



Noland Unit 1H
Ritchie County WV
 Northing: 14275952.12
 Easting: 1640948.63
 As Drilled



To convert Magnetic North to Grid, Subtract 8.35"
 To convert True North to Grid, Subtract 0.00"

Azimuths to Grid North
 True North: 0.00"
 Magnetic North: -8.35"
 Magnetic Field
 Strength: 52192.3snT
 Dip Angle: 66.85"
 Date: 4/8/2015
 Model: BGGM2014

Patterson 347: GL 1120' + KB 25 @ 1145.0usft
 Gr: 1120.0

		WELL DETAILS		Noland Unit 1H	
		Ground Level:		1120.0	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14275952.12	1640948.63	39° 18' 47.322 N	80° 59' 53.229 W

Genie Lightfoot
 11:43, May 20 2015

Scientific Drilling
 11220 NW 10th Street
 Yukon OK 73099

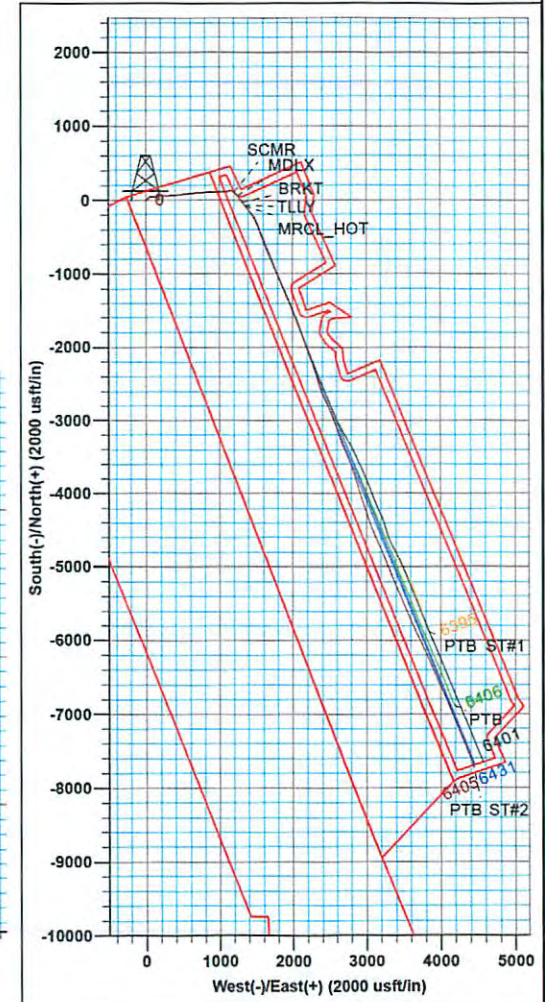
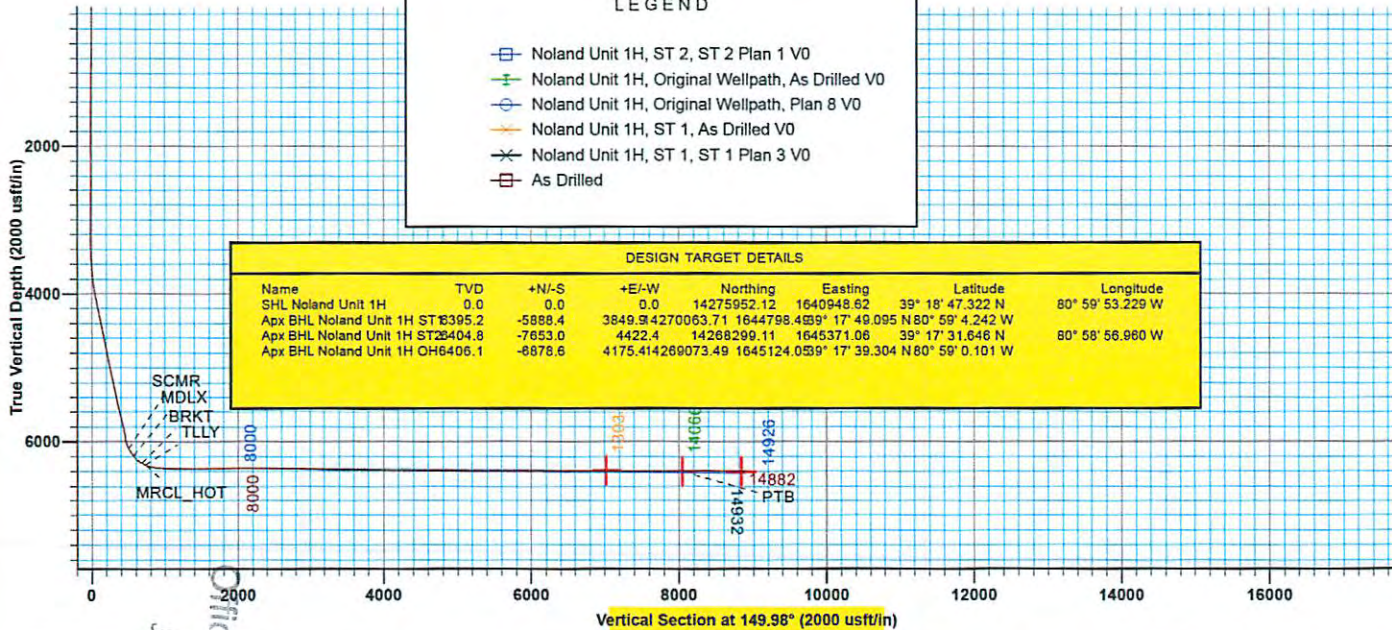
PROJECT DETAILS: Ritchie County WV
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

SITE DETAILS: Walnut West Pad: Noland/Musgrave/Schmidle
 Site Centre Northing: 14275952.12
 Easting: 1640948.63
 Positional Uncertainty: 0.0
 Convergence: 0.00
 Local North: Grid

