



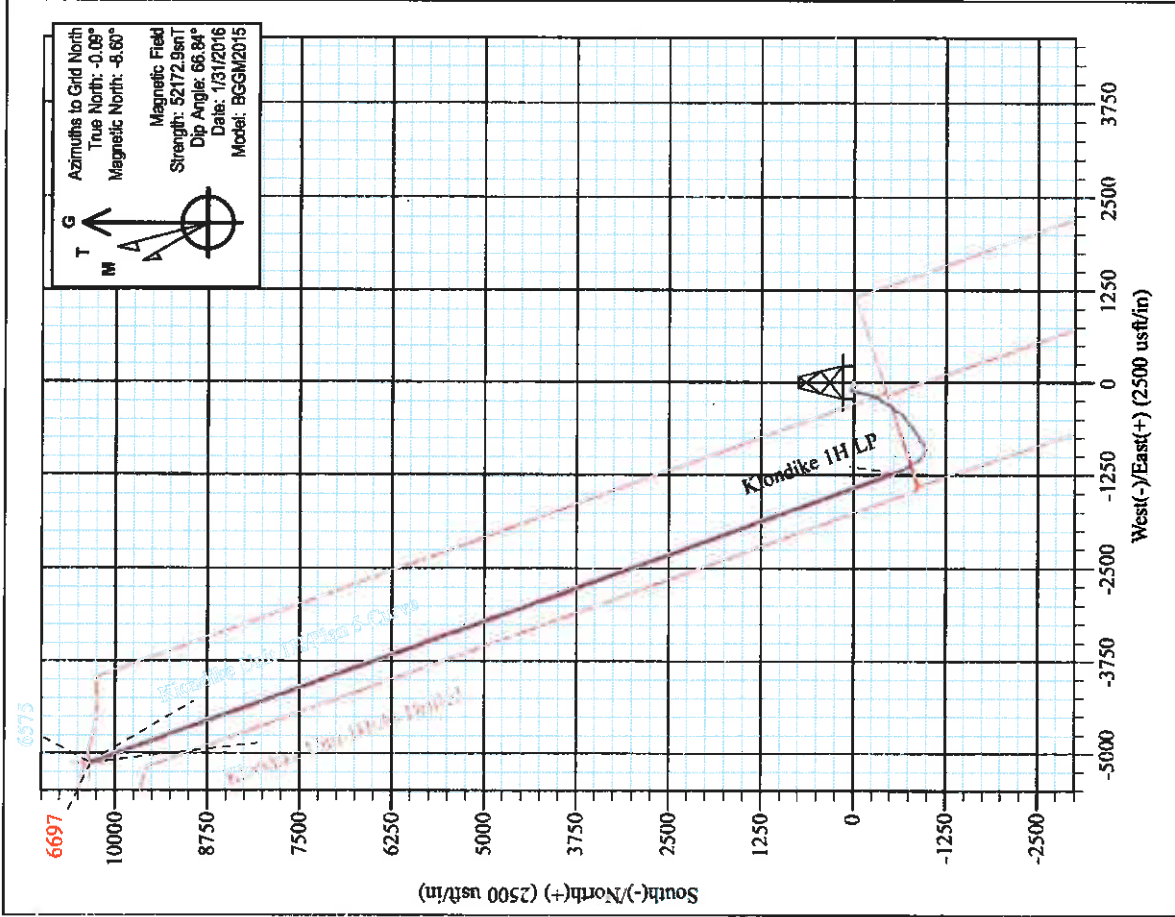
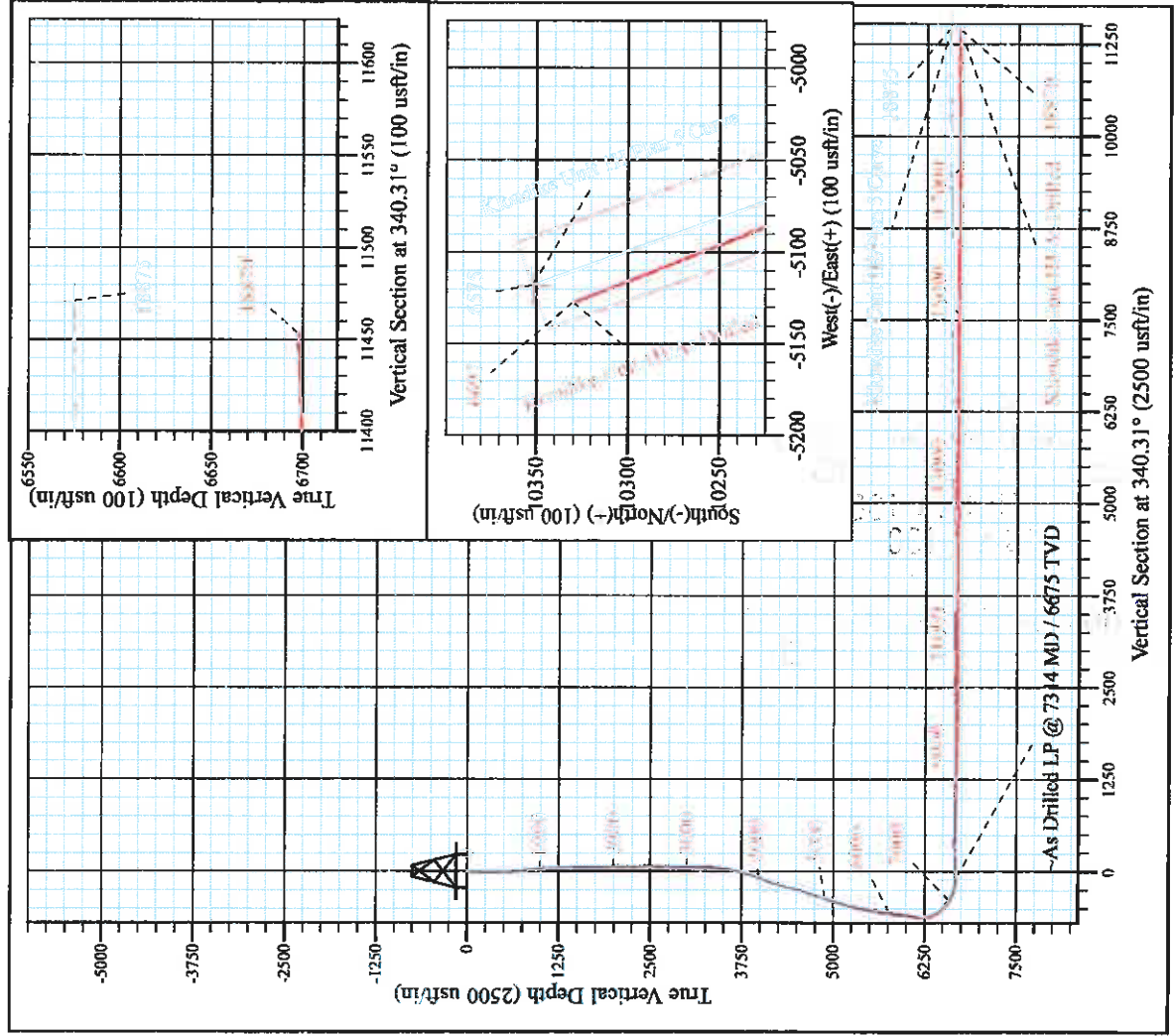
Pierpoint Pad: Ingov/Klondike/Wall/Weigle
 Klondike Unit 1H
 Plan 5 Curve
 Patterson 340: 120' GL + 24' KB @ 1225.0usft
 Tyler County WV

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



WELL DETAILS: Klondike Unit 1H SHL

+N-S	+E-W	Northing	Latitude	Longitude
0.0	0.0	14326561.29	39° 27' 7.414 N	80° 51' 32.623 W



Azimuths to Grid North
 True North: -0.09°
 Magnetic North: -8.60°

Magnetic Field
 Strength: 52172.9gaT
 Dip Angle: 66.84°
 Date: 1/31/2016
 Model: BGGM2015

