



PHOENIX
TECHNOLOGY SERVICES USA INC.

EQT Production - Marcellus

Marion County, WV
Marion County 513688
Well #513688

Main Wellbore

Design: 513688 As Drilled Surveys

Standard Survey Report

26 February, 2015



Where energy meets innovation.

02/12/2016

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Marion County 513688
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 ft @ 1164.0usft
Project:	Marion County, WV	MD Reference:	KB@23 ft @ 1164.0usft
Site:	Marion County 513688	North Reference:	Gnd
Well:	Well #513688	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513688 As Drilled Surveys		

Project: Marion County, WV			
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		Using geodetic scale factor

Site: Marion County 513688					
Site Position:		Northing:	400,939.10 usft	Latitude:	39.60
From:	Map	Easting:	1,793,387.00 usft	Longitude:	-80.23
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.47 °

Well: Well #513688						
Well Position	+N-S	0.0 usft	Northing:	400,939.10 usft	Latitude:	39° 35' 54.586 N
	+E-W	0.0 usft	Easting:	1,793,387.00 usft	Longitude:	80° 13' 59.630 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,141.0 usft

Wellbore: Main Wellbore					
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/9/2015	-8.90	66.94	52,296

Design: 513688 As Drilled Surveys					
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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	199.11

Survey Program	Date	From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
	2/26/2015	0.00	3,396.0	513688 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
		0.00	11,640.0	513688 PHX MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea 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	-1,164.0	0.0	0.0	0.0	0.00	0.00	0.00
110.0	0.37	68.72	110.0	-1,054.0	0.1	0.3	-0.2	0.34	0.34	0.00
210.0	0.70	125.19	210.0	-954.0	-0.1	1.1	-0.3	0.58	0.33	56.47
310.0	0.77	124.01	310.0	-854.0	-0.8	2.2	0.1	0.07	0.07	-1.18
410.0	0.74	125.29	410.0	-754.0	-1.6	3.3	0.4	0.03	-0.03	1.28
510.0	0.65	148.06	510.0	-654.0	-2.4	4.1	1.0	0.29	-0.09	22.77
610.0	0.68	147.34	610.0	-554.0	-3.4	4.7	1.7	0.03	0.03	-0.72
710.0	0.98	120.22	710.0	-454.0	-4.3	5.8	2.2	0.49	0.30	-27.12

