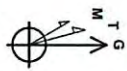




Lettie Unit 1H
 Doddridge County WV
 Northing: 14238847.81
 Easting: 1752529.46
 As Drilled



To convert Magnetic North to Grid, Subtract 82°
 To convert True North to Grid, Subtract 12.82°

Asimuth to Grid North
 True North: -5.92°
 Magnetic North: -82°
 Strength: 52287 Oant
 Dip Angle: 66.75°
 Date: 3/12/2014
 Model: IGRF2010

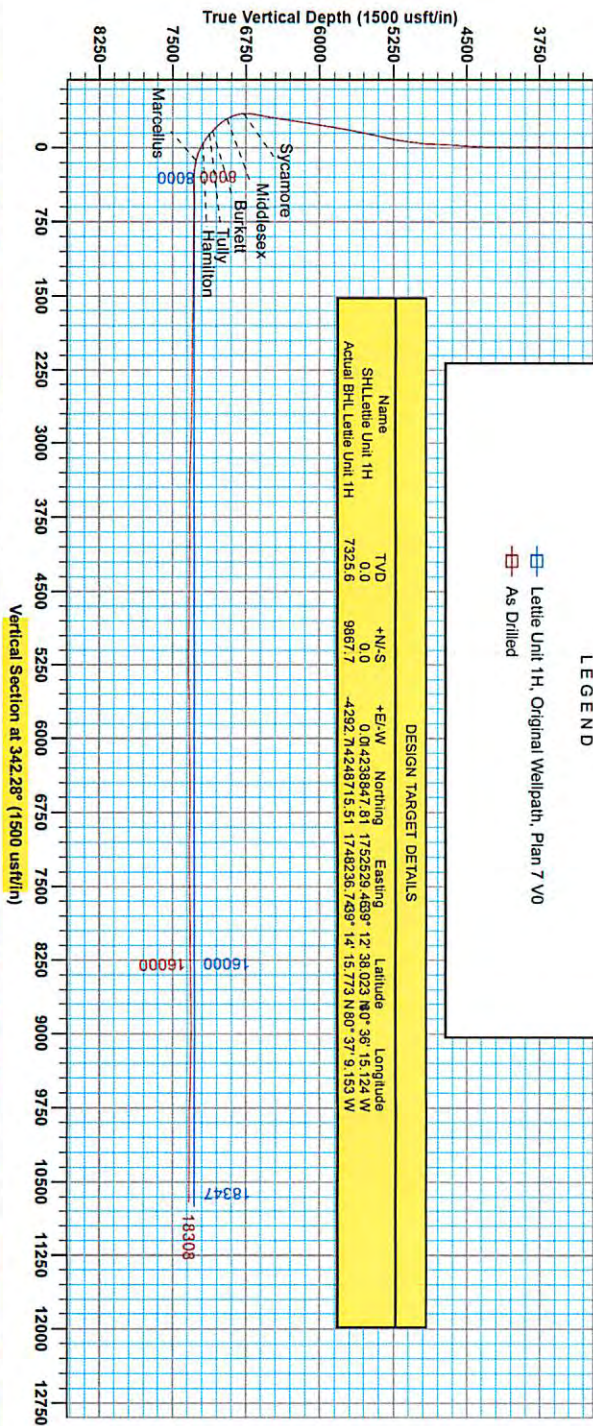
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 Department of Environmental Protection
 07/24/2015

WELL DETAILS: Lettie Unit 1H
 Ground Level: 1270.0
 +N/-S: 0.0 +E/+W: 0.0
 Northing: 14238847.81 Easting: 1752529.46
 Latitude: 36° 15' 12.4" W Longitude: 120° 36' 15.124" W