LEGEND

- Noland Unit 1H, ST 2, ST 2 Plan 1 V0
- Noland Unit 1H, Original Wellpath, As Drilled V0
- Noland Unit 1H, Original Wellpath, Plan 8 V0
- ✖ Noland Unit 1H, ST 1, As Drilled V0
- ✖ Noland Unit 1H, ST 1, ST 1 Plan 3 V0
- As Drilled

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Noland Unit 1H	0.0	0.0	0.0	14275952.12	1640948.62	39° 18' 47.322 N	80° 59' 53.229 W
ApX BHL Noland Unit 1H ST#395.2		-5888.4	3849.8	4270063.71	1644798.4	39° 17' 49.095 N	80° 58' 4.242 W
ApX BHL Noland Unit 1H ST#404.8		-7653.0	4422.4	14268299.11	1645371.06	39° 17' 31.646 N	80° 58' 56.980 W
ApX BHL Noland Unit 1H OH6406.1		-8878.8	4175.4	14269073.49	1645124.0	39° 17' 39.304 N	80° 59' 0.101 W



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Antero

Ritchie County WV
Walnut West Pad: Noland/Musgrave/Schmidle
Noland Unit 1H
ST 2

Design: As Drilled

EOW Completion Report

20 May, 2015



Scientific Drilling

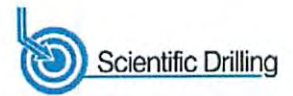
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3 2016

02/05/2016



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Project	Ritchie County WV, Ritchie County WV, WV North		
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	Walnut West Pad: Noland/Musgrave/Schmidle				
Site Position:	Northing:	14,275,952.12 usft	Latitude:	39° 18' 47.322 N	
From: Map	Easting:	1,640,948.63 usft	Longitude:	80° 59' 53.229 W	
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.00 °

Well	Noland Unit 1H, Marcellus				
Well Position	+N/-S	0.0 usft	Northing:	14,275,952.12 usft	
	+E/-W	0.0 usft	Easting:	1,640,948.63 usft	
Position Uncertainty	2.0 usft	Wellhead Elevation:	1,145.0 usft	Ground Level:	1,120.0 usft

Wellbore	ST 2			
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	4/8/2015	-8.35	66.85	52,192

Design	As Drilled			
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Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	8,923.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	149.98	

Survey Program	Date 5/20/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
37.0	5,962.0	Survey #4 Final Gyro (Original Wellpath)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
6,071.0	8,923.0	Survey #5 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1
9,016.0	14,882.0	Survey #1 SDI MWD (ST2) (ST 2)	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
37.0	0.28	146.95	37.0	-0.1	0.0	0.1	0.76
62.0	0.57	146.95	62.0	-0.2	0.2	0.3	1.16
87.0	0.70	105.82	87.0	-0.4	0.4	0.5	1.85
112.0	0.77	96.07	112.0	-0.4	0.7	0.7	0.57
137.0	0.71	109.14	137.0	-0.5	1.0	0.9	0.71
162.0	0.71	103.93	162.0	-0.6	1.3	1.2	0.26
187.0	0.80	107.04	187.0	-0.7	1.6	1.4	0.40
212.0	0.75	109.63	212.0	-0.8	1.9	1.6	0.24
237.0	0.80	104.86	237.0	-0.9	2.3	1.9	0.33

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	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)		
262.0	0.74	111.08	262.0	-1.0	2.6	2.1	0.41		
287.0	0.61	110.35	287.0	-1.1	2.8	2.4	0.52		
312.0	0.48	110.00	312.0	-1.2	3.1	2.6	0.52		
337.0	0.63	121.07	337.0	-1.3	3.3	2.8	0.73		
362.0	0.61	126.54	362.0	-1.4	3.5	3.0	0.25		
387.0	0.66	128.39	387.0	-1.6	3.7	3.3	0.22		
412.0	0.53	127.15	412.0	-1.8	3.9	3.5	0.52		
437.0	0.45	140.90	437.0	-1.9	4.1	3.7	0.57		
462.0	0.34	126.84	462.0	-2.0	4.2	3.9	0.58		
487.0	0.26	127.57	487.0	-2.1	4.3	4.0	0.32		
512.0	0.30	130.10	512.0	-2.2	4.4	4.1	0.17		
537.0	0.28	138.10	537.0	-2.3	4.5	4.2	0.18		
562.0	0.29	127.45	562.0	-2.4	4.6	4.3	0.22		
587.0	0.31	117.03	587.0	-2.4	4.7	4.5	0.23		
612.0	0.43	98.78	612.0	-2.5	4.9	4.6	0.67		
637.0	0.55	86.31	637.0	-2.5	5.1	4.7	0.64		
662.0	0.85	70.27	662.0	-2.4	5.4	4.8	1.42		
687.0	1.51	56.57	687.0	-2.2	5.8	4.8	2.85		
712.0	2.37	50.11	711.9	-1.6	6.5	4.7	3.54		
737.0	2.88	48.94	736.9	-0.9	7.4	4.5	2.05		
762.0	3.38	47.55	761.9	0.0	8.4	4.2	2.02		
787.0	3.93	45.90	786.8	1.1	9.5	3.8	2.24		
812.0	4.34	44.48	811.8	2.4	10.8	3.4	1.69		
837.0	4.72	43.97	836.7	3.8	12.2	2.8	1.53		
862.0	4.84	45.12	861.6	5.3	13.6	2.3	0.61		
887.0	4.96	44.51	886.5	6.8	15.1	1.7	0.52		
912.0	5.05	44.09	911.4	8.3	16.7	1.1	0.39		
937.0	5.52	43.25	936.3	10.0	18.3	0.5	1.91		
962.0	5.71	43.76	961.2	11.8	19.9	-0.2	0.79		
987.0	5.74	43.04	986.1	13.6	21.7	-0.9	0.31		
1,012.0	5.57	44.19	1,010.9	15.4	23.4	-1.6	0.82		
1,037.0	5.19	43.53	1,035.8	17.1	25.0	-2.3	1.54		
1,062.0	4.73	44.57	1,060.7	18.6	26.5	-2.9	1.87		
1,087.0	4.60	44.68	1,085.7	20.1	27.9	-3.4	0.52		
1,112.0	4.39	44.43	1,110.6	21.5	29.3	-3.9	0.84		
1,137.0	4.04	45.95	1,135.5	22.8	30.6	-4.4	1.47		
1,162.0	3.80	45.69	1,160.5	24.0	31.8	-4.8	0.96		
1,187.0	3.35	45.50	1,185.4	25.0	32.9	-5.2	1.80		
1,212.0	3.10	42.35	1,210.4	26.1	33.9	-5.6	1.23		
1,237.0	2.82	43.95	1,235.3	27.0	34.8	-6.0	1.17		
1,262.0	2.62	44.14	1,260.3	27.9	35.6	-6.3	0.80		
1,287.0	2.52	43.77	1,285.3	28.7	36.4	-6.6	0.41		
1,312.0	2.24	43.92	1,310.3	29.4	37.1	-6.9	1.12		
1,337.0	2.03	46.92	1,335.2	30.1	37.8	-7.1	0.95		
1,362.0	1.83	44.39	1,360.2	30.6	38.4	-7.3	0.87		

