2	-370.1	-444.1	1.04
2,431.0	19.49	304.70	2,348.5	344.1	-376.9	-451.0	2.46
2,456.0	19.29	303.48	2,372.1	348.7	-383.8	-457.7	1.81
2,481.0	19.09	302.24	2,395.7	353.2	-390.7	-464.2	1.82
2,506.0	19.02	301.96	2,419.4	357.5	-397.6	-470.7	0.46
2,531.0	18.68	301.98	2,443.0	361.8	-404.5	-477.0	1.36
2,556.0	18.75	301.72	2,466.7	366.0	-411.3	-483.3	0.44

Office
JUL 05 2016



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 523 GL 814' + 19 @ 833 0usft
Site:	Weigle East Pad Dearl/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833 0usft
Well:	Hawkeye 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)
2,581.0	18.08	300.76	2,490.4	370.1	-418.0	-489.4	2.94
2,606.0	17.96	300.28	2,514.2	374.0	-424.7	-495.4	0.76
2,631.0	17.57	298.94	2,538.0	377.8	-431.3	-501.1	2.26
2,656.0	17.18	295.41	2,561.8	381.2	-438.0	-506.6	4.50
2,681.0	16.91	293.50	2,585.8	384.3	-444.6	-511.7	2.49
2,706.0	16.59	291.96	2,609.7	387.0	-451.3	-516.6	2.19
2,731.0	16.71	290.50	2,633.6	389.6	-457.9	-521.2	1.74
2,756.0	17.01	288.22	2,657.6	392.0	-464.8	-525.8	2.90
2,781.0	17.12	287.72	2,681.5	394.3	-471.8	-530.3	0.73
2,806.0	16.78	286.22	2,705.4	396.4	-478.7	-534.7	2.22
2,831.0	16.91	285.00	2,729.3	398.4	-485.7	-538.8	1.51
2,856.0	16.94	284.25	2,753.2	400.2	-492.8	-542.9	0.88
2,881.0	17.31	282.93	2,777.1	401.9	-499.9	-547.0	2.15
2,906.0	17.56	280.38	2,801.0	403.5	-507.2	-550.9	3.22
2,931.0	17.72	279.43	2,824.8	404.8	-514.7	-554.6	1.32
2,956.0	17.36	278.02	2,848.6	405.9	-522.2	-558.2	2.23
2,981.0	17.35	276.88	2,872.5	406.9	-529.5	-561.6	1.36
3,006.0	17.08	275.78	2,896.4	407.7	-536.9	-564.9	1.69
3,031.0	17.46	274.39	2,920.2	408.3	-544.3	-568.0	2.24
3,056.0	18.08	271.51	2,944.1	408.7	-551.9	-570.9	4.30
3,081.0	18.75	268.48	2,967.8	408.7	-559.8	-573.6	4.67
3,106.0	19.58	265.63	2,991.4	408.3	-568.0	-575.9	5.00
3,131.0	20.10	263.20	3,014.9	407.5	-576.4	-578.0	3.90
3,156.0	20.44	260.78	3,038.4	406.3	-585.0	-579.8	3.62
3,181.0	20.71	258.45	3,061.8	404.7	-593.7	-581.2	3.45
3,206.0	20.79	255.72	3,085.1	402.7	-602.3	-582.2	3.88
3,231.0	21.08	253.05	3,108.5	400.3	-610.9	-582.9	3.99
3,256.0	21.27	251.27	3,131.8	397.5	-619.5	-583.2	2.68
3,281.0	21.91	250.19	3,155.1	394.5	-628.2	-583.2	3.01
3,306.0	22.62	249.48	3,178.2	391.2	-637.1	-583.2	3.04
3,331.0	22.91	248.80	3,201.2	387.8	-646.1	-583.0	1.57
3,356.0	23.44	247.27	3,224.2	384.1	-655.2	-582.6	3.21
3,381.0	24.10	245.58	3,247.1	380.1	-664.5	-581.9	3.79
3,406.0	24.35	243.99	3,269.9	375.7	-673.7	-580.9	2.79
3,431.0	24.92	242.73	3,292.6	371.0	-683.0	-579.6	3.10
3,456.0	25.45	242.08	3,315.2	366.1	-692.5	-578.2	2.39
3,481.0	26.11	241.40	3,337.8	360.9	-702.0	-576.6	2.89