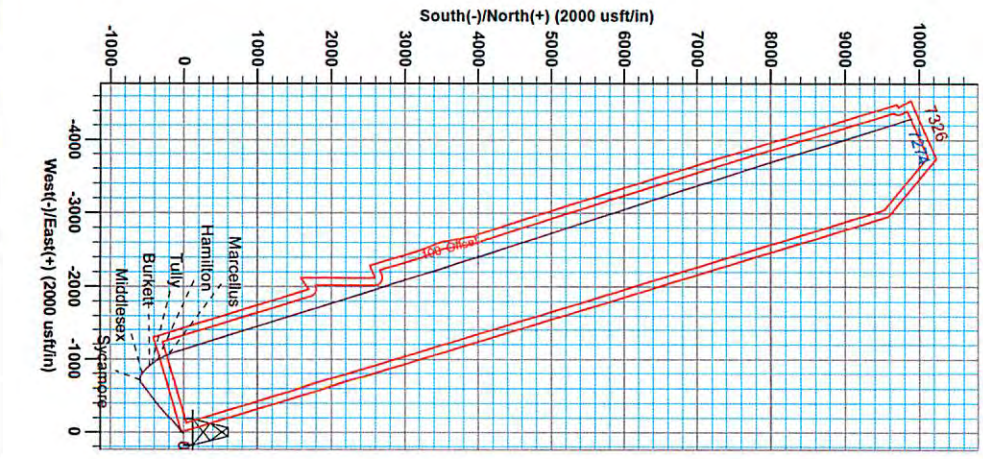
PROJECT DETAILS: Doddridge County WV
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1983 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

SITE DETAILS: Wagner Pad
 Site Center: Lettie Unit 1H
 Site Center Northing: 14238847.81
 Site Center Easting: 1752529.46
 Positional Uncertainty: 2.8
 Convergence: 0.25
 Local Norm: Grid

Gene Lightfoot
 14-47, June 09 2014
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK 73128



LEGEND
 □ Lettie Unit 1H, Original Wellpath, Plan 7 VO
 □ As Drilled





Antero Resources

Doddridge County WV

Wagner Pad : Lettie/Downs/Bolte/Mason/McQuire

Lettie Unit 1H

Original Wellpath

Design: As Drilled

EOW Completion Report

09 June, 2014



Scientific Drilling

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WV Department of
Environmental Protection
07/24/2015



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Lettie Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Site:	Wagner Pad : Lettie/Downs/Bolte/Mason/McQuire	MD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Well:	Lettie 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	Wagner Pad : Lettie/Downs/Bolte/Mason/McQuire				
Site Position:		Northing:	14,238,847.81 usft	Latitude:	39° 12' 38.023 N
From:	Map	Easting:	1,752,529.46 usft	Longitude:	80° 36' 15.124 W
Position Uncertainty:	2.8 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.25 °

Well	Lettie Unit 1H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,238,847.81 usft	Latitude:	39° 12' 38.023 N
	+E/-W	0.0 usft	Easting:	1,752,529.46 usft	Longitude:	80° 36' 15.124 W
Position Uncertainty	2.8 usft		Wellhead Elevation:	1,289.0 usft	Ground Level:	1,270.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/3/2014	-8.57	66.75	52,267

Design	As Drilled				
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	342.28	

Survey Program	Date 6/9/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	6,758.5	Survey #3 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
6,793.0	18,308.0	Survey #4 SDI 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	0.0	0.00	
100.0	0.73	351.83	100.0	0.6	-0.1	0.6	0.6	0.73	
200.0	0.25	58.41	200.0	1.4	0.0	1.3	0.67	0.67	
300.0	0.12	86.41	300.0	1.5	0.3	1.3	0.15	0.15	
400.0	0.23	32.40	400.0	1.7	0.5	1.4	0.19	0.19	
500.0	0.25	79.12	500.0	1.9	0.8	1.5	0.19	0.19	
600.0	0.17	84.35	600.0	1.9	1.2	1.5	0.08	0.08	
700.0	0.14	77.02	700.0	2.0	1.5	1.4	0.04	0.04	
800.0	0.13	69.07	800.0	2.0	1.7	1.4	0.02	0.02	
900.0	0.18	121.70	900.0	2.0	1.9	1.3	0.14	0.14	
1,000.0	0.18	54.75	1,000.0	2.0	2.2	1.3	0.20	0.20	

