

33.05743



Mountaineer Keystone, LLC

Harrison County, West Virginia NAD 27

Maxwell PAD

Maxwell #5HM

Wellbore #1

Design: Wellbore #1

DDC Survey Report

23 December, 2014

Received
Office of Oil & Gas
SEP 25 2015



10/30/2015

33-05743



Survey Report



Company:	Mountaineer Keystone, LLC	Local Co-ordinate Reference:	Well Maxwell #5HM
Project:	Harrison County, West Virginia NAD 27	TVD Reference:	WELL @ 1482.0usft
Site:	Maxwell PAD	MD Reference:	WELL @ 1482.0usft
Well:	Maxwell #5HM	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

Project	Harrison County, West Virginia NAD 27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site	Maxwell PAD				
Site Position:		Northing:	265,036.00 usft	Latitude:	39° 13' 27.934 N
From:	Map	Easting:	1,754,372.00 usft	Longitude:	80° 22' 1.290 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.55 °

Well	Maxwell #5HM					
Well Position	+N/-S	0.0 usft	Northing:	265,034.00 usft	Latitude:	39° 13' 27.917 N
	+E/-W	0.0 usft	Easting:	1,754,402.00 usft	Longitude:	80° 22' 0.908 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	1,462.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/1/2014	-8.76	66.66	52,153

Design	Wellbore #1				
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	346.97

Survey Program	Date	12/23/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
147.0	14,938.0	MWD Survey (Wellbore #1)	MWD default	MWD - Standard	

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	
First Survey @ 147' MD / 147' TVD										
147.0	0.49	163.48	147.0	-0.6	0.2	-0.6	0.33	0.33	0.00	
238.0	1.02	195.21	238.0	-1.8	0.1	-1.7	0.72	0.58	34.87	
363.0	1.50	205.08	363.0	-4.3	-0.9	-4.0	0.42	0.38	7.90	
453.0	2.30	194.68	452.9	-7.1	-1.9	-6.5	0.96	0.89	-11.56	
613.0	2.92	195.21	612.7	-14.2	-3.7	-13.0	0.39	0.39	0.23	
705.0	1.99	189.48	704.7	-18.0	-4.6	-16.5	1.04	0.91	-6.23	
799.0	2.52	177.58	798.6	-21.7	-4.8	-20.0	0.75	0.56	-12.66	
893.0	2.12	164.49	892.5	-25.4	-4.3	-23.8	0.70	0.73	-13.93	
987.0	1.50	144.57	986.5	-28.1	-3.1	-26.7	0.93	-0.66	2.19	

Received
Office of Oil & Gas
SEP 25 2015

33-05743



Survey Report



Company:	Mountaineer Keystone, LLC	Local Co-ordinate Reference:	Well Maxwell #5HM
Project:	Harrison County, West Virginia NAD 27	TVD Reference:	WELL @ 1482.0usft
Site:	Maxwell PAD	MD Reference:	WELL @ 1482.0usft
Well:	Maxwell #5HM	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