3,506.0	26.40	240.16	3,360.2	355.5	-711.7	-574.7	2.48
3,531.0	26.82	239.06	3,382.5	349.9	-721.4	-572.7	2.59
3,556.0	26.97	238.06	3,404.8	344.0	-731.0	-570.4	1.91
3,581.0	27.48	237.69	3,427.1	337.9	-740.7	-567.9	2.15
3,606.0	27.89	237.04	3,449.2	331.6	-750.5	-565.3	2.04
3,631.0	28.34	236.56	3,471.2	325.2	-760.3	-562.6	2.01
3,656.0	28.46	236.18	3,493.2	318.6	-770.2	-559.7	0.87



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Well:	Hawkeye 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)
3,681.0	28.03	235.27	3,515.3	311.9	-780.0	-556.7	2.43
3,706.0	27.70	234.75	3,537.4	305.2	-789.6	-553.6	1.64
3,731.0	27.22	233.77	3,559.5	298.5	-798.9	-550.5	2.64
3,756.0	27.08	232.82	3,581.8	291.7	-808.1	-547.1	1.82
3,781.0	27.03	231.98	3,604.1	284.7	-817.1	-543.6	1.54
3,806.0	26.26	231.26	3,626.4	277.8	-825.9	-540.0	3.34
3,831.0	26.06	230.72	3,648.8	270.8	-834.4	-536.4	1.24
3,856.0	26.16	230.89	3,671.3	263.9	-843.0	-532.7	0.50
3,881.0	25.77	231.14	3,693.8	257.0	-851.5	-529.1	1.62
3,906.0	25.31	230.28	3,716.3	250.2	-859.8	-525.5	2.36
3,931.0	24.95	230.67	3,739.0	243.4	-868.0	-521.9	1.59
3,956.0	25.18	231.40	3,761.6	236.8	-876.2	-518.4	1.54
3,981.0	25.32	232.30	3,784.2	230.2	-884.6	-515.0	1.63
4,006.0	25.24	232.81	3,806.8	223.7	-893.1	-511.8	0.93
4,031.0	25.32	233.18	3,829.4	217.3	-901.6	-508.6	0.71
4,056.0	25.71	233.99	3,852.0	210.9	-910.3	-505.5	2.09
4,081.0	26.27	235.45	3,874.5	204.5	-919.2	-502.6	3.40
4,106.0	27.05	236.24	3,896.8	198.3	-928.5	-499.8	3.43
4,131.0	27.73	236.92	3,919.0	191.9	-938.1	-497.1	2.99
4,156.0	28.51	237.13	3,941.0	185.5	-948.0	-494.4	3.15
4,181.0	29.46	237.39	3,962.9	179.0	-958.2	-491.6	3.83
4,206.0	30.03	236.92	3,984.6	172.2	-968.6	-488.8	2.46
4,231.0	30.47	236.75	4,006.2	165.3	-979.2	-485.9	1.79
4,256.0	30.28	235.58	4,027.8	158.3	-989.7	-482.8	2.49
4,281.0	29.72	234.76	4,049.4	151.2	-999.9	-479.5	2.78
4,306.0	29.39	234.37	4,071.2	144.0	-1,010.0	-476.2	1.53
4,331.0	29.51	234.31	4,093.0	136.8	-1,020.0	-472.8	0.49
4,356.0	29.20	234.48	4,114.7	129.7	-1,029.9	-469.5	1.28
4,381.0	29.11	234.75	4,136.6	122.7	-1,039.9	-466.2	0.64
4,406.0	28.97	234.94	4,158.4	115.7	-1,049.8	-462.9	0.67
4,431.0	28.59	235.35	4,180.3	108.8	-1,059.7	-459.8	1.71
4,456.0	28.87	235.17	4,202.3	101.9	-1,069.5	-456.7	1.17
4,481.0	28.97	235.36	4,224.1	95.1	-1,079.5	-453.5	0.54
4,506.0	28.92	235.62	4,246.0	88.2	-1,089.4	-450.5	0.54
4,531.0	29.23	236.57	4,267.9	81.4	-1,099.5	-447.5	2.22
4,556.0	29.56	237.28	4,289.7	74.7	-1,109.8	-444.6	1.92
4,581.0	29.48	237.64	4,311.4	68.1	-1,120.2	-441.9	0.78
4,606.0	29.75	237.67	4,333.1	61.5	-1,130.6	-439.0	1.08
4,631.0	29.47	237.73	4,354.9	54.9	-1,141.1	-436.5	1.13
