



Antero Resources
 Gains Unit 1H
 Doddridge County WV
 Northing: 14280108.28
 Easting: 1728005.71
 As Drilled ST 1

17-06395

WELL DETAILS: Gains Unit 1H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	14280108.28	1728005.7139	19° 26' 9.33" N	80° 41' 25.005" W	

PROJECT DETAILS: Doddridge County WV

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1987 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level



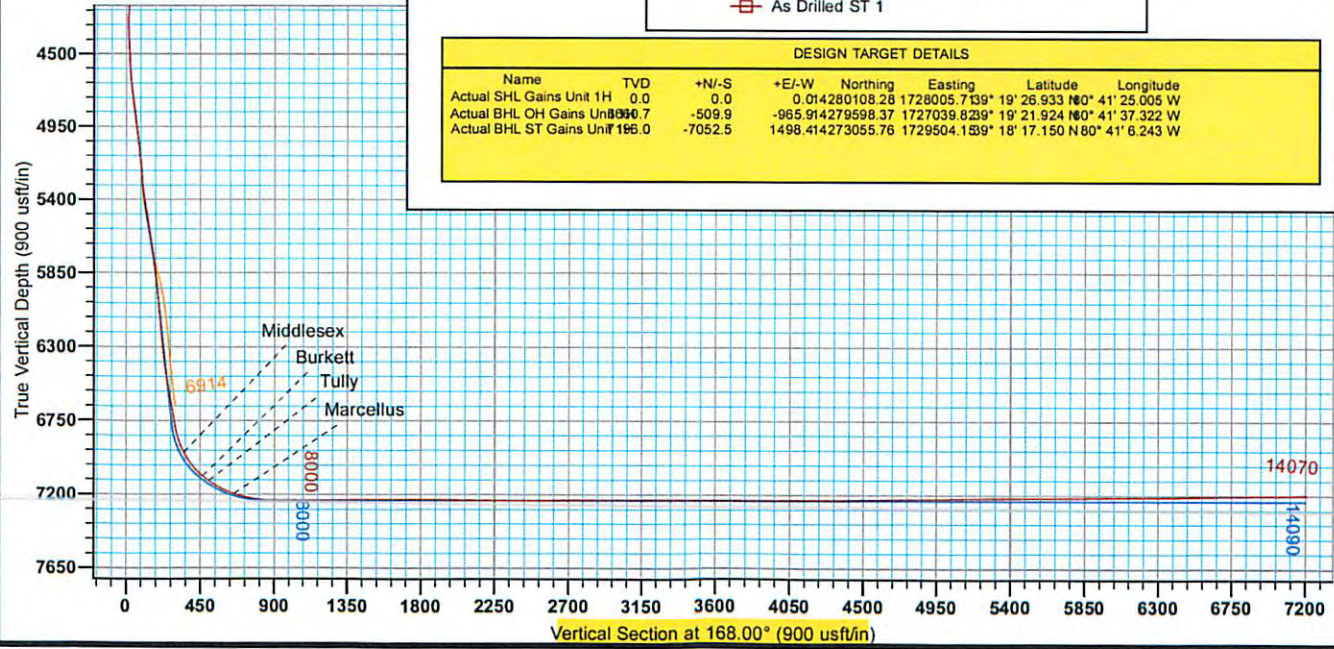
Genie Lightfoot
 15:04, October 20 2014
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK

LEGEND

- ✂ Gains Unit 1H, Original Wellpath, As Drilled V0
- ✂ Gains Unit 1H, Original Wellpath, Plan 6 V0
- ⊠ Gains Unit 1H, ST 1, Plan 5 ST 1 V0
- ⊠ As Drilled ST 1