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Project:	Marion County, WV	MD Reference:	KB@23 ft @ 1164.0usft
Site:	Marion County 513688	North Reference:	Grid
Well:	Well #513688	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513688 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
810.0	1.10	115.49	809.9	-354.1	-5.2	7.4	2.5	0.15	0.12	-4.73
910.0	1.09	116.01	909.9	-254.1	-6.0	9.1	2.7	0.01	-0.01	0.52
1,010.0	1.09	113.24	1,009.9	-154.1	-6.8	10.8	2.9	0.05	0.00	-2.77
1,110.0	1.04	117.34	1,109.9	-54.1	-7.6	12.5	3.1	0.09	-0.05	4.10
1,210.0	1.09	117.49	1,209.9	45.9	-8.5	14.2	3.4	0.05	0.05	0.15
1,310.0	1.13	127.94	1,309.8	145.8	-9.5	15.8	3.8	0.21	0.04	10.45
1,410.0	1.22	130.20	1,409.8	245.8	-10.8	17.4	4.5	0.10	0.09	2.26
1,510.0	1.22	132.01	1,509.8	345.8	-12.2	19.0	5.3	0.04	0.00	1.81
1,610.0	1.25	130.63	1,609.8	445.8	-13.6	20.6	6.1	0.04	0.03	-1.38
1,710.0	1.24	130.48	1,709.8	545.8	-15.0	22.2	6.9	0.01	-0.01	-0.15
1,810.0	1.14	129.74	1,809.7	645.7	-16.4	23.8	7.7	0.10	-0.10	-0.74
1,910.0	0.99	129.12	1,909.7	745.7	-17.6	25.3	8.3	0.15	-0.15	-0.62
2,010.0	0.83	128.10	2,009.7	845.7	-18.5	26.5	8.8	0.16	-0.16	-1.02
2,110.0	0.83	134.14	2,109.7	945.7	-19.5	27.6	9.4	0.09	0.00	6.04
2,210.0	0.73	135.16	2,209.7	1,045.7	-20.5	28.6	10.0	0.10	-0.10	1.02
2,310.0	0.76	135.45	2,309.7	1,145.7	-21.4	29.5	10.5	0.03	0.03	0.29
2,410.0	0.65	135.60	2,409.7	1,245.7	-22.3	30.3	11.1	0.11	-0.11	0.15
2,510.0	0.63	135.91	2,509.7	1,345.7	-23.1	31.1	11.6	0.02	-0.02	0.31
2,610.0	0.54	128.20	2,609.7	1,445.7	-23.7	31.9	12.0	0.12	-0.09	-7.71
2,710.0	0.49	124.11	2,709.7	1,545.7	-24.3	32.6	12.3	0.06	-0.05	-4.09
2,810.0	0.58	128.04	2,809.7	1,645.7	-24.8	33.4	12.5	0.10	0.09	3.93
2,910.0	0.59	132.44	2,909.6	1,745.6	-25.5	34.1	12.9	0.05	0.01	4.40
3,010.0	0.65	130.16	3,009.6	1,845.6	-26.2	34.9	13.3	0.06	0.06	2.28
3,110.0	0.87	134.73	3,109.6	1,945.6	-27.1	35.9	13.8	0.23	0.22	4.57
3,210.0	1.16	137.47	3,209.6	2,045.6	-28.4	37.1	14.7	0.29	0.29	2.74
3,310.0	1.27	132.71	3,309.6	2,145.6	-29.9	38.6	15.6	0.15	0.11	-4.76
Gyro (The Use 33%) MD										
3,396.0	1.29	126.20	3,395.6	2,231.6	-31.1	40.1	16.2	0.17	0.02	-7.57
3,410.0	1.29	126.20	3,409.6	2,245.6	-31.3	40.4	16.3	0.00	0.00	0.00
3,449.0	1.50	250.20	3,448.6	2,284.6	-31.7	40.3	16.8	6.32	0.54	317.95
3,481.0	2.40	259.90	3,480.5	2,316.5	-32.0	39.2	17.4	2.99	2.81	30.31
3,513.0	3.40	258.10	3,512.5	2,348.5	-32.3	37.6	18.2	3.14	3.13	-5.63
3,545.0	4.30	254.50	3,544.4	2,380.4	-32.8	35.5	19.4	2.91	2.81	-11.25
3,576.0	5.10	254.40	3,575.3	2,411.3	-33.5	33.1	20.8	2.58	2.58	-0.32
3,608.0	6.00	254.10	3,607.2	2,443.2	-34.3	30.1	22.6	2.81	2.81	-0.94
3,639.0	6.70	254.60	3,638.0	2,474.0	-35.2	26.8	24.5	2.27	2.26	1.61
3,671.0	7.40	256.00	3,669.7	2,505.7	-36.2	23.0	26.7	2.25	2.19	4.38
3,703.0	8.00	254.60	3,701.5	2,537.5	-37.3	18.9	29.1	1.96	1.88	-4.38
3,734.0	8.40	253.40	3,732.1	2,568.1	-38.6	14.6	31.6	1.40	1.29	-3.87
3,766.0	8.50	251.50	3,763.8	2,599.8	-40.0	10.1	34.5	0.93	0.31	-5.94
3,797.0	8.30	249.90	3,794.5	2,630.5	-41.5	5.8	37.3	0.99	-0.65	-5.16
3,828.0	7.00	250.70	3,825.2	2,661.2	-42.9	2.0	39.9	4.21	-4.19	2.58
3,860.0	5.70	251.60	3,857.0	2,693.0	-44.0	-1.4	42.0	4.07	-4.06	2.81