4,656.0	29.18	237.84	4,376.7	48.4	-1,151.4	-433.9	1.18
4,681.0	29.62	237.97	4,398.5	41.8	-1,161.8	-431.2	1.78
4,706.0	29.75	238.39	4,420.2	35.3	-1,172.3	-428.6	0.98
4,731.0	29.76	238.73	4,441.9	28.8	-1,182.9	-426.1	0.68
4,756.0	29.96	239.38	4,463.6	22.4	-1,193.6	-423.7	1.52

Office of Oil & Gas
JUL 10 2016



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 523: GL 814' + 19 @ 833.0usft
Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523: GL 814' + 19 @ 833.0usft
Well:	Hawkeye 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)
4,781.0	30.08	239.81	4,485.2	16.1	-1,204.4	-421.4	0.99
4,806.0	30.04	240.01	4,506.8	9.8	-1,215.2	-419.1	0.43
4,831.0	29.80	240.45	4,528.5	3.6	-1,226.0	-416.9	1.30
4,856.0	29.77	240.89	4,550.2	-2.4	-1,236.9	-414.8	0.88
4,881.0	29.55	241.22	4,571.9	-8.4	-1,247.7	-412.9	1.10
4,906.0	29.78	241.59	4,593.7	-14.4	-1,258.6	-411.0	1.18
4,931.0	29.87	241.58	4,615.3	-20.3	-1,269.5	-409.1	0.36
4,956.0	29.84	241.45	4,637.0	-26.2	-1,280.4	-407.2	0.29
4,981.0	29.80	240.91	4,658.7	-32.2	-1,291.3	-405.2	1.09
5,006.0	29.94	240.73	4,680.4	-38.3	-1,302.2	-403.2	0.66
5,031.0	29.76	240.06	4,702.1	-44.4	-1,313.0	-401.0	1.52
5,056.0	29.55	239.89	4,723.8	-50.6	-1,323.7	-398.8	0.90
5,081.0	29.01	239.83	4,745.6	-56.7	-1,334.3	-396.6	2.16
5,106.0	28.90	239.82	4,767.5	-62.8	-1,344.8	-394.4	0.44
5,131.0	29.14	239.78	4,789.3	-68.9	-1,355.2	-392.2	0.96
5,156.0	28.88	239.22	4,811.2	-75.1	-1,365.7	-389.9	1.50
5,181.0	28.92	239.46	4,833.1	-81.2	-1,376.1	-387.6	0.49
5,206.0	28.95	239.39	4,855.0	-87.4	-1,386.5	-385.3	0.18
5,231.0	28.89	238.69	4,876.9	-93.6	-1,396.9	-383.0	1.38
5,256.0	28.63	238.27	4,898.8	-99.9	-1,407.1	-380.5	1.32
5,281.0	28.57	238.34	4,920.7	-106.2	-1,417.3	-378.0	0.27
5,306.0	28.60	238.77	4,942.7	-112.4	-1,427.5	-375.6	0.83
5,331.0	28.15	238.68	4,964.7	-118.6	-1,437.7	-373.2	1.81
5,356.0	28.10	238.67	4,986.7	-124.7	-1,447.7	-370.8	0.20
5,381.0	28.18	238.92	5,008.8	-130.8	-1,457.8	-368.5	0.57
5,406.0	28.15	239.14	5,030.8	-136.9	-1,467.9	-366.2	0.43
5,431.0	27.88	238.98	5,052.9	-142.9	-1,478.0	-363.9	1.12
5,456.0	27.87	238.75	5,075.0	-149.0	-1,488.0	-361.6	0.43
5,481.0	27.78	238.33	5,097.1	-155.1	-1,498.0	-359.2	0.86
5,506.0	27.31	237.68	5,119.3	-161.2	-1,507.8	-356.8	2.23
5,531.0	27.24	237.26	5,141.5	-167.4	-1,517.4	-354.2	0.82
5,556.0	26.88	236.81	5,163.7	-173.5	-1,527.0	-351.6	1.66
5,581.0	26.48	236.54	5,186.1	-179.7	-1,536.3	-349.0	1.67
5,606.0	26.11	235.96	5,208.5	-185.9	-1,545.6	-346.3	1.80
5,631.0	26.69	235.72	5,230.9	-192.1	-1,554.8	-343.5	2.36
5,656.0	27.18	235.62	5,253.2	-198.5	-1,564.1	-340.6	1.97