Shane Rhodes
 14-06, February 26 2016
 Scientific Drilling International
 124 Vista Drive
 Charleroi, PA 15022

Klondike Unit 1H
APPROX. BHL
39° 28' 49.625 N 80° 52' 37.830 W



Antero Resources

**Tyler County WV
Pierpoint Pad: Ingot/Klondike/Wall/Weigle
Klondike Unit 1H**

Original Wellpath

Design: As Drilled

Standard Survey Report

09 March, 2016





Company:	Antero Resources	Local Co-ordinate Reference:	Well Klondike Unit 1H
Project:	Tyler County WV	TVD Reference:	Patterson 340 1201' GL + 24' KB @ 1225.0usft
Site:	Pierpoint Pad:Ingot/Klondike/Wall/Weigle	MD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Well:	Klondike Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Project	Tyler County WV, Tyler Co West Virginia		
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	Pierpoint Pad:Ingot/Klondike/Wall/Weigle				
Site Position:		Northing:	14,326,547.37 usft	Latitude:	39° 27' 7.276 N
From:	Map	Easting:	1,680,227.52 usft	Longitude:	80° 51' 32.288 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well	Klondike Unit 1H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,326,561.29 usft	Latitude:	39° 27' 7.414 N
	+E/-W	0.0 usft	Easting:	1,680,201.20 usft	Longitude:	80° 51' 32.623 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,225.0 usft	Ground Level:	1,201.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	1/31/2016	-8.51	66.84	52,173
	BGGM2015	2/26/2016	-8.51	66.83	52,165

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	340.31	

Survey Program	Date	3/9/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	6,215.0	Survey #9 - Final Def Gyro (Original Wellp	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
6,215.0	18,870.0	Survey #10 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.30	204.84	100.0	-0.2	-0.1	-0.2	0.30	0.30	0.00	
First Gyro @ 100										
125.0	0.34	192.19	125.0	-0.4	-0.2	-0.3	0.32	0.16	-50.60	
150.0	0.29	169.57	150.0	-0.5	-0.2	-0.4	0.53	-0.20	-90.48	
175.0	0.39	154.97	175.0	-0.6	-0.1	-0.6	0.53	0.40	-58.40	
200.0	0.24	159.77	200.0	-0.8	-0.1	-0.7	0.61	-0.60	19.20	
225.0	0.27	159.86	225.0	-0.9	0.0	-0.8	0.12	0.12	0.36	



Scientific Drilling International
Survey Report



Company: Antero Resources
Project: Tyler County WV
Site: Pierpoint Pad:Ingot/Klondike/Wall/Waigle
Well: Klondike Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Klondike Unit 1H
TVD Reference: Patterson 340: 1201' GL + 24' KB @ 1225.0usft
MD Reference: Patterson 340: 1201' GL + 24' KB @ 1225.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
250.0	0.33	148.66	250.0	-1.0	0.0	-0.9	0.33	0.24	-44.80
275.0	0.33	148.72	275.0	-1.1	0.1	-1.1	0.00	0.00	0.24
300.0	0.25	148.47	300.0	-1.2	0.2	-1.2	0.32	-0.32	-1.00
325.0	0.29	148.52	325.0	-1.3	0.2	-1.3	0.16	0.16	0.20
350.0	0.24	149.41	350.0	-1.4	0.3	-1.4	0.20	-0.20	3.56
375.0	0.15	191.42	375.0	-1.5	0.3	-1.5	0.65	-0.36	168.04
400.0	0.20	246.80	400.0	-1.5	0.3	-1.6	0.67	0.20	221.52
425.0	0.50	291.07	425.0	-1.5	0.1	-1.5	1.53	1.20	177.08
450.0	1.23	299.55	450.0	-1.4	-0.2	-1.2	2.96	2.92	33.92
475.0	1.33	301.74	475.0	-1.1	-0.7	-0.8	0.45	0.40	8.76
500.0	2.25	303.79	500.0	-0.6	-1.3	-0.2	3.69	3.68	8.20
525.0	2.93	305.69	524.9	0.0	-2.3	0.8	2.74	2.72	7.60
550.0	3.35	305.23	549.9	0.8	-3.4	1.9	1.68	1.68	-1.84
575.0	3.64	303.22	574.9	1.7	-4.6	3.1	1.26	1.16	-8.04
600.0	4.81	298.18	599.8	2.6	-6.2	4.5	4.91	4.68	-20.16
625.0	5.61	295.25	624.7	3.6	-8.3	6.2	3.37	3.20	-11.72
650.0	6.14	294.90	649.6	4.7	-10.6	8.0	2.12	2.12	-1.40
675.0	6.27	294.64	674.4	5.8	-13.0	9.9	0.53	0.52	-1.04
700.0	6.55	293.53	699.3	7.0	-15.6	11.8	1.22	1.12	-4.44
725.0	6.71	293.08	724.1	8.1	-18.2	13.8	0.67	0.64	-1.80
750.0	6.85	292.34	748.9	9.2	-20.9	15.8	0.66	0.56	-2.96
775.0	7.16	292.06	773.7	10.4	-23.8	17.8	1.25	1.24	-1.12
800.0	7.14	291.78	798.5	11.5	-26.7	19.9	0.16	-0.08	-1.12
825.0	7.21	291.64	823.3	12.7	-29.6	21.9	0.29	0.28	-0.56
850.0	7.34	291.07	848.1	13.9	-32.5	24.0	0.59	0.52	-2.28
875.0	7.49	290.57	872.9	15.0	-35.5	26.1	0.65	0.60	-2.00
900.0	7.64	289.39	897.7	16.1	-38.6	28.2	0.66	0.60	-4.72
925.0	7.63	288.39	922.5	17.2	-41.8	30.3	0.53	-0.04	-4.00
950.0	7.77	288.16	947.3	18.3	-44.9	32.3	0.57	0.56	-0.92
975.0	7.69	287.85	972.0	19.3	-48.1	34.4	0.36	-0.32	-1.24
1,000.0	7.84	287.93	996.8	20.3	-51.4	36.4	0.60	0.60	0.32
1,025.0	7.74	288.06	1,021.6	21.4	-54.6	38.5	0.41	-0.40	0.52
1,050.0	6.65	287.20	1,046.4	22.3	-57.6	40.4	4.38	-4.36	-3.44
1,075.0	5.99	288.11	1,071.2	23.2	-60.2	42.1	2.67	-2.64	3.64
1,100.0	5.73	287.43	1,096.1	23.9	-62.6	43.6	1.08	-1.04	-2.72
1,125.0	5.53	287.81	1,121.0	24.7	-64.9	45.1	0.81	-0.80	1.52
1,150.0	5.09	287.51	1,145.9	25.4	-67.2	46.5	1.76	-1.76	-1.20
1,175.0	4.77	288.37	1,170.8	26.0	-69.2	47.8	1.31	-1.28	3.44
1,200.0	4.30	288.30	1,195.7	26.7	-71.1	49.1	1.88	-1.88	-0.28
1,225.0	3.92	288.40	1,220.6	27.2	-72.8	50.2	1.52	-1.52	0.40
1,250.0	3.86	288.69	1,245.6	27.8	-74.4	51.2	0.25	-0.24	1.16
1,275.0	3.62	288.23	1,270.5	28.3	-75.9	52.2	0.97	-0.96	-1.84
1,300.0	3.38	290.48	1,295.5	28.8	-77.4	53.2	1.11	-0.96	9.00



