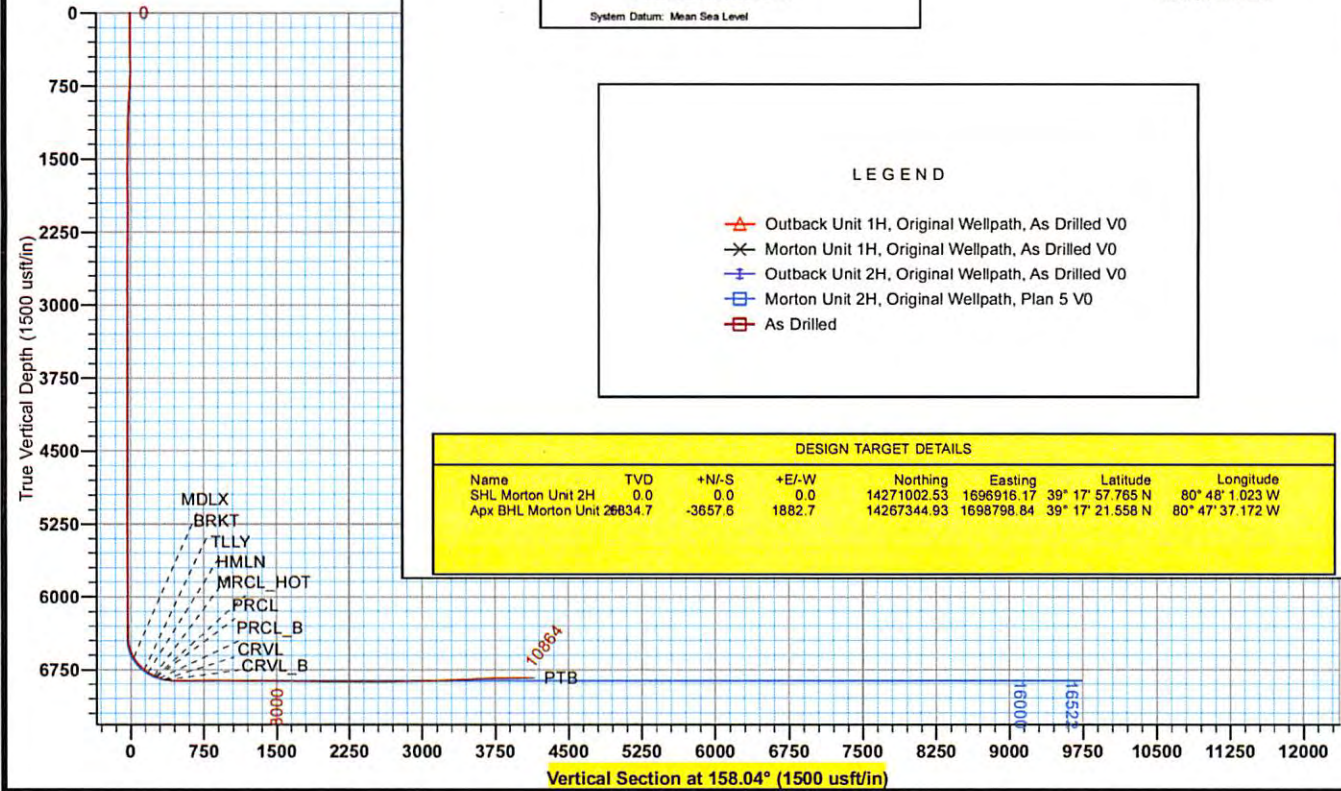




Antero
Morton Unit 2H
Doddridge County WV
Northing: 14271002.53
Easting: 1696916.18
As Drilled

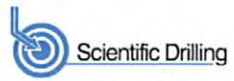


WELL DETAILS: Morton Unit 2H

		Ground Level: 1189.0		Slot	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14271002.53	1696916.18	39° 17' 57.765 N	80° 48' 1.023 W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Morton Unit 2H, Grid North
 Vertical (V/C) Reference: Frontier 22, CL 1180' + KB 25' @ 1214 Gush
 Section (V/S) Reference: Stat - (0.0N, 0.0E)
 Measured Depth Reference: Frontier 22, CL 1180' + KB 25' @ 1214 Gush
 Calculation Method: Minimum Curvature



PROJECT DETAILS: Doddridge 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

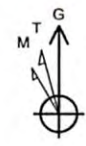
Genie Lightfoot
 10.24, March 06 2015
 Scientific Drilling
 11220 NW 10th Street
 Yukon, OK. 73099

LEGEND

- △ Outback Unit 1H, Original Wellpath, As Drilled V0
- × Morton Unit 1H, Original Wellpath, As Drilled V0
- ⊕ Outback Unit 2H, Original Wellpath, As Drilled V0
- ⊕ Morton Unit 2H, Original Wellpath, Plan 5 V0
- ⊕ As Drilled