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Lettie Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Site:	Wagner Pad : Lettie/Downs/Bolte/Mason/McQuire	MD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Well:	Lettie 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)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
1,100.0	0.21	97.41	1,100.0	2.1	2.5	1.2	0.14
1,200.0	0.06	78.68	1,200.0	2.1	2.7	1.1	0.15
1,300.0	0.20	67.28	1,300.0	2.1	2.9	1.1	0.14
1,400.0	0.17	110.30	1,400.0	2.2	3.2	1.1	0.14
1,500.0	0.13	158.57	1,500.0	2.0	3.4	0.9	0.13
1,600.0	0.10	69.66	1,600.0	1.9	3.5	0.8	0.16
1,700.0	0.48	92.95	1,700.0	1.9	4.0	0.6	0.39
1,800.0	0.69	118.16	1,800.0	1.6	5.0	0.0	0.33
1,900.0	0.62	117.61	1,900.0	1.1	6.0	-0.8	0.07
2,000.0	0.65	112.94	2,000.0	0.6	7.0	-1.5	0.06
2,100.0	0.78	100.65	2,100.0	0.3	8.2	-2.2	0.20
2,200.0	0.61	123.93	2,200.0	-0.1	9.3	-3.0	0.33
2,300.0	0.32	131.30	2,300.0	-0.6	10.0	-3.6	0.30
2,400.0	0.38	123.84	2,399.9	-1.0	10.4	-4.1	0.08
2,500.0	0.34	148.18	2,499.9	-1.4	10.9	-4.7	0.16
2,600.0	0.30	161.05	2,599.9	-1.9	11.1	-5.2	0.08
2,700.0	0.23	167.82	2,699.9	-2.4	11.2	-5.7	0.08
2,800.0	0.25	186.45	2,799.9	-2.8	11.3	-6.1	0.08
2,900.0	0.33	210.14	2,899.9	-3.3	11.1	-6.5	0.14
3,000.0	0.23	222.22	2,999.9	-3.7	10.8	-6.8	0.12
3,100.0	0.31	223.13	3,099.9	-4.0	10.5	-7.0	0.08
3,200.0	0.28	208.20	3,199.9	-4.4	10.2	-7.3	0.08
3,300.0	0.36	195.37	3,299.9	-4.9	10.0	-7.7	0.11
3,400.0	0.28	190.08	3,399.9	-5.5	9.9	-8.2	0.09
3,500.0	0.28	179.76	3,499.9	-6.0	9.8	-8.7	0.05
3,600.0	0.32	167.63	3,599.9	-6.5	9.9	-9.2	0.07
3,700.0	0.30	182.41	3,699.9	-7.0	9.9	-9.7	0.08
3,800.0	0.20	132.42	3,799.9	-7.4	10.1	-10.1	0.23
3,900.0	0.26	207.22	3,899.9	-7.7	10.1	-10.4	0.28
4,000.0	0.28	187.94	3,999.9	-8.2	9.9	-10.8	0.09
4,100.0	0.26	146.14	4,099.9	-8.6	10.0	-11.2	0.19
4,200.0	0.07	13.57	4,199.9	-8.7	10.2	-11.4	0.31
4,300.0	0.18	116.76	4,299.9	-8.7	10.3	-11.5	0.21
4,400.0	2.47	192.01	4,399.9	-10.9	10.0	-13.4	2.43
4,500.0	5.15	202.59	4,499.7	-17.2	7.8	-18.7	2.76
4,600.0	7.23	210.71	4,599.1	-26.7	2.9	-26.3	2.25
4,700.0	9.21	235.46	4,698.1	-36.7	-6.9	-32.8	4.01
4,800.0	12.64	244.86	4,796.3	-45.8	-23.4	-36.5	3.85
4,900.0	15.07	237.96	4,893.3	-57.4	-44.3	-41.2	2.93
5,000.0	17.79	231.54	4,989.3	-73.8	-67.3	-49.8	3.27
5,100.0	20.27	228.56	5,083.8	-94.8	-92.3	-62.2	2.66
5,200.0	21.87	231.35	5,177.1	-117.9	-119.8	-75.8	1.89
5,300.0	25.37	228.80	5,268.7	-143.6	-150.5	-91.0	3.65
5,400.0	25.53	221.89	5,359.0	-173.8	-181.0	-110.4	2.97

