



Where energy meets innovation.

EQT Production - Marcellus

Doddridge County, WV Grid

Doddridge County 514665

Well #514665

Main Wellbore

Design: 514665 As Drilled Surveys

Standard Survey Report

25 September, 2014



07/24/2015

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514665
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514665	North Reference:	Grid
Well:	Well #514665	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	514665 As Drilled Surveys		

Project Doddridge County, WV Grid

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 Doddridge County 514665

Site Position:		Northing:	277,770.00 usft	Latitude:	39.26
From:	Map	Easting:	1,642,252.00 usft	Longitude:	-80.76
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.81 °

Well Well #514665

Well Position	+N/-S	0.0 usft	Northing:	277,770.00 usft	Latitude:	39° 15' 20.651 N
	+E/-W	0.0 usft	Easting:	1,642,252.00 usft	Longitude:	80° 45' 48.159 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,208.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	9/2/2014	-8.49	66.76	52,248

Design 514665 As Drilled Surveys

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	131.16

Survey Program Date 9/25/2014

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,306.0	514665 Gyro Data Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	12,670.0	514665 PHX MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination

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)
0.0	0.00	0.00	0.0	-1,224.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.20	352.20	100.0	-1,124.0	0.2	0.0	-0.1	0.20	0.20	0.00
200.0	0.13	82.08	200.0	-1,024.0	0.4	0.1	-0.2	0.24	-0.07	89.88
300.0	0.21	143.66	300.0	-924.0	0.2	0.3	0.1	0.19	0.08	61.58
400.0	0.20	130.06	400.0	-824.0	0.0	0.5	0.4	0.05	-0.01	-13.60
500.0	0.21	119.35	500.0	-724.0	-0.2	0.8	0.8	0.04	0.01	-10.71
600.0	0.14	126.37	600.0	-624.0	-0.4	1.1	1.1	0.07	-0.07	7.02
700.0	0.12	91.84	700.0	-524.0	-0.5	1.3	1.3	0.08	-0.02	-34.53