DESIGN TARGET DETAILS

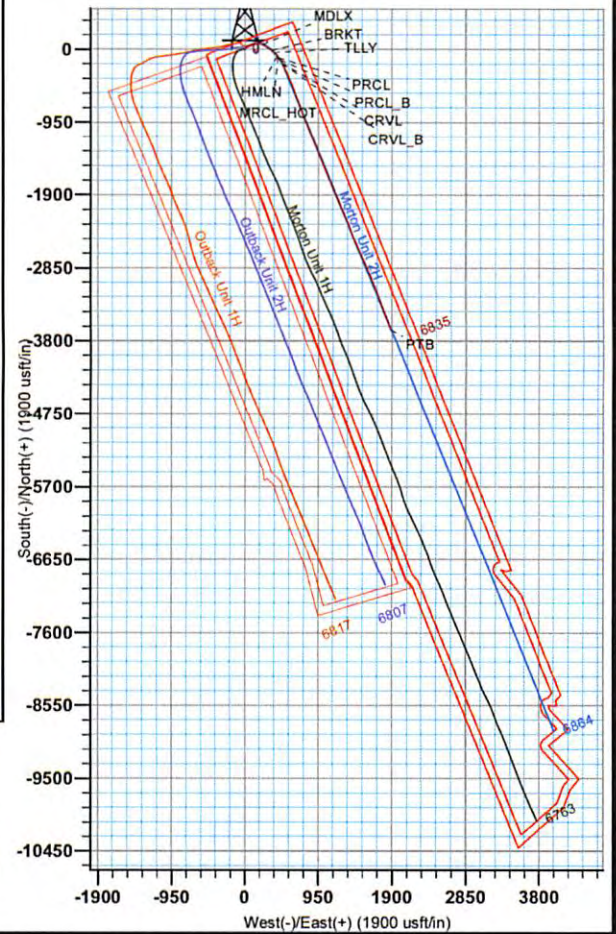
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Morton Unit 2H	0.0	0.0	0.0	14271002.53	1696916.17	39° 17' 57.765 N	80° 48' 1.023 W
Apx BHL Morton Unit 2H	26834.7	-3657.6	1882.7	14267344.93	1698798.84	39° 17' 21.558 N	80° 47' 37.172 W



To convert Magnetic North to Grid, Subtract 8.60°
 To convert True North to Grid, Subtract 0.13°

Azimuths to Grid North
 True North: -0.13°
 Magnetic North: -8.60°

Magnetic Field
 Strength: 52222.1snT
 Dip Angle: 66.85°
 Date: 10/16/2014
 Model: BGGM2014





Antero

Doddridge County WV
Cofor Pad/Outback Morton Nova Grape Rainer
Morton Unit 2H
Original Wellpath

Design: As Drilled

EOW Completion Report

06 March, 2015



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Office of Oil and Gas
WV Department of
Environmental Protection

12/16/2016

Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	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	Cofor Pad/Outback Morton Nova Grape Rainer				
Site Position:	Northing:	14,271,032.41 usft	Latitude:	39° 17' 58.061 N	
From: Map	Easting:	1,696,909.68 usft	Longitude:	80° 48' 1.105 W	
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.13 °

Well	Morton Unit 2H, Marcellus				
Well Position	+N/-S	0.0 usft	Northing:	14,271,002.53 usft	
	+E/-W	0.0 usft	Easting:	1,696,916.18 usft	
Position Uncertainty	2.0 usft	Wellhead Elevation:	1,214.0 usft	Ground Level:	1,189.0 usft

Wellbore	Original Wellpath			
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/16/2014	-8.47	66.85	52,222

Design	As Drilled			
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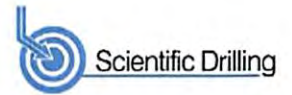
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	158.04	

Survey Program	Date 3/6/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.6	6,072.3	Survey #6 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
6,072.3	10,864.0	Survey #7 MWD (Original Wellpath)	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
112.6	0.26	152.30	112.6	-0.2	0.1	0.3	0.23
137.6	0.18	145.56	137.6	-0.3	0.2	0.3	0.34
163.1	0.21	178.89	163.0	-0.4	0.2	0.4	0.45
188.3	0.22	140.64	188.3	-0.5	0.2	0.5	0.56
213.8	0.23	190.86	213.8	-0.6	0.2	0.6	0.75
237.4	0.24	194.03	237.4	-0.7	0.2	0.7	0.07
262.6	0.18	179.00	262.6	-0.7	0.2	0.8	0.32
288.1	0.19	182.15	288.1	-0.8	0.2	0.8	0.06
313.2	0.32	179.48	313.2	-0.9	0.2	0.9	0.52
337.6	0.22	166.96	337.6	-1.1	0.2	1.1	0.47