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Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	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)	
1,387.0	1.50	47.13	1,385.2	31.2	38.9	-7.5	1.36	
1,412.0	1.21	45.76	1,410.2	31.6	39.3	-7.7	1.17	
1,437.0	1.04	43.83	1,435.2	31.9	39.7	-7.8	0.70	
1,462.0	0.84	40.14	1,460.2	32.2	39.9	-7.9	0.84	
1,487.0	0.98	41.39	1,485.2	32.5	40.2	-8.0	0.57	
1,512.0	0.93	43.11	1,510.2	32.8	40.5	-8.2	0.23	
1,537.0	0.97	46.35	1,535.2	33.1	40.8	-8.3	0.27	
1,562.0	0.86	52.42	1,560.2	33.4	41.1	-8.3	0.59	
1,587.0	0.75	50.41	1,585.2	33.6	41.4	-8.4	0.45	
1,612.0	0.67	59.12	1,610.2	33.8	41.6	-8.4	0.54	
1,637.0	0.59	58.22	1,635.2	33.9	41.8	-8.4	0.32	
1,662.0	0.50	37.91	1,660.2	34.1	42.0	-8.5	0.85	
1,687.0	0.39	52.41	1,685.2	34.2	42.2	-8.5	0.63	
1,712.0	0.48	37.08	1,710.2	34.3	42.3	-8.6	0.59	
1,737.0	0.48	42.56	1,735.2	34.5	42.4	-8.7	0.18	
1,762.0	0.41	40.24	1,760.2	34.7	42.5	-8.7	0.29	
1,787.0	0.37	55.13	1,785.2	34.8	42.7	-8.8	0.43	
1,812.0	0.40	64.55	1,810.2	34.9	42.8	-8.8	0.28	
1,837.0	0.37	58.77	1,835.2	34.9	43.0	-8.8	0.20	
1,862.0	0.34	68.24	1,860.2	35.0	43.1	-8.7	0.26	
1,887.0	0.36	86.91	1,885.2	35.0	43.2	-8.7	0.46	
1,912.0	0.42	90.52	1,910.2	35.0	43.4	-8.6	0.26	
1,937.0	0.44	85.34	1,935.2	35.0	43.6	-8.5	0.17	
1,962.0	0.53	85.44	1,960.2	35.1	43.8	-8.4	0.36	
1,987.0	0.45	88.77	1,985.2	35.1	44.0	-8.3	0.34	
2,012.0	0.37	80.12	2,010.2	35.1	44.2	-8.3	0.40	
2,037.0	0.38	85.40	2,035.2	35.1	44.4	-8.2	0.14	
2,062.0	0.36	79.37	2,060.2	35.1	44.5	-8.1	0.17	
2,087.0	0.41	82.68	2,085.2	35.2	44.7	-8.1	0.22	
2,112.0	0.44	73.24	2,110.2	35.2	44.9	-8.0	0.30	
2,137.0	0.46	76.63	2,135.2	35.2	45.1	-8.0	0.13	
2,162.0	0.48	82.22	2,160.2	35.3	45.3	-7.9	0.20	
2,187.0	0.47	80.51	2,185.2	35.3	45.5	-7.8	0.07	
2,212.0	0.45	75.68	2,210.2	35.4	45.7	-7.8	0.17	
2,237.0	0.19	71.14	2,235.2	35.4	45.8	-7.7	1.04	
2,262.0	0.18	44.56	2,260.2	35.4	45.9	-7.7	0.34	
2,287.0	0.20	38.02	2,285.2	35.5	45.9	-7.8	0.12	
2,312.0	0.19	32.76	2,310.2	35.6	46.0	-7.8	0.08	
2,337.0	0.23	38.45	2,335.2	35.6	46.0	-7.8	0.18	
2,362.0	0.21	43.54	2,360.2	35.7	46.1	-7.9	0.11	
2,387.0	0.18	42.17	2,385.2	35.8	46.1	-7.9	0.12	
2,412.0	0.11	63.81	2,410.2	35.8	46.2	-7.9	0.35	
2,437.0	0.09	51.71	2,435.2	35.8	46.2	-7.9	0.12	
2,462.0	0.07	47.58	2,460.2	35.9	46.3	-7.9	0.08	