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514665
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514665	North Reference:	Grid
Well:	Well #514665	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	514665 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)	
800.0	0.07	113.40	800.0	-424.0	-0.5	1.4	1.4	0.06	-0.05	21.56	
900.0	0.06	63.06	900.0	-324.0	-0.5	1.5	1.5	0.06	-0.01	-50.34	
1,000.0	0.15	189.88	1,000.0	-224.0	-0.6	1.6	1.6	0.19	0.09	126.82	
1,100.0	0.24	112.79	1,100.0	-124.0	-0.8	1.7	1.8	0.25	0.09	-77.09	
1,200.0	0.52	76.49	1,200.0	-24.0	-0.8	2.4	2.3	0.36	0.28	-36.30	
1,300.0	0.69	70.25	1,300.0	76.0	-0.5	3.4	2.9	0.18	0.17	-6.24	
1,400.0	0.91	85.64	1,400.0	176.0	-0.2	4.7	3.7	0.31	0.22	15.39	
1,500.0	0.78	98.08	1,500.0	276.0	-0.3	6.2	4.8	0.22	-0.13	12.44	
1,600.0	0.76	108.68	1,600.0	376.0	-0.6	7.5	6.0	0.14	-0.02	10.60	
1,700.0	0.70	125.85	1,700.0	476.0	-1.1	8.6	7.2	0.23	-0.06	17.17	
1,800.0	0.65	139.26	1,799.9	575.9	-1.9	9.5	8.4	0.17	-0.05	13.41	
1,900.0	0.68	145.16	1,899.9	675.9	-2.8	10.2	9.6	0.07	0.03	5.90	
2,000.0	0.47	154.50	1,999.9	775.9	-3.7	10.7	10.5	0.23	-0.21	9.34	
2,100.0	0.44	160.30	2,099.9	875.9	-4.4	11.0	11.2	0.05	-0.03	5.80	
2,200.0	0.41	176.34	2,199.9	975.9	-5.1	11.2	11.8	0.12	-0.03	16.04	
2,300.0	0.43	184.37	2,299.9	1,075.9	-5.9	11.2	12.3	0.06	0.02	8.03	
2,400.0	0.40	185.37	2,399.9	1,175.9	-6.6	11.1	12.7	0.03	-0.03	1.00	
2,500.0	0.42	179.66	2,499.9	1,275.9	-7.3	11.1	13.2	0.05	0.02	-5.71	
2,600.0	0.43	186.09	2,599.9	1,375.9	-8.0	11.0	13.6	0.05	0.01	6.43	
2,700.0	0.43	189.74	2,699.9	1,475.9	-8.8	10.9	14.0	0.03	0.00	3.65	
2,800.0	0.41	185.34	2,799.9	1,575.9	-9.5	10.8	14.4	0.04	-0.02	-4.40	
2,900.0	0.46	185.51	2,899.9	1,675.9	-10.3	10.8	14.9	0.05	0.05	0.17	
3,000.0	0.48	183.00	2,999.9	1,775.9	-11.1	10.7	15.4	0.03	0.02	-2.51	
3,100.0	0.49	182.49	3,099.9	1,875.9	-11.9	10.7	15.9	0.01	0.01	-0.51	
3,200.0	0.54	182.74	3,199.9	1,975.9	-12.8	10.6	16.5	0.05	0.05	0.25	
3,300.0	0.49	179.68	3,299.9	2,075.9	-13.7	10.6	17.0	0.06	-0.05	-3.06	
3,400.0	0.54	178.82	3,399.9	2,175.9	-14.6	10.6	17.6	0.05	0.05	-0.86	
3,500.0	0.53	176.82	3,499.9	2,275.9	-15.6	10.7	18.3	0.02	-0.01	-2.00	
3,600.0	0.59	175.62	3,599.9	2,375.9	-16.5	10.7	19.0	0.06	0.06	-1.20	
3,700.0	0.60	177.70	3,699.9	2,475.9	-17.6	10.8	19.7	0.02	0.01	2.08	
3,800.0	0.62	173.36	3,799.9	2,575.9	-18.6	10.9	20.4	0.05	0.02	-4.34	
3,900.0	0.62	183.06	3,899.9	2,675.9	-19.7	10.9	21.2	0.10	0.00	9.70	
4,000.0	0.65	196.30	3,999.9	2,775.9	-20.8	10.7	21.8	0.15	0.03	13.24	
4,100.0	0.69	218.56	4,099.8	2,875.8	-21.8	10.2	22.0	0.26	0.04	22.26	
4,200.0	0.78	228.99	4,199.8	2,975.8	-22.7	9.3	22.0	0.16	0.09	10.43	
4,300.0	0.88	236.71	4,299.8	3,075.8	-23.6	8.1	21.7	0.15	0.10	7.72	
4,400.0	0.92	255.02	4,399.8	3,175.8	-24.2	6.7	21.0	0.29	0.04	18.31	
4,500.0	0.96	261.83	4,499.8	3,275.8	-24.6	5.1	20.0	0.12	0.04	6.81	
4,600.0	1.03	264.89	4,599.8	3,375.8	-24.8	3.4	18.8	0.09	0.07	3.06	
4,700.0	1.10	274.13	4,699.8	3,475.8	-24.8	1.5	17.5	0.19	0.07	9.24	
4,800.0	1.12	281.41	4,799.8	3,575.8	-24.5	-0.4	15.8	0.14	0.02	7.28	
4,900.0	1.19	287.95	4,899.7	3,675.7	-24.0	-2.3	14.0	0.15	0.07	6.54	



Where energy meets innovation.

Phoenix Technology Services

Survey Report



Where energy meets innovation.