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	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)	
363.0	0.17	164.42	363.0	-1.1	0.2	1.1	0.20	
388.6	0.21	173.74	388.6	-1.2	0.3	1.2	0.20	
414.0	0.21	127.73	414.0	-1.3	0.3	1.3	0.65	
437.1	0.26	157.34	437.1	-1.4	0.4	1.4	0.56	
462.7	0.19	151.93	462.7	-1.5	0.4	1.5	0.28	
488.1	0.25	159.46	488.1	-1.5	0.4	1.6	0.26	
513.6	0.46	127.49	513.6	-1.7	0.5	1.7	1.10	
539.1	1.41	111.50	539.1	-1.8	0.9	2.0	3.82	
562.7	1.61	110.30	562.7	-2.1	1.5	2.5	0.86	
588.2	1.59	108.93	588.2	-2.3	2.2	2.9	0.17	
613.7	1.52	94.26	613.7	-2.4	2.8	3.3	1.58	
639.3	1.77	59.11	639.3	-2.3	3.5	3.4	3.99	
662.3	2.42	36.90	662.3	-1.7	4.1	3.1	4.47	
687.9	3.22	31.34	687.8	-0.6	4.8	2.4	3.30	
713.5	3.73	28.28	713.4	0.7	5.6	1.4	2.12	
739.1	4.13	27.89	738.9	2.2	6.4	0.3	1.57	
762.2	4.45	26.66	761.9	3.8	7.2	-0.8	1.45	
787.8	5.13	23.71	787.5	5.7	8.1	-2.3	2.82	
813.5	5.29	23.15	813.0	7.9	9.0	-3.9	0.66	
839.6	5.35	22.30	839.1	10.1	10.0	-5.6	0.38	
862.2	5.34	22.91	861.6	12.0	10.8	-7.1	0.26	
888.3	5.15	19.23	887.6	14.3	11.6	-8.9	1.48	
914.2	4.70	12.99	913.3	16.4	12.2	-10.6	2.71	
939.3	4.51	12.93	938.4	18.4	12.7	-12.3	0.76	
962.0	3.97	16.51	961.0	20.0	13.1	-13.6	2.64	
987.5	3.23	25.65	986.4	21.5	13.7	-14.8	3.68	
1,013.3	3.12	27.43	1,012.2	22.8	14.3	-15.7	0.57	
1,038.9	2.74	28.24	1,037.7	23.9	14.9	-16.6	1.50	
1,062.3	2.76	27.42	1,061.1	24.9	15.5	-17.3	0.19	
1,088.0	2.50	29.88	1,086.9	25.9	16.0	-18.1	1.10	
1,113.9	2.30	28.90	1,112.7	26.9	16.6	-18.7	0.79	
1,137.2	2.22	28.86	1,136.0	27.7	17.0	-19.3	0.34	
1,163.4	1.90	30.87	1,162.1	28.5	17.5	-19.9	1.25	
1,189.1	1.66	31.53	1,187.9	29.2	17.9	-20.4	0.93	
1,212.4	1.51	29.90	1,211.1	29.7	18.2	-20.8	0.67	
1,238.3	1.55	31.31	1,237.0	30.3	18.6	-21.2	0.21	
1,264.0	1.48	29.28	1,262.7	30.9	18.9	-21.6	0.34	
1,287.2	1.19	27.73	1,285.9	31.4	19.2	-22.0	1.26	
1,313.1	1.14	29.09	1,311.8	31.9	19.4	-22.3	0.22	
1,338.9	0.92	31.61	1,337.6	32.3	19.6	-22.6	0.87	
1,362.1	0.82	34.61	1,360.8	32.6	19.8	-22.8	0.47	
1,388.2	0.64	35.15	1,386.9	32.8	20.0	-23.0	0.69	
1,413.7	0.58	36.16	1,412.4	33.0	20.2	-23.1	0.24	
1,437.1	0.44	34.22	1,435.8	33.2	20.3	-23.2	0.60	