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	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)	
2,487.0	0.11	324.90	2,485.2	35.9	46.3	-7.9	0.49	
2,512.0	0.16	317.24	2,510.2	35.9	46.2	-8.0	0.21	
2,537.0	0.08	329.11	2,535.2	36.0	46.2	-8.0	0.33	
2,562.0	0.17	312.34	2,560.2	36.0	46.1	-8.1	0.38	
2,587.0	0.15	313.34	2,585.2	36.1	46.1	-8.2	0.08	
2,612.0	0.16	337.14	2,610.2	36.1	46.1	-8.2	0.26	
2,637.0	0.27	310.36	2,635.2	36.2	46.0	-8.3	0.58	
2,662.0	0.22	308.94	2,660.2	36.3	45.9	-8.4	0.20	
2,687.0	0.20	324.30	2,685.2	36.3	45.9	-8.5	0.24	
2,712.0	0.20	335.16	2,710.2	36.4	45.8	-8.6	0.15	
2,737.0	0.25	344.38	2,735.2	36.5	45.8	-8.7	0.25	
2,762.0	0.21	327.52	2,760.2	36.6	45.7	-8.8	0.31	
2,787.0	0.27	345.50	2,785.2	36.7	45.7	-8.9	0.38	
2,812.0	0.18	343.52	2,810.2	36.8	45.7	-9.0	0.36	
2,837.0	0.17	344.78	2,835.2	36.8	45.7	-9.1	0.04	
2,862.0	0.16	322.22	2,860.2	36.9	45.6	-9.1	0.26	
2,887.0	0.19	342.40	2,885.2	37.0	45.6	-9.2	0.27	
2,912.0	0.17	356.16	2,910.2	37.1	45.6	-9.3	0.19	
2,937.0	0.16	292.81	2,935.2	37.1	45.5	-9.3	0.69	
2,962.0	0.15	312.41	2,960.2	37.1	45.5	-9.4	0.21	
2,987.0	0.17	326.52	2,985.2	37.2	45.4	-9.5	0.18	
3,012.0	0.20	288.44	3,010.2	37.2	45.4	-9.5	0.50	
3,037.0	0.23	303.06	3,035.2	37.3	45.3	-9.6	0.25	
3,062.0	0.24	314.15	3,060.2	37.3	45.2	-9.7	0.19	
3,087.0	0.19	304.54	3,085.2	37.4	45.1	-9.8	0.25	
3,112.0	0.41	313.33	3,110.2	37.5	45.0	-9.9	0.90	
3,137.0	0.29	296.55	3,135.2	37.6	44.9	-10.1	0.63	
3,162.0	0.15	298.98	3,160.2	37.6	44.8	-10.1	0.56	
3,187.0	0.28	50.06	3,185.2	37.7	44.9	-10.2	1.45	
3,212.0	0.63	63.21	3,210.2	37.8	45.0	-10.2	1.45	
3,237.0	1.00	66.90	3,235.2	37.9	45.3	-10.1	1.49	
3,262.0	1.73	68.62	3,260.1	38.1	45.9	-10.1	2.92	
3,287.0	2.34	70.80	3,285.1	38.4	46.7	-9.9	2.46	
3,312.0	3.00	73.78	3,310.1	38.8	47.8	-9.7	2.70	
3,337.0	3.59	73.69	3,335.1	39.2	49.2	-9.3	2.36	
3,362.0	4.17	74.23	3,360.0	39.7	50.8	-8.9	2.32	
3,387.0	4.74	74.80	3,384.9	40.2	52.7	-8.4	2.29	
3,412.0	5.49	76.68	3,409.8	40.7	54.9	-7.8	3.07	
3,437.0	5.93	78.71	3,434.7	41.3	57.3	-7.1	1.94	
3,462.0	6.58	80.14	3,459.6	41.8	60.0	-6.1	2.67	
3,487.0	7.16	82.79	3,484.4	42.2	62.9	-5.0	2.64	
3,512.0	7.80	84.40	3,509.2	42.6	66.2	-3.7	2.69	
3,537.0	8.28	86.42	3,533.9	42.8	69.7	-2.2	2.23	
3,562.0	8.83	86.71	3,558.6	43.1	73.4	-0.6	2.21	