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)
1,081.0	1.59	114.47	1,080.4	-29.6	-1.2	-28.6	0.86	0.10	-32.02
1,174.0	1.41	98.48	1,173.4	-30.3	1.1	-29.8	0.49	-0.19	-17.19
1,268.0	1.59	108.70	1,267.4	-30.9	3.5	-30.9	0.34	0.19	10.87
1,362.0	1.59	116.68	1,361.3	-31.9	5.9	-32.4	0.24	0.00	8.49
1,456.0	1.81	112.80	1,455.3	-33.1	8.4	-34.1	0.26	0.23	-4.13
1,550.0	1.41	116.81	1,549.3	-34.2	10.8	-35.8	0.44	-0.43	4.27
1,644.0	1.10	115.88	1,643.2	-35.1	12.7	-37.1	0.33	-0.33	-0.99
1,737.0	1.19	99.80	1,736.2	-35.7	14.4	-38.0	0.36	0.10	-17.29
1,831.0	0.80	112.80	1,830.2	-36.1	16.0	-38.8	0.48	-0.41	13.83
1,925.0	0.88	97.77	1,924.2	-36.4	17.3	-39.4	0.25	0.09	-15.99
2,019.0	0.49	94.60	2,018.2	-36.6	18.4	-39.8	0.42	-0.41	-3.37
2,113.0	0.62	91.91	2,112.2	-36.6	19.4	-40.0	0.14	0.14	-2.86
2,207.0	0.40	91.60	2,206.2	-36.6	20.2	-40.2	0.23	-0.23	-0.33
2,300.0	0.80	42.51	2,299.2	-36.2	21.0	-40.0	0.66	0.43	-52.78
2,394.0	2.39	47.89	2,393.1	-34.4	22.9	-38.6	1.70	1.69	5.72
2,488.0	4.29	53.18	2,487.0	-30.9	27.1	-36.3	2.05	2.02	5.63
2,582.0	5.21	54.89	2,580.6	-26.4	33.4	-33.2	0.99	0.98	1.82
2,676.0	6.01	53.79	2,674.2	-21.0	40.9	-29.7	0.86	0.85	-1.17
2,770.0	5.79	49.39	2,767.7	-15.0	48.5	-25.6	0.53	-0.23	-4.68
2,805.0	5.79	45.11	2,802.5	-12.6	51.0	-23.8	1.23	0.00	-12.23
2,889.0	5.79	37.00	2,886.1	-6.3	56.6	-18.9	0.97	0.00	-9.65
2,983.0	8.22	41.67	2,979.4	2.5	63.9	-11.9	2.65	2.59	4.97
3,077.0	10.78	45.68	3,072.1	13.7	74.7	-3.5	2.81	2.72	4.27
3,171.0	12.99	47.98	3,164.1	26.9	88.8	6.2	2.40	2.35	2.45
3,265.0	14.89	52.60	3,255.3	41.3	106.3	16.3	2.34	2.02	4.91
3,358.0	13.92	51.10	3,345.4	55.6	124.5	26.1	1.12	-1.04	-1.61
3,452.0	14.32	58.29	3,436.5	68.8	143.2	34.8	1.91	0.43	7.65
3,546.0	15.29	59.17	3,527.4	81.3	163.7	42.3	1.06	1.03	0.94
3,640.0	13.70	56.17	3,618.4	93.8	183.6	50.0	1.87	-1.69	-3.19
3,733.0	15.38	53.70	3,708.4	107.3	202.7	58.8	1.93	1.81	-2.66
3,827.0	14.58	50.71	3,799.2	122.1	221.9	69.0	1.18	-0.85	-3.18
3,921.0	14.58	50.49	3,890.2	137.2	240.2	79.5	0.06	0.00	-0.23
4,015.0	14.58	50.00	3,981.2	152.3	258.3	90.1	0.13	0.00	-0.52
4,109.0	14.80	54.41	4,072.1	166.9	277.2	100.1	1.21	0.23	4.69
4,203.0	16.79	58.20	4,162.6	181.0	298.5	109.1	2.38	2.12	4.03
4,297.0	15.29	56.88	4,252.9	195.0	320.4	117.7	1.64	-1.60	-1.40
4,391.0	14.89	60.58	4,343.7	207.7	341.3	125.4	1.11	-0.43	3.94
4,485.0	16.62	60.09	4,434.1	220.3	363.5	132.7	1.85	1.84	0.52
4,578.0	14.41	55.29	4,523.7	233.5	384.5	140.8	2.75	-1.38	-5.16
4,672.0	14.18	57.67	4,614.8	246.3	403.9	148.9	0.67	-0.24	2.53
4,766.0	15.51	60.40	4,705.7	258.7	424.5	156.3	1.60	1.41	0.50
4,860.0	15.29	59.61	4,796.3	271.2	446.1	163.6	0.32	-0.23	-0.84
4,953.0	17.10	59.79	4,885.6	284.3	468.5	171.3	1.95	1.95	0.19

Received
Office of Oil & Gas
SEP 22 2015

33.05743



Survey Report



Company:	Mountaineer Keystone, LLC	Local Co-ordinate Reference:	Well Maxwell #5HM
Project:	Harrison County, West Virginia NAD 27	TVD Reference:	WELL @ 1482.0usft
Site:	Maxwell PAD	MD Reference:	WELL @ 1482.0usft
Well:	Maxwell #5HM	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