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514665
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514665	North Reference:	Grid
Well:	Well #514665	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	514665 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)
5,000.0	1.23	282.67	4,999.7	3,775.7	-23.4	-4.4	12.1	0.12	0.04	-5.28
5,100.0	1.35	294.36	5,099.7	3,875.7	-22.7	-6.5	10.1	0.29	0.12	11.69
5,200.0	1.47	294.75	5,199.7	3,975.7	-21.7	-8.7	7.7	0.12	0.12	0.39
5,300.0	1.35	299.94	5,299.6	4,075.6	-20.6	-10.9	5.3	0.18	-0.12	5.19
Gyro Tie In=5306' MD										
5,306.0	1.35	298.22	5,305.6	4,081.6	-20.5	-11.0	5.2	0.68	0.00	-28.67
5,433.0	2.00	307.30	5,432.6	4,208.6	-18.4	-14.1	1.5	0.55	0.51	7.15
5,496.0	2.60	336.10	5,495.5	4,271.5	-16.5	-15.6	-0.9	2.04	0.95	45.71
5,528.0	3.70	2.70	5,527.5	4,303.5	-14.8	-15.8	-2.2	5.63	3.44	83.13
5,559.0	5.50	18.50	5,558.4	4,334.4	-12.4	-15.3	-3.4	7.05	5.81	50.97
5,591.0	7.70	29.60	5,590.2	4,366.2	-9.1	-13.7	-4.4	7.92	6.88	34.69
5,622.0	10.50	41.80	5,620.8	4,396.8	-5.1	-10.8	-4.8	10.92	9.03	39.35
5,654.0	13.50	44.70	5,652.1	4,428.1	-0.3	-6.3	-4.5	9.56	9.38	9.06
5,685.0	16.90	46.00	5,682.0	4,458.0	5.4	-0.5	-3.9	11.02	10.97	4.19
5,717.0	19.60	49.40	5,712.4	4,488.4	12.1	6.9	-2.7	9.07	8.44	10.63
5,748.0	21.70	55.60	5,741.4	4,517.4	18.7	15.6	-0.6	9.77	6.77	20.00
5,780.0	24.00	60.00	5,770.9	4,546.9	25.3	26.1	3.0	8.95	7.19	13.75
5,811.0	26.50	60.90	5,798.9	4,574.9	31.9	37.7	7.4	8.16	8.06	2.90
5,843.0	30.10	61.40	5,827.1	4,603.1	39.2	50.9	12.6	11.27	11.25	1.56
5,875.0	33.90	61.40	5,854.2	4,630.2	47.3	65.8	18.4	11.88	11.88	0.00
5,906.0	38.00	62.80	5,879.3	4,655.3	55.8	81.9	25.0	13.49	13.23	4.52
5,938.0	42.20	63.50	5,903.8	4,679.8	65.1	100.3	32.7	13.20	13.13	2.19
5,970.0	46.00	63.60	5,926.7	4,702.7	75.0	120.2	41.2	11.88	11.88	0.31
6,001.0	48.40	63.60	5,947.8	4,723.8	85.1	140.6	49.8	7.74	7.74	0.00
6,033.0	51.00	63.50	5,968.5	4,744.5	96.0	162.5	59.1	8.13	8.13	-0.31
6,064.0	54.00	64.00	5,987.4	4,763.4	106.9	184.5	68.6	9.76	9.68	1.61
6,096.0	56.80	63.90	6,005.5	4,781.5	118.4	208.2	78.8	8.75	8.75	-0.31
6,127.0	59.60	64.70	6,021.9	4,797.9	129.9	231.9	89.1	9.29	9.03	2.58
6,159.0	61.70	64.60	6,037.6	4,813.6	141.8	257.1	100.3	6.57	6.56	-0.31
6,190.0	63.80	65.00	6,051.8	4,827.8	153.5	282.0	111.3	6.87	6.77	1.29
6,222.0	66.70	65.10	6,065.1	4,841.1	165.8	308.4	123.1	9.07	9.06	0.31
6,253.0	70.00	65.10	6,076.6	4,852.6	177.9	334.5	134.8	10.65	10.65	0.00
6,316.0	71.80	65.00	6,097.2	4,873.2	203.0	388.5	158.9	2.86	2.86	-0.16
6,379.0	72.40	64.90	6,116.6	4,892.6	228.4	442.8	183.1	0.96	0.95	-0.16
6,442.0	71.60	65.20	6,136.0	4,912.0	253.7	497.1	207.3	1.35	-1.27	0.48
6,505.0	69.90	65.40	6,156.8	4,932.8	278.5	551.2	231.7	2.72	-2.70	0.32
6,568.0	70.30	65.20	6,178.2	4,954.2	303.3	605.0	255.9	0.70	0.63	-0.32
6,631.0	70.00	65.70	6,199.6	4,975.6	327.9	658.9	280.3	0.89	-0.48	0.79
6,694.0	69.10	64.80	6,221.6	4,997.6	352.6	712.5	304.4	1.96	-1.43	-1.43
6,757.0	69.80	64.90	6,243.8	5,019.8	377.7	765.9	328.1	1.12	1.11	0.16
6,820.0	70.00	65.10	6,265.4	5,041.4	402.7	819.5	352.0	0.44	0.32	0.32
6,884.0	70.80	65.50	6,286.9	5,062.9	427.9	874.3	376.7	1.38	1.25	0.63
6,947.0	70.40	66.80	6,307.8	5,083.8	451.9	928.6	401.8	2.05	-0.63	2.06