Received
Office of Oil & Gas
JAN 13 2016

Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	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)	
3,587.0	9.36	86.61	3,583.3	43.3	77.3	1.2	2.12	
3,612.0	10.05	84.79	3,608.0	43.6	81.5	3.0	3.02	
3,637.0	10.56	83.07	3,632.6	44.1	86.0	4.8	2.38	
3,662.0	11.16	81.53	3,657.1	44.7	90.6	6.6	2.67	
3,687.0	11.54	81.58	3,681.6	45.4	95.5	8.4	1.52	
3,712.0	12.26	81.48	3,706.1	46.2	100.6	10.3	2.88	
3,737.0	13.00	81.76	3,730.5	47.0	106.0	12.3	2.97	
3,762.0	14.01	82.37	3,754.8	47.8	111.8	14.5	4.08	
3,787.0	14.70	82.68	3,779.0	48.6	117.9	16.9	2.78	
3,812.0	15.31	82.82	3,803.2	49.4	124.4	19.4	2.44	
3,837.0	15.88	83.59	3,827.2	50.2	131.0	22.1	2.43	
3,862.0	16.71	84.22	3,851.2	51.0	138.0	24.9	3.39	
3,887.0	17.05	85.47	3,875.2	51.6	145.2	28.0	1.99	
3,912.0	17.59	86.51	3,899.0	52.1	152.7	31.2	2.49	
3,937.0	18.13	88.36	3,922.8	52.5	160.3	34.8	3.13	
3,962.0	18.61	89.12	3,946.5	52.6	168.2	38.6	2.15	
3,987.0	19.58	90.08	3,970.2	52.7	176.4	42.6	4.08	
4,012.0	20.30	90.46	3,993.7	52.7	184.9	46.9	2.93	
4,037.0	21.01	90.26	4,017.1	52.6	193.7	51.4	2.85	
4,062.0	21.51	90.12	4,040.4	52.6	202.8	55.9	2.01	
4,087.0	22.10	90.04	4,063.6	52.6	212.1	60.6	2.36	
4,112.0	22.79	89.77	4,086.7	52.6	221.6	65.4	2.79	
4,137.0	23.24	89.43	4,109.7	52.6	231.4	70.2	1.88	
4,162.0	24.08	88.35	4,132.6	52.8	241.4	75.0	3.78	
4,187.0	25.01	87.37	4,155.3	53.2	251.8	79.9	4.06	
4,212.0	25.35	85.95	4,178.0	53.9	262.4	84.7	2.77	
4,237.0	25.81	84.58	4,200.5	54.7	273.2	89.3	3.00	
4,262.0	25.60	83.97	4,223.0	55.8	284.0	93.7	1.35	
4,287.0	25.64	83.65	4,245.6	57.0	294.7	98.1	0.58	
4,312.0	26.03	83.91	4,268.1	58.2	305.5	102.5	1.62	
4,337.0	26.34	84.19	4,290.5	59.3	316.5	107.0	1.33	
4,362.0	26.49	84.23	4,312.9	60.4	327.6	111.6	0.60	
4,387.0	26.66	84.05	4,335.3	61.6	338.7	116.1	0.75	
4,412.0	26.74	83.98	4,357.6	62.8	349.9	120.7	0.34	
4,437.0	26.87	84.03	4,379.9	63.9	361.1	125.3	0.53	
4,462.0	27.05	83.89	4,402.2	65.1	372.4	129.9	0.76	
4,487.0	26.95	83.87	4,424.5	66.3	383.6	134.5	0.40	
4,512.0	26.84	83.80	4,446.8	67.5	394.9	139.1	0.46	
4,537.0	27.06	83.91	4,469.0	68.8	406.1	143.7	0.90	
4,562.0	27.18	84.50	4,491.3	69.9	417.5	148.4	1.18	
4,587.0	27.24	85.66	4,513.5	70.9	428.9	153.2	2.14	
4,612.0	26.78	86.52	4,535.8	71.7	440.2	158.2	2.41	
4,637.0	26.37	86.18	4,558.2	72.4	451.4	163.2	1.75	
4,662.0	26.44	86.00	4,580.6	73.1	462.5	168.1	0.43	

Received
Office of Oil & Gas
JAN 13 2016

Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	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)	
4,687.0	26.60	85.54	4,602.9	74.0	473.6	172.9	1.04	
4,712.0	26.68	85.29	4,625.3	74.9	484.8	177.7	0.55	
4,737.0	26.57	84.59	4,647.6	75.8	495.9	182.5	1.33	
4,762.0	26.35	83.91	4,670.0	77.0	507.0	187.0	1.50	
4,787.0	26.45	83.23	4,692.4	78.2	518.0	191.5	1.27	
4,812.0	26.78	82.68	4,714.7	79.6	529.2	195.9	1.65	
4,837.0	26.73	82.44	4,737.1	81.0	540.3	200.2	0.48	
4,862.0	26.69	82.27	4,759.4	82.5	551.5	204.5	0.34	
4,887.0	26.89	82.21	4,781.7	84.1	562.6	208.7	0.81	
4,912.0	26.93	82.22	4,804.0	85.6	573.8	213.0	0.16	
4,937.0	27.01	82.45	4,826.3	87.1	585.1	217.3	0.53	
4,962.0	26.60	83.23	4,848.6	88.5	596.3	221.7	2.16	
4,987.0	26.03	84.01	4,871.0	89.7	607.3	226.1	2.67	
5,012.0	25.85	84.22	4,893.5	90.9	618.2	230.6	0.81	
5,037.0	26.02	84.39	4,916.0	91.9	629.0	235.1	0.74	
5,062.0	26.14	84.79	4,938.4	93.0	640.0	239.7	0.85	
5,087.0	26.15	85.41	4,960.9	93.9	650.9	244.4	1.09	
5,112.0	26.09	86.17	4,983.3	94.7	661.9	249.2	1.36	
5,137.0	26.20	86.45	5,005.8	95.4	672.9	254.1	0.66	
5,162.0	26.49	86.70	5,028.2	96.1	684.0	259.0	1.24	
5,187.0	26.53	87.06	5,050.5	96.7	695.1	264.1	0.66	
5,212.0	26.11	86.91	5,072.9	97.3	706.2	269.1	1.70	
5,237.0	25.98	86.76	5,095.4	97.9	717.2	274.1	0.58	
5,262.0	26.25	86.99	5,117.9	98.5	728.2	279.0	1.15	
5,287.0	26.30	87.01	5,140.3	99.1	739.2	284.1	0.20	
5,312.0	25.84	86.55	5,162.7	99.7	750.2	289.0	2.01	
5,337.0	25.67	86.42	5,185.2	100.4	761.0	293.9	0.72	
5,362.0	25.79	86.55	5,207.8	101.0	771.8	298.7	0.53	
5,387.0	25.80	86.77	5,230.3	101.7	782.7	303.6	0.39	
5,412.0	25.67	86.74	5,252.8	102.3	793.5	308.5	0.52	
5,437.0	25.38	86.72	5,275.4	102.9	804.3	313.3	1.16	
5,462.0	25.35	86.41	5,297.9	103.5	815.0	318.1	0.54	
5,487.0	25.27	86.29	5,320.5	104.2	825.7	322.9	0.38	
5,512.0	25.34	86.46	5,343.1	104.9	836.3	327.6	0.40	
5,537.0	25.22	86.25	5,365.8	105.6	847.0	332.4	0.60	
5,562.0	25.33	86.47	5,388.4	106.2	857.6	337.1	0.58	
5,587.0	25.34	86.36	5,411.0	106.9	868.3	341.9	0.19	
5,612.0	24.91	86.15	5,433.6	107.6	878.9	346.6	1.76	
5,637.0	24.67	85.94	5,456.3	108.3	889.4	351.2	1.02	
5,662.0	24.80	85.96	5,479.0	109.1	899.8	355.8	0.52	
5,687.0	25.08	87.16	5,501.7	109.7	910.3	360.5	2.31	
5,712.0	24.93	88.31	5,524.3	110.1	920.9	365.4	2.03	
5,737.0	24.65	88.60	5,547.0	110.4	931.3	370.4	1.22	
5,762.0	24.96	88.92	5,569.7	110.6	941.8	375.5	1.35	