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)
5,047.0	17.28	59.08	4,975.4	298.4	492.5	179.7	0.29	0.19	-0.76
5,140.0	17.28	58.90	5,064.2	312.6	516.1	188.2	0.06	0.00	-0.19
5,234.0	18.60	63.00	5,153.7	326.7	541.4	196.2	1.94	1.40	4.36
5,328.0	14.80	61.59	5,243.7	339.2	565.4	203.0	4.07	-4.04	-1.50
5,420.0	15.29	60.40	5,332.5	350.8	586.3	209.5	0.63	0.53	-1.29
5,515.0	19.40	63.58	5,423.2	364.0	611.3	216.8	4.44	4.33	3.35
5,609.0	15.82	62.87	5,512.8	376.8	636.7	223.5	3.82	-3.81	-0.76
5,703.0	14.32	66.97	5,603.5	387.2	658.8	228.7	1.96	-1.60	4.36
5,797.0	17.01	68.60	5,694.0	396.7	682.3	232.7	2.90	2.86	1.73
5,891.0	15.29	63.00	5,784.3	407.4	706.1	237.7	2.47	-1.83	-5.96
5,985.0	13.39	59.79	5,875.4	418.5	726.6	243.9	2.19	-2.02	-3.41
6,079.0	14.58	60.98	5,966.6	429.7	746.3	250.4	1.30	1.27	1.27
6,173.0	14.01	62.08	6,057.7	440.8	766.7	256.5	0.67	-0.61	1.17
6,267.0	14.58	56.17	6,148.8	452.7	786.6	263.7	1.67	0.61	-6.29
6,361.0	11.49	52.29	6,240.4	465.0	803.9	271.8	3.41	-3.29	-4.13
6,455.0	7.91	48.50	6,333.0	475.0	816.1	278.8	3.87	-3.81	-4.03
6,549.0	5.08	44.49	6,426.4	482.3	823.9	284.1	3.05	-3.01	-4.27
6,643.0	2.78	53.88	6,520.2	486.6	828.6	287.2	2.53	-2.45	9.99
6,737.0	1.19	56.17	6,614.1	488.5	831.3	288.5	1.69	-1.69	2.44
6,831.0	0.80	83.19	6,708.1	489.1	832.8	288.7	0.64	-0.41	28.74
6,893.0	1.02	105.70	6,770.1	489.0	833.7	288.4	0.67	0.35	36.31
6,925.0	1.02	110.60	6,802.1	488.8	834.3	288.1	0.27	0.00	15.31
7,019.0	9.01	350.41	6,895.7	495.8	833.8	295.0	10.17	8.50	-127.86
7,112.0	21.39	346.40	6,985.3	519.5	828.6	319.3	13.35	13.31	-4.31
7,206.0	25.10	347.28	7,071.6	555.7	820.2	356.4	3.96	3.95	0.94
7,300.0	25.01	346.40	7,156.8	594.4	811.1	396.2	0.41	-0.10	-0.94
7,394.0	34.51	348.47	7,238.3	639.9	801.1	442.8	10.16	10.11	2.20
7,488.0	43.00	342.79	7,311.6	696.8	786.2	501.6	9.78	9.03	-6.04
7,582.0	54.22	335.69	7,373.7	762.4	761.0	571.2	13.20	11.94	-7.55
7,676.0	58.28	335.21	7,425.9	833.5	728.5	647.8	4.34	4.32	-0.51
7,707.0	58.29	335.38	7,442.2	857.4	717.5	673.6	0.47	0.03	0.55
7,739.0	59.79	335.69	7,458.6	882.4	706.1	700.5	4.76	4.69	0.97
7,770.0	63.19	336.18	7,473.4	907.3	695.0	727.2	11.06	10.97	1.58
7,801.0	67.21	337.81	7,486.4	933.2	684.0	754.9	13.82	12.97	5.26
7,833.0	69.42	340.89	7,498.3	961.0	673.5	784.4	11.30	6.91	9.63
7,864.0	71.98	343.40	7,508.5	988.8	664.6	813.5	11.25	8.26	8.10
7,895.0	75.92	345.30	7,517.1	1,017.5	656.5	843.3	14.01	12.71	6.13
7,927.0	77.91	345.30	7,524.3	1,047.7	648.6	874.4	6.22	6.22	
7,957.0	79.89	346.09	7,530.1	1,076.2	641.4	903.9	7.09	6.60	
7,989.0	84.80	344.90	7,534.4	1,106.9	633.4	935.6	15.78	15.34	
8,022.0	89.31	343.10	7,536.0	1,138.5	624.3	968.5	14.71	13.67	
8,052.0	91.30	341.99	7,535.9	1,167.2	615.3	998.4	7.60	6.63	
8,145.0	89.31	339.79	7,535.4	1,255.0	584.9	1,090.8	3.19	-2.14	-2.37