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514665
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514665	North Reference:	Grid
Well:	Well #514665	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	514665 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)
7,010.0	69.90	66.80	6,329.2	5,105.2	475.3	983.1	427.4	0.79	-0.79	0.00
7,073.0	70.40	64.70	6,350.6	5,126.6	499.6	1,037.1	452.1	3.23	0.79	-3.33
7,137.0	69.90	63.70	6,372.3	5,148.3	525.8	1,091.3	475.6	1.66	-0.78	-1.56
7,200.0	70.40	63.80	6,393.7	5,169.7	552.0	1,144.5	498.4	0.81	0.79	0.16
7,263.0	69.50	64.00	6,415.3	5,191.3	578.0	1,197.6	521.3	1.46	-1.43	0.32
7,326.0	69.90	62.60	6,437.2	5,213.2	604.6	1,250.4	543.6	2.18	0.63	-2.22
7,390.0	71.10	61.80	6,458.5	5,234.5	632.7	1,303.8	565.2	2.21	1.88	-1.25
7,453.0	71.50	64.30	6,478.7	5,254.7	659.8	1,356.9	587.5	3.81	0.63	3.97
7,484.0	71.70	65.80	6,488.5	5,264.5	672.2	1,383.6	599.4	4.64	0.65	4.84
7,516.0	71.50	68.10	6,498.6	5,274.6	684.1	1,411.6	612.6	6.85	-0.63	7.19
7,547.0	71.20	71.20	6,508.5	5,284.5	694.3	1,439.1	626.6	9.52	-0.97	10.00
7,578.0	71.00	74.20	6,518.6	5,294.6	703.0	1,467.1	641.9	9.18	-0.65	9.68
7,610.0	70.50	77.50	6,529.1	5,305.1	710.4	1,496.4	659.1	9.86	-1.56	10.31
7,641.0	70.90	80.40	6,539.4	5,315.4	716.0	1,525.1	677.1	8.92	1.29	9.35
7,673.0	72.00	83.20	6,549.6	5,325.6	720.3	1,555.1	696.8	8.98	3.44	8.75
7,704.0	72.90	85.80	6,558.9	5,334.9	723.2	1,584.5	717.1	8.51	2.90	8.39
7,736.0	73.90	88.50	6,568.1	5,344.1	724.7	1,615.2	739.2	8.67	3.13	8.44
7,768.0	74.30	91.50	6,576.8	5,352.8	724.7	1,645.9	762.3	9.10	1.25	9.38
7,799.0	73.10	93.50	6,585.5	5,361.5	723.4	1,675.6	785.6	7.30	-3.87	6.45
7,831.0	71.30	95.90	6,595.3	5,371.3	720.9	1,706.0	810.1	9.09	-5.63	7.50
7,862.0	71.00	98.70	6,605.3	5,381.3	717.2	1,735.1	834.4	8.60	-0.97	9.03
7,894.0	71.60	100.70	6,615.6	5,391.6	712.0	1,765.0	860.3	6.21	1.88	6.25
7,925.0	72.70	103.10	6,625.1	5,401.1	706.0	1,793.9	886.0	8.18	3.55	7.74
7,955.0	74.00	106.10	6,633.7	5,409.7	698.7	1,821.7	911.7	10.51	4.33	10.00
7,986.0	76.30	109.00	6,641.6	5,417.6	689.7	1,850.2	939.2	11.70	7.42	9.35
8,018.0	77.00	112.60	6,649.0	5,425.0	678.6	1,879.3	968.4	11.16	2.19	11.25
8,049.0	76.50	115.50	6,656.1	5,432.1	666.3	1,906.9	997.2	9.25	-1.61	9.35
8,080.0	76.50	119.20	6,663.4	5,439.4	652.5	1,933.6	1,026.5	11.61	0.00	11.94
8,112.0	75.90	123.10	6,671.0	5,447.0	636.4	1,960.2	1,057.1	11.98	-1.88	12.19
8,143.0	75.70	127.10	6,678.6	5,454.6	619.1	1,984.8	1,087.0	12.53	-0.65	12.90
8,175.0	76.40	130.00	6,686.3	5,462.3	599.8	2,009.1	1,118.0	9.06	2.19	9.06
8,206.0	77.90	132.80	6,693.2	5,469.2	579.8	2,031.8	1,148.2	10.05	4.84	9.03
8,238.0	80.00	136.20	6,699.4	5,475.4	557.8	2,054.2	1,179.5	12.32	6.56	10.63
8,269.0	80.70	140.00	6,704.6	5,480.6	535.0	2,074.6	1,209.9	12.29	2.26	12.26
8,301.0	81.60	144.00	6,709.5	5,485.5	510.1	2,094.0	1,240.9	12.67	2.81	12.50
8,333.0	81.80	148.40	6,714.1	5,490.1	483.8	2,111.6	1,271.5	13.62	0.63	13.75
8,364.0	82.40	152.10	6,718.4	5,494.4	457.2	2,126.9	1,300.5	11.98	1.94	11.94
8,396.0	83.60	154.50	6,722.3	5,498.3	428.8	2,141.1	1,329.9	8.34	3.75	7.50
8,428.0	85.70	155.80	6,725.3	5,501.3	399.9	2,154.5	1,359.0	7.71	6.56	4.06
8,459.0	88.30	155.90	6,726.9	5,502.9	371.6	2,167.2	1,387.1	8.39	8.39	0.32
8,491.0	90.40	155.90	6,727.2	5,503.2	342.4	2,180.3	1,416.2	6.56	6.56	0.00
8,522.0	90.70	156.00	6,726.9	5,502.9	314.1	2,192.9	1,444.3	1.02	0.97	0.32
8,585.0	90.90	156.60	6,726.1	5,502.1	256.4	2,218.2	1,501.4	1.00	0.32	0.95