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Marion County 513888
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 ft @ 1164.0usft
Project:	Marion County, WV	MD Reference:	KB@23 ft @ 1164.0usft
Site:	Marion County 513888	North Reference:	Grid
Well:	Well #513888	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513888 As Drilled Survey		

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,891.0	5 00	249.30	3,887.8	2,723.8	-45.0	-4.1	43.8	2.36	-2.26	-7.42
3,922.0	4 20	248.40	3,918.7	2,754.7	-45.9	-6.4	45.4	2.59	-2.58	-2.90
3,954.0	3 70	250.60	3,950.7	2,786.7	-46.6	-8.5	46.8	1.63	-1.56	6.88
3,985.0	2 80	252.80	3,981.6	2,817.6	-47.2	-10.2	47.9	2.93	-2.90	7.10
4,016.0	2 30	255.30	4,012.6	2,848.6	-47.6	-11.5	48.7	1.65	-1.61	8.06
4,048.0	1 50	263.00	4,044.6	2,880.6	-47.8	-12.5	49.3	2.62	-2.50	24.06
4,142.0	0 40	317.20	4,138.6	2,974.6	-47.7	-14.0	49.6	1.39	-1.17	57.66
4,236.0	1 00	287.70	4,232.6	3,068.6	-47.2	-15.0	49.5	0.72	0.64	-31.38
4,331.0	1 30	283.60	4,327.5	3,163.5	-46.7	-16.8	49.6	0.33	0.32	-4.32
4,424.0	1 10	262.60	4,420.5	3,256.5	-46.6	-18.7	50.1	0.52	-0.22	-22.58
4,512.0	1 10	250.70	4,508.5	3,344.5	-47.0	-20.4	51.0	0.26	0.00	-13.52
4,532.0	1 10	242.20	4,528.5	3,364.5	-47.1	-20.7	51.3	0.82	0.00	-42.50
4,564.0	2 00	246.20	4,560.5	3,396.5	-47.5	-21.5	51.9	2.83	2.81	12.50
4,595.0	4 60	261.70	4,591.4	3,427.4	-47.9	-23.2	52.8	8.79	8.39	50.00
4,627.0	7 40	267.40	4,623.2	3,459.2	-48.2	-26.5	54.2	8.94	8.75	17.81
4,658.0	10 20	263.50	4,653.9	3,489.9	-48.6	-31.3	56.1	9.23	9.03	-12.58
4,689.0	12 70	260.30	4,684.3	3,520.3	-49.4	-37.3	58.9	8.32	8.06	-10.32
4,721.0	15 10	257.70	4,715.3	3,551.3	-50.9	-44.9	62.8	7.75	7.50	-8.13
4,752.0	18 20	255.90	4,745.0	3,581.0	-53.0	-53.5	67.6	10.14	10.00	-5.81
4,784.0	21 20	253.80	4,775.1	3,611.1	-55.8	-63.9	73.7	9.63	9.38	-6.56
4,815.0	24 50	253.10	4,803.7	3,639.7	-59.2	-75.5	80.7	10.68	10.65	-2.26
4,847.0	28 00	253.60	4,832.4	3,668.4	-63.3	-89.0	88.9	10.96	10.94	1.56
4,878.0	31 30	254.50	4,859.3	3,695.3	-67.5	-103.8	97.7	10.74	10.65	2.90
4,910.0	34 50	255.90	4,886.2	3,722.2	-71.9	-120.6	107.4	10.28	10.00	4.38
5,004.0	40 40	254.90	4,960.8	3,796.8	-86.4	-175.9	139.2	6.31	6.28	-1.06
5,099.0	42 00	254.90	5,032.3	3,868.3	-102.7	-236.3	174.3	1.68	1.68	0.00
5,193.0	40 80	254.10	5,102.8	3,938.8	-119.3	-296.2	209.6	1.40	-1.28	-0.85
5,288.0	42.30	254.00	5,173.9	4,009.9	-136.6	-356.8	245.8	1.58	1.58	-0.11
5,382.0	40 80	252.40	5,244.2	4,080.2	-154.6	-416.4	282.4	1.95	-1.60	-1.70
5,477.0	42 00	251.90	5,315.5	4,151.5	-173.8	-476.2	320.2	1.31	1.26	-0.53
5,571.0	40 70	250.40	5,386.1	4,222.1	-193.9	-535.0	358.4	1.74	-1.38	-1.60
5,665.0	43 00	253.00	5,456.1	4,292.1	-213.6	-594.5	396.4	3.06	2.45	2.77
5,759.0	41 40	251.90	5,525.7	4,361.7	-232.6	-654.7	434.1	1.87	-1.70	-1.17
5,854.0	39 00	250.60	5,598.3	4,434.3	-252.3	-712.8	471.7	2.68	-2.53	-1.37
5,948.0	40 50	253.60	5,670.5	4,506.5	-270.7	-770.0	507.9	2.59	1.60	3.19
6,042.0	42.20	255.70	5,741.1	4,577.1	-287.1	-829.9	543.0	2.33	1.81	2.23
6,137.0	40.60	254.30	5,812.4	4,648.4	-303.4	-890.6	578.2	1.95	-1.68	-1.47
6,232.0	41.70	255.50	5,883.9	4,719.9	-319.7	-950.9	613.4	1.43	1.16	1.26
6,326.0	39.90	253.80	5,955.1	4,791.1	-335.9	-1,010.1	648.1	2.25	-1.91	-1.81
6,420.0	40.60	254.90	6,026.8	4,862.8	-352.3	-1,068.6	682.7	1.06	0.74	1.17
6,515.0	41 20	256 10	6,098.6	4,934.6	-367.9	-1,128.8	717.1	1.04	0.63	1.26