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Company:	Antero Resources	Local Co-ordinate Reference:	Well Lettie Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Site:	Wagner Pad : Lettie/Downs/Bolte/Mason/McQuire	MD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Well:	Lettie 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)
5,500.0	24.70	223.89	5,449.6	-204.9	-209.9	-131.3	1.19
5,600.0	25.08	226.18	5,540.3	-234.6	-239.6	-150.5	1.04
5,700.0	25.71	228.67	5,630.6	-263.6	-271.2	-168.5	1.24
5,800.0	24.98	231.10	5,721.0	-291.2	-304.0	-184.9	1.27
5,900.0	25.32	230.69	5,811.5	-318.0	-336.9	-200.4	0.38
6,000.0	24.73	230.92	5,902.1	-344.7	-369.7	-215.8	0.60
6,100.0	25.37	229.63	5,992.7	-371.8	-402.3	-231.7	0.84
6,200.0	25.26	231.16	6,083.1	-399.1	-435.2	-247.7	0.66
6,300.0	25.28	232.46	6,173.6	-425.4	-468.8	-262.6	0.56
6,400.0	25.40	234.63	6,263.9	-450.9	-503.2	-276.3	0.94
6,500.0	25.07	234.08	6,354.4	-475.7	-537.8	-289.4	0.40
6,600.0	26.66	233.81	6,444.4	-501.4	-573.1	-303.2	1.59
6,700.0	26.21	230.85	6,533.9	-528.6	-608.3	-318.3	1.39
6,758.5	25.64	228.70	6,586.6	-545.1	-627.9	-328.1	1.88
6,793.0	25.29	227.82	6,617.7	-555.0	-638.9	-334.2	1.50
6,836.0	24.74	226.99	6,656.7	-567.3	-652.3	-341.8	1.52
6,882.0	25.17	238.39	6,698.4	-579.0	-667.7	-348.3	10.48
6,926.0	26.32	250.81	6,738.0	-587.1	-684.9	-350.8	12.51
6,966.0	26.61	261.72	6,773.9	-591.3	-702.1	-349.5	12.17
Sycamore							
6,972.0	26.73	263.33	6,779.2	-591.7	-704.8	-349.0	12.17
7,016.0	28.20	273.52	6,818.3	-592.2	-725.0	-343.4	11.18
7,061.0	30.75	283.55	6,857.5	-588.8	-746.8	-333.6	12.33
7,105.0	32.91	291.84	6,894.9	-581.7	-768.9	-320.1	11.07
7,151.0	36.07	299.94	6,932.8	-570.3	-792.2	-302.1	12.10
7,164.0	37.11	301.76	6,943.3	-566.3	-798.9	-296.3	11.55
Middlesex							
7,195.0	39.68	305.77	6,967.6	-555.6	-814.9	-281.2	11.55
7,241.0	43.06	310.90	7,002.1	-536.7	-838.7	-256.0	10.40
7,285.0	46.88	314.93	7,033.2	-515.6	-861.4	-228.9	10.83
7,330.0	49.33	319.65	7,063.3	-490.9	-884.1	-198.5	9.52
7,368.0	49.33	320.76	7,088.0	-468.8	-902.5	-171.8	2.22
Burkett							
7,374.0	49.33	320.94	7,092.0	-465.3	-905.4	-167.6	2.22
7,417.0	49.67	322.99	7,119.9	-439.5	-925.6	-136.9	3.71
Tully							
7,420.0	49.70	323.13	7,121.8	-437.7	-926.9	-134.8	3.71
7,464.0	54.51	324.29	7,148.8	-409.7	-947.5	-101.9	11.13
7,495.0	58.16	325.16	7,166.0	-388.6	-962.4	-77.3	12.00
7,525.0	59.92	325.21	7,181.5	-367.5	-977.0	-52.7	5.87
7,538.0	60.64	325.54	7,187.9	-358.2	-983.5	-41.9	5.93
Hamilton							
7,554.0	61.52	325.93	7,195.6	-346.7	-991.3	-28.5	5.93
7,585.0	64.51	328.13	7,209.7	-323.5	-1,006.4	-1.8	5.3
7,615.0	67.64	330.94	7,221.9	-299.8	-1,020.3	24.0	13.50