DESIGN TARGET DETAILS

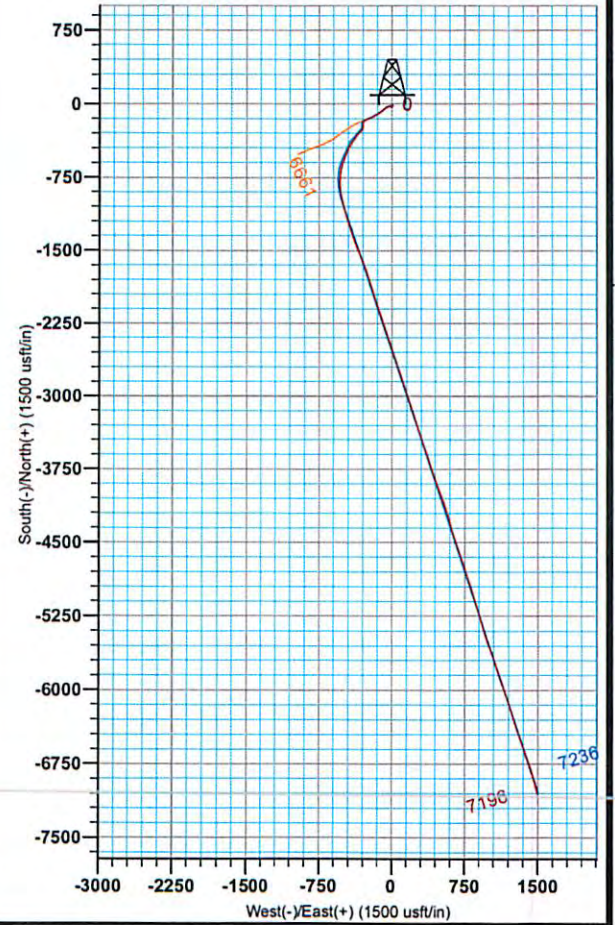
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Actual SHL Gains Unit 1H	0.0	0.0	0.0	14280108.28	1728005.7139	19° 26' 9.33" N	80° 41' 25.005" W
Actual BHL OH Gains Unit 1H	396.7	-509.9	-965.9	14279598.37	1727039.8239	19° 21' 9.24" N	80° 41' 37.322" W
Actual BHL ST Gains Unit 1H	166.0	-7052.5	1498.4	14273055.76	1729504.1539	18° 17' 15.0" N	80° 41' 6.243" W



To convert Magnetic North to Grid, Subtract 8.74°
 To convert True North to Grid, Subtract 0.20°

Azimuths to Grid North
 True North: -0.20°
 Magnetic North: -8.74°

Magnetic Field
 Strength: 52227.3anT
 Dip Angle: 66.86°
 Date: 9/24/2014
 Model: BGM2014



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Antero Resources

**Doddridge County WV
Koch/Gains/McCue/Mt Salem Revival/Milo
Gains Unit 1H
ST 1**

Design: As Drilled ST 1

EOW Completion Report

20 October, 2014

Received
Office of Oil & Gas
10/20/14



10/09/2015

17-06395



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Gains Unit 1H
Project:	Doddridge County WV	TVD Reference:	Patt 317: Gains 1H 1377 GL + 23 KB @ 1400.0us
Site:	Koch/Gains/McCue/Mt Salem Revival/Milo	MD Reference:	Patt 317: Gains 1H 1377 GL + 23 KB @ 1400.0us
Well:	Gains Unit 1H	North Reference:	Grid
Wellbore:	ST 1	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled ST 1	Database:	Oklahoma District

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

Site	Koch/Gains/McCue/Mt Salem Revival/Milo				
Site Position:		Northing:	14,280,147.06 usft	Latitude:	39° 19' 27.317 N
From:	Map	Easting:	1,727,993.07 usft	Longitude:	80° 41' 25.164 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.20 °

Well	Gains Unit 1H, Marcellus					
Well Position	+N-S	0.0 usft	Northing:	14,280,108.28 usft	Latitude:	39° 19' 26.933 N
	+E-W	0.0 usft	Easting:	1,728,005.71 usft	Longitude:	80° 41' 25.005 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,400.0 usft	Ground Level:	1,377.0 usft

Wellbore	ST 1
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	9/24/2014	-8.55	66.86	52,227

Design	As Drilled ST 1
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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	168.00