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Project:	Marion County, WV	MD Reference:	KB @ 23 ft @ 1164.0 usft
Site:	Marion County 513688	North Reference:	Grid
Well:	Well #513688	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513688 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,609.0	39.20	254.20	6,170.4	5,006.4	-383.4	-1,187.5	751.0	2.50	-2.13	-2.02
6,704.0	42.20	254.90	6,242.4	5,078.4	-399.9	-1,247.2	786.1	3.19	3.16	0.74
6,798.0	40.10	253.00	6,313.2	5,149.2	-416.9	-1,306.6	821.7	2.60	-2.23	-2.02
6,893.0	40.70	254.40	6,385.5	5,221.5	-434.2	-1,365.7	857.4	1.15	0.63	1.47
6,987.0	41.40	254.80	6,456.4	5,292.4	-450.6	-1,425.2	892.4	0.80	0.74	0.43
7,081.0	40.00	252.80	6,527.7	5,363.7	-467.7	-1,484.1	927.8	2.04	-1.49	-2.13
7,176.0	42.50	253.70	6,599.1	5,435.1	-485.7	-1,544.1	964.5	2.70	2.63	0.95
7,271.0	40.40	252.00	6,670.3	5,506.3	-504.3	-1,604.2	1,001.6	2.51	-2.21	-1.79
7,365.0	41.40	254.20	6,741.4	5,577.4	-522.1	-1,663.1	1,037.8	1.87	1.06	2.34
7,459.0	38.70	253.00	6,813.3	5,649.3	-539.2	-1,721.1	1,072.9	2.99	-2.87	-1.28
7,553.0	39.50	252.90	6,886.3	5,722.3	-556.6	-1,777.8	1,107.9	0.85	0.85	-0.11
7,648.0	40.00	254.50	6,959.3	5,795.3	-573.6	-1,836.1	1,143.1	1.20	0.53	1.68
7,742.0	42.30	255.20	7,030.1	5,866.1	-589.8	-1,895.8	1,177.9	2.50	2.45	0.74
7,837.0	40.10	253.20	7,101.6	5,937.6	-606.8	-1,956.0	1,213.7	2.70	-2.32	-2.11
7,931.0	43.50	253.00	7,171.6	6,007.6	-625.0	-2,015.9	1,250.5	3.62	3.62	-0.21
7,963.0	43.40	252.30	7,194.9	6,030.9	-631.6	-2,036.9	1,263.6	1.54	-0.31	-2.19
7,994.0	43.90	250.10	7,217.3	6,053.3	-638.5	-2,057.2	1,276.7	5.16	1.61	-7.10
8,026.0	44.70	247.40	7,240.2	6,076.2	-646.6	-2,078.0	1,291.2	6.40	2.50	-8.44
8,057.0	45.10	243.40	7,262.2	6,098.2	-655.7	-2,097.9	1,306.3	9.20	1.29	-12.90
8,089.0	45.40	239.40	7,284.7	6,120.7	-666.5	-2,117.8	1,323.1	8.93	0.94	-12.50