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	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)
1,463.0	0.35	20.20	1,461.7	33.4	20.4	-23.3	0.51
1,489.3	0.39	27.41	1,488.0	33.5	20.5	-23.4	0.23
1,512.1	0.42	34.03	1,510.8	33.7	20.5	-23.5	0.24
1,538.4	0.43	34.60	1,537.1	33.8	20.7	-23.7	0.04
1,564.2	0.47	29.71	1,562.9	34.0	20.8	-23.8	0.21
1,587.6	0.46	34.29	1,586.3	34.2	20.9	-23.9	0.16
1,613.5	0.45	40.34	1,612.1	34.3	21.0	-24.0	0.19
1,639.4	0.42	62.60	1,638.1	34.4	21.1	-24.0	0.66
1,662.7	0.39	57.30	1,661.3	34.5	21.3	-24.1	0.21
1,688.6	0.34	69.14	1,687.3	34.6	21.4	-24.1	0.35
1,714.6	0.35	79.22	1,713.3	34.6	21.6	-24.1	0.24
1,737.8	0.25	81.68	1,736.5	34.7	21.7	-24.0	0.44
1,763.3	0.22	78.38	1,762.0	34.7	21.8	-24.0	0.13
1,787.7	0.34	79.61	1,786.3	34.7	21.9	-24.0	0.49
1,813.1	0.27	70.74	1,811.8	34.7	22.0	-24.0	0.33
1,838.5	0.31	68.87	1,837.2	34.8	22.2	-24.0	0.16
1,864.1	0.29	63.41	1,862.7	34.8	22.3	-24.0	0.14
1,889.6	0.28	65.68	1,888.3	34.9	22.4	-24.0	0.06
1,912.4	0.46	59.06	1,911.1	35.0	22.5	-24.0	0.81
1,938.0	0.40	61.62	1,936.6	35.1	22.7	-24.0	0.25
1,963.5	0.42	65.02	1,962.2	35.1	22.9	-24.0	0.12
1,989.4	0.39	69.83	1,988.1	35.2	23.0	-24.0	0.17
2,014.8	0.41	78.50	2,013.5	35.3	23.2	-24.0	0.25
2,037.8	0.43	78.40	2,036.5	35.3	23.4	-24.0	0.09
2,063.4	0.36	82.70	2,062.0	35.3	23.5	-24.0	0.30
2,088.9	0.33	83.92	2,087.6	35.3	23.7	-23.9	0.12
2,114.3	0.27	73.24	2,113.0	35.4	23.8	-23.9	0.32
2,137.5	0.23	89.28	2,136.2	35.4	23.9	-23.9	0.35
2,163.0	0.23	78.27	2,161.7	35.4	24.0	-23.8	0.17
2,188.7	0.19	71.64	2,187.4	35.4	24.1	-23.8	0.18
2,214.4	0.14	60.62	2,213.1	35.4	24.2	-23.8	0.23
2,237.7	0.07	36.33	2,236.3	35.5	24.2	-23.8	0.35
2,263.4	0.11	52.49	2,262.0	35.5	24.2	-23.9	0.18
2,289.4	0.11	125.62	2,288.0	35.5	24.3	-23.8	0.50
2,313.3	0.12	77.51	2,311.9	35.5	24.3	-23.8	0.39
2,339.4	0.08	139.70	2,338.1	35.5	24.4	-23.8	0.42
2,363.0	0.09	120.29	2,361.7	35.5	24.4	-23.8	0.13
2,389.1	0.02	341.03	2,387.8	35.5	24.4	-23.8	0.41
2,412.5	0.07	208.35	2,411.1	35.4	24.4	-23.8	0.36
2,437.6	0.07	133.48	2,436.3	35.4	24.4	-23.7	0.34
2,462.8	0.11	144.69	2,461.5	35.4	24.4	-23.7	0.17
2,487.9	0.12	168.14	2,486.6	35.3	24.4	-23.6	0.19
2,512.9	0.19	217.92	2,511.6	35.3	24.4	-23.6	0.58
2,537.5	0.24	201.24	2,536.2	35.2	24.4	-23.5	0.32
2,563.2	0.01	288.94	2,561.9	35.2	24.4	-23.5	0.93

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WV Department of Environmental Protection

Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
2,588.7	0.07	252.55	2,587.4	35.2	24.3	-23.5	0.24	
2,614.4	0.16	296.20	2,613.0	35.2	24.3	-23.5	0.47	
2,637.4	0.13	285.83	2,636.1	35.2	24.2	-23.6	0.17	
2,663.0	0.14	300.61	2,661.7	35.2	24.2	-23.6	0.14	
2,689.0	0.16	291.24	2,687.7	35.2	24.1	-23.7	0.12	
2,714.5	0.12	284.98	2,713.2	35.3	24.1	-23.7	0.17	
2,737.9	0.13	300.48	2,736.5	35.3	24.0	-23.7	0.15	
2,763.3	0.18	293.95	2,761.9	35.3	24.0	-23.8	0.21	
2,788.8	0.17	289.13	2,787.5	35.3	23.9	-23.8	0.07	
2,812.1	0.14	285.85	2,810.8	35.4	23.8	-23.9	0.13	
2,838.1	0.19	289.26	2,836.7	35.4	23.8	-23.9	0.20	
2,863.6	0.21	289.07	2,862.3	35.4	23.7	-24.0	0.08	
2,889.2	0.18	293.84	2,887.8	35.4	23.6	-24.0	0.13	
2,912.6	0.15	284.65	2,911.2	35.5	23.5	-24.1	0.17	
2,938.1	0.25	298.02	2,936.8	35.5	23.4	-24.2	0.43	
2,962.3	0.21	282.75	2,961.0	35.5	23.4	-24.2	0.30	
2,987.8	0.19	292.15	2,986.5	35.6	23.3	-24.3	0.15	
3,013.4	0.25	289.70	3,012.0	35.6	23.2	-24.3	0.24	
3,038.9	0.20	286.12	3,037.6	35.6	23.1	-24.4	0.20	
3,062.7	0.15	274.37	3,061.3	35.6	23.0	-24.4	0.26	
3,088.3	0.17	274.87	3,087.0	35.6	22.9	-24.5	0.08	
3,113.9	0.27	288.96	3,112.6	35.7	22.8	-24.5	0.44	
3,137.3	0.22	264.29	3,136.0	35.7	22.7	-24.6	0.49	
3,163.0	0.17	283.68	3,161.7	35.7	22.7	-24.6	0.32	
3,189.1	0.30	293.83	3,187.8	35.7	22.6	-24.7	0.52	
3,212.4	0.22	286.15	3,211.1	35.8	22.5	-24.8	0.37	
3,238.1	0.29	279.62	3,236.7	35.8	22.4	-24.8	0.29	
3,263.8	0.38	285.92	3,262.4	35.8	22.2	-24.9	0.38	
3,287.1	0.23	274.37	3,285.8	35.8	22.1	-25.0	0.69	
3,313.4	0.30	280.28	3,312.0	35.9	22.0	-25.0	0.29	
3,339.0	0.24	307.27	3,337.7	35.9	21.9	-25.1	0.54	
3,364.1	0.31	315.14	3,362.7	36.0	21.8	-25.2	0.32	
3,389.3	0.15	297.91	3,388.0	36.0	21.7	-25.3	0.68	
3,412.9	0.21	301.06	3,411.5	36.1	21.6	-25.4	0.26	
3,439.3	0.14	305.58	3,438.0	36.1	21.6	-25.4	0.27	
3,462.8	0.22	308.90	3,461.5	36.2	21.5	-25.5	0.34	
3,488.8	0.19	310.19	3,487.4	36.2	21.4	-25.6	0.12	
3,512.3	0.29	310.08	3,511.0	36.3	21.4	-25.7	0.42	
3,538.2	0.16	299.23	3,536.9	36.4	21.3	-25.8	0.53	
3,564.3	0.21	323.74	3,562.9	36.4	21.2	-25.8	0.36	
3,587.8	0.12	321.66	3,586.5	36.5	21.2	-25.9	0.38	
3,614.1	0.18	310.79	3,612.8	36.5	21.1	-26.0	0.25	
3,637.8	0.16	322.94	3,636.5	36.6	21.1	-26.0	0.17	
3,663.7	0.19	319.93	3,662.4	36.6	21.0	-26.1	0.12	

Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
3,687.4	0.11	309.85	3,686.1	36.7	21.0	-26.2	0.35
3,713.4	0.09	301.67	3,712.1	36.7	20.9	-26.2	0.09
3,737.5	0.11	297.20	3,736.2	36.7	20.9	-26.2	0.09
3,763.5	0.17	290.92	3,762.1	36.7	20.8	-26.3	0.24
3,787.1	0.10	272.45	3,785.8	36.8	20.8	-26.3	0.35
3,813.1	0.17	272.14	3,811.7	36.8	20.7	-26.3	0.27
3,839.1	0.20	302.97	3,837.8	36.8	20.7	-26.4	0.39
3,862.8	0.22	288.71	3,861.5	36.8	20.6	-26.5	0.24
3,889.3	0.20	302.44	3,888.0	36.9	20.5	-26.5	0.20
3,913.3	0.20	301.64	3,912.0	36.9	20.4	-26.6	0.01
3,937.2	0.19	303.00	3,935.8	37.0	20.4	-26.7	0.05
3,963.2	0.16	299.12	3,961.9	37.0	20.3	-26.7	0.12
3,987.0	0.11	308.03	3,985.7	37.0	20.2	-26.8	0.23
4,013.5	0.12	308.48	4,012.2	37.1	20.2	-26.8	0.04
4,037.3	0.14	322.70	4,036.0	37.1	20.2	-26.9	0.16
4,063.5	0.08	312.99	4,062.2	37.1	20.1	-26.9	0.24
4,087.3	0.16	319.64	4,085.9	37.2	20.1	-27.0	0.34
4,113.3	0.19	281.19	4,111.9	37.2	20.0	-27.0	0.46
4,139.4	0.07	270.39	4,138.0	37.2	20.0	-27.0	0.47
4,162.6	0.11	301.01	4,161.3	37.2	19.9	-27.1	0.26
4,188.3	0.09	264.64	4,186.9	37.2	19.9	-27.1	0.25
4,213.9	0.05	264.58	4,212.6	37.2	19.9	-27.1	0.16
4,237.2	0.04	231.29	4,235.9	37.2	19.8	-27.1	0.12
4,263.0	0.06	329.43	4,261.6	37.2	19.8	-27.1	0.30
4,288.9	0.14	169.47	4,287.6	37.2	19.8	-27.1	0.76
4,312.2	0.08	203.06	4,310.8	37.2	19.8	-27.1	0.37
4,337.8	0.17	138.04	4,336.4	37.1	19.8	-27.0	0.60
4,363.4	0.13	222.58	4,362.1	37.1	19.9	-27.0	0.79
4,389.0	0.10	189.33	4,387.7	37.0	19.8	-26.9	0.28
4,412.4	0.11	199.74	4,411.0	37.0	19.8	-26.9	0.09
4,438.4	0.09	241.89	4,437.0	37.0	19.8	-26.9	0.29
4,464.0	0.15	241.11	4,462.7	36.9	19.7	-26.9	0.23
4,487.4	0.11	215.39	4,486.1	36.9	19.7	-26.9	0.30
4,513.0	0.15	251.75	4,511.7	36.9	19.7	-26.8	0.35
4,538.6	0.11	237.42	4,537.3	36.8	19.6	-26.8	0.20
4,562.4	0.17	242.52	4,561.1	36.8	19.6	-26.8	0.26
4,588.1	0.10	215.52	4,586.8	36.8	19.5	-26.8	0.36
4,613.8	0.19	185.57	4,612.5	36.7	19.5	-26.8	0.45
4,637.1	0.11	209.42	4,635.8	36.7	19.5	-26.7	0.43
4,662.8	0.13	194.20	4,661.5	36.6	19.5	-26.7	0.15
4,688.8	0.08	208.53	4,687.5	36.6	19.4	-26.6	0.22
4,712.7	0.06	227.24	4,711.3	36.5	19.4	-26.6	0.13
4,737.7	0.12	163.85	4,736.3	36.5	19.4	-26.6	0.43
4,762.9	0.13	185.70	4,761.6	36.5	19.4	-26.5	0.19

Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
4,788.1	0.23	167.29	4,786.8	36.4	19.4	-26.5	0.45	
4,813.0	0.19	168.05	4,811.7	36.3	19.5	-26.4	0.16	
4,837.8	0.25	161.45	4,836.5	36.2	19.5	-26.3	0.26	
4,862.6	0.12	178.93	4,861.2	36.1	19.5	-26.2	0.57	
4,887.1	0.24	157.52	4,885.7	36.1	19.5	-26.1	0.55	
4,913.8	0.18	142.94	4,912.5	36.0	19.6	-26.0	0.30	
4,938.2	0.19	153.54	4,936.9	35.9	19.6	-26.0	0.15	
4,963.0	0.18	192.58	4,961.7	35.8	19.6	-25.9	0.50	
4,987.4	0.10	181.62	4,986.0	35.8	19.6	-25.8	0.34	
5,014.2	0.11	207.25	5,012.8	35.7	19.6	-25.8	0.18	
5,038.5	0.17	159.21	5,037.1	35.7	19.6	-25.7	0.52	
5,062.9	0.11	184.39	5,061.6	35.6	19.6	-25.7	0.35	
5,087.4	0.07	217.02	5,086.0	35.6	19.6	-25.7	0.26	
5,114.1	0.08	185.85	5,112.7	35.5	19.6	-25.6	0.16	
5,138.9	0.16	114.75	5,137.5	35.5	19.6	-25.6	0.62	
5,163.3	0.11	120.56	5,161.9	35.5	19.7	-25.6	0.21	
5,187.8	0.08	138.45	5,186.5	35.5	19.7	-25.5	0.17	
5,212.0	0.13	121.77	5,210.7	35.4	19.7	-25.5	0.24	
5,238.9	0.04	57.53	5,237.5	35.4	19.8	-25.5	0.44	
5,263.4	0.08	133.17	5,262.0	35.4	19.8	-25.4	0.33	
5,287.7	0.08	226.41	5,286.4	35.4	19.8	-25.4	0.48	
5,312.0	0.19	127.08	5,310.7	35.4	19.8	-25.4	0.89	
5,339.4	0.06	157.21	5,338.1	35.3	19.8	-25.3	0.52	
5,363.8	0.18	144.78	5,362.5	35.3	19.9	-25.3	0.50	
5,388.3	0.14	149.20	5,387.0	35.2	19.9	-25.2	0.17	
5,412.8	0.12	116.85	5,411.4	35.2	20.0	-25.2	0.31	
5,437.3	0.18	260.79	5,436.0	35.2	19.9	-25.1	1.16	
5,464.2	0.08	239.69	5,462.8	35.1	19.9	-25.2	0.41	
5,488.6	0.13	236.03	5,487.3	35.1	19.8	-25.1	0.21	
5,513.2	0.08	233.10	5,511.9	35.1	19.8	-25.1	0.20	
5,538.2	0.12	220.46	5,536.8	35.1	19.8	-25.1	0.18	
5,562.4	0.12	233.22	5,561.0	35.0	19.7	-25.1	0.11	
5,587.3	0.07	192.13	5,585.9	35.0	19.7	-25.1	0.33	
5,614.3	0.15	219.97	5,612.9	35.0	19.7	-25.1	0.35	
5,638.5	0.12	166.75	5,637.1	34.9	19.7	-25.0	0.51	
5,662.5	0.07	197.11	5,661.1	34.9	19.7	-25.0	0.29	
5,688.9	0.11	123.09	5,687.5	34.8	19.7	-24.9	0.43	
5,713.3	0.16	214.02	5,712.0	34.8	19.7	-24.9	0.80	
5,737.4	0.05	138.94	5,736.1	34.8	19.7	-24.9	0.64	
5,763.9	0.09	137.73	5,762.5	34.7	19.7	-24.8	0.15	
5,787.8	0.10	156.71	5,786.5	34.7	19.7	-24.8	0.14	
5,814.2	0.05	226.95	5,812.9	34.7	19.7	-24.8	0.36	
5,838.2	0.09	124.69	5,836.9	34.7	19.7	-24.8	0.47	
5,862.2	0.18	207.22	5,860.9	34.6	19.7	-24.7	0.79	