Survey Program	Date	10/20/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	5,153.0	Survey #1 SDI Gyro (ST 1)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
5,200.0	14,070.0	Survey #2 MWD (ST 1)	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
112.0	0.18	134.42	112.0	-0.1	0.1	0.1	0.16
212.0	0.53	145.78	212.0	-0.6	0.5	0.7	0.36
312.0	0.69	155.75	312.0	-1.5	1.0	1.7	0.19
412.0	0.53	155.85	412.0	-2.5	1.4	2.8	0.16
512.0	0.55	148.28	512.0	-3.3	1.9		0.07
612.0	0.63	147.02	612.0	-4.2	2.4		0.08
712.0	0.61	150.89	712.0	-5.1	3.0		0.05
812.0	0.66	157.03	812.0	-6.1	3.5		0.08
912.0	0.53	155.70	912.0	-7.1	3.9		0.13
1,012.0	0.62	160.34	1,012.0	-8.0	4.3		0.10

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17-06395



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Gains Unit 1H
Project:	Doddridge County WV	TVD Reference:	Patt 317: Gains 1H 1377 GL + 23 KB @ 1400.0us
Site:	Koch/Gains/McCue/Mt Salem Revival/Milo	MD Reference:	Patt 317: Gains 1H 1377 GL + 23 KB @ 1400.0us
Well:	Gains Unit 1H	North Reference:	Grid
Wellbore:	ST 1	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled ST 1	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)		
1,112.0	0.58	157.55	1,111.9	-9.0	4.6	9.8	0.05		
1,212.0	0.56	158.08	1,211.9	-9.9	5.0	10.7	0.02		
1,312.0	0.51	162.29	1,311.9	-10.8	5.3	11.7	0.06		
1,412.0	0.57	161.29	1,411.9	-11.7	5.6	12.6	0.06		
1,512.0	0.49	157.68	1,511.9	-12.6	6.0	13.5	0.09		
1,612.0	0.59	157.00	1,611.9	-13.4	6.3	14.4	0.10		
1,712.0	0.35	161.68	1,711.9	-14.2	6.6	15.3	0.24		
1,812.0	0.27	158.16	1,811.9	-14.7	6.8	15.8	0.08		
1,912.0	0.35	154.64	1,911.9	-15.2	7.0	16.3	0.08		
2,012.0	0.37	155.70	2,011.9	-15.8	7.3	16.9	0.02		
2,112.0	0.24	146.85	2,111.9	-16.2	7.5	17.4	0.14		
2,212.0	0.23	97.85	2,211.9	-16.4	7.8	17.7	0.20		
2,312.0	0.05	87.66	2,311.9	-16.5	8.1	17.8	0.18		
2,412.0	0.14	134.22	2,411.9	-16.5	8.2	17.9	0.11		
2,512.0	0.06	345.73	2,511.9	-16.6	8.3	17.9	0.19		
2,612.0	0.15	138.23	2,611.9	-16.6	8.4	18.0	0.21		
2,712.0	0.27	237.89	2,711.9	-16.9	8.2	18.2	0.33		
2,812.0	0.17	273.00	2,811.9	-17.0	7.9	18.2	0.16		
2,912.0	0.21	271.88	2,911.9	-17.0	7.6	18.2	0.04		
3,012.0	0.31	242.90	3,011.9	-17.1	7.1	18.2	0.16		
3,112.0	0.39	244.05	3,111.9	-17.3	6.6	18.3	0.08		
3,212.0	0.45	239.38	3,211.9	-17.7	6.0	18.5	0.07		
3,312.0	0.53	238.58	3,311.9	-18.1	5.2	18.8	0.08		
3,412.0	0.66	243.94	3,411.9	-18.6	4.3	19.1	0.14		
3,512.0	0.60	235.07	3,511.9	-19.2	3.4	19.5	0.11		
3,612.0	0.61	222.75	3,611.9	-19.9	2.6	20.0	0.13		
3,712.0	0.85	217.63	3,711.9	-20.9	1.8	20.8	0.25		
3,812.0	1.79	227.37	3,811.9	-22.5	0.2	22.0	0.96		
3,912.0	3.60	244.22	3,911.8	-24.9	-3.8	23.6	1.96		
4,012.0	1.73	268.66	4,011.6	-26.3	-8.2	24.1	2.15		
4,025.4	1.88	288.60	4,025.0	-26.3	-8.6	23.9	4.81		
4,150.0	4.50	306.04	4,149.4	-22.7	-14.5	19.2	2.22		
4,213.0	5.86	281.31	4,212.2	-20.6	-19.6	16.1	4.10		
4,277.0	7.07	264.18	4,275.8	-20.4	-26.7	14.4	3.54		
4,340.0	7.78	252.75	4,338.3	-22.1	-34.7	14.4	2.60		
4,403.0	7.25	244.07	4,400.7	-25.1	-42.3	15.7	1.99		
4,530.0	8.21	238.29	4,526.6	-33.3	-57.2	20.7	0.97		
4,626.0	10.69	235.39	4,621.2	-42.0	-70.4	26.4	2.63		
4,722.0	13.55	230.09	4,715.1	-54.3	-86.4	35.1	3.19		
4,818.0	16.22	230.26	4,807.9	-70.1	-105.3	46.9	2.78		
4,913.0	18.70	237.30	4,898.5	-86.8	-128.3	58.2	3.42		
5,009.0	20.65	241.06	4,988.9	-103.3	-156.1	68.6	2.42		
5,106.0	24.07	241.70	5,078.6	-120.9	-188.5	79.1	3.53		
5,156.0	24.56	245.59	5,124.1	-130.1	-206.9	84.2	3.35		