Company: Antero Resources
Project: Tyler County WV
Site: Pierpoint Pad:Ingot/Klondike/Wall/Weigle
Well: Klondike Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Klondike Unit 1H
TVD Reference: Patterson 340: 1201' GL + 24' KB @ 1225.0usft
MD Reference: Patterson 340: 1201' GL + 24' KB @ 1225.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,325.0	3.22	290.96	1,320.4	29.3	-78.7	54.1	0.65	-0.64	1.92
1,350.0	2.90	291.40	1,345.4	29.8	-80.0	55.0	1.28	-1.28	1.76
1,375.0	2.60	293.09	1,370.4	30.2	-81.1	55.8	1.24	-1.20	6.76
1,400.0	2.39	292.47	1,395.3	30.7	-82.1	56.5	0.85	-0.84	-2.48
1,425.0	2.24	293.69	1,420.3	31.1	-83.0	57.2	0.63	-0.60	4.88
1,450.0	2.07	293.96	1,445.3	31.4	-83.9	57.8	0.68	-0.68	1.08
1,475.0	1.77	293.78	1,470.3	31.8	-84.6	58.4	1.20	-1.20	-0.72
1,500.0	1.61	296.13	1,495.3	32.1	-85.3	58.9	0.70	-0.64	9.40
1,525.0	1.59	295.72	1,520.3	32.4	-85.9	59.4	0.09	-0.08	-1.64
1,550.0	1.27	292.77	1,545.3	32.6	-86.5	59.9	1.31	-1.28	-11.80
1,575.0	1.32	292.05	1,570.3	32.9	-87.0	60.3	0.21	0.20	-2.88
1,600.0	1.07	293.03	1,595.3	33.1	-87.5	60.6	1.00	-1.00	3.92
1,625.0	0.99	298.31	1,620.3	33.3	-87.9	60.9	0.50	-0.32	21.12
1,650.0	0.95	295.64	1,645.2	33.4	-88.3	61.2	0.24	-0.16	-10.68
1,675.0	0.93	289.46	1,670.2	33.6	-88.7	61.5	0.41	-0.08	-24.72
1,700.0	0.82	287.42	1,695.2	33.7	-89.0	61.7	0.46	-0.44	-8.16
1,725.0	0.73	280.96	1,720.2	33.8	-89.3	61.9	0.50	-0.36	-25.84
1,750.0	0.74	283.13	1,745.2	33.9	-89.7	62.1	0.12	0.04	8.68
1,775.0	0.73	281.32	1,770.2	33.9	-90.0	62.3	0.10	-0.04	-7.24
1,800.0	0.66	278.88	1,795.2	34.0	-90.3	62.4	0.30	-0.28	-9.76
1,825.0	0.63	272.40	1,820.2	34.0	-90.6	62.5	0.32	-0.12	-25.92
1,850.0	0.59	287.01	1,845.2	34.1	-90.8	62.7	0.64	-0.16	58.44
1,875.0	0.61	274.31	1,870.2	34.1	-91.1	62.8	0.54	0.08	-50.80
1,900.0	0.54	279.90	1,895.2	34.1	-91.3	62.9	0.36	-0.28	22.36
1,925.0	0.36	284.02	1,920.2	34.2	-91.5	63.0	0.73	-0.72	16.48
1,950.0	0.28	276.16	1,945.2	34.2	-91.6	63.1	0.36	-0.32	-31.44
1,975.0	0.23	255.65	1,970.2	34.2	-91.8	63.1	0.41	-0.20	-82.04
2,000.0	0.25	279.56	1,995.2	34.2	-91.9	63.1	0.41	0.08	95.64
2,025.0	0.17	292.90	2,020.2	34.2	-91.9	63.2	0.37	-0.32	53.36
2,050.0	0.20	253.48	2,045.2	34.2	-92.0	63.2	0.51	0.12	-157.68
2,075.0	0.16	281.20	2,070.2	34.2	-92.1	63.2	0.38	-0.16	110.88
2,100.0	0.16	276.67	2,095.2	34.2	-92.2	63.3	0.05	0.00	-18.12
2,125.0	0.16	243.03	2,120.2	34.2	-92.2	63.3	0.37	0.00	-134.56
2,150.0	0.15	261.00	2,145.2	34.2	-92.3	63.3	0.20	-0.04	71.88
2,175.0	0.05	323.22	2,170.2	34.2	-92.3	63.3	0.54	-0.40	248.88
2,200.0	0.14	308.36	2,195.2	34.2	-92.4	63.3	0.37	0.36	-59.44
2,225.0	0.16	295.52	2,220.2	34.3	-92.4	63.4	0.16	0.08	-51.36
2,250.0	0.10	253.99	2,245.2	34.3	-92.5	63.4	0.43	-0.24	-166.12
2,275.0	0.12	254.52	2,270.2	34.3	-92.5	63.4	0.08	0.08	2.12
2,300.0	0.14	286.52	2,295.2	34.3	-92.6	63.4	0.30	0.08	128.00
2,325.0	0.15	287.88	2,320.2	34.3	-92.6	63.5	0.04	0.04	5.44
2,350.0	0.11	238.14	2,345.2	34.3	-92.7	63.5	0.46	-0.16	-198.96
2,375.0	0.11	164.97	2,370.2	34.2	-92.7	63.5	0.52	0.00	-292.68
2,400.0	0.12	206.59	2,395.2	34.2	-92.7	63.4	0.33	0.04	166.48



Company: Antero Resources
Project: Tyler County WV
Site: Pierpoint Pad'Ingot/Klondike/Wall/Weigle
Well: Klondike Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Klondike Unit 1H
TVD Reference: Patterson 340. 1201' GL + 24' KB @ 1225.0usft
MD Reference: Patterson 340. 1201' GL + 24' KB @ 1225.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,425.0	0.20	205.46	2,420.2	34.1	-92.7	63.4	0.32	0.32	-4.52
2,450.0	0.18	222.54	2,445.2	34.1	-92.8	63.3	0.24	-0.08	68.32
2,475.0	0.12	207.12	2,470.2	34.0	-92.8	63.3	0.29	-0.24	-61.68
2,500.0	0.16	244.23	2,495.2	34.0	-92.9	63.3	0.39	0.16	148.44
2,525.0	0.18	243.28	2,520.2	33.9	-92.9	63.3	0.08	0.08	-3.80
2,550.0	0.13	218.77	2,545.2	33.9	-93.0	63.2	0.33	-0.20	-98.04
2,575.0	0.14	227.32	2,570.2	33.9	-93.0	63.2	0.09	0.04	34.20
2,600.0	0.27	250.22	2,595.2	33.8	-93.1	63.2	0.60	0.52	91.60
2,625.0	0.26	268.78	2,620.2	33.8	-93.2	63.2	0.34	-0.04	74.24
2,650.0	0.45	283.35	2,645.2	33.8	-93.4	63.3	0.84	0.76	58.28
2,675.0	0.57	291.95	2,670.2	33.9	-93.6	63.4	0.57	0.48	34.40
2,700.0	0.69	293.70	2,695.2	34.0	-93.8	63.6	0.49	0.48	7.00
2,725.0	0.67	294.93	2,720.2	34.1	-94.1	63.8	0.10	-0.08	4.92
2,750.0	0.71	304.55	2,745.2	34.3	-94.4	64.1	0.49	0.16	38.48
2,775.0	0.87	296.85	2,770.2	34.4	-94.7	64.3	0.77	0.64	-30.80
2,800.0	0.80	305.47	2,795.2	34.6	-95.0	64.6	0.57	-0.28	34.48
2,825.0	0.80	306.26	2,820.2	34.8	-95.3	64.9	0.04	0.00	3.16
2,850.0	0.82	303.16	2,845.2	35.0	-95.5	65.2	0.19	0.08	-12.40
2,875.0	0.71	303.72	2,870.2	35.2	-95.8	65.4	0.44	-0.44	2.24
2,900.0	0.67	294.50	2,895.2	35.4	-96.1	65.7	0.47	-0.16	-36.88
2,925.0	0.90	310.98	2,920.2	35.6	-96.4	65.9	1.28	0.92	65.92
2,950.0	0.73	305.28	2,945.2	35.8	-96.6	66.2	0.75	-0.68	-22.80
2,975.0	0.81	295.92	2,970.2	35.9	-96.9	66.5	0.60	0.32	-37.44
3,000.0	0.89	298.24	2,995.2	36.1	-97.3	66.8	0.35	0.32	9.28
3,025.0	0.90	293.09	3,020.2	36.3	-97.6	67.0	0.32	0.04	-20.60
3,050.0	1.15	265.19	3,045.2	36.3	-98.0	67.2	2.20	1.00	-111.60
3,075.0	1.78	240.58	3,070.2	36.1	-98.6	67.2	3.51	2.52	-98.44
3,100.0	2.08	247.36	3,095.2	35.8	-99.4	67.2	1.51	1.20	27.12
3,125.0	1.91	239.83	3,120.1	35.4	-100.2	67.1	1.25	-0.68	-30.12
3,150.0	2.23	213.39	3,145.1	34.8	-100.8	66.7	3.99	1.28	-105.76
3,175.0	2.76	199.37	3,170.1	33.8	-101.3	65.9	3.22	2.12	-56.08
3,200.0	2.76	190.10	3,195.1	32.6	-101.6	64.9	1.78	0.00	-37.08
3,225.0	2.88	195.41	3,220.0	31.4	-101.8	63.9	1.15	0.48	21.24
3,250.0	4.00	208.71	3,245.0	30.1	-102.4	62.8	5.47	4.48	53.20
3,275.0	4.38	210.70	3,269.9	28.5	-103.3	61.6	1.63	1.52	7.96
3,300.0	4.52	211.38	3,294.9	26.8	-104.3	60.4	0.80	0.56	2.72
3,325.0	4.40	211.04	3,319.8	25.1	-105.3	59.2	0.49	-0.48	-1.36
3,350.0	4.15	210.17	3,344.7	23.5	-106.3	58.0	1.03	-1.00	-3.48
3,375.0	3.95	206.08	3,369.7	22.0	-107.1	56.8	1.40	-0.80	-16.36
3,400.0	4.84	199.97	3,394.6	20.2	-107.9	55.4	4.02	3.56	-24.44
3,425.0	6.40	196.12	3,419.5	17.9	-108.6	53.4	6.42	6.24	-15.40
3,450.0	7.21	192.27	3,444.3	15.0	-109.3	51.0	3.72	3.24	-15.40
3,475.0	7.07	190.08	3,469.1	12.0	-109.9	48.3	1.22	-0.56	-8.76