8,120.0	46.50	234.80	7,306.3	6,142.3	-678.7	-2,136.5	1,340.7	11.24	3.55	-14.64
8,152.0	46.60	230.10	7,328.3	6,164.3	-692.8	-2,154.9	1,360.1	10.67	0.31	-14.69
8,184.0	45.70	225.40	7,350.4	6,186.4	-708.3	-2,172.0	1,380.3	10.96	-2.81	-14.69
8,215.0	44.40	219.90	7,372.4	6,208.4	-724.4	-2,186.9	1,400.4	13.23	-4.19	-17.74
8,247.0	43.90	214.50	7,395.3	6,231.3	-742.2	-2,200.3	1,421.6	11.66	-1.56	-16.88
8,278.0	44.50	209.60	7,417.6	6,253.6	-760.5	-2,211.8	1,442.6	11.19	1.94	-15.81
8,310.0	45.80	207.00	7,440.1	6,276.1	-780.4	-2,222.5	1,465.0	7.05	4.06	-8.13
8,342.0	48.00	203.50	7,462.0	6,298.0	-801.6	-2,232.5	1,488.3	10.54	6.88	-10.94
8,373.0	49.70	200.10	7,482.4	6,318.4	-823.2	-2,241.1	1,511.6	9.91	5.48	-10.97
8,404.0	52.00	197.20	7,502.0	6,338.0	-846.0	-2,248.8	1,535.6	10.38	7.42	-9.35
8,436.0	53.80	193.50	7,521.3	6,357.3	-870.6	-2,255.6	1,561.1	10.80	5.63	-11.56
8,467.0	55.80	191.50	7,539.1	6,375.1	-895.4	-2,261.0	1,586.2	8.33	6.45	-6.45
8,499.0	58.20	189.70	7,556.6	6,392.6	-921.7	-2,266.0	1,612.8	8.86	7.50	-5.63
Top of Marcellus - 75% TVD										
8,529.6	61.16	187.63	7,572.0	6,408.0	-947.8	-2,269.9	1,638.7	11.31	9.68	-6.78
8,530.0	61.20	187.60	7,572.2	6,408.2	-948.2	-2,270.0	1,639.1	11.31	9.73	-6.58
8,562.0	63.50	185.70	7,587.1	6,423.1	-976.3	-2,273.3	1,666.7	8.91	7.19	-5.94
8,593.0	66.40	184.50	7,600.2	6,436.2	-1,004.3	-2,275.8	1,694.0	9.99	9.35	-3.87
8,624.0	69.60	183.90	7,611.8	6,447.8	-1,033.0	-2,277.9	1,721.8	10.48	10.32	-1.94
8,656.0	72.00	182.20	7,622.3	6,458.3	-1,063.1	-2,279.5	1,750.8	9.02	7.50	-5.31
8,687.0	73.20	180.50	7,631.6	6,467.6	-1,092.7	-2,280.2	1,779.0	6.51	3.87	-5.48
8,719.0	74.70	178.00	7,640.4	6,476.4	-1,123.5	-2,279.8	1,807.9	8.85	4.69	-7.81
8,750.0	75.50	174.50	7,648.4	6,484.4	-1,153.3	-2,277.6	1,835.5	11.21	2.58	-11.29

Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	San Juan County State
Company:	EQT Production - Marcellus	TVD Reference:	NA@23 R @ 1164.0usft
Project:	San Juan County, WV	MD Reference:	NA@23 R @ 1164.0usft
Site:	San Juan County 611038	North Reference:	Grid
Well:	WV014512250	Survey Calculation Method:	Minimum Curvature
Wellbore:	Non Wellbore		
Design:	COMPASS 5000 1 Build 73		

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,781.0	76.80	172.60	7,655.8	6,491.8	-1,183.3	-2,274.4	1,862.6	7.28	4.19	-6.13
8,813.0	78.00	170.50	7,662.8	6,498.8	-1,214.1	-2,269.8	1,890.3	7.42	3.75	-6.56
8,844.0	79.70	167.90	7,668.8	6,504.8	-1,244.0	-2,264.1	1,916.7	9.89	5.48	-8.39
8,875.0	81.20	165.50	7,674.0	6,510.0	-1,273.8	-2,257.1	1,942.5	9.04	4.84	-7.74
8,906.0	81.60	163.60	7,678.6	6,514.6	-1,303.3	-2,248.9	1,967.7	6.20	1.29	-6.13
8,938.0	83.10	161.10	7,682.8	6,518.8	-1,333.5	-2,239.3	1,993.1	9.05	4.69	-7.81
8,969.0	85.50	159.40	7,685.9	6,521.9	-1,362.6	-2,228.9	2,017.1	9.47	7.74	-5.48
9,001.0	86.50	158.50	7,687.6	6,523.6	-1,392.4	-2,217.4	2,041.6	9.79	9.38	-2.81
9,033.0	89.10	158.30	7,688.3	6,524.3	-1,422.1	-2,205.6	2,065.6	1.98	1.88	-0.63
9,064.0	89.50	158.10	7,688.7	6,524.7	-1,450.9	-2,194.1	2,089.2	1.44	1.29	-0.65
Opposite Point of Well = 8004' MD/7639' TVD										
9,096.0	89.50	157.60	7,688.9	6,524.9	-1,480.5	-2,182.1	2,113.3	1.56	0.00	-1.56
9,158.0	92.00	160.70	7,688.1	6,524.1	-1,538.5	-2,160.0	2,160.8	6.42	4.03	5.00
9,253.0	91.20	160.30	7,685.5	6,521.5	-1,628.0	-2,128.3	2,235.0	0.94	-0.84	-0.42
9,347.0	91.50	159.60	7,683.3	6,519.3	-1,716.3	-2,096.1	2,307.9	0.81	0.32	-0.74
9,441.0	91.40	156.20	7,680.9	6,516.9	-1,803.3	-2,050.7	2,378.6	3.62	-0.11	-3.62
9,536.0	93.60	157.70	7,676.7	6,512.7	-1,890.6	-2,023.6	2,448.9	2.80	2.32	1.58
9,630.0	89.50	157.80	7,674.2	6,510.2	-1,977.6	-1,988.0	2,519.4	4.36	-4.36	0.11
9,725.0	92.40	162.60	7,672.6	6,508.6	-2,066.8	-1,955.8	2,593.3	5.90	3.05	5.05
9,820.0	91.50	160.60	7,669.4	6,505.4	-2,157.0	-1,925.9	2,668.6	2.31	-0.95	-2.11
9,914.0	90.20	162.90	7,668.0	6,504.0	-2,246.3	-1,896.4	2,743.3	2.81	-1.38	2.45
10,008.0	90.30	162.30	7,667.6	6,503.6	-2,336.0	-1,868.3	2,818.9	0.65	0.11	-0.64
10,103.0	90.70	162.70	7,666.7	6,502.7	-2,426.6	-1,839.8	2,895.1	0.60	0.42	0.42
10,197.0	90.30	161.10	7,665.9	6,501.9	-2,515.9	-1,810.6	2,970.0	1.75	-0.43	-1.70
10,291.0	89.70	163.80	7,665.9	6,501.9	-2,605.5	-1,782.2	3,045.4	2.94	-0.64	2.87