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EOW Completion Report



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Site:	Koch/Gains/McCue/Mt Salem Revival/Milo	MD Reference:	Patt 317: Gains 1H 1377 GL + 23 KB @ 1400.0us
Well:	Gains Unit 1H	North Reference:	Grid
Wellbore:	ST 1	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled ST 1	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,281.0	22.34	248.51	5,238.8	-149.5	-252.7	93.7	2.00
5,312.0	19.17	244.29	5,267.8	-153.9	-262.8	95.9	11.30
5,344.0	16.97	240.86	5,298.2	-158.4	-271.6	98.5	7.63
5,375.0	16.18	235.41	5,327.9	-163.1	-279.1	101.5	5.62
5,407.0	15.48	227.24	5,358.7	-168.5	-285.9	105.4	7.29
5,438.0	13.74	216.63	5,388.7	-174.3	-291.1	110.0	10.28
5,470.0	12.34	208.16	5,419.9	-180.3	-295.0	115.1	7.39
5,501.0	11.43	202.71	5,450.2	-186.1	-297.8	120.2	4.66
5,532.0	10.60	198.33	5,480.7	-191.6	-299.8	125.1	3.80
5,564.0	9.85	187.42	5,512.2	-197.1	-301.1	130.3	6.48
5,595.0	9.50	178.28	5,542.7	-202.3	-301.4	135.3	5.08
5,626.0	9.23	175.64	5,573.3	-207.4	-301.1	140.3	1.64
5,658.0	8.71	173.89	5,604.9	-212.3	-300.7	145.2	1.83
5,689.0	8.53	172.57	5,635.6	-217.0	-300.1	149.8	0.86
5,783.0	9.23	193.31	5,728.5	-231.2	-300.9	163.6	3.47
5,877.0	7.65	194.98	5,821.4	-244.6	-304.3	176.0	1.70
5,909.0	7.01	194.93	5,853.2	-248.5	-305.4	179.6	2.00
5,940.0	7.39	203.33	5,883.9	-252.2	-306.6	183.0	3.61
5,972.0	8.35	213.79	5,915.6	-256.0	-308.7	186.3	5.38
6,003.0	8.98	221.52	5,946.3	-259.7	-311.6	189.3	4.27
6,066.0	9.32	221.87	6,008.5	-267.2	-318.3	195.2	0.55
6,160.0	9.32	226.80	6,101.2	-278.1	-328.9	203.6	0.85
6,254.0	10.11	224.34	6,193.9	-289.2	-340.2	212.1	0.95
6,348.0	8.79	222.93	6,286.6	-300.3	-350.9	220.8	1.43
6,442.0	9.76	215.63	6,379.4	-312.1	-360.4	230.3	1.62
6,536.0	13.72	212.21	6,471.4	-328.0	-371.0	243.7	4.28
6,630.0	13.72	213.44	6,562.7	-346.7	-383.1	259.5	0.31
6,724.0	15.17	215.66	6,653.8	-366.0	-396.4	275.6	1.65
6,756.0	14.26	215.19	6,684.7	-372.6	-401.1	281.1	2.87
6,788.0	12.84	214.05	6,715.8	-378.8	-405.4	286.3	4.52
6,819.0	12.13	213.35	6,746.1	-384.4	-409.1	291.0	2.34
6,851.0	14.07	212.03	6,777.2	-390.5	-413.0	296.1	6.13
6,882.0	17.23	211.77	6,807.1	-397.6	-417.4	302.1	10.20
6,913.0	20.58	211.94	6,836.4	-406.1	-422.7	309.4	10.81
6,945.0	24.45	212.12	6,866.0	-416.5	-429.2	318.2	12.10
6,976.0	28.03	210.02	6,893.8	-428.2	-436.3	328.2	11.93
7,008.0	30.86	206.93	6,921.6	-442.1	-443.7	340.2	10.03
7,033.0	33.06	204.84	6,942.9	-454.0	-449.5	350.6	9.84
Middlesex							
7,039.0	33.59	204.38	6,947.9	-457.0	-450.9	353.8	9.84
7,071.0	36.67	204.03	6,974.0	-473.8	-458.4	358.1	9.65
7,103.0	39.57	203.33	6,999.2	-491.9	-466.4	364.2	9.16
7,134.0	43.18	203.07	7,022.5	-510.7	-474.4	369.9	11.66
7,166.0	47.13	202.36	7,045.0	-531.6	-483.2	376.6	12.44
7,197.0	51.44	201.48	7,065.2	-553.4	-491.9	383.1	14.07