Scientific Drilling International
Survey Report



Company: Antero Resources
Project: Tyler County WV
Srte: Pierpoint Pad:Ingot/Klondike/Wall/Weigle
Well: Klondike Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Klondike Unit 1H
TVD Reference: Patterson 340: 1201' GL + 24' KB @ 1225.0usft
MD Reference: Patterson 340: 1201' GL + 24' KB @ 1225.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,500.0	8.44	188.78	3,493.9	8.6	-110.8	45.4	5.52	5.48	-5.20
3,525.0	9.60	187.05	3,518.6	4.8	-111.0	41.9	4.76	4.64	-6.92
3,550.0	10.17	186.03	3,543.2	0.5	-111.5	38.0	2.39	2.28	-4.08
3,575.0	10.25	185.08	3,567.8	-3.9	-111.9	34.0	0.75	0.32	-3.80
3,600.0	11.16	191.15	3,592.3	-8.5	-112.6	29.9	5.79	3.64	24.28
3,625.0	12.33	195.38	3,616.8	-13.4	-113.8	25.7	5.81	4.68	16.92
3,650.0	13.10	196.26	3,641.2	-18.7	-115.3	21.2	3.18	3.08	3.52
3,675.0	13.53	195.16	3,665.5	-24.3	-116.8	16.5	2.00	1.72	-4.40
3,700.0	14.60	194.00	3,689.8	-30.2	-118.4	11.5	4.43	4.28	-4.64
3,725.0	16.03	192.08	3,713.9	-36.6	-119.8	5.9	6.07	5.72	-7.68
3,750.0	16.21	189.76	3,737.9	-43.4	-121.2	0.1	2.68	0.72	-9.28
3,775.0	16.83	189.18	3,761.9	-50.4	-122.3	-6.3	2.57	2.48	-2.32
3,800.0	18.21	188.78	3,785.7	-57.9	-123.5	-12.9	5.54	5.52	-1.60
3,825.0	19.45	189.09	3,809.4	-65.8	-124.8	-19.9	4.98	4.96	1.24
3,850.0	19.73	189.18	3,832.9	-74.1	-126.1	-27.3	1.13	1.12	0.36
3,875.0	20.07	189.70	3,856.4	-82.5	-127.5	-34.7	1.53	1.36	2.08
3,900.0	20.58	191.66	3,879.9	-91.0	-129.1	-42.2	3.40	2.04	7.84
3,925.0	21.16	194.19	3,903.3	-99.7	-131.1	-49.7	4.29	2.32	10.12
3,950.0	21.00	194.36	3,926.6	-108.4	-133.3	-57.2	0.69	-0.64	0.68
3,975.0	20.75	195.92	3,949.9	-117.0	-135.6	-64.5	2.44	-1.00	6.24
4,000.0	20.97	194.43	3,973.3	-125.6	-138.0	-71.8	2.30	0.88	-5.96
4,025.0	21.66	192.84	3,996.6	-134.4	-140.1	-79.4	3.60	2.76	-6.36
4,050.0	22.57	193.04	4,019.8	-143.6	-142.2	-87.3	3.65	3.64	0.80
4,075.0	23.95	192.97	4,042.7	-153.2	-144.4	-95.6	5.52	5.52	-0.28
4,100.0	25.43	191.65	4,065.4	-163.4	-146.7	-104.5	6.32	5.92	-5.28
4,125.0	25.79	190.28	4,088.0	-174.0	-148.7	-113.8	2.77	1.44	-5.48
4,150.0	25.14	190.73	4,110.5	-184.6	-150.7	-123.1	2.71	-2.60	1.80
4,175.0	23.59	192.97	4,133.3	-194.7	-152.8	-131.8	7.22	-6.20	8.96
4,200.0	22.64	193.21	4,156.3	-204.3	-155.0	-140.1	3.82	-3.80	0.96
4,225.0	22.07	192.05	4,179.4	-213.5	-157.1	-148.1	2.88	-2.28	-4.64
4,250.0	21.69	193.70	4,202.6	-222.6	-159.2	-156.0	2.89	-1.52	6.60
4,275.0	21.32	196.48	4,225.9	-231.5	-161.5	-163.5	4.34	-1.48	11.12
4,300.0	21.09	197.65	4,249.2	-240.1	-164.2	-170.8	1.93	-0.92	4.68
4,325.0	20.51	197.57	4,272.6	-248.8	-166.9	-177.8	2.32	-2.32	-0.32
4,350.0	20.62	198.85	4,296.0	-256.9	-169.6	-184.7	1.85	0.44	5.12
4,375.0	20.80	201.91	4,319.4	-265.2	-172.7	-191.5	4.39	0.72	12.24
4,400.0	20.90	204.30	4,342.7	-273.4	-176.2	-198.0	3.43	0.40	9.56
4,425.0	20.73	205.74	4,366.1	-281.4	-179.9	-204.4	2.16	-0.68	5.76
4,450.0	20.72	206.44	4,389.5	-289.4	-183.8	-210.5	0.99	-0.04	2.80
4,475.0	20.75	207.77	4,412.9	-297.3	-187.9	-216.6	1.89	0.12	5.32
4,500.0	20.59	211.23	4,436.3	-304.9	-192.2	-222.3	4.93	-0.84	13.84
4,525.0	21.04	213.59	4,459.6	-312.4	-197.0	-227.8	3.81	1.80	9.44
4,550.0	22.10	215.33	4,482.9	-320.0	-202.2	-233.2	4.95	4.24	6.96



Scientific Drilling International
Survey Report



Company: Antero Resources
Project: Tyler County WV
Site: Pierpoint Pad:Ingot/Klondike/Wall/Weigle
Well: Klondike Unit 1-H
Wellbore: Original Well: path
Design: As Drilled