10,386.0	89.80	163.40	7,666.3	6,502.3	-2,696.6	-1,755.4	3,122.7	0.43	0.11	-0.42
10,481.0	94.30	164.40	7,662.9	6,498.9	-2,787.8	-1,729.1	3,200.3	4.85	4.74	1.05
10,575.0	92.10	163.30	7,657.7	6,493.7	-2,878.0	-1,703.0	3,276.9	2.62	-2.34	-1.17
10,670.0	92.00	162.80	7,654.3	6,490.3	-2,968.8	-1,675.3	3,353.6	0.54	-0.11	-0.53
10,764.0	91.30	161.70	7,651.6	6,487.6	-3,058.3	-1,646.6	3,428.8	1.39	-0.74	-1.17
10,859.0	91.50	161.60	7,649.3	6,485.3	-3,148.4	-1,616.7	3,504.2	0.24	0.21	-0.11
10,953.0	92.00	161.70	7,646.4	6,482.4	-3,237.6	-1,587.2	3,578.8	0.54	0.53	0.11
11,047.0	92.60	162.70	7,642.6	6,478.6	-3,327.0	-1,558.5	3,653.9	1.24	0.64	1.08
11,142.0	91.10	160.50	7,639.6	6,475.6	-3,417.1	-1,528.5	3,729.2	2.80	-1.58	-2.32
11,236.0	91.60	161.10	7,637.3	6,473.3	-3,505.9	-1,497.6	3,802.9	0.83	0.53	0.64
11,331.0	91.80	161.50	7,634.5	6,470.5	-3,595.8	-1,467.1	3,878.0	0.47	0.21	0.42
11,424.0	92.20	161.40	7,631.3	6,467.3	-3,683.9	-1,437.6	3,951.5	0.44	0.43	-0.11
11,518.0	92.80	161.70	7,627.2	6,463.2	-3,773.0	-1,407.8	4,026.0	0.71	0.64	0.32
Final Survey = 11586' MD/7624' TVD										
11,586.0	92.80	161.50	7,623.9	6,459.9	-3,837.4	-1,386.4	4,079.9	0.29	0.00	-0.29
Projection to W = 11640' MD/7621' TVD										
11,640.0	92.80	161.50	7,621.2	6,457.2	-3,888.6	-1,369.3	4,122.6	0.00	0.00	0.00



Phoenix Technologies
Survey Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Site Marion County 513688
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 ft @ 1164.0usft
Project:	Marion County, WV	MD Reference:	KB@23 ft @ 1164.0usft
Site:	Marion County 513688	North Reference:	Grid
Well:	Well #513688	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513688 As Drilled Surveys		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,529.6	7,572.0	Top of Marcellus @7572' TVD			

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
3,396.0	3,395.6	-31.1	40.1	Gyro Tie In= 3396' MD	
4,532.0	4,528.5	-47.1	-20.7	KOP= 4532' MD	
9,096.0	7,688.9	-1,480.5	-2,182.1	Deepest Point of Well= 9096' MD/7689' TVD	
11,586.0	7,623.9	-3,837.4	-1,386.4	Final Survey= 11586' MD/7624' TVD	
11,640.0	7,621.2	-3,888.6	-1,369.3	Projection to TD= 11640' MD/7621' TVD	

Checked By: _____ Approved By: _____ Date: _____



EQT Production - Marcellus

Project: Marion County, WV
Site: Marion County 513688
Well: Well #513688
Wellbore: Main Wellbore
Design: 513688 As Drilled Surveys