Received
Office of Oil & Gas
JAN 13 2016



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	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)
5,787.0	25.82	89.32	5,592.3	110.8	952.6	380.7	3.51
5,812.0	26.42	89.79	5,614.7	110.9	963.6	386.1	2.54
5,837.0	26.72	89.90	5,637.1	110.9	974.7	391.7	1.22
5,862.0	26.25	89.69	5,659.5	110.9	985.9	397.2	1.92
5,887.0	25.72	89.11	5,681.9	111.1	996.8	402.6	2.35
5,912.0	26.04	88.73	5,704.4	111.3	1,007.8	407.9	1.44
5,937.0	26.08	88.31	5,726.9	111.5	1,018.7	413.1	0.76
5,962.0	25.78	88.18	5,749.4	111.9	1,029.7	418.3	1.22
6,071.0	26.42	86.33	5,847.3	114.2	1,077.6	440.3	0.95
6,103.0	25.93	86.59	5,876.0	115.1	1,091.6	446.6	1.57
6,134.0	25.83	81.56	5,903.9	116.4	1,105.1	452.1	7.09
6,165.0	26.43	72.80	5,931.7	119.5	1,118.4	456.1	12.58
6,197.0	25.96	74.25	5,960.4	123.5	1,131.9	459.4	2.48
6,228.0	25.45	86.26	5,988.4	125.8	1,145.1	464.0	16.86
6,259.0	26.14	97.47	6,016.3	125.3	1,158.5	471.1	15.87
6,291.0	27.96	108.19	6,044.8	122.1	1,172.6	481.0	16.24
6,322.0	30.14	117.25	6,071.9	116.2	1,186.5	493.0	15.82
6,353.0	32.30	123.30	6,098.5	108.1	1,200.3	507.0	12.28
6,385.0	33.78	129.45	6,125.3	97.8	1,214.3	522.9	11.45
6,416.0	34.98	134.81	6,150.9	86.0	1,227.3	539.6	10.50
6,447.0	35.89	139.89	6,176.1	72.8	1,239.5	557.1	9.94
6,479.0	39.46	142.17	6,201.5	57.6	1,251.8	576.4	11.97
6,510.0	44.00	143.12	6,224.6	41.2	1,264.3	596.9	14.79
6,542.0	48.74	144.12	6,246.7	22.5	1,278.0	619.9	14.98
6,573.0	54.59	143.47	6,265.9	2.9	1,292.4	644.1	18.94
6,604.0	59.56	142.09	6,282.7	-17.8	1,308.1	669.9	16.46
6,636.0	62.58	140.47	6,298.2	-39.6	1,325.6	697.6	10.43
6,667.0	64.53	140.54	6,312.0	-61.0	1,343.3	724.9	6.29
6,699.0	68.57	141.32	6,324.8	-83.8	1,361.8	753.9	12.82
6,730.0	72.89	142.52	6,335.0	-106.9	1,379.8	782.9	14.41
6,762.0	77.94	141.33	6,343.0	-131.2	1,398.9	813.5	16.19
6,793.0	82.27	140.77	6,348.4	-155.0	1,418.1	843.7	14.08
6,824.0	84.56	143.54	6,351.9	-179.3	1,437.0	874.2	11.55
6,856.0	85.74	146.71	6,354.6	-205.4	1,455.2	906.0	10.54
6,887.0	87.01	148.63	6,356.6	-231.6	1,471.8	936.9	7.42
6,918.0	86.85	150.83	6,358.2	-258.3	1,487.4	967.8	7.11
6,946.0	87.28	154.00	6,359.7	-283.1	1,500.3	995.8	11.41
7,005.0	88.56	159.88	6,361.8	-337.3	1,523.4	1,054.3	10.19
7,040.0	88.19	160.17	6,362.8	-370.2	1,535.3	1,088.7	1.34
7,134.0	89.36	159.31	6,364.8	-458.4	1,567.9	1,181.3	1.54
7,229.0	90.77	159.31	6,364.7	-547.2	1,601.4	1,275.1	1.48
7,323.0	90.71	158.65	6,363.5	-635.0	1,635.2	1,367.9	0.70
7,417.0	90.57	157.68	6,362.5	-722.2	1,670.1	1,460.9	1.04
7,511.0	90.13	156.33	6,361.9	-808.8	1,706.8	1,554.2	1.51