5,681.0	27.26	235.73	5,275.4	-204.9	-1,573.5	-337.8	0.38
5,706.0	27.42	235.47	5,297.6	-211.4	-1,583.0	-334.8	0.80
5,731.0	27.40	235.23	5,319.8	-218.0	-1,592.5	-331.9	0.45
5,756.0	27.31	235.10	5,342.0	-224.5	-1,601.9	-328.9	0.43
5,781.0	27.30	235.60	5,364.2	-231.1	-1,611.4	-325.9	0.92
5,806.0	27.74	236.35	5,386.4	-237.5	-1,620.9	-323.1	2.24
5,831.0	27.93	237.23	5,408.5	-243.9	-1,630.7	-320.3	1.81
5,856.0	27.83	237.33	5,430.6	-250.2	-1,640.5	-317.7	0.44



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
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Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Well:	Hawkeye 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)
5,881.0	27.55	236.94	5,452.7	-256.5	-1,650.3	-315.1	1.33
5,906.0	27.08	236.19	5,474.9	-262.9	-1,659.9	-312.3	2.33
5,931.0	26.67	235.43	5,497.2	-269.2	-1,669.2	-309.5	2.14
5,956.0	26.35	235.06	5,519.6	-275.6	-1,678.4	-306.6	1.44
5,981.0	26.64	235.36	5,542.0	-281.9	-1,687.5	-303.7	1.28
6,006.0	26.92	236.33	5,564.3	-288.3	-1,696.9	-300.9	2.08
6,006.4	26.92	236.34	5,564.7	-288.4	-1,697.0	-300.9	1.01
6,037.0	27.49	236.08	5,591.9	-296.1	-1,708.6	-297.5	1.91
6,067.0	27.20	235.06	5,618.5	-303.9	-1,720.0	-294.0	1.84
6,097.0	26.90	235.50	5,645.3	-311.7	-1,731.2	-290.4	1.20
6,127.0	26.54	234.85	5,672.1	-319.4	-1,742.3	-286.9	1.55
6,157.0	26.03	233.42	5,699.0	-327.2	-1,753.1	-283.2	2.71
6,187.0	25.95	232.40	5,725.9	-335.1	-1,763.5	-279.3	1.51
6,217.0	26.24	236.15	5,752.9	-342.8	-1,774.3	-275.7	5.58
6,247.0	26.42	238.55	5,779.7	-350.0	-1,785.5	-272.7	3.60
6,276.0	26.51	237.77	5,805.7	-356.8	-1,796.4	-270.0	1.24
6,306.0	26.49	237.37	5,832.6	-364.0	-1,807.7	-267.0	0.60
6,336.0	26.46	237.04	5,859.4	-371.2	-1,819.0	-264.0	0.50
6,366.0	25.98	237.14	5,886.3	-378.4	-1,830.1	-261.0	1.61
6,396.0	27.29	233.24	5,913.1	-386.1	-1,841.1	-257.5	7.28
6,420.0	28.73	226.08	5,934.3	-393.4	-1,849.7	-253.5	15.22
SCMR							
6,426.0	29.14	224.40	5,939.6	-395.5	-1,851.8	-252.2	15.22
6,455.0	31.60	217.39	5,964.6	-406.5	-1,861.3	-245.0	14.86
6,485.0	33.88	212.66	5,989.9	-419.8	-1,870.6	-235.7	11.42
6,515.0	35.77	208.14	6,014.5	-434.6	-1,879.3	-224.7	10.66
6,545.0	37.57	202.61	6,038.6	-450.8	-1,886.9	-212.0	12.53
6,575.0	39.80	197.94	6,062.0	-468.4	-1,893.4	-197.6	12.24
6,605.0	41.89	193.97	6,084.7	-487.2	-1,898.8	-181.7	11.11
6,634.0	43.97	190.02	6,105.9	-506.5	-1,902.9	-164.9	11.71
MDLX							
6,635.0	44.04	189.89	6,106.6	-507.2	-1,903.0	-164.3	11.71
6,665.0	46.81	187.77	6,127.7	-528.3	-1,906.2	-145.5	10.52
6,695.0	48.90	185.71	6,147.8	-550.4	-1,908.8	-125.6	8.63
6,724.0	51.23	184.03	6,166.4	-572.6	-1,910.7	-105.4	9.18
6,755.0	54.34	182.90	6,185.2	-597.2	-1,912.2	-82.7	10.44