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Gains Unit 1H
Project:	Doddridge County WV	TVD Reference:	Patt 317: Gains 1H 1377 GL + 23 KB @ 1400.0us
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Well:	Gains Unit 1H	North Reference:	Grid
Wellbore:	ST 1	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled ST 1	Database:	Oklahoma District

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,229.0	54.34	199.46	7,084.5	-577.3	-500.9	460.6	10.37
7,235.0	54.63	198.94	7,088.0	-581.9	-502.5	464.8	8.56
Burkett							
7,261.0	55.93	196.74	7,102.8	-602.3	-509.0	483.3	8.56
7,284.0	57.55	194.84	7,115.5	-620.8	-514.2	500.3	9.87
Tully							
7,292.0	58.12	194.19	7,119.7	-627.3	-515.9	506.4	9.87
7,324.0	60.50	191.82	7,136.1	-654.1	-522.1	531.3	9.79
7,356.0	62.96	189.53	7,151.2	-681.8	-527.3	557.3	9.94
7,387.0	65.33	187.42	7,164.7	-709.4	-531.4	583.5	9.80
7,419.0	67.62	185.58	7,177.5	-738.6	-534.8	611.3	8.89
7,451.0	69.64	183.38	7,189.2	-768.3	-537.1	639.9	8.99
7,467.0	71.04	181.55	7,194.5	-783.3	-537.7	654.5	13.89
Marcellus							
7,482.0	72.37	179.86	7,199.3	-797.6	-537.9	668.4	13.89
7,514.0	74.66	177.04	7,208.3	-828.2	-537.1	698.5	11.07
7,546.0	76.84	174.55	7,216.2	-859.2	-534.8	729.3	10.16
7,577.0	79.79	171.04	7,222.5	-889.3	-531.0	759.5	14.61
7,609.0	81.96	169.30	7,227.6	-920.4	-525.6	791.1	8.65
7,641.0	83.14	167.86	7,231.7	-951.5	-519.3	822.8	5.79
7,699.0	90.13	165.10	7,235.1	-1,007.7	-505.8	880.6	12.95
7,794.0	90.57	166.59	7,234.5	-1,099.9	-482.5	975.6	1.64
7,884.0	90.13	163.25	7,234.0	-1,186.7	-459.1	1,065.4	3.74
7,974.0	89.78	163.25	7,234.1	-1,272.9	-433.2	1,155.1	0.39
8,065.0	90.57	159.74	7,233.8	-1,359.2	-404.3	1,245.5	3.95
8,157.0	91.01	156.48	7,232.5	-1,444.6	-370.0	1,336.1	3.58
8,248.0	90.22	158.86	7,231.5	-1,528.7	-335.5	1,425.6	2.76
8,340.0	90.57	157.98	7,230.9	-1,614.3	-301.6	1,516.3	1.03
8,431.0	89.87	160.53	7,230.6	-1,699.4	-269.4	1,606.3	2.91
8,523.0	89.78	162.55	7,230.8	-1,786.6	-240.3	1,697.7	2.20
8,613.0	89.69	161.85	7,231.2	-1,872.3	-212.7	1,787.2	0.78
8,705.0	90.75	162.02	7,230.9	-1,959.8	-184.2	1,878.7	1.17
8,797.0	89.43	162.72	7,230.8	-2,047.4	-156.4	1,970.2	1.62
8,888.0	88.46	161.49	7,232.4	-2,134.0	-128.4	2,060.7	1.72
8,983.0	89.69	161.23	7,234.0	-2,224.0	-98.0	2,155.1	1.32
9,077.0	89.34	160.18	7,234.8	-2,312.7	-67.0	2,248.3	1.18
9,172.0	89.25	161.32	7,235.9	-2,402.4	-35.7	2,342.6	1.20
9,267.0	91.45	162.99	7,235.3	-2,492.8	-6.6	2,437.1	2.91
9,362.0	90.66	161.23	7,233.6	-2,583.2	22.6	2,531.5	2.03
9,457.0	90.92	161.23	7,232.3	-2,673.2	53.2	2,625.9	0.27
9,552.0	90.04	161.14	7,231.5	-2,763.1	83.8	2,720.2	0.93
9,646.0	90.13	161.93	7,231.3	-2,852.3	113.6	2,814.5	0.85
9,741.0	90.31	161.67	7,231.0	-2,942.5	143.3	2,908.0	1.00
9,836.0	89.52	162.20	7,231.1	-3,032.8	172.7	3,002.5	1.00