Received
Office of Oil & Gas
JAN 13 2016

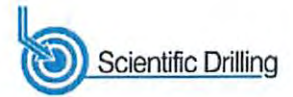
Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	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)	
7,605.0	89.40	154.83	6,362.3	-894.3	1,745.7	1,647.8	1.77	
7,699.0	89.56	157.29	6,363.1	-980.2	1,783.8	1,741.2	2.62	
7,793.0	90.67	158.05	6,362.9	-1,067.2	1,819.5	1,834.4	1.43	
7,887.0	90.27	157.43	6,362.2	-1,154.2	1,855.2	1,927.5	0.78	
7,982.0	89.93	156.43	6,362.0	-1,241.6	1,892.4	2,021.8	1.11	
8,076.0	89.83	155.39	6,362.2	-1,327.4	1,930.7	2,115.3	1.11	
8,170.0	90.00	157.70	6,362.3	-1,413.6	1,968.2	2,208.7	2.46	
8,264.0	89.97	157.37	6,362.4	-1,500.5	2,004.1	2,301.9	0.35	
8,358.0	89.63	158.80	6,362.7	-1,587.7	2,039.2	2,394.9	1.56	
8,452.0	90.00	160.83	6,363.0	-1,675.9	2,071.6	2,487.6	2.20	
8,546.0	89.29	159.44	6,363.6	-1,764.3	2,103.5	2,580.1	1.66	
8,641.0	89.30	159.17	6,364.7	-1,853.2	2,137.1	2,673.8	0.28	
8,735.0	89.16	159.63	6,366.0	-1,941.2	2,170.2	2,766.5	0.51	
8,829.0	89.60	161.42	6,367.0	-2,029.8	2,201.5	2,858.9	1.96	
8,923.0	88.99	159.08	6,368.2	-2,118.2	2,233.3	2,951.4	2.57	
9,016.0	86.07	160.36	6,372.2	-2,205.4	2,265.5	3,043.0	3.43	
9,047.0	85.77	160.06	6,374.4	-2,234.5	2,275.9	3,073.4	1.37	
9,079.0	85.50	161.17	6,376.8	-2,264.6	2,286.5	3,104.8	3.56	
9,110.0	85.73	162.16	6,379.2	-2,293.9	2,296.3	3,135.0	3.27	
9,173.0	86.44	163.16	6,383.5	-2,353.9	2,315.0	3,196.4	1.94	
9,204.0	87.55	165.14	6,385.1	-2,383.7	2,323.4	3,226.4	7.31	
9,298.0	88.46	163.95	6,388.4	-2,474.2	2,348.5	3,317.3	1.59	
9,393.0	90.47	161.75	6,389.3	-2,565.0	2,376.5	3,409.9	3.14	
9,487.0	90.44	156.69	6,388.5	-2,652.8	2,409.8	3,502.6	5.38	
9,581.0	89.33	154.07	6,388.7	-2,738.3	2,449.0	3,596.2	3.03	
9,612.0	90.60	154.65	6,388.7	-2,766.2	2,462.4	3,627.1	4.50	
9,675.0	88.89	151.18	6,389.0	-2,822.3	2,491.1	3,690.0	6.14	
9,769.0	89.16	159.93	6,390.6	-2,907.8	2,529.9	3,783.5	9.31	
9,832.0	90.34	159.34	6,390.9	-2,966.9	2,551.8	3,845.6	2.09	
9,863.0	89.53	161.03	6,390.9	-2,996.0	2,562.4	3,876.1	6.05	
9,895.0	89.09	161.82	6,391.3	-3,026.3	2,572.5	3,907.4	2.83	
9,926.0	89.46	158.86	6,391.7	-3,055.5	2,583.0	3,937.9	9.62	
9,957.0	90.00	159.70	6,391.9	-3,084.5	2,593.9	3,968.5	3.22	
9,989.0	90.00	162.47	6,391.9	-3,114.8	2,604.3	3,999.9	8.66	
10,020.0	89.13	161.06	6,392.1	-3,144.2	2,614.0	4,030.3	5.34	
10,052.0	88.79	160.48	6,392.7	-3,174.4	2,624.6	4,061.7	2.10	
10,083.0	89.23	162.54	6,393.2	-3,203.8	2,634.4	4,092.1	6.79	
10,115.0	89.46	162.53	6,393.6	-3,234.4	2,644.0	4,123.3	0.72	
10,146.0	89.46	160.70	6,393.9	-3,263.8	2,653.8	4,153.7	5.90	
10,177.0	90.44	161.13	6,393.9	-3,293.1	2,663.9	4,184.1	3.45	
10,208.0	89.93	159.86	6,393.8	-3,322.3	2,674.2	4,214.6	4.41	
10,240.0	88.73	156.62	6,394.2	-3,352.0	2,686.1	4,246.2	10.80	
10,271.0	88.22	154.34	6,395.0	-3,380.2	2,699.0	4,277.1	7.53	
10,303.0	89.13	155.12	6,395.7	-3,409.1	2,712.6	4,309.0	3.74	
10,334.0	91.41	157.03	6,395.6	-3,437.5	2,725.2	4,339.8	9.59	