Received
Office of Oil & Gas
SEP 25 2015

33-05743



Survey Report



Company:	Mountaineer Keystone, LLC	Local Co-ordinate Reference:	Well Maxwell #5HM
Project:	Harrison County, West Virginia NAD 27	TVD Reference:	WELL @ 1482.0usft
Site:	Maxwell PAD	MD Reference:	WELL @ 1482.0usft
Well:	Maxwell #5HM	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

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)
8,239.0	88.29	339.45	7,537.4	1,343.1	552.2	1,184.0	1.14	-1.09	-0.36
8,332.0	88.72	339.19	7,539.8	1,430.1	519.3	1,276.2	0.54	0.46	-0.28
8,427.0	88.88	338.52	7,543.4	1,518.6	485.1	1,370.2	2.06	-1.94	-0.71
8,521.0	90.13	338.30	7,545.9	1,606.0	450.5	1,463.1	3.47	3.46	-0.23
8,615.0	89.34	337.83	7,546.3	1,693.2	415.4	1,555.9	0.98	-0.84	-0.50
8,709.0	89.25	338.54	7,547.5	1,780.5	380.5	1,648.8	0.76	-0.10	0.76
8,802.0	88.99	339.25	7,548.9	1,867.2	347.0	1,740.9	0.81	-0.28	0.76
8,896.0	90.48	340.65	7,549.3	1,955.5	314.8	1,834.2	2.17	1.59	1.49
8,989.0	91.89	339.15	7,547.4	2,042.8	282.8	1,926.5	2.21	1.52	-1.61
9,083.0	91.01	338.40	7,545.0	2,130.4	248.8	2,019.5	1.23	-0.94	-0.80
9,177.0	88.99	337.60	7,545.0	2,217.6	213.6	2,112.3	2.31	-2.15	-0.85
9,271.0	89.69	339.58	7,546.1	2,305.1	179.3	2,205.3	2.23	0.74	2.11
9,365.0	90.13	339.43	7,546.3	2,393.1	146.4	2,298.5	0.49	0.47	-0.16
9,458.0	89.25	339.61	7,546.8	2,480.2	113.8	2,390.7	0.97	-0.95	0.19
9,552.0	88.46	338.80	7,548.6	2,568.1	80.5	2,483.8	1.20	-0.84	-0.86
9,646.0	90.48	339.10	7,549.5	2,655.8	46.7	2,576.9	2.17	2.15	0.32
9,740.0	91.01	339.42	7,548.3	2,743.7	13.4	2,670.0	0.66	0.56	0.34
9,834.0	91.01	339.77	7,546.6	2,831.8	-19.3	2,763.2	0.37	0.00	0.37
9,928.0	89.78	338.41	7,546.0	2,919.6	-52.9	2,856.4	1.95	-1.31	-1.45
10,022.0	88.90	338.08	7,547.1	3,006.9	-87.7	2,949.3	1.00	-0.94	-0.35
10,116.0	92.07	338.68	7,546.3	3,094.3	-122.4	3,042.2	3.43	3.37	0.64
10,210.0	90.92	337.46	7,543.8	3,181.4	-157.5	3,135.0	1.78	-1.22	-1.30
10,303.0	88.99	336.63	7,543.9	3,267.1	-193.7	3,226.6	2.26	-2.08	-0.89
10,397.0	90.13	336.06	7,544.6	3,353.2	-231.4	3,319.0	1.36	1.21	-0.61
10,491.0	89.25	335.58	7,545.1	3,438.9	-269.9	3,411.2	1.07	-0.94	-0.51
10,585.0	90.40	336.58	7,545.4	3,524.8	-308.0	3,503.5	1.62	1.22	1.06
10,679.0	89.43	336.63	7,545.6	3,611.1	-345.4	3,596.0	1.03	-1.03	0.05
10,773.0	89.60	337.64	7,546.4	3,697.7	-381.9	3,688.6	1.09	0.18	1.07
10,866.0	90.22	338.24	7,546.5	3,783.9	-416.8	3,780.5	0.93	0.67	0.65
10,960.0	91.98	341.38	7,544.7	3,872.1	-449.3	3,873.7	3.83	1.87	3.34
11,054.0	91.36	341.19	7,542.0	3,961.1	-479.4	3,967.2	0.69	-0.66	-0.20
11,148.0	90.31	340.34	7,540.6	4,049.8	-510.4	4,060.6	1.44	-1.12	-0.90
11,242.0	90.13	340.88	7,540.2	4,138.5	-541.6	4,154.0	0.61	-0.19	0.57
11,335.0	90.48	339.80	7,539.7	4,226.1	-572.9	4,246.4	1.22	0.38	-1.16
11,429.0	89.60	339.42	7,539.7	4,314.2	-605.6	4,339.6	1.02	-0.94	-0.40
11,523.0	88.81	338.54	7,541.0	4,401.9	-639.3	4,432.7	1.26	-0.84	-0.94
11,617.0	90.66	338.65	7,541.4	4,489.4	-673.6	4,525.7	1.97	1.97	0.12
11,711.0	91.36	338.06	7,539.7	4,576.8	-708.3	4,618.6	0.97	0.74	-0.63
11,804.0	90.22	336.90	7,538.5	4,662.7	-743.9	4,710.4	1.75	-1.23	-1.25
11,898.0	88.90	336.02	7,539.2	4,748.9	-781.5	4,802.8	1.69	-1.46	-1.46
11,992.0	91.80	339.33	7,538.6	4,835.8	-817.2	4,895.5	4.68	3.09	3.52
12,086.0	91.63	340.68	7,535.8	4,924.1	-849.3	4,988.8	1.45	-0.18	-0.18
12,180.0	90.40	339.80	7,534.1	5,012.5	-881.1	5,082.1	1.61	-1.31	-0.94
12,274.0	90.40	342.23	7,533.5	5,101.4	-911.6	5,175.6	2.59	0.00	2.59