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EOW Completion Report



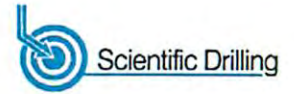
Company:	Antero Resources	Local Co-ordinate Reference:	Well Lettie Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Site:	Wagner Pad : Lettie/Downs/Boite/Mason/McQuire	MD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Well:	Lettie Unit 1H	North 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)	
7,643.0	70.51	333.00	7,231.9	-276.8	-1,032.5	50.7	12.34	
7,674.0	72.91	334.77	7,241.6	-250.3	-1,045.5	79.8	9.45	
7,704.0	74.53	335.55	7,250.0	-224.2	-1,057.6	108.3	5.95	
7,730.0	75.66	336.69	7,256.7	-201.2	-1,067.8	133.3	6.07	
Marcellus								
7,733.0	75.79	336.82	7,257.4	-198.6	-1,068.9	136.2	6.07	
7,764.0	78.33	340.75	7,264.4	-170.4	-1,079.8	166.4	14.82	
7,794.0	79.78	343.46	7,270.1	-142.4	-1,088.9	195.8	10.10	
7,833.0	83.17	343.59	7,275.9	-105.4	-1,099.8	234.4	8.70	
7,885.0	88.69	342.91	7,279.5	-55.7	-1,114.8	286.2	10.70	
7,924.0	89.66	343.04	7,280.1	-18.5	-1,126.2	325.2	2.51	
8,014.0	90.74	343.67	7,279.8	67.8	-1,152.0	415.2	1.39	
8,103.0	91.34	343.79	7,278.2	153.2	-1,176.9	504.1	0.69	
8,193.0	90.00	340.74	7,277.1	238.9	-1,204.3	594.1	3.70	
8,282.0	89.03	341.51	7,277.9	323.1	-1,233.1	683.1	1.39	
8,371.0	89.90	343.29	7,278.7	407.9	-1,260.0	772.1	2.23	
8,461.0	89.29	342.03	7,279.3	493.8	-1,286.8	862.1	1.56	
8,550.0	89.33	340.92	7,280.4	578.2	-1,315.1	951.1	1.25	
8,640.0	89.36	339.98	7,281.4	663.0	-1,345.2	1,041.0	1.04	
8,729.0	88.82	341.61	7,282.9	747.1	-1,374.5	1,130.0	1.93	