6,780.0	56.41	182.01	6,199.4	-617.8	-1,913.1	-63.6	8.77
BRKT							
6,785.0	56.82	181.84	6,202.1	-621.9	-1,913.2	-59.8	8.77
6,815.0	59.55	179.07	6,217.9	-647.4	-1,913.4	-35.8	12.01
6,824.0	60.38	177.80	6,222.4	-655.2	-1,913.2	-28.4	15.32
TLLY							
6,845.0	62.36	174.91	6,232.5	-673.6	-1,912.0	-10.7	15.32
6,875.0	63.72	173.23	6,246.1	-700.2	-1,909.3	15.3	6.74
6,904.0	67.06	170.87	6,258.2	-726.3	-1,905.6	41.1	13.69



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
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Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833 Ousft
Well:	Hawkeye 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)
6,924.0	70.20	168.70	6,265.5	-744.6	-1,902.3	59.4	18.67
MRCL_HOT							
6,934.0	71.78	167.65	6,268.7	-753.9	-1,900.4	68.8	18.67
6,964.0	75.73	167.26	6,277.1	-782.0	-1,894.1	97.4	13.23
6,994.0	78.30	166.45	6,283.9	-810.5	-1,887.5	126.4	8.96
7,024.0	81.18	165.27	6,289.2	-839.1	-1,880.3	155.8	10.35
7,054.0	86.27	164.32	6,292.5	-867.8	-1,872.4	185.5	17.26
7,088.0	89.46	164.28	6,293.8	-900.5	-1,863.3	219.4	9.38
7,171.0	89.60	164.02	6,294.4	-980.4	-1,840.6	302.2	0.36
7,261.0	88.33	160.65	6,296.1	-1,066.1	-1,813.3	392.1	4.00
7,350.0	88.96	161.97	6,298.2	-1,150.4	-1,784.8	481.1	1.64
7,440.0	90.37	161.83	6,298.7	-1,235.9	-1,756.8	571.0	1.57
7,530.0	89.80	159.56	6,298.6	-1,320.9	-1,727.1	661.0	2.60
7,619.0	89.09	158.19	6,299.4	-1,403.9	-1,695.0	750.0	1.73
7,709.0	89.40	158.59	6,300.6	-1,487.6	-1,661.8	839.9	0.56
7,798.0	88.63	158.48	6,302.1	-1,570.4	-1,629.3	928.9	0.87
7,888.0	89.56	160.42	6,303.6	-1,654.6	-1,597.7	1,018.8	2.39
7,978.0	88.93	158.52	6,304.7	-1,738.9	-1,566.1	1,108.8	2.22
8,067.0	90.57	160.49	6,305.1	-1,822.3	-1,535.0	1,197.8	2.88
8,157.0	90.13	160.57	6,304.6	-1,907.1	-1,505.0	1,287.8	0.50
8,246.0	89.50	160.39	6,304.9	-1,991.0	-1,475.2	1,376.8	0.74
8,336.0	89.40	159.53	6,305.7	-2,075.5	-1,444.4	1,466.8	0.96
8,425.0	88.86	159.97	6,307.1	-2,159.0	-1,413.6	1,555.8	0.78
8,515.0	89.60	161.83	6,308.3	-2,244.1	-1,384.2	1,645.8	2.22
8,604.0	89.43	160.84	6,309.0	-2,328.4	-1,355.7	1,734.7	1.13
8,694.0	89.90	161.69	6,309.6	-2,413.6	-1,326.8	1,824.7	1.08
8,784.0	89.93	161.15	6,309.7	-2,498.9	-1,298.1	1,914.7	0.60
8,874.0	89.93	160.77	6,309.8	-2,584.0	-1,268.7	2,004.7	0.42
8,963.0	89.46	160.06	6,310.3	-2,667.8	-1,238.9	2,093.7	0.96
9,052.0	90.37	160.94	6,310.4	-2,751.7	-1,209.2	2,182.7	1.42
9,142.0	89.53	158.54	6,310.5	-2,836.2	-1,178.0	2,272.7	2.83
9,231.0	89.50	159.28	6,311.3	-2,919.2	-1,146.0	2,361.7	0.83
9,321.0	89.93	161.19	6,311.7	-3,003.9	-1,115.6	2,451.7	2.18
9,410.0	89.66	159.82	6,312.0	-3,087.8	-1,085.9	2,540.7	1.57