Received
Office of Oil & Gas
SEP 25 2015

33.05743



Survey Report



Company:	Mountaineer Keystone, LLC	Local Co-ordinate Reference:	Well Maxwell #5HM
Project:	Harrison County, West Virginia NAD 27	TVD Reference:	WELL @ 1482.0usft
Site:	Maxwell PAD	MD Reference:	WELL @ 1482.0usft
Well:	Maxwell #5HM	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

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)
12,368.0	89.34	342.02	7,533.7	5,190.9	-940.5	5,269.3	1.15	-1.13	-0.22
12,462.0	90.75	344.54	7,533.6	5,280.9	-967.5	5,363.1	3.07	1.50	2.68
12,555.0	90.31	344.35	7,532.8	5,370.5	-992.5	5,456.0	0.52	-0.47	-0.20
12,649.0	90.31	343.72	7,532.2	5,460.8	-1,018.3	5,549.8	0.67	0.00	-0.67
12,743.0	91.19	344.11	7,531.0	5,551.2	-1,044.4	5,643.7	1.02	0.94	0.41
12,837.0	89.60	343.14	7,530.4	5,641.3	-1,070.9	5,737.5	1.98	-1.69	-1.03
12,931.0	89.96	343.51	7,530.7	5,731.4	-1,097.8	5,831.3	0.55	0.38	0.39
13,025.0	88.81	342.63	7,531.7	5,821.3	-1,125.2	5,925.1	1.54	-1.22	-0.94
13,119.0	89.52	341.09	7,533.1	5,910.6	-1,154.5	6,018.7	1.80	0.76	-1.64
13,213.0	91.98	342.25	7,531.9	5,999.8	-1,184.0	6,112.3	2.89	2.62	1.23
13,307.0	91.36	341.42	7,529.1	6,089.1	-1,213.3	6,205.9	1.10	-0.66	-0.88
13,401.0	90.31	341.46	7,527.8	6,178.2	-1,243.2	6,299.4	1.12	-1.12	0.04
13,495.0	89.43	340.69	7,528.0	6,267.1	-1,273.7	6,392.9	1.24	-0.94	-0.82
13,590.0	90.92	340.71	7,527.7	6,356.8	-1,305.1	6,487.4	1.57	1.57	0.02
13,684.0	91.89	341.57	7,525.4	6,445.7	-1,335.5	6,580.8	1.38	1.03	0.91
13,778.0	90.84	341.22	7,523.1	6,534.8	-1,365.5	6,674.4	1.18	-1.12	-0.37
13,872.0	92.07	340.47	7,520.8	6,623.5	-1,396.3	6,767.8	1.53	1.31	-0.80
13,966.0	91.10	340.08	7,518.2	6,712.0	-1,428.0	6,861.1	1.11	-1.03	-0.41
14,060.0	89.69	337.92	7,517.5	6,799.7	-1,461.7	6,954.2	2.74	-1.50	-2.30
14,154.0	91.63	337.44	7,516.4	6,886.7	-1,497.4	7,047.0	2.13	2.06	-0.51
14,247.0	91.10	337.03	7,514.2	6,972.4	-1,533.4	7,138.6	0.72	-0.57	-0.44
14,341.0	90.31	336.95	7,513.1	7,058.9	-1,570.1	7,231.2	0.84	-0.84	-0.09
14,435.0	91.80	337.24	7,511.3	7,145.5	-1,606.7	7,323.8	1.61	1.59	0.31
14,529.0	92.51	336.11	7,507.8	7,231.8	-1,643.9	7,416.2	1.42	0.76	-1.20
14,623.0	92.77	338.54	7,503.5	7,318.4	-1,680.1	7,508.7	2.60	0.28	2.59
14,717.0	91.36	337.28	7,500.1	7,405.4	-1,715.4	7,601.5	2.01	-1.50	-1.34
14,808.0	91.19	336.71	7,498.0	7,489.2	-1,751.0	7,691.1	0.65	-0.19	-0.63
14,883.0	90.31	336.52	7,497.1	7,558.0	-1,780.7	7,764.9	1.20	-1.17	-0.25
TD @ 14938' MD / 7497' TVD									
14,938.0	89.96	336.52	7,496.9	7,608.4	-1,802.6	7,819.0	0.64	-0.64	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
147.0	147.0	-0.6	0.2	First Survey @ 147' MD / 147' TVD
14,938.0	7,496.9	7,608.4	-1,802.6	TD @ 14938' MD / 7497' TVD