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17-06395



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Gains Unit 1H
Project:	Doddridge County WV	TVD Reference:	Patt 317: Gains 1H 1377 GL + 23 KB @ 1400.0us
Site:	Koch/Gains/McCue/Mt Salem Revival/Milo	MD Reference:	Patt 317: Gains 1H 1377 GL + 23 KB @ 1400.0us
Well:	Gains Unit 1H	North Reference:	Grid
Wellbore:	ST 1	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled ST 1	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
9,931.0	89.69	162.72	162.72	7,231.8	-3,123.4	201.4	3,097.0	0.58	
10,026.0	90.66	162.99	162.99	7,231.5	-3,214.2	229.4	3,191.7	1.06	
10,121.0	91.19	161.32	161.32	7,230.0	-3,304.6	258.5	3,286.1	1.84	
10,216.0	89.69	161.41	161.41	7,229.2	-3,394.6	288.8	3,380.5	1.58	
10,310.0	89.69	160.26	160.26	7,229.7	-3,483.4	319.7	3,473.8	1.22	
10,405.0	90.40	159.91	159.91	7,229.7	-3,572.7	352.0	3,567.9	0.83	
10,500.0	89.78	161.93	161.93	7,229.5	-3,662.5	383.1	3,662.1	2.22	
10,595.0	90.13	162.72	162.72	7,229.6	-3,753.0	411.9	3,756.7	0.91	
10,689.0	89.96	161.32	161.32	7,229.5	-3,842.4	441.0	3,850.1	1.50	
10,784.0	90.13	158.68	158.68	7,229.4	-3,931.7	473.4	3,944.2	2.78	
10,879.0	90.57	159.65	159.65	7,228.9	-4,020.5	507.2	4,038.1	1.12	
10,974.0	89.60	161.49	161.49	7,228.7	-4,110.0	538.8	4,132.3	2.19	
11,069.0	89.60	162.37	162.37	7,229.4	-4,200.3	568.3	4,226.7	0.93	
11,164.0	90.66	163.69	163.69	7,229.2	-4,291.2	596.0	4,321.4	1.78	
11,259.0	90.92	164.22	164.22	7,227.9	-4,382.5	622.3	4,416.1	0.62	
11,353.0	90.40	161.14	161.14	7,226.8	-4,472.2	650.3	4,509.7	3.32	
11,448.0	90.84	160.26	160.26	7,225.7	-4,561.9	681.7	4,603.9	1.04	
11,542.0	90.04	162.11	162.11	7,225.0	-4,650.8	712.0	4,697.3	2.14	
11,636.0	90.66	161.41	161.41	7,224.4	-4,740.1	741.4	4,790.7	0.99	
11,731.0	91.10	161.67	161.67	7,223.0	-4,830.2	771.5	4,885.1	0.54	
11,826.0	91.14	160.26	160.26	7,221.1	-4,920.0	802.4	4,979.3	1.48	
11,921.0	90.75	163.43	163.43	7,219.6	-5,010.2	832.0	5,073.8	3.36	
12,016.0	90.31	163.69	163.69	7,218.7	-5,101.4	858.9	5,168.5	0.54	
12,111.0	91.01	162.72	162.72	7,217.6	-5,192.3	886.4	5,263.1	1.26	