Local Co-ordinate Reference: Well Klondike Unit 1H
TVD Reference: Patterson 340: 1201' GL + 24' KB @ 1225.0usft
MD Reference: Patterson 340: 1201' GL + 24' KB @ 1225.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,575.0	23.18	216.86	4,505.9	-327.8	-207.8	-238.6	4.92	4.32	6.12
4,600.0	23.53	217.43	4,528.9	-335.7	-213.8	-244.0	1.67	1.40	2.28
4,625.0	23.75	216.15	4,551.8	-343.7	-219.8	-249.5	2.23	0.88	-5.12
4,650.0	24.66	213.34	4,574.6	-352.1	-225.7	-255.5	5.87	3.64	-11.24
4,675.0	26.15	210.59	4,597.2	-361.2	-231.3	-262.2	7.60	5.96	-11.00
4,700.0	27.20	209.42	4,619.5	-371.0	-237.0	-269.4	4.70	4.20	-4.68
4,725.0	27.51	209.12	4,641.7	-381.0	-242.6	-277.0	1.36	1.24	-1.20
4,750.0	27.33	210.41	4,663.9	-391.0	-248.3	-284.5	2.48	-0.72	5.16
4,775.0	27.03	210.03	4,686.2	-400.8	-254.0	-291.8	1.39	-1.20	-1.52
4,800.0	26.19	209.14	4,708.5	-410.6	-259.6	-299.1	3.72	-3.36	-3.56
4,825.0	26.06	210.32	4,731.0	-420.1	-265.0	-306.3	2.14	-0.52	4.72
4,850.0	26.55	211.11	4,753.4	-429.7	-270.7	-313.3	2.41	1.96	3.16
4,875.0	26.08	210.04	4,775.8	-439.2	-276.3	-320.4	2.67	-1.88	-4.28
4,900.0	25.62	209.70	4,798.3	-448.7	-281.7	-327.5	1.93	-1.84	-1.36
4,925.0	26.57	211.37	4,820.7	-458.1	-287.3	-334.5	4.80	3.80	6.68
4,950.0	27.98	212.98	4,842.9	-467.8	-293.4	-341.6	6.37	5.84	6.44
4,975.0	28.20	212.86	4,865.0	-477.7	-299.8	-348.7	0.91	0.88	-0.48
5,000.0	27.61	213.44	4,887.1	-487.5	-306.2	-355.8	2.60	-2.36	2.32
5,025.0	28.10	215.43	4,909.2	-497.1	-312.8	-362.7	4.20	1.96	7.96
5,050.0	29.08	216.90	4,931.1	-506.8	-319.9	-369.4	4.83	3.92	5.88
5,075.0	28.86	216.75	4,953.0	-516.5	-327.2	-376.0	0.93	-0.88	-0.60
5,100.0	28.54	216.65	4,974.9	-526.1	-334.3	-382.7	1.29	-1.28	-0.40
5,125.0	29.04	216.56	4,996.9	-535.8	-341.5	-389.4	2.01	2.00	-0.36
5,150.0	28.90	216.00	5,018.7	-545.5	-348.7	-396.1	1.22	-0.56	-2.24
5,175.0	28.45	214.88	5,040.7	-555.3	-355.6	-403.0	2.80	-1.80	-4.48
5,200.0	28.83	214.47	5,062.6	-565.2	-362.5	-410.0	1.71	1.52	-1.64
5,225.0	29.44	214.37	5,084.4	-575.2	-369.3	-417.1	2.45	2.44	-0.40
5,250.0	29.40	213.68	5,106.2	-585.4	-376.2	-424.4	1.37	-0.16	-2.76
5,275.0	28.98	212.67	5,128.0	-595.6	-382.9	-431.7	2.59	-1.68	-4.04
5,300.0	28.43	213.66	5,150.0	-605.6	-389.4	-439.0	2.91	-2.20	3.96
5,325.0	27.91	216.07	5,172.0	-615.3	-396.2	-445.8	5.00	-2.08	9.64
5,350.0	27.73	218.70	5,194.1	-624.6	-403.3	-452.2	4.96	-0.72	10.52
5,375.0	27.82	221.60	5,216.2	-633.5	-410.8	-458.0	5.42	0.36	11.60
5,400.0	28.45	224.48	5,238.3	-642.1	-418.8	-463.4	5.99	2.52	11.52
5,425.0	29.02	227.51	5,260.2	-650.4	-427.5	-468.4	6.26	2.28	12.12
5,450.0	29.05	229.80	5,282.1	-658.5	-436.6	-472.9	4.45	0.12	9.16
5,475.0	28.54	229.72	5,304.0	-666.2	-445.8	-477.1	2.05	-2.04	-0.32
5,500.0	27.55	228.46	5,326.0	-673.9	-454.7	-481.3	4.61	-3.96	-5.04
5,525.0	26.67	227.03	5,348.3	-681.6	-463.1	-485.7	4.38	-3.52	-5.72
5,550.0	26.06	226.27	5,370.7	-689.2	-471.2	-490.2	2.79	-2.44	-3.04
5,575.0	25.70	227.48	5,393.2	-696.7	-479.1	-494.5	2.56	-1.44	4.84
5,600.0	25.75	229.50	5,415.7	-703.9	-487.2	-498.5	3.51	0.20	8.08
5,625.0	25.83	229.92	5,438.2	-710.9	-495.5	-502.4	0.80	0.32	1.68
5,650.0	25.74	228.93	5,460.7	-718.0	-503.8	-506.2	1.76	-0.36	-3.96



Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Klondike Unit 1H
Project:	Tyler County WV	TVD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Site:	Pierpoint Pad:Ingot/Klondike/Wall/Weigle	MD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Well:	Klondike Unit 1H	North Reference:	Grid
Wellbore:	Original Welipath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,675.0	26.24	229.33	5,483.2	-725.1	-512.1	-510.2	2.12	2.00	1.60	
5,700.0	27.29	229.99	5,505.5	-732.4	-520.7	-514.2	4.36	4.20	2.64	
5,725.0	27.96	230.15	5,527.7	-739.9	-529.6	-518.2	2.70	2.68	0.64	
5,750.0	28.12	230.09	5,549.7	-747.4	-538.6	-522.2	0.65	0.64	-0.24	
5,775.0	28.76	230.71	5,571.7	-755.0	-547.8	-526.3	2.82	2.56	2.48	
5,800.0	29.40	231.19	5,593.6	-762.6	-557.2	-530.3	2.72	2.56	1.92	
5,825.0	29.19	230.96	5,615.4	-770.3	-566.7	-534.3	0.95	-0.84	-0.92	
5,850.0	28.85	230.89	5,637.2	-778.0	-576.1	-538.4	1.37	-1.36	-0.28	
5,875.0	28.97	232.27	5,659.1	-785.5	-585.6	-542.2	2.71	0.48	5.52	
5,900.0	28.91	234.53	5,681.0	-792.7	-595.3	-545.8	4.38	-0.24	9.04	
5,925.0	28.32	234.59	5,702.9	-799.6	-605.1	-549.0	2.36	-2.36	0.24	
5,950.0	28.52	235.80	5,724.9	-806.4	-614.8	-552.1	2.44	0.80	4.84	
5,975.0	29.03	237.58	5,746.8	-813.0	-624.9	-554.9	3.99	2.04	7.12	
6,000.0	29.07	238.26	5,768.7	-819.5	-635.2	-557.6	1.33	0.16	2.72	
6,025.0	28.56	237.74	5,790.6	-825.9	-645.4	-560.1	2.27	-2.04	-2.08	
6,050.0	27.91	236.64	5,812.6	-832.3	-655.3	-562.8	3.33	-2.60	-4.40	
6,075.0	28.05	236.23	5,834.7	-838.8	-665.1	-565.6	0.95	0.56	-1.64	
6,100.0	28.58	236.49	5,856.7	-845.3	-675.0	-568.5	2.18	2.12	1.04	
6,125.0	29.02	237.32	5,878.6	-851.9	-685.1	-571.3	2.38	1.76	3.32	
6,150.0	29.62	239.26	5,900.4	-858.3	-695.5	-573.8	4.49	2.40	7.76	
6,175.0	30.62	240.89	5,922.0	-864.6	-706.3	-576.0	5.17	4.00	6.52	
6,200.0	30.63	241.06	5,943.6	-870.8	-717.5	-578.1	0.35	0.04	0.68	
6,215.0	30.47	240.79	5,956.5	-874.5	-724.1	-579.3	1.40	-1.06	-1.79	
Last Gyro @ 6216										
6,215.0	30.47	240.79	5,956.5	-874.5	-724.2	-579.4	1.40	-1.06	-1.80	
6,267.0	29.82	237.20	6,001.5	-887.9	-746.5	-584.5	3.69	-1.26	-6.91	
RNST @ 6267										
6,280.0	29.67	236.28	6,012.7	-891.4	-751.9	-586.0	3.69	-1.14	-7.08	
6,373.0	31.00	234.00	6,093.0	-918.3	-790.4	-598.3	1.89	1.43	-2.45	
6,405.0	31.59	234.17	6,120.3	-928.0	-803.9	-602.9	1.86	1.84	0.53	
6,436.0	31.06	233.20	6,146.8	-937.6	-816.9	-607.5	2.36	-1.71	-3.13	
6,467.0	30.30	234.80	6,173.5	-946.9	-829.7	-612.0	3.60	-2.45	5.16	
6,499.0	29.86	244.78	6,201.2	-954.9	-843.5	-614.9	15.68	-1.38	31.19	
6,530.0	30.01	253.89	6,228.1	-960.4	-857.9	-615.2	14.66	0.48	29.39	
6,562.0	30.57	261.89	6,255.7	-963.8	-873.7	-613.0	12.72	1.75	25.00	
6,593.0	31.56	269.65	6,282.3	-964.9	-889.6	-608.8	13.30	3.19	25.03	
6,624.0	32.50	277.24	6,308.6	-963.9	-906.0	-602.3	13.33	3.03	24.48	
6,642.0	32.78	280.73	6,323.7	-962.4	-915.6	-597.6	10.59	1.57	19.41	
SCMR @ 6642										
6,656.0	33.07	283.41	6,335.5	-960.8	-923.0	-593.6	10.59	2.05	19.11	
6,687.0	33.33	289.96	6,361.4	-955.9	-939.3	-583.6	11.60	0.84	21.13	
6,718.0	34.08	296.90	6,388.1	-948.9	-955.5	-571.5	12.26	2.34	21.69	
6,750.0	35.34	302.70	6,413.6	-940.1	-970.8	-558.0	11.40	4.06	18.71	
6,782.0	37.06	308.44	6,439.4	-929.1	-986.2	-542.5	11.87	5.38	17.94	



Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Klondike Unit 1H
Project:	Tyler County WV	TVD Reference:	Patterson 340. 1201' GL + 24' KB @ 1225.0usft
Site:	Pierpoint Pad:Ingot/Klondike/Wall/Weigle	MD Reference:	Patterson 340. 1201' GL + 24' KB @ 1225.0usft
Well:	Klondike Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,813.0	39.57	313.06	6,463.7	-916.6	-1,000.7	-525.8	12.28	8.10	14.90
6,844.0	42.17	317.11	6,487.2	-902.2	-1,015.0	-507.4	11.97	8.39	13.06
6,853.0	43.14	318.22	6,493.8	-897.7	-1,019.1	-501.8	13.61	10.73	12.36
MDLX @ 6853									
6,876.0	45.65	320.89	6,510.2	-885.4	-1,029.5	-486.8	13.61	10.93	11.60
6,907.0	48.98	323.97	6,531.2	-867.4	-1,043.4	-465.1	12.99	10.74	9.94
6,938.0	52.53	325.37	6,550.8	-847.8	-1,057.3	-442.0	11.97	11.45	4.52
6,969.0	56.03	326.97	6,568.9	-826.9	-1,071.3	-417.6	12.04	11.29	5.16
7,001.0	58.75	328.10	6,586.2	-804.1	-1,085.7	-391.3	9.01	8.50	3.53
7,013.0	59.56	328.52	6,592.3	-795.4	-1,091.2	-381.2	7.41	6.77	3.53
BRKT @ 7013									
7,032.0	60.85	329.18	6,601.8	-781.2	-1,099.7	-365.0	7.41	6.78	3.45
7,055.0	62.70	329.88	6,612.6	-763.8	-1,110.0	-345.1	8.47	8.03	3.05
TLLY @ 7055									
7,064.0	63.42	330.15	6,616.7	-756.8	-1,114.0	-337.2	8.47	8.04	2.98
7,096.0	66.69	331.49	6,630.2	-731.5	-1,128.1	-308.6	10.90	10.22	4.19
7,127.0	69.68	333.12	6,641.7	-706.0	-1,141.5	-280.1	10.81	9.65	5.26
7,150.0	72.07	335.04	6,649.3	-686.5	-1,151.0	-258.5	13.04	10.37	8.36
MRCL_HOT @ 7160									
7,158.0	72.90	335.70	6,651.7	-679.5	-1,154.2	-250.9	13.04	10.43	8.21
7,190.0	76.13	337.55	6,660.2	-651.2	-1,166.4	-220.2	11.53	10.09	5.78
7,221.0	79.41	338.96	6,666.8	-623.1	-1,177.6	-189.9	11.48	10.58	4.55
7,250.0	82.23	340.26	6,671.4	-596.3	-1,187.6	-161.3	10.68	9.72	4.48
7,280.0	86.74	341.37	6,674.3	-568.1	-1,197.4	-131.4	15.48	15.03	3.70
7,314.0	90.30	341.67	6,675.2	-535.8	-1,208.2	-97.4	10.51	10.47	0.88
7,342.0	90.94	342.14	6,674.9	-509.2	-1,216.9	-69.5	2.84	2.29	1.68
7,436.0	91.95	338.62	6,672.5	-420.7	-1,248.4	24.5	3.89	1.07	-3.74
7,530.0	91.21	339.21	6,669.9	-333.1	-1,282.2	118.4	1.01	-0.79	0.63
7,623.0	91.61	340.20	6,667.6	-245.9	-1,314.5	211.4	1.15	0.43	1.06
7,717.0	90.00	338.06	6,666.3	-158.0	-1,347.9	305.4	2.85	-1.71	-2.28
7,812.0	90.40	338.21	6,666.0	-69.9	-1,383.3	400.3	0.45	0.42	0.16
7,906.0	90.37	340.09	6,665.3	18.0	-1,416.8	494.3	2.00	-0.03	2.00
8,000.0	89.33	339.78	6,665.6	106.3	-1,449.0	588.3	1.15	-1.11	-0.33
8,094.0	89.13	338.93	6,666.9	194.2	-1,482.2	682.2	0.93	-0.21	-0.90
8,188.0	90.34	338.34	6,667.3	281.7	-1,516.4	776.2	1.43	1.29	-0.63
8,282.0	88.35	339.34	6,668.4	369.4	-1,550.3	870.2	2.37	-2.12	1.06
8,377.0	89.93	339.86	6,669.8	458.4	-1,583.4	965.1	1.75	1.66	0.55
8,471.0	89.06	338.32	6,670.6	546.2	-1,617.0	1,059.1	1.88	-0.93	-1.64
8,565.0	87.85	338.10	6,673.1	633.5	-1,651.9	1,153.0	1.31	-1.29	-0.23
8,658.0	87.41	341.90	6,677.0	720.8	-1,683.6	1,245.9	4.11	-0.47	4.09
8,753.0	87.58	342.48	6,681.1	811.1	-1,712.7	1,340.8	0.64	0.18	0.61
8,847.0	88.69	341.75	6,684.2	900.5	-1,741.5	1,434.7	1.41	1.18	-0.78
8,941.0	88.96	341.23	6,686.1	989.7	-1,771.4	1,528.6	0.82	0.29	-0.55
9,035.0	89.06	341.81	6,687.8	1,078.8	-1,801.1	1,622.6	0.63	0.11	0.62



Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Klondike Unit 1H
Project:	Tyler County WV	TVD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Site:	Pierpoint Pad:ingot/Klondike/Wall/Weigle	MD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Well:	Klondike Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,129.0	89.19	341.71	6,689.2	1,168.1	-1,830.6	1,716.5	0.17	0.14	-0.11
9,223.0	89.83	341.49	6,690.0	1,257.3	-1,860.2	1,810.5	0.72	0.68	-0.23
9,317.0	88.93	341.50	6,691.0	1,346.4	-1,890.1	1,904.5	0.96	-0.96	0.01
9,411.0	89.36	339.14	6,692.4	1,434.9	-1,921.7	1,998.5	2.55	0.46	-2.51
9,505.0	89.70	338.58	6,693.2	1,522.6	-1,955.6	2,092.4	0.70	0.36	-0.60
9,599.0	89.43	338.95	6,693.9	1,610.2	-1,989.7	2,186.4	0.49	-0.29	0.39
9,693.0	90.87	338.42	6,693.7	1,697.7	-2,023.8	2,280.4	1.83	1.53	-0.56
9,787.0	90.44	340.30	6,692.6	1,785.7	-2,057.0	2,374.3	2.05	-0.46	2.00
9,881.0	89.30	339.99	6,692.8	1,874.1	-2,088.9	2,468.3	1.26	-1.21	-0.33
9,975.0	89.43	340.85	6,693.8	1,962.7	-2,120.4	2,562.3	0.93	0.14	0.91
10,069.0	92.08	344.21	6,692.6	2,052.3	-2,148.6	2,656.2	4.55	2.82	3.57
10,163.0	91.01	342.95	6,690.1	2,142.4	-2,175.2	2,750.0	1.76	-1.14	-1.34
10,257.0	91.55	341.19	6,688.0	2,231.8	-2,204.1	2,844.0	1.96	0.57	-1.87
10,350.0	88.86	339.77	6,687.6	2,319.5	-2,235.2	2,937.0	3.27	-2.89	-1.53
10,444.0	89.53	338.87	6,689.0	2,407.4	-2,268.3	3,030.9	1.19	0.71	-0.96
10,538.0	89.93	338.45	6,689.4	2,495.0	-2,302.6	3,124.9	0.62	0.43	-0.45
10,633.0	90.00	337.87	6,689.5	2,583.2	-2,337.9	3,219.8	0.61	0.07	-0.61
10,727.0	89.97	339.62	6,689.5	2,670.8	-2,372.0	3,313.8	1.86	-0.03	1.86
10,821.0	90.13	339.42	6,689.4	2,758.8	-2,404.9	3,407.8	0.27	0.17	-0.21
10,915.0	90.77	341.54	6,688.7	2,847.4	-2,436.3	3,501.8	2.36	0.68	2.26
11,009.0	89.60	341.09	6,688.4	2,936.4	-2,466.4	3,595.7	1.33	-1.24	-0.48
11,103.0	89.73	340.62	6,688.9	3,025.2	-2,497.2	3,689.7	0.52	0.14	-0.50
11,197.0	89.90	340.61	6,689.2	3,113.9	-2,528.4	3,783.7	0.18	0.18	-0.01
11,291.0	90.70	340.79	6,688.7	3,202.6	-2,559.5	3,877.7	0.87	0.85	0.19
11,385.0	89.50	340.16	6,688.6	3,291.2	-2,590.9	3,971.7	1.44	-1.28	-0.67
11,479.0	89.80	339.96	6,689.1	3,379.6	-2,622.9	4,065.7	0.38	0.32	-0.21
11,574.0	90.60	340.06	6,688.8	3,468.9	-2,655.4	4,160.7	0.85	0.84	0.11
11,668.0	89.90	339.07	6,688.4	3,556.9	-2,688.2	4,254.7	1.29	-0.74	-1.05
11,762.0	90.03	337.07	6,688.4	3,644.1	-2,723.3	4,348.6	2.13	0.14	-2.13
11,856.0	89.66	336.28	6,688.7	3,730.5	-2,760.6	4,442.5	0.93	-0.39	-0.84
11,951.0	89.50	339.15	6,689.4	3,818.3	-2,796.6	4,537.3	3.03	-0.17	3.02
12,045.0	88.62	340.55	6,690.9	3,906.6	-2,829.0	4,631.3	1.76	-0.94	1.49
12,139.0	87.65	342.83	6,694.0	3,995.8	-2,858.5	4,725.2	2.63	-1.03	2.43
12,233.0	90.27	343.40	6,695.7	4,085.7	-2,885.8	4,819.1	2.85	2.79	0.61
12,327.0	90.81	342.75	6,694.8	4,175.6	-2,913.1	4,913.0	0.90	0.57	-0.69
12,421.0	90.94	341.96	6,693.4	4,265.2	-2,941.6	5,006.9	0.85	0.14	-0.84
12,515.0	91.28	341.44	6,691.6	4,354.4	-2,971.1	5,100.9	0.66	0.36	-0.55
12,609.0	89.56	341.27	6,690.9	4,443.5	-3,001.2	5,194.8	1.84	-1.83	-0.18
12,704.0	89.83	341.19	6,691.4	4,533.4	-3,031.8	5,289.8	0.30	0.28	-0.08
12,798.0	90.50	340.50	6,691.1	4,622.2	-3,062.6	5,383.8	1.02	0.71	-0.73
12,892.0	89.03	339.88	6,691.5	4,710.6	-3,094.5	5,477.8	1.70	-1.56	-0.66
12,986.0	89.50	340.12	6,692.7	4,799.0	-3,126.6	5,571.8	0.56	0.50	0.26
13,080.0	89.97	339.72	6,693.1	4,887.3	-3,158.9	5,665.8	0.66	0.50	-0.43



Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Klondike Unit 1H
Project:	Tyler County WV	TVD Reference:	Patterson 340' 1201' GL + 24' KB @ 1225.0usft
Site:	Pierpoint Pad:Ingot/Klondike/Wali/Weigle	MD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Well:	Klondike Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,174.0	90.71	339.63	6,692.6	4,975.4	-3,191.5	5,759.8	0.79	0.79	-0.10
13,268.0	89.93	338.86	6,692.0	5,063.3	-3,224.8	5,853.8	1.17	-0.83	-0.82
13,363.0	90.50	339.32	6,691.7	5,152.0	-3,258.7	5,948.8	0.77	0.60	0.48
13,456.0	90.44	340.47	6,690.9	5,239.4	-3,290.7	6,041.8	1.24	-0.08	1.24
13,551.0	89.66	342.21	6,690.8	5,329.4	-3,321.1	6,136.7	2.01	-0.82	1.83
13,645.0	90.34	342.93	6,690.8	5,419.0	-3,349.3	6,230.7	1.05	0.72	0.77
13,738.0	89.03	343.55	6,691.4	5,508.1	-3,376.1	6,323.5	1.56	-1.41	0.67
13,832.0	89.77	343.82	6,692.3	5,598.3	-3,402.5	6,417.4	0.84	0.79	0.29
13,926.0	90.44	341.40	6,692.2	5,688.0	-3,430.6	6,511.3	2.67	0.71	-2.57
14,020.0	90.03	338.26	6,691.8	5,776.2	-3,463.0	6,605.3	3.37	-0.44	-3.34
14,114.0	90.44	337.90	6,691.4	5,863.4	-3,498.1	6,699.2	0.58	0.44	-0.38
14,209.0	89.26	337.89	6,691.6	5,951.4	-3,533.8	6,794.1	1.24	-1.24	-0.01
14,303.0	89.76	337.50	6,692.4	6,038.4	-3,569.5	6,888.0	0.67	0.53	-0.41
14,397.0	88.52	339.10	6,693.9	6,125.7	-3,604.2	6,981.9	2.15	-1.32	1.70
14,492.0	88.25	341.12	6,698.5	6,215.0	-3,636.5	7,076.9	2.14	-0.28	2.13
14,585.0	89.19	341.04	6,698.6	6,303.0	-3,666.7	7,169.9	1.01	1.01	-0.09
14,679.0	89.56	342.03	6,699.6	6,392.1	-3,698.5	7,263.8	1.12	0.39	1.05
14,773.0	90.40	341.65	6,699.7	6,481.4	-3,725.8	7,357.8	0.98	0.89	-0.40
14,867.0	89.23	340.86	6,700.0	6,570.5	-3,756.0	7,451.8	1.50	-1.24	-0.84
14,962.0	89.87	341.73	6,700.7	6,660.4	-3,786.4	7,546.8	1.14	0.67	0.92
15,056.0	89.26	340.86	6,701.4	6,749.5	-3,816.6	7,640.7	1.13	-0.65	-0.93
15,150.0	89.40	340.16	6,702.5	6,838.1	-3,847.9	7,734.7	0.76	0.15	-0.74
15,243.0	90.13	337.81	6,702.9	6,924.9	-3,881.3	7,827.7	2.65	0.78	-2.53
15,337.0	89.09	339.29	6,703.6	7,012.4	-3,915.7	7,921.7	1.92	-1.11	1.57
15,431.0	89.77	340.38	6,704.5	7,100.6	-3,948.1	8,015.6	1.37	0.72	1.16
15,526.0	89.60	338.84	6,705.0	7,189.6	-3,981.2	8,110.6	1.63	-0.18	-1.62
15,619.0	88.69	339.94	6,706.4	7,276.7	-4,013.9	8,203.6	1.53	-0.98	1.18
15,714.0	88.82	339.23	6,708.5	7,365.7	-4,047.0	8,298.6	0.76	0.14	-0.75
15,808.0	89.73	339.01	6,709.7	7,453.5	-4,080.5	8,392.5	1.00	0.97	-0.23
15,902.0	90.44	339.31	6,709.5	7,541.4	-4,114.0	8,486.5	0.82	0.76	0.32
15,996.0	89.80	338.64	6,709.3	7,629.1	-4,147.7	8,580.5	0.99	-0.68	-0.71
16,090.0	89.23	340.07	6,710.1	7,717.1	-4,180.8	8,674.5	1.64	-0.61	1.52
16,184.0	90.24	340.58	6,710.5	7,805.6	-4,212.5	8,768.5	1.20	1.07	0.54
16,278.0	91.11	340.91	6,709.4	7,894.3	-4,243.5	8,862.5	0.99	0.93	0.35
16,372.0	89.70	339.22	6,708.8	7,982.7	-4,275.5	8,956.5	2.34	-1.50	-1.80
16,466.0	90.07	338.26	6,709.0	8,070.3	-4,309.6	9,050.4	1.09	0.39	-1.02
16,560.0	89.63	338.72	6,709.2	8,157.7	-4,344.1	9,144.4	0.68	-0.47	0.49
16,654.0	89.56	341.43	6,709.9	8,246.1	-4,376.1	9,238.4	2.88	-0.07	2.88
16,748.0	89.36	339.93	6,710.8	8,334.8	-4,407.2	9,332.4	1.61	-0.21	-1.60
16,842.0	89.90	341.35	6,711.4	8,423.5	-4,438.3	9,426.3	1.62	0.57	1.51
16,937.0	90.24	340.64	6,711.3	8,513.3	-4,469.3	9,521.3	0.83	0.36	-0.75
17,030.0	90.67	343.12	6,710.5	8,601.7	-4,498.2	9,614.3	2.71	0.46	2.67
17,124.0	90.70	342.55	6,709.4	8,691.5	-4,525.9	9,708.2	0.61	0.03	-0.61



Company:	Antero Resources	Local Co-ordinate Reference:	Well Klondike Unit 1H
Project:	Tyler County WV	TVD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Site:	Pierpoint Pad:Ingot/Klondike/Wall/Weigle	MD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Well:	Klondike Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,219.0	91.61	342.63	6,707.5	8,782.1	-4,554.4	9,803.1	0.96	0.96	0.08
17,313.0	91.38	341.12	6,705.0	8,871.4	-4,583.6	9,897.0	1.62	-0.24	-1.61
17,407.0	90.34	339.57	6,703.6	8,959.9	-4,615.2	9,991.0	1.99	-1.11	-1.65
17,501.0	88.46	338.66	6,704.6	9,047.7	-4,648.7	10,085.0	2.22	-2.00	-0.97
17,595.0	88.76	338.56	6,706.9	9,135.2	-4,683.0	10,178.9	0.34	0.32	-0.11
17,689.0	89.30	338.56	6,708.5	9,222.7	-4,717.3	10,272.9	0.57	0.57	0.00
17,783.0	90.10	338.91	6,709.0	9,310.3	-4,751.4	10,366.8	0.93	0.85	0.37
17,878.0	90.20	338.75	6,708.7	9,398.9	-4,785.7	10,461.8	0.20	0.11	-0.17
17,971.0	90.34	340.03	6,708.3	9,485.9	-4,818.5	10,554.8	1.38	0.15	1.38
18,065.0	91.48	341.24	6,706.8	9,574.6	-4,849.6	10,648.8	1.77	1.21	1.29
18,160.0	89.97	341.01	6,705.6	9,664.5	-4,880.4	10,743.7	1.61	-1.59	-0.24
18,254.0	90.64	341.49	6,705.1	9,753.5	-4,910.6	10,837.7	0.88	0.71	0.51
18,348.0	89.36	340.36	6,705.1	9,842.3	-4,941.3	10,931.7	1.82	-1.36	-1.20
18,443.0	90.03	339.92	6,705.6	9,931.6	-4,973.6	11,026.7	0.84	0.71	-0.46
18,536.0	90.37	339.24	6,705.3	10,018.8	-5,006.0	11,119.7	0.82	0.37	-0.73
18,630.0	90.70	338.89	6,704.4	10,106.6	-5,039.6	11,213.6	0.51	0.35	-0.37
18,724.0	91.44	338.45	6,702.6	10,194.1	-5,073.8	11,307.6	0.92	0.79	-0.47
18,806.0	92.25	338.62	6,700.0	10,270.4	-5,103.8	11,389.5	1.01	0.99	0.21
18,870.0	92.25	338.62	6,697.5	10,329.9	-5,127.1	11,453.4	0.00	0.00	0.00

Target Name	- hit/miss target	- Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Interp @ 6669.9 (Klondike)	- actual wellpath hits target center	- Point	0.00	0.00	6,669.9	-333.1	-1,282.2	14,326,228.24	1,678,919.00	39° 27' 4.141 N	80° 51' 48.981 W
Interp @ 6674.3 (Klondike)	- actual wellpath hits target center	- Point	0.00	0.00	6,674.3	-568.1	-1,197.4	14,325,993.22	1,679,003.82	39° 27' 1.816 N	80° 51' 47.904 W
-As Drilled LP Klondike	- actual wellpath hits target center	- Point	0.00	0.00	6,675.2	-535.8	-1,208.2	14,326,025.45	1,678,993.05	39° 27' 2.135 N	80° 51' 48.041 W

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,267.0	6,001.5	RNST @ 6267		0.00	
6,842.0	6,323.7	SCMR @ 6642		0.00	
6,853.0	6,493.8	MDLX @ 6853		0.00	
7,013.0	6,592.3	BRKT @ 7013		0.00	
7,055.0	6,812.6	TLLY @ 7055		0.00	
7,150.0	6,649.3	MRCL_HOT @ 7150		0.00	



Company:	Antero Resources	Local Co-ordinate Reference:	Well Klondike Unit 1H
Project:	Tyler County WV	TVD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Site:	Pierpoint Pad:Ingot/Klondike/Wall/Weigle	MD Reference:	Patterson 340: 1201' GL + 24' KB @ 1225.0usft
Well:	Klondike Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.0	100.0	-0.2	-0.1	First Gyro @ 100
6,215.0	5,956.5	-874.5	-724.1	Last Gyro @ 6215

Checked By: _____ Approved By: _____ Date: _____