8,819.0	90.10	343.92	7,283.7	833.0	-1,401.1	1,220.0	2.93	
8,908.0	89.60	342.62	7,283.9	918.2	-1,426.8	1,308.9	1.56	
8,998.0	89.23	341.42	7,284.9	1,003.8	-1,454.5	1,398.9	1.40	
9,087.0	88.62	342.50	7,286.5	1,088.4	-1,482.1	1,487.9	1.39	
9,177.0	89.66	342.98	7,287.9	1,174.4	-1,508.8	1,577.9	1.27	
9,266.0	90.47	343.12	7,287.8	1,259.5	-1,534.7	1,666.9	0.92	
9,356.0	88.99	342.32	7,288.2	1,345.4	-1,561.5	1,756.9	1.87	
9,445.0	87.95	342.44	7,290.6	1,430.2	-1,588.4	1,845.9	1.18	
9,535.0	89.50	344.06	7,292.6	1,516.4	-1,614.3	1,935.8	2.49	
9,624.0	89.40	342.38	7,293.4	1,601.6	-1,640.0	2,024.8	1.89	
9,714.0	89.87	342.05	7,294.0	1,687.3	-1,667.5	2,114.8	0.64	
9,803.0	88.35	341.48	7,295.4	1,771.8	-1,695.4	2,203.8	1.82	
9,893.0	89.97	343.28	7,296.7	1,857.6	-1,722.6	2,293.8	2.69	
9,982.0	90.03	341.59	7,296.7	1,942.4	-1,749.5	2,382.8	1.90	
10,072.0	89.09	341.27	7,297.4	2,027.7	-1,778.1	2,472.7	1.10	
10,161.0	88.92	340.84	7,298.9	2,111.9	-1,807.0	2,561.7	0.52	
10,251.0	90.57	344.50	7,299.3	2,197.8	-1,833.8	2,651.7	4.46	
10,340.0	89.23	343.59	7,299.5	2,283.4	-1,858.3	2,740.6	1.82	
10,429.0	88.62	343.23	7,301.2	2,368.6	-1,883.7	2,829.6	0.80	
10,519.0	88.79	342.42	7,303.2	2,454.6	-1,910.3	2,919.6	0.82	
10,608.0	87.11	340.13	7,306.4	2,538.8	-1,938.8	3,008.5	0.82	
10,698.0	87.72	340.75	7,310.5	2,623.5	-1,968.9	3,098.4	0.97	
10,787.0	88.12	340.74	7,313.7	2,707.5	-1,998.2	3,187.3	0.25	
10,877.0	88.25	340.17	7,316.5	2,792.3	-2,028.3	3,277.2	0.65	
10,966.0	88.35	343.20	7,319.2	2,876.7	-2,056.3	3,366.1	3.40	