Checked By: _____ Approved By: _____ Date: _____

Received
Office of Oil & Gas

SEP 25 2015

10/30/2015

Company Name: Mountaineer Keystone, LLC
 Maxwell #5HM
 Harrison County, West Virginia NAD 27
 Rig: #64
 Created By: Jerry Arseneault
 Date: 12/23/2014

33-05743

Maxwell #5HM
 Harrison County, West Virginia NAD 27
 Q141309 & AM-141242
 Design #4

Mountaineer Keystone, LLC

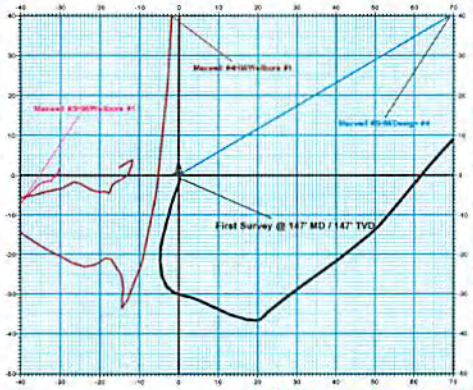


M G T Azimuths to Grid North

Correction: -8.21°

Magnetic Field
 Strength: 52153.3snT
 Dip Angle: 66.66°
 Date: 12/1/2014
 Model: IGRF2010

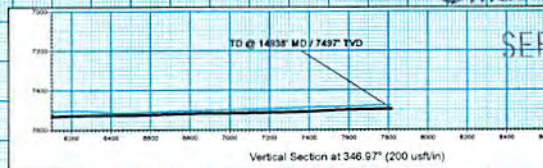
WELL DETAILS: Maxwell #5HM			
+N/S	+E/W	Ground Level	1482.9
0.0	0.0	Northing	295034.00
		Easting	1754402.00
		Latitude	39° 13' 27.917 N
		Longitude	80° 22' 0.308 W



PROJECT DETAILS: Harrison County, West Virginia NAD 27	
Geodetic System:	US State Plane 1927 (Exact solution)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1856
Zone:	West Virginia North 4701
System Datum:	Mean Sea Level

ANNOTATIONS							
MD	In	Act	TVD	+N/S	+E/W	Y-Sect	Departure Annotation
147.0	0.49	163.48	147.0	-0.8	0.2	-0.8	0.8 First Survey @ 147 MD / 147 TVD
14938.0	89.98	334.52	7496.9	7908.4	-1892.8	7819.0	8630.0 TD @ 14938 MD / 7497 TVD

DESIGN TARGET DETAILS							
Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
PDR, Maxwell #5HM DB4	7477.0	7614.0	-1762.0	272648.00	1752540.00	39° 14' 43.903 N	80° 22' 54.238 W
- plan file target center							
LP Maxwell #5HM	7690.0	896.2	848.9	296032.70	1735047.50	39° 13' 37.844 N	80° 21' 52.823 W
- plan misses target center by 76.3m at 7938.5m MD (7930.4 TVD, 1507.4 M, 642.2 E)							



Received
 Office of Oil & Gas
 SEP 25 2015

10/30/2015

Vertical Section at 346.97° (200 usf/in)