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514665
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514665	North Reference:	Grid
Well:	Well #514665	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	514665 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)
8,648.0	91.30	157.60	6,724.9	5,500.9	198.4	2,242.7	1,558.0	1.71	0.63	1.59
8,711.0	91.30	156.60	6,723.4	5,499.4	140.4	2,267.2	1,614.6	1.59	0.00	-1.59
8,774.0	91.20	156.50	6,722.0	5,498.0	82.6	2,292.3	1,671.5	0.22	-0.16	-0.16
8,837.0	91.30	156.40	6,720.7	5,496.7	24.9	2,317.5	1,728.5	0.22	0.16	-0.16
8,900.0	90.20	154.70	6,719.9	5,495.9	-32.5	2,343.5	1,785.9	3.21	-1.75	-2.70
8,963.0	89.80	153.50	6,719.9	5,495.9	-89.1	2,371.1	1,843.9	2.01	-0.63	-1.90
9,026.0	89.80	154.00	6,720.1	5,496.1	-145.6	2,398.9	1,902.0	0.79	0.00	0.79
9,089.0	89.60	153.20	6,720.4	5,496.4	-202.1	2,426.9	1,960.3	1.31	-0.32	-1.27
9,152.0	90.10	154.20	6,720.6	5,496.6	-258.5	2,454.8	2,018.4	1.77	0.79	1.59
9,215.0	90.70	154.70	6,720.1	5,496.1	-315.4	2,482.0	2,076.3	1.24	0.95	0.79
9,278.0	91.30	155.50	6,719.0	5,495.0	-372.5	2,508.5	2,133.9	1.59	0.95	1.27
9,341.0	91.20	154.50	6,717.7	5,493.7	-429.6	2,535.1	2,191.5	1.59	-0.16	-1.59
9,404.0	91.10	153.60	6,716.4	5,492.4	-486.2	2,562.7	2,249.5	1.44	-0.16	-1.43
9,467.0	89.80	153.70	6,715.9	5,491.9	-542.7	2,590.7	2,307.7	2.07	-2.06	0.16
9,529.0	90.00	154.50	6,716.0	5,492.0	-598.5	2,617.8	2,364.8	1.33	0.32	1.29
9,592.0	90.20	154.80	6,715.9	5,491.9	-655.4	2,644.7	2,422.6	0.57	0.32	0.48
9,654.0	90.10	154.50	6,715.7	5,491.7	-711.4	2,671.3	2,479.4	0.51	-0.16	-0.48
9,717.0	88.50	154.30	6,716.5	5,492.5	-768.2	2,698.5	2,537.3	2.56	-2.54	-0.32
9,780.0	88.20	154.10	6,718.3	5,494.3	-824.9	2,725.9	2,595.3	0.57	-0.48	-0.32
9,843.0	89.20	156.10	6,719.7	5,495.7	-882.0	2,752.4	2,652.8	3.55	1.59	3.17