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Lettie Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Site:	Wagner Pad : Lettie/Downs/Bolte/Mason/McQuire	MD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Well:	Lettie 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)	
11,056.0	90.64	343.29	7,320.0	2,962.9	-2,082.2	3,456.1	2.55	
11,145.0	89.43	342.88	7,319.9	3,048.0	-2,108.1	3,545.1	1.44	
11,235.0	89.53	342.15	7,320.7	3,133.9	-2,135.2	3,635.1	0.82	
11,324.0	91.11	344.70	7,320.2	3,219.2	-2,160.5	3,724.1	3.37	
11,414.0	90.10	344.47	7,319.3	3,305.9	-2,184.5	3,814.0	1.15	
11,503.0	90.13	344.05	7,319.1	3,391.6	-2,208.6	3,902.9	0.47	
11,593.0	89.90	341.95	7,319.1	3,477.7	-2,234.9	3,992.9	2.35	
11,687.0	89.43	340.90	7,319.6	3,566.8	-2,264.9	4,086.9	1.22	
11,782.0	89.29	339.23	7,320.7	3,656.1	-2,297.2	4,181.8	1.76	
11,876.0	88.42	340.94	7,322.6	3,744.4	-2,329.3	4,275.7	2.04	
11,971.0	89.36	342.74	7,324.4	3,834.7	-2,358.9	4,370.7	2.14	
12,065.0	89.43	344.40	7,325.4	3,924.8	-2,385.4	4,464.7	1.77	
12,160.0	90.20	345.06	7,325.7	4,016.5	-2,410.5	4,559.6	1.07	
12,254.0	89.97	343.47	7,325.6	4,106.9	-2,436.0	4,653.5	1.71	
12,348.0	89.56	341.01	7,326.0	4,196.4	-2,464.6	4,747.5	2.65	
12,443.0	89.76	340.16	7,326.5	4,286.0	-2,496.2	4,842.5	0.92	
12,537.0	89.56	340.50	7,327.1	4,374.6	-2,527.8	4,936.4	0.42	
12,632.0	89.03	342.14	7,328.2	4,464.5	-2,558.3	5,031.4	1.81	
12,727.0	89.60	342.29	7,329.4	4,555.0	-2,587.3	5,126.4	0.62	
12,817.0	90.34	342.37	7,329.4	4,640.7	-2,614.6	5,216.4	0.83	
12,906.0	90.24	341.39	7,329.0	4,725.3	-2,642.3	5,305.4	1.11	
12,996.0	90.74	343.33	7,328.2	4,811.1	-2,669.5	5,395.4	2.23	
13,085.0	90.84	342.72	7,327.0	4,896.2	-2,695.5	5,484.3	0.69	
13,175.0	90.81	342.54	7,325.7	4,982.1	-2,722.4	5,574.3	0.20	
13,264.0	90.44	341.11	7,324.7	5,066.6	-2,750.2	5,663.3	1.66	
13,354.0	90.91	341.53	7,323.7	5,151.9	-2,779.0	5,753.3	0.70	
13,444.0	90.00	342.14	7,322.9	5,237.4	-2,807.0	5,843.3	1.22	
13,533.0	90.61	342.54	7,322.5	5,322.2	-2,834.0	5,932.3	0.82	
13,623.0	91.04	341.56	7,321.2	5,407.8	-2,861.8	6,022.3	1.19	
13,712.0	90.20	343.18	7,320.2	5,492.6	-2,888.7	6,111.3	2.05	
13,802.0	90.30	343.28	7,319.8	5,578.8	-2,914.7	6,201.3	0.16	
13,892.0	90.40	343.35	7,319.3	5,665.0	-2,940.5	6,291.2	0.14	
13,981.0	90.67	343.14	7,318.4	5,750.2	-2,966.2	6,380.2	0.38	
14,071.0	90.07	343.02	7,317.9	5,836.3	-2,992.4	6,470.2	0.68	
14,161.0	90.64	343.45	7,317.3	5,922.5	-3,018.3	6,560.2	0.79	
14,251.0	89.46	341.23	7,317.2	6,008.3	-3,045.6	6,650.2	2.79	
14,340.0	89.66	341.36	7,317.9	6,092.6	-3,074.2	6,739.2	0.27	
14,430.0	89.70	340.81	7,318.4	6,177.7	-3,103.4	6,829.2	0.61	
14,519.0	88.72	342.63	7,319.6	6,262.2	-3,131.3	6,918.1	2.32	
14,611.0	88.73	342.30	7,321.7	6,349.9	-3,159.0	7,010.1	1.86	
14,701.0	91.04	344.40	7,321.9	6,436.1	-3,184.8	7,100.1	3.22	
14,790.0	88.93	341.00	7,321.9	6,521.1	-3,211.2	7,189.1	4.50	
14,880.0	90.37	341.53	7,322.4	6,606.3	-3,240.1	7,279.1	1.70	
14,970.0	90.44	341.57	7,321.8	6,691.7	-3,268.6	7,369.0	0.09	