12,206.0	90.22	162.99	162.99	7,216.6	-5,283.1	914.4	5,357.8	0.88	
12,301.0	90.84	162.90	162.90	7,215.7	-5,373.9	942.2	5,452.4	0.66	
12,395.0	90.22	161.93	161.93	7,214.8	-5,463.5	970.6	5,545.9	1.22	
12,491.0	90.04	159.65	159.65	7,214.6	-5,554.1	1,002.2	5,641.2	2.38	
12,585.0	90.22	158.68	158.68	7,214.4	-5,642.0	1,035.6	5,734.0	1.05	
12,680.0	91.19	161.76	161.76	7,213.2	-5,731.4	1,067.8	5,828.1	3.40	
12,775.0	90.48	161.05	161.05	7,211.8	-5,821.4	1,098.1	5,922.5	1.06	
12,870.0	90.13	162.11	162.11	7,211.3	-5,911.5	1,128.1	6,016.9	1.18	
12,965.0	90.92	161.14	161.14	7,210.5	-6,001.7	1,158.0	6,111.3	1.32	
13,059.0	89.96	162.81	162.81	7,209.7	-6,091.1	1,187.1	6,204.8	2.05	
13,154.0	90.22	162.02	162.02	7,209.6	-6,181.6	1,215.8	6,299.3	0.88	
13,249.0	91.01	162.64	162.64	7,208.6	-6,272.1	1,244.7	6,393.9	1.06	
13,344.0	90.84	162.11	162.11	7,207.0	-6,362.7	1,273.4	6,488.4	0.59	
13,439.0	91.01	161.58	161.58	7,205.5	-6,452.9	1,303.0	6,582.8	0.59	
13,534.0	91.01	159.56	159.56	7,203.8	-6,542.5	1,334.6	6,677.0	2.13	
13,628.0	91.63	160.79	160.79	7,201.7	-6,630.9	1,366.5	6,770.1	1.47	
13,723.0	90.48	160.00	160.00	7,199.9	-6,720.4	1,398.4	6,864.2	1.47	
13,818.0	90.13	163.34	163.34	7,199.4	-6,810.5	1,428.2	6,958.7	3.53	
13,913.0	90.57	163.87	163.87	7,198.8	-6,901.7	1,455.0	7,053.4	0.73	
14,013.0	91.24	164.35	164.35	7,197.2	-6,997.8	1,482.4	7,148.1	0.82	
14,070.0	91.24	163.00	163.00	7,196.0	-7,052.5	1,498.4	7,210.0	2.37	

Received
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Aug 17 2015

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Wellbore:	ST 1	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled ST 1	Database:	Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
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Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,033.0	6,942.9	-454.0	-449.5	Middlesex
7,235.0	7,088.0	-581.9	-502.5	Burkett
7,284.0	7,115.5	-620.8	-514.2	Tully
7,467.0	7,194.5	-783.3	-537.7	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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