9,906.0	89.60	155.60	6,720.4	5,496.4	-939.5	2,778.2	2,710.1	1.02	0.63	-0.79
9,969.0	89.40	155.50	6,721.0	5,497.0	-996.9	2,804.3	2,767.4	0.35	-0.32	-0.16
10,031.0	90.00	155.60	6,721.3	5,497.3	-1,053.3	2,829.9	2,823.9	0.98	0.97	0.16
10,093.0	90.60	155.60	6,721.0	5,497.0	-1,109.8	2,855.5	2,880.4	0.97	0.97	0.00
10,157.0	90.70	156.20	6,720.2	5,496.2	-1,168.2	2,881.7	2,938.5	0.95	0.16	0.94
10,220.0	89.90	155.40	6,719.9	5,495.9	-1,225.7	2,907.5	2,995.7	1.80	-1.27	-1.27
10,283.0	89.90	154.40	6,720.0	5,496.0	-1,282.7	2,934.2	3,053.4	1.59	0.00	-1.59
10,345.0	90.20	154.30	6,720.0	5,496.0	-1,338.6	2,961.1	3,110.4	0.51	0.48	-0.16
10,409.0	89.50	153.20	6,720.1	5,496.1	-1,396.0	2,989.4	3,169.5	2.04	-1.09	-1.72
10,472.0	89.50	152.50	6,720.7	5,496.7	-1,452.1	3,018.1	3,228.0	1.11	0.00	-1.11
10,535.0	89.60	151.90	6,721.2	5,497.2	-1,507.8	3,047.5	3,286.8	0.97	0.16	-0.95
10,598.0	90.00	154.70	6,721.4	5,497.4	-1,564.1	3,075.8	3,345.2	4.49	0.63	4.44
10,661.0	90.00	154.80	6,721.4	5,497.4	-1,621.0	3,102.7	3,402.9	0.16	0.00	0.16
10,724.0	90.20	154.70	6,721.3	5,497.3	-1,678.0	3,129.5	3,460.6	0.35	0.32	-0.16
10,787.0	89.00	152.70	6,721.7	5,497.7	-1,734.5	3,157.5	3,518.8	3.70	-1.90	-3.17
10,850.0	89.00	152.10	6,722.8	5,498.8	-1,790.3	3,186.6	3,577.5	0.95	0.00	-0.95
10,913.0	89.10	153.40	6,723.9	5,499.9	-1,846.3	3,215.5	3,636.1	2.07	0.16	2.06
10,976.0	88.80	155.30	6,725.0	5,501.0	-1,903.1	3,242.7	3,694.0	3.05	-0.48	3.02
11,040.0	89.10	156.10	6,726.2	5,502.2	-1,961.4	3,269.1	3,752.2	1.33	0.47	1.25
11,102.0	89.30	156.50	6,727.1	5,503.1	-2,018.2	3,294.0	3,808.3	0.72	0.32	0.65
11,166.0	89.30	157.10	6,727.8	5,503.8	-2,077.0	3,319.2	3,866.0	0.94	0.00	0.94
11,228.0	89.60	157.40	6,728.4	5,504.4	-2,134.2	3,343.2	3,921.7	0.68	0.48	0.48