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EOW Completion Report



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Project:	Doddridge County WV	TVD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Site:	Wagner Pad : Lettie/Downs/Bolte/Mason/McQuire	MD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Well:	Lettie 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)
15,059.0	90.24	340.54	7,321.3	6,775.8	-3,297.5	7,458.0	1.18
15,149.0	91.37	342.20	7,320.0	6,861.1	-3,326.2	7,548.0	2.23
15,239.0	91.01	343.10	7,318.1	6,947.0	-3,353.1	7,638.0	1.08
15,328.0	90.00	343.57	7,317.3	7,032.3	-3,378.6	7,727.0	1.25
15,418.0	90.54	343.12	7,316.9	7,118.5	-3,404.4	7,816.9	0.78
15,504.0	90.44	342.66	7,316.2	7,200.7	-3,429.7	7,902.9	0.55
15,597.0	90.84	343.05	7,315.1	7,289.5	-3,457.1	7,995.9	0.60
15,687.0	89.97	341.63	7,314.5	7,375.3	-3,484.4	8,085.9	1.85
15,776.0	90.74	342.61	7,314.0	7,460.0	-3,511.7	8,174.9	1.40
15,866.0	90.80	341.75	7,312.8	7,545.7	-3,539.3	8,264.9	0.96
15,955.0	90.73	341.08	7,311.6	7,630.0	-3,567.6	8,353.9	0.76
16,045.0	90.70	341.86	7,310.4	7,715.3	-3,596.2	8,443.9	0.87
16,135.0	90.74	341.40	7,309.3	7,800.7	-3,624.6	8,533.9	0.51
16,225.0	90.64	342.38	7,308.2	7,886.3	-3,652.6	8,623.8	1.09
16,314.0	89.50	342.09	7,308.1	7,971.0	-3,679.7	8,712.8	1.32
16,404.0	90.50	342.19	7,308.1	8,056.7	-3,707.3	8,802.8	1.12
16,494.0	90.77	341.84	7,307.1	8,142.3	-3,735.1	8,892.8	0.49
16,583.0	90.77	343.11	7,305.9	8,227.1	-3,761.9	8,981.8	1.43
16,673.0	88.42	343.84	7,306.6	8,313.4	-3,787.5	9,071.8	2.73
16,763.0	88.16	343.47	7,309.2	8,399.7	-3,812.8	9,161.7	0.50
16,852.0	89.43	342.28	7,311.1	8,484.8	-3,839.0	9,250.7	1.96
16,942.0	90.54	343.28	7,311.1	8,570.7	-3,865.7	9,340.7	1.66
17,032.0	88.35	344.14	7,312.0	8,657.1	-3,890.9	9,430.7	2.61
17,122.0	88.56	344.21	7,314.4	8,743.7	-3,915.4	9,520.6	0.25
17,211.0	87.99	342.03	7,317.1	8,828.8	-3,941.3	9,609.5	2.53
17,301.0	88.22	341.18	7,320.1	8,914.1	-3,969.7	9,699.5	0.98
17,391.0	89.09	341.71	7,322.2	8,999.4	-3,998.3	9,789.4	1.13
17,480.0	90.00	341.85	7,322.9	9,084.0	-4,026.1	9,878.4	1.03
17,570.0	90.50	341.59	7,322.5	9,169.4	-4,054.3	9,968.4	0.63
17,659.0	90.07	341.21	7,322.1	9,253.8	-4,082.7	10,057.4	0.64
17,749.0	89.40	340.92	7,322.5	9,338.9	-4,111.9	10,147.4	0.81
17,839.0	89.56	342.59	7,323.3	9,424.4	-4,140.1	10,237.4	1.86
17,928.0	89.93	342.86	7,323.7	9,509.4	-4,166.5	10,326.4	0.51
18,018.0	89.83	341.76	7,323.9	9,595.1	-4,193.9	10,416.4	1.23
18,107.0	89.60	340.53	7,324.3	9,679.3	-4,222.7	10,505.3	1.41
18,197.0	89.80	340.00	7,324.8	9,764.0	-4,253.0	10,595.3	0.63
18,258.0	89.52	338.70	7,325.2	9,821.1	-4,274.6	10,656.2	2.18
18,308.0	89.52	338.70	7,325.6	9,867.7	-4,292.7	10,706.1	0.00

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Site:	Wagner Pad : Lettie/Downs/Bolte/Mason/McQuire	MD Reference:	Precision 523 GL 1270' + 19' RKB @ 1289.0usft
Well:	Lettie Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,966.0	6,773.9	-591.3	-702.1	Sycamore
7,164.0	6,943.3	-566.3	-798.9	Middlesex
7,368.0	7,088.0	-468.8	-902.5	Burkett
7,417.0	7,119.9	-439.5	-925.6	Tully
7,538.0	7,187.9	-358.2	-983.5	Hamilton
7,730.0	7,256.7	-201.2	-1,067.8	Marcellus

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