9,500.0	89.66	159.44	6,312.6	-3,172.1	-1,054.5	2,630.6	0.42
9,590.0	89.90	159.93	6,312.9	-3,256.6	-1,023.3	2,720.6	0.61
9,679.0	89.10	157.82	6,313.7	-3,339.6	-991.2	2,809.6	2.54
9,769.0	89.90	160.96	6,314.5	-3,423.8	-959.6	2,899.6	3.60
9,859.0	89.70	160.33	6,314.8	-3,508.7	-929.7	2,989.6	0.73
9,948.0	89.60	158.78	6,315.3	-3,592.1	-898.6	3,078.6	1.75
10,037.0	89.73	161.78	6,315.8	-3,675.9	-868.6	3,167.5	3.37
10,127.0	89.66	161.74	6,316.3	-3,761.3	-840.4	3,257.5	0.09
10,216.0	89.23	160.43	6,317.2	-3,845.5	-811.6	3,346.5	1.55
10,306.0	89.77	160.61	6,318.0	-3,930.4	-781.6	3,436.5	0.63



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
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Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Well:	Hawkeye 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)
10,396.0	90.20	161.00	6,318.0	-4,015.4	-752.0	3,526.5	0.65
10,485.0	89.39	160.53	6,318.3	-4,099.4	-722.7	3,615.5	1.05
10,575.0	89.23	160.24	6,319.4	-4,184.2	-692.5	3,705.5	0.37
10,664.0	90.10	160.59	6,319.9	-4,268.0	-662.6	3,794.5	1.05
10,754.0	89.50	159.62	6,320.2	-4,352.6	-632.0	3,884.5	1.27
10,843.0	88.70	157.31	6,321.6	-4,435.4	-599.3	3,973.4	2.75
10,933.0	89.63	159.93	6,322.9	-4,519.2	-566.5	4,063.4	3.09
11,023.0	89.50	159.85	6,323.6	-4,603.7	-535.6	4,153.4	0.17
11,112.0	89.16	158.89	6,324.7	-4,687.0	-504.2	4,242.3	1.14
11,202.0	90.23	160.06	6,325.1	-4,771.3	-472.7	4,332.3	1.76
11,291.0	89.60	159.30	6,325.3	-4,854.7	-441.8	4,421.3	1.11
11,381.0	90.10	162.59	6,325.5	-4,939.8	-412.4	4,511.3	3.70
11,471.0	90.57	163.42	6,325.0	-5,025.9	-386.1	4,601.2	1.06
11,560.0	90.71	162.89	6,324.0	-5,111.0	-360.3	4,690.1	0.62
11,650.0	88.32	161.67	6,324.8	-5,196.8	-332.9	4,780.0	2.98
11,739.0	89.23	160.80	6,326.7	-5,281.0	-304.3	4,869.0	1.41
11,829.0	88.83	160.87	6,328.2	-5,366.0	-274.7	4,959.0	0.45
11,919.0	89.63	160.04	6,329.4	-5,450.8	-244.6	5,048.9	1.28
12,008.0	89.63	160.69	6,330.0	-5,534.6	-214.7	5,137.9	0.73
12,098.0	88.79	159.83	6,331.2	-5,619.3	-184.3	5,227.9	1.34
12,187.0	89.66	160.72	6,332.4	-5,703.1	-154.3	5,316.9	1.40
12,277.0	89.50	159.07	6,333.1	-5,787.6	-123.4	5,406.9	1.84
12,366.0	89.50	158.89	6,333.8	-5,870.7	-91.5	5,495.9	0.20
12,456.0	88.56	159.24	6,335.4	-5,954.7	-59.3	5,585.9	1.11
12,545.0	89.77	161.14	6,336.7	-6,038.5	-29.1	5,674.8	2.53
12,635.0	89.56	161.91	6,337.2	-6,123.8	-0.6	5,764.8	0.89
12,724.0	89.77	159.78	6,337.7	-6,207.9	28.6	5,853.8	2.40
12,814.0	89.66	160.16	6,338.2	-6,292.4	59.4	5,943.8	0.44
12,904.0	90.13	160.98	6,338.3	-6,377.3	89.3	6,033.8	1.05
12,993.0	89.70	159.50	6,338.5	-6,461.1	119.4	6,122.8	1.73