Where energy meets innovation.

Phoenix Technology Services Survey Report



Where energy meets innovation.

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514665
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514665	North Reference:	Grid
Well:	Well #514665	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	514665 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)
11,291.0	89.70	157.10	6,728.8	5,504.8	-2,192.3	3,367.5	3,978.2	0.50	0.16	-0.48
11,354.0	89.60	156.20	6,729.2	5,505.2	-2,250.1	3,392.5	4,035.1	1.44	-0.16	-1.43
11,417.0	89.70	156.10	6,729.6	5,505.6	-2,307.7	3,418.0	4,092.2	0.22	0.16	-0.16
11,481.0	89.10	154.80	6,730.3	5,506.3	-2,365.9	3,444.6	4,150.5	2.24	-0.94	-2.03
11,544.0	88.00	153.80	6,731.8	5,507.8	-2,422.7	3,471.9	4,208.4	2.36	-1.75	-1.59
11,607.0	88.00	154.10	6,734.0	5,510.0	-2,479.2	3,499.5	4,266.5	0.48	0.00	0.48
11,670.0	88.30	153.60	6,736.1	5,512.1	-2,535.8	3,527.3	4,324.6	0.93	0.48	-0.79
11,733.0	88.10	153.40	6,738.1	5,514.1	-2,592.1	3,555.4	4,382.8	0.45	-0.32	-0.32
11,796.0	89.70	155.40	6,739.3	5,515.3	-2,648.9	3,582.6	4,440.7	4.06	2.54	3.17
11,859.0	90.40	154.90	6,739.2	5,515.2	-2,706.1	3,609.1	4,498.2	1.37	1.11	-0.79
11,922.0	90.60	155.40	6,738.7	5,514.7	-2,763.3	3,635.5	4,555.8	0.85	0.32	0.79
11,986.0	90.10	155.20	6,738.3	5,514.3	-2,821.4	3,662.3	4,614.2	0.84	-0.78	-0.31
12,048.0	90.70	155.80	6,737.8	5,513.8	-2,877.8	3,688.0	4,670.7	1.37	0.97	0.97
12,111.0	89.30	155.90	6,737.8	5,513.8	-2,935.3	3,713.8	4,727.9	2.23	-2.22	0.16
12,174.0	89.10	154.70	6,738.7	5,514.7	-2,992.5	3,740.1	4,785.4	1.93	-0.32	-1.90
12,238.0	88.90	154.80	6,739.8	5,515.8	-3,050.4	3,767.4	4,844.0	0.35	-0.31	0.16
12,301.0	89.20	156.10	6,740.9	5,516.9	-3,107.7	3,793.6	4,901.5	2.12	0.48	2.06
12,364.0	90.00	157.20	6,741.3	5,517.3	-3,165.5	3,818.5	4,958.3	2.16	1.27	1.75
12,427.0	90.60	157.40	6,741.0	5,517.0	-3,223.7	3,842.8	5,014.9	1.00	0.95	0.32
12,491.0	89.10	156.40	6,741.2	5,517.2	-3,282.5	3,867.9	5,072.5	2.82	-2.34	-1.56
12,554.0	88.90	156.00	6,742.3	5,518.3	-3,340.2	3,893.4	5,129.6	0.71	-0.32	-0.63
Last Survey=12617' MD/ 6743' TVD										
12,617.0	89.30	155.60	6,743.2	5,519.2	-3,397.6	3,919.2	5,186.8	0.90	0.63	-0.63
Projection to TD=12670' MD/ 6744' TVD										
12,670.0	89.30	155.60	6,743.9	5,519.9	-3,445.9	3,941.1	5,235.1	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,306.0	5,305.6	-20.5	-11.0	Gyro Tie In=5306' MD
12,617.0	6,743.2	-3,397.6	3,919.2	Last Survey=12617' MD/ 6743' TVD
12,670.0	6,743.9	-3,445.9	3,941.1	Projection to TD=12670' MD/ 6744' TVD

Checked By: _____ Approved By: _____ Date: _____

Received
Office of Oil & Gas
JUL 06 2015



EQT Production - Marcellus

Project: Doddridge County, WV Grid
Site: Doddridge County 514665
Well: Well #514665
Wellbore: Main Wellbore
Design: 514665 As Drilled Surveys