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Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	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)
5,889.1	0.12	184.14	5,887.8	34.5	19.7	-24.7	0.31
5,913.1	0.11	143.42	5,911.7	34.5	19.7	-24.6	0.34
5,937.2	0.09	178.31	5,935.8	34.5	19.7	-24.6	0.26
5,963.6	0.21	128.51	5,962.3	34.4	19.8	-24.5	0.63
5,987.6	0.18	120.53	5,986.3	34.4	19.8	-24.5	0.17
6,013.5	0.25	234.27	6,012.2	34.3	19.8	-24.4	1.40
6,037.5	0.27	189.10	6,036.1	34.2	19.8	-24.3	0.84
6,063.4	0.23	251.78	6,062.0	34.1	19.7	-24.3	1.01
6,072.3	0.04	241.81	6,071.0	34.1	19.7	-24.3	2.13
6,098.0	0.11	131.55	6,096.7	34.1	19.7	-24.3	0.50
6,130.0	0.11	183.85	6,128.7	34.1	19.7	-24.2	0.30
6,161.0	1.09	75.89	6,159.7	34.1	20.0	-24.2	3.64
6,193.0	5.06	64.38	6,191.6	34.8	21.6	-24.2	12.49
6,225.0	9.21	64.75	6,223.3	36.5	25.2	-24.4	12.97
6,257.0	12.47	64.25	6,254.8	39.1	30.6	-24.8	10.19
6,289.0	15.62	64.22	6,285.8	42.5	37.6	-25.3	9.84
6,321.0	19.23	65.26	6,316.3	46.6	46.3	-25.9	11.32
6,353.0	22.38	68.74	6,346.2	51.0	56.7	-26.1	10.57
6,385.0	25.46	70.13	6,375.5	55.5	68.9	-25.7	9.78
6,417.0	28.44	69.85	6,404.0	60.5	82.5	-25.2	9.32
6,450.0	30.51	70.83	6,432.7	65.9	97.8	-24.6	6.44
6,482.0	31.73	74.53	6,460.1	70.8	113.6	-23.2	7.09
6,514.0	32.88	81.66	6,487.2	74.4	130.3	-20.2	12.43
6,546.0	34.48	89.89	6,513.8	75.6	148.0	-14.8	15.10
6,578.0	35.22	96.08	6,540.1	74.7	166.2	-7.1	11.29
6,610.0	36.57	101.66	6,566.0	71.8	184.7	2.5	11.06
6,642.0	38.21	107.69	6,591.5	66.8	203.5	14.1	12.53
6,674.0	39.90	111.97	6,616.3	60.0	222.4	27.6	9.94
6,679.0	40.12	112.33	6,620.2	58.8	225.4	29.8	6.39
MDLX							
6,706.0	41.32	114.23	6,640.6	51.8	241.6	42.3	6.39
6,738.0	43.25	117.92	6,664.3	42.3	260.9	58.3	9.83
6,771.0	45.79	122.21	6,687.8	30.7	280.9	76.5	11.93
6,803.0	48.27	124.98	6,709.6	17.8	300.4	95.9	10.01
6,835.0	51.56	126.39	6,730.2	3.5	320.3	116.5	10.82
6,867.0	54.69	128.91	6,749.4	-12.2	340.5	138.6	11.63
6,868.0	54.77	128.99	6,750.0	-12.7	341.2	139.3	10.50
BRKT							
6,899.0	57.28	131.49	6,767.3	-29.3	360.8	162.1	10.50
6,921.0	59.13	133.22	6,778.9	-41.9	374.6	178.9	10.74
TLLY							
6,931.0	59.98	133.98	6,784.0	-47.8	380.8	186.8	10.74
6,962.0	63.09	136.38	6,798.8	-67.2	400.0	211.9	12.12
6,994.0	66.22	139.42	6,812.5	-88.6	419.4	239.0	13.01

Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
6,995.0	66.28	139.55	6,812.9	-89.3	420.0	239.9	13.60	
HMLN								
7,015.0	67.49	142.20	6,820.7	-103.6	431.6	257.5	13.60	
MRCL_HOT								
7,025.0	68.11	143.51	6,824.5	-111.0	437.2	266.4	13.60	
PRCL								
7,026.0	68.17	143.64	6,824.9	-111.7	437.8	267.3	13.60	
7,057.0	70.59	147.28	6,835.8	-135.6	454.2	295.6	13.48	
7,060.0	70.87	147.58	6,836.8	-138.0	455.7	298.4	13.39	
PRCL_B								
7,089.0	73.65	150.43	6,845.6	-161.7	469.9	325.7	13.39	
7,105.0	75.36	151.05	6,849.9	-175.1	477.5	341.0	11.36	
CRVL								
7,121.0	77.08	151.67	6,853.7	-188.8	484.9	356.4	11.36	
CRVL_B								
7,153.0	81.40	153.59	6,859.7	-216.7	499.4	387.7	14.73	
7,254.0	91.28	155.74	6,866.1	-307.7	542.4	488.2	10.01	
7,350.0	91.11	157.95	6,864.1	-395.9	580.2	584.1	2.31	
7,447.0	90.84	157.65	6,862.5	-485.7	616.8	681.1	0.42	
7,543.0	89.97	159.23	6,861.8	-575.0	652.1	777.1	1.88	
7,640.0	89.56	159.99	6,862.2	-665.9	685.9	874.1	0.89	
7,736.0	89.77	160.14	6,862.8	-756.1	718.6	970.0	0.27	
7,831.0	89.36	160.57	6,863.5	-845.6	750.6	1,064.9	0.63	
7,927.0	89.30	157.57	6,864.6	-935.3	784.8	1,160.9	3.13	
8,024.0	89.36	157.66	6,865.7	-1,024.9	821.8	1,257.9	0.11	
8,120.0	89.56	158.16	6,866.6	-1,113.9	857.9	1,353.9	0.56	
8,216.0	89.26	158.38	6,867.6	-1,203.1	893.4	1,449.9	0.39	
8,313.0	89.36	159.20	6,868.8	-1,293.5	928.5	1,546.9	0.85	
8,409.0	89.40	158.64	6,869.8	-1,383.0	963.0	1,642.8	0.58	
8,506.0	89.46	157.38	6,870.8	-1,473.0	999.4	1,739.8	1.30	
8,602.0	89.97	156.18	6,871.3	-1,561.2	1,037.2	1,835.8	1.36	
8,698.0	89.09	158.87	6,872.1	-1,649.9	1,073.9	1,931.8	2.95	
8,795.0	88.96	159.44	6,873.7	-1,740.5	1,108.4	2,028.8	0.60	
8,891.0	90.47	156.87	6,874.2	-1,829.6	1,144.1	2,124.7	3.10	
8,987.0	90.03	156.34	6,873.8	-1,917.7	1,182.2	2,220.7	0.72	
9,084.0	89.53	157.05	6,874.1	-2,006.8	1,220.6	2,317.7	0.90	
9,180.0	89.87	157.09	6,874.7	-2,095.2	1,258.0	2,413.7	0.36	
9,277.0	89.40	155.95	6,875.3	-2,184.2	1,296.7	2,510.6	1.27	
9,373.0	90.13	157.60	6,875.7	-2,272.4	1,334.5	2,606.6	1.88	
9,469.0	91.81	161.42	6,874.0	-2,362.3	1,368.1	2,702.5	4.35	
9,566.0	90.64	156.91	6,872.0	-2,452.9	1,402.6	2,799.5	4.80	
9,662.0	91.71	157.07	6,870.0	-2,541.3	1,440.1	2,895.4	1.13	
9,758.0	91.17	155.47	6,867.6	-2,629.1	1,478.7	2,991.4	1.76	
9,855.0	91.36	156.28	6,865.4	-2,717.6	1,518.4	3,088.3	0.86	
9,951.0	92.11	155.40	6,862.5	-2,805.2	1,557.6	3,184.1	1.20	



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Morton Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Site:	Cofor Pad/Outback Morton Nova Grape Rainer	MD Reference:	Frontier 22: GL 1189' + KB 25' @ 1214.0usft
Well:	Morton Unit 2H	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)
10,047.0	92.28	158.05	6,858.9	-2,893.3	1,595.6	3,280.0	2.76
10,144.0	92.93	158.89	6,854.4	-2,983.4	1,631.1	3,376.9	1.09
10,240.0	92.89	158.77	6,849.6	-3,072.8	1,665.7	3,472.8	0.13
10,336.0	91.78	159.53	6,845.7	-3,162.5	1,699.9	3,568.7	1.40
10,432.0	91.98	158.56	6,842.5	-3,252.1	1,734.2	3,664.6	1.03
10,524.0	91.71	158.95	6,839.5	-3,337.8	1,767.5	3,756.6	0.52
10,615.0	91.48	161.64	6,837.0	-3,423.4	1,798.2	3,847.5	2.97
10,706.0	90.26	159.61	6,835.6	-3,509.2	1,828.4	3,938.4	2.60
10,795.0	90.10	160.10	6,835.4	-3,592.8	1,859.0	4,027.3	0.58
10,864.0	91.00	159.80	6,834.7	-3,657.6	1,882.7	4,096.3	1.37
PTB							

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,679.0	6,620.2	58.8	225.4	MDLX
6,868.0	6,750.0	-12.7	341.2	BRKT
6,921.0	6,778.9	-41.9	374.6	TLTY
6,995.0	6,812.9	-89.3	420.0	HMLN
7,015.0	6,820.7	-103.6	431.6	MRCL_HOT
7,025.0	6,824.5	-111.0	437.2	PRCL
7,060.0	6,836.8	-138.0	455.7	PRCL_B
7,105.0	6,849.9	-175.1	477.5	CRVL
7,121.0	6,853.7	-188.8	484.9	CRVL_B
10,864.0	6,834.7	-3,657.6	1,882.7	PTB

Checked By: _____ Approved By: _____ Date: _____

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