13,083.0	88.76	160.51	6,339.7	-6,545.6	150.2	6,212.8	1.53
13,173.0	88.96	160.44	6,341.5	-6,630.4	180.3	6,302.8	0.24
13,262.0	89.23	160.84	6,342.9	-6,714.4	209.8	6,391.8	0.54
13,352.0	89.16	160.54	6,344.1	-6,799.3	239.5	6,481.7	0.34
13,442.0	88.82	160.18	6,345.7	-6,884.1	269.8	6,571.7	0.55
13,531.0	89.46	160.28	6,347.0	-6,967.8	299.9	6,660.7	0.73
13,621.0	90.03	160.50	6,347.4	-7,052.6	330.1	6,750.7	0.68
13,710.0	89.33	158.82	6,347.9	-7,136.0	361.0	6,839.7	2.04
13,800.0	89.50	158.67	6,348.9	-7,219.9	393.6	6,929.7	0.25
13,890.0	90.13	158.37	6,349.2	-7,303.7	426.6	7,019.6	0.78
13,979.0	88.80	158.07	6,350.0	-7,386.3	459.6	7,108.6	1.53
14,069.0	88.09	160.21	6,352.4	-7,470.4	491.7	7,198.5	2.50
14,158.0	89.23	161.18	6,354.5	-7,554.3	521.1	7,287.5	1.68
14,248.0	88.59	160.97	6,356.2	-7,639.5	550.3	7,377.5	0.75



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 523 GL 814' + 19 @ 833 0usft
Site:	Weigle East Pad Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833 0usft
Well:	Hawkeye 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)
14,338.0	88.62	160.55	6,358.4	-7,724.4	579.9	7,467.4	0.47
14,427.0	88.82	161.18	6,360.4	-7,808.5	609.1	7,556.4	0.74
14,517.0	90.00	160.11	6,361.3	-7,893.4	638.9	7,646.4	1.77
14,606.0	90.24	160.36	6,361.1	-7,977.1	669.0	7,735.4	0.39
14,696.0	89.06	160.31	6,361.7	-8,061.9	699.3	7,825.4	1.31
14,785.0	88.82	159.55	6,363.3	-8,145.5	729.8	7,914.4	0.90
14,875.0	89.66	160.83	6,364.5	-8,230.1	760.3	8,004.4	1.70
14,965.0	89.83	161.08	6,364.9	-8,315.2	789.7	8,094.3	0.34
15,054.0	89.53	160.01	6,365.4	-8,399.1	819.3	8,183.3	1.25
15,144.0	89.26	159.74	6,366.4	-8,483.6	850.3	8,273.3	0.42
15,233.0	88.83	158.45	6,367.9	-8,566.7	882.0	8,362.3	1.53
15,323.0	90.37	160.67	6,368.5	-8,651.1	913.5	8,452.3	3.00
15,412.0	90.27	160.37	6,368.0	-8,735.0	943.1	8,541.3	0.36
15,502.0	89.83	161.88	6,367.9	-8,820.1	972.3	8,631.3	1.75
15,591.0	90.07	161.54	6,368.0	-8,904.6	1,000.2	8,720.2	0.47
15,680.0	89.43	162.17	6,368.4	-8,989.2	1,027.9	8,809.2	1.01
15,770.0	89.66	160.50	6,369.1	-9,074.5	1,056.7	8,899.2	1.87
15,860.0	89.93	160.81	6,369.4	-9,159.4	1,086.5	8,989.2	0.46
15,949.0	89.56	160.14	6,369.8	-9,243.3	1,116.3	9,078.2	0.86
16,039.0	89.19	159.68	6,370.8	-9,327.8	1,147.2	9,168.2	0.66
16,128.0	89.46	160.06	6,371.8	-9,411.3	1,177.8	9,257.2	0.52
16,217.0	89.56	159.73	6,372.6	-9,494.9	1,208.4	9,346.2	0.39
16,307.0	89.20	160.76	6,373.6	-9,579.6	1,238.8	9,436.2	1.21
16,397.0	88.62	160.62	6,375.3	-9,664.5	1,268.6	9,526.1	0.66
16,486.0	88.38	159.87	6,377.6	-9,748.3	1,298.6	9,615.1	0.88
16,575.0	89.66	159.54	6,379.1	-9,831.7	1,329.5	9,704.1	1.49
16,665.0	90.13	159.59	6,379.3	-9,916.1	1,360.9	9,794.1	0.53