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Noland Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well:	Noland Unit 1H	North Reference:	Grid
Wellbore:	ST 2	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)	
10,428.0	91.98	159.02	6,392.8	-3,524.6	2,760.4	4,432.8	2.20	
10,491.0	91.61	160.30	6,390.8	-3,583.6	2,782.2	4,494.9	2.11	
10,523.0	90.60	161.00	6,390.2	-3,613.8	2,792.8	4,526.3	3.84	
10,617.0	89.87	161.56	6,389.8	-3,702.8	2,823.0	4,618.5	0.98	
10,648.0	89.77	160.48	6,389.9	-3,732.2	2,833.1	4,648.9	3.50	
10,711.0	89.80	160.36	6,390.2	-3,791.5	2,854.2	4,710.9	0.20	
10,742.0	90.31	162.43	6,390.1	-3,820.9	2,864.1	4,741.3	6.88	
10,805.0	89.77	162.36	6,390.1	-3,880.9	2,883.1	4,802.8	0.86	
10,836.0	89.50	162.76	6,390.3	-3,910.5	2,892.4	4,833.0	1.56	
10,898.0	90.34	162.78	6,390.4	-3,969.7	2,910.8	4,893.5	1.36	
10,930.0	90.40	162.64	6,390.2	-4,000.3	2,920.3	4,924.7	0.48	
10,992.0	90.03	163.89	6,389.9	-4,059.7	2,938.2	4,985.0	2.10	
11,024.0	89.87	163.37	6,390.0	-4,090.4	2,947.2	5,016.1	1.70	
11,086.0	90.10	161.06	6,390.0	-4,149.4	2,966.1	5,076.7	3.74	
11,118.0	89.80	161.30	6,390.0	-4,179.7	2,976.4	5,108.1	1.20	
11,180.0	89.43	161.08	6,390.4	-4,238.4	2,996.4	5,168.9	0.69	
11,212.0	89.30	161.76	6,390.8	-4,268.7	3,006.6	5,200.3	2.16	
11,275.0	89.33	162.29	6,391.5	-4,328.6	3,026.1	5,261.9	0.84	
11,369.0	89.43	159.64	6,392.5	-4,417.5	3,056.7	5,354.2	2.82	
11,400.0	89.83	158.11	6,392.7	-4,446.4	3,067.9	5,384.8	5.10	
11,463.0	89.73	157.12	6,393.0	-4,504.6	3,091.9	5,447.2	1.58	
11,557.0	89.33	156.67	6,393.8	-4,591.1	3,128.8	5,540.5	0.64	
11,651.0	88.36	156.80	6,395.7	-4,677.4	3,165.9	5,633.9	1.04	
11,745.0	89.73	155.95	6,397.2	-4,763.5	3,203.6	5,727.3	1.72	
11,840.0	89.90	158.44	6,397.5	-4,851.1	3,240.4	5,821.5	2.63	
11,934.0	90.50	158.95	6,397.2	-4,938.7	3,274.5	5,914.4	0.84	
12,028.0	90.44	158.07	6,396.4	-5,026.1	3,309.0	6,007.4	0.94	
12,122.0	90.30	159.15	6,395.8	-5,113.7	3,343.2	6,100.3	1.16	
12,216.0	90.90	156.85	6,394.8	-5,200.8	3,378.5	6,193.4	2.53	
12,310.0	89.46	156.38	6,394.5	-5,287.1	3,415.8	6,286.7	1.61	
12,404.0	88.76	156.13	6,396.0	-5,373.1	3,453.6	6,380.2	0.79	
12,498.0	88.12	157.06	6,398.6	-5,459.3	3,490.9	6,473.5	1.20	
12,592.0	90.00	157.65	6,400.1	-5,546.1	3,527.1	6,566.7	2.10	
12,687.0	91.54	157.02	6,398.8	-5,633.7	3,563.7	6,660.9	1.75	
12,781.0	90.81	156.00	6,396.9	-5,719.9	3,601.2	6,754.3	1.33	
12,875.0	90.50	155.71	6,395.8	-5,805.7	3,639.6	6,847.8	0.45	
12,969.0	89.53	153.53	6,395.8	-5,890.6	3,679.9	6,941.5	2.54	
13,064.0	89.43	156.42	6,396.7	-5,976.7	3,720.1	7,036.1	3.04	
13,157.0	90.13	156.89	6,397.0	-6,062.1	3,756.9	7,128.5	0.91	
13,252.0	89.80	154.93	6,397.1	-6,148.8	3,795.7	7,223.0	2.09	
13,346.0	89.60	156.42	6,397.6	-6,234.4	3,834.4	7,316.5	1.60	
13,440.0	88.69	155.38	6,399.0	-6,320.2	3,872.8	7,410.0	1.47	
13,534.0	90.27	158.17	6,399.8	-6,406.6	3,909.9	7,503.3	3.41	
13,628.0	91.11	157.12	6,398.7	-6,493.5	3,945.6	7,596.4	1.43	

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EOW Completion Report



Company: Antero	Local Co-ordinate Reference: Well Noland Unit 1H
Project: Ritchie County WV	TVD Reference: Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Site: Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference: Patterson 347: GL 1120' + KB 25 @ 1145.0usft
Well: Noland Unit 1H	North Reference: Grid
Wellbore: ST 2	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)
13,722.0	90.47	157.42	6,397.4	-6,580.2	3,981.9	7,689.7	0.75
13,816.0	90.00	153.26	6,397.0	-6,665.6	4,021.2	7,783.2	4.45
13,911.0	89.90	159.79	6,397.1	-6,752.7	4,059.0	7,877.6	6.87
14,005.0	89.36	157.14	6,397.7	-6,840.1	4,093.5	7,970.5	2.88
14,099.0	89.93	157.87	6,398.3	-6,927.0	4,129.4	8,063.7	0.99
14,193.0	88.96	158.85	6,399.2	-7,014.4	4,164.1	8,156.7	1.47
14,287.0	90.57	158.63	6,399.6	-7,102.0	4,198.2	8,249.6	1.73
14,382.0	90.00	159.02	6,399.1	-7,190.5	4,232.5	8,343.5	0.73
14,476.0	89.30	156.79	6,399.7	-7,277.6	4,267.9	8,436.6	2.49
14,570.0	88.66	157.33	6,401.4	-7,364.2	4,304.5	8,529.8	0.89
14,664.0	89.63	157.72	6,402.8	-7,451.0	4,340.4	8,623.0	1.11
14,758.0	89.46	157.91	6,403.5	-7,538.1	4,375.9	8,716.1	0.27
14,822.0	89.40	158.36	6,404.1	-7,597.5	4,399.7	8,779.5	0.71
14,882.0	89.34	157.20	6,404.8	-7,653.0	4,422.4	8,838.9	1.94
PTB ST#2							

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,882.0	6,404.8	-7,653.0	4,422.4	PTB ST#2

Checked By: _____ Approved By: _____ Date: _____

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