16,754.0	88.22	159.16	6,380.6	-9,999.3	1,392.3	9,883.0	2.20
16,844.0	89.67	159.69	6,382.2	-10,083.6	1,423.9	9,973.0	1.72
16,933.0	90.20	159.57	6,382.3	-10,167.0	1,454.9	10,062.0	0.61
17,023.0	88.72	159.25	6,383.2	-10,251.3	1,486.5	10,152.0	1.68
17,112.0	89.26	160.14	6,384.8	-10,334.7	1,517.4	10,241.0	1.17
17,202.0	89.43	160.66	6,385.8	-10,419.5	1,547.6	10,331.0	0.61
17,291.0	89.76	159.47	6,386.4	-10,503.2	1,577.9	10,420.0	1.39
17,381.0	89.56	161.20	6,387.0	-10,587.9	1,608.2	10,510.0	1.93
17,471.0	89.80	160.08	6,387.5	-10,672.8	1,638.0	10,600.0	1.27
17,560.0	89.16	161.22	6,388.3	-10,756.8	1,667.5	10,689.0	1.47
17,650.0	88.96	160.95	6,389.7	-10,841.9	1,696.7	10,778.9	0.37
17,739.0	90.03	161.80	6,390.5	-10,926.2	1,725.1	10,867.9	1.54
17,829.0	89.97	161.53	6,390.5	-11,011.7	1,753.4	10,957.9	0.31
17,919.0	89.50	160.79	6,390.9	-11,096.8	1,782.5	11,047.9	0.97
18,008.0	90.07	160.45	6,391.3	-11,180.8	1,812.0	11,136.9	0.75
18,098.0	88.72	159.53	6,392.2	-11,265.4	1,842.8	11,226.9	1.82
18,187.0	89.50	160.89	6,393.6	-11,349.1	1,873.0	11,315.8	1.76
18,277.0	89.23	160.03	6,394.6	-11,433.9	1,903.1	11,405.8	1.00



Company:	Antero	Local Co-ordinate Reference:	Well Hawkeye Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Site:	Weigle East Pad. Dean/Goodfellow/Hawkeye/Sc	MD Reference:	Precision 523 GL 814' + 19 @ 833.0usft
Well:	Hawkeye Unit 1H	North Reference:	Grd
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)
18,387.0	88.79	156.94	6,396.2	-11,517.6	1,936.1	11,495.8	3.47
18,456.0	90.37	161.02	6,396.8	-11,600.7	1,968.0	11,584.7	4.92
18,546.0	89.76	158.16	6,396.7	-11,685.0	1,999.4	11,674.7	3.25
18,635.0	89.63	160.36	6,397.2	-11,768.2	2,030.9	11,763.7	2.48
18,725.0	89.46	159.57	6,397.9	-11,852.8	2,061.7	11,853.7	0.90
18,814.0	90.77	161.14	6,397.7	-11,936.6	2,091.6	11,942.7	2.30
18,903.0	91.01	160.80	6,396.3	-12,020.7	2,120.6	12,031.7	0.47
18,993.0	91.24	159.29	6,394.6	-12,105.3	2,151.3	12,121.6	1.70
19,082.0	91.74	159.55	6,392.3	-12,188.6	2,182.6	12,210.6	0.63
19,171.0	92.31	159.79	6,389.1	-12,272.0	2,213.5	12,299.5	0.69
19,221.0	92.32	158.75	6,387.1	-12,318.7	2,231.2	12,349.5	2.08
19,277.0	92.32	158.75	6,384.8	-12,370.9	2,251.5	12,405.4	0.00

PTB

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,420.0	5,934.3	-393.4	-1,849.7	SCMR
6,634.0	6,105.9	-506.5	-1,902.9	MDLX
6,780.0	6,199.4	-617.8	-1,913.1	BRKT
6,824.0	6,222.4	-655.2	-1,913.2	TLTY
6,924.0	6,265.5	-744.6	-1,902.3	MRCL_HOT
19,277.0	6,384.8	-12,370.9	2,251.5	PTB

Checked By: _____	Approved By: _____	Date: _____
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Received
Office of Oil & Gas
JUL 05 2016