

17-06504

PHOENIX
TECHNOLOGY SERVICES



EQT Production - Marcellus

Doddridge County, WV Grid

Doddridge County 513155

Well #513155

Main Wellbore

Design: 513155 AS Drilled

Standard Survey Report

28 April, 2015



WV Department of
Environmental Protection
10/16/2015



17-06504

PHX Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513155
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Drilled		

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 513155		
Site Position:		Northing:	260,322.00 usft
From:	Map	Easting:	1,642,326.60 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	39.21
		Longitude:	-80.76
		Grid Convergence:	-0.81 °

Well	Well #513155		
Well Position	+N/-S	0.0 usft	Northing: 260,322.00 usft
	+E/-W	0.0 usft	Easting: 1,642,326.60 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	39° 12' 28.219 N
		Longitude:	80° 45' 44.094 W
		Ground Level:	1,252.0 usft

Wellbore	Main Wellbore		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/6/2015	-7.78	66.68	52,241

Design	513155 AS Drilled		
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Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	306.82

Survey Program	Date 4/28/2015		
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From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,288.0	513155 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	12,885.0	513155 PHX MWD Surveys (Main Wellbor	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

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	-1,275.0	0.0	0.0	0.0	0.00	0.00	0.00
23.0	0.00	0.00	23.0	-1,252.0	0.0	0.0	0.0	0.00	0.00	0.00
123.0	0.29	243.85	123.0	-1,152.0	-0.1	-0.2	0.1	0.29	0.29	0.00
223.0	0.21	253.74	223.0	-1,052.0	-0.3	-0.6	0.3	0.09	-0.08	9.89
323.0	0.24	287.49	323.0	-952.0	-0.3	-1.0	0.6	0.13	0.03	33.75
423.0	0.18	275.94	423.0	-852.0	-0.2	-1.4	1.0	0.07	-0.05	-11.55
523.0	0.23	277.22	523.0	-752.0	-0.1	-1.7	1.3	0.05	0.05	1.28
623.0	0.20	277.01	623.0	-652.0	-0.1	-2.1	1.6	0.03	-0.03	-0.21

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WV Department of
Environmental Protection
COMPASS 5000.1 Build 73

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Project:	Doddridge County, WV Grd	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Drilled		

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)
723.0	0.25	279.63	723.0	-552.0	0.0	-2.5	2.0	0.05	0.05	2.62
823.0	0.28	285.69	823.0	-452.0	0.1	-2.9	2.4	0.04	0.03	6.06
923.0	0.37	294.38	923.0	-352.0	0.3	-3.5	2.9	0.10	0.09	8.69
1,023.0	0.54	282.92	1,023.0	-252.0	0.5	-4.2	3.7	0.19	0.17	-11.46
1,123.0	0.67	291.20	1,123.0	-152.0	0.8	-5.2	4.7	0.16	0.13	8.28
1,223.0	0.97	308.13	1,223.0	-52.0	1.6	-6.4	6.1	0.38	0.30	16.93
1,323.0	1.19	302.11	1,323.0	48.0	2.6	-8.0	8.0	0.25	0.22	-6.02
1,423.0	1.27	300.62	1,422.9	147.9	3.7	-9.8	10.1	0.09	0.08	-1.49
1,523.0	1.17	299.60	1,522.9	247.9	4.8	-11.6	12.2	0.10	-0.10	-1.02
1,623.0	1.02	296.15	1,622.9	347.9	5.7	-13.3	14.1	0.16	-0.15	-3.45
1,723.0	1.18	293.23	1,722.9	447.9	6.5	-15.1	16.0	0.17	0.16	-2.92
1,823.0	1.49	287.93	1,822.8	547.8	7.3	-17.3	18.2	0.33	0.31	-5.30
1,923.0	1.43	291.42	1,922.8	647.8	8.2	-19.7	20.6	0.11	-0.06	3.49
2,023.0	1.50	294.67	2,022.8	747.8	9.2	-22.0	23.1	0.11	0.07	3.25
2,123.0	1.51	294.72	2,122.7	847.7	10.3	-24.4	25.7	0.01	0.01	0.05
2,223.0	1.49	296.67	2,222.7	947.7	11.4	-26.8	28.3	0.05	-0.02	1.95
2,323.0	1.49	300.15	2,322.7	1,047.7	12.6	-29.0	30.8	0.09	0.00	3.48
2,423.0	1.66	302.63	2,422.6	1,147.6	14.1	-31.4	33.6	0.18	0.17	2.48
2,523.0	1.54	304.77	2,522.6	1,247.6	15.6	-33.7	36.3	0.13	-0.12	2.14
2,623.0	1.66	305.48	2,622.6	1,347.6	17.2	-36.0	39.1	0.12	0.12	0.71
2,723.0	1.70	309.02	2,722.5	1,447.5	19.0	-38.3	42.1	0.11	0.04	3.54
2,823.0	1.71	304.43	2,822.5	1,547.5	20.8	-40.7	45.0	0.14	0.01	-4.59
2,923.0	1.76	310.12	2,922.4	1,647.4	22.6	-43.1	48.1	0.18	0.05	5.69
3,023.0	1.87	308.62	3,022.4	1,747.4	24.6	-45.6	51.2	0.12	0.11	-1.50
3,123.0	1.93	308.41	3,122.3	1,847.3	26.7	-48.2	54.5	0.06	0.06	-0.21
3,223.0	1.96	307.52	3,222.3	1,947.3	28.8	-50.8	57.9	0.04	0.03	-0.89
3,323.0	2.13	307.03	3,322.2	2,047.2	30.9	-53.7	61.5	0.17	0.17	-0.49
3,423.0	1.97	307.41	3,422.1	2,147.1	33.1	-56.5	65.1	0.16	-0.16	0.38
3,523.0	2.05	309.81	3,522.1	2,247.1	35.3	-59.3	68.6	0.12	0.08	2.40
3,623.0	2.03	313.95	3,622.0	2,347.0	37.7	-61.9	72.1	0.15	-0.02	4.14
3,723.0	1.97	314.53	3,722.0	2,447.0	40.1	-64.4	75.6	0.06	-0.06	0.58
3,823.0	2.41	312.00	3,821.9	2,546.9	42.7	-67.2	79.4	0.45	0.44	-2.53
3,923.0	3.50	304.70	3,921.7	2,646.7	45.9	-71.3	84.5	1.15	1.09	-7.30
4,023.0	4.52	300.66	4,021.5	2,746.5	49.6	-77.2	91.5	1.06	1.02	-4.04
4,123.0	5.06	302.06	4,121.2	2,846.2	54.0	-84.3	99.8	0.55	0.54	1.40
4,223.0	5.40	301.56	4,220.7	2,945.7	58.8	-92.0	108.9	0.34	0.34	-0.50
4,323.0	5.56	302.91	4,320.3	3,045.3	63.8	-100.1	118.4	0.21	0.16	1.35
4,423.0	6.01	304.20	4,419.8	3,144.8	69.4	-108.5	128.5	0.47	0.45	1.29
4,523.0	6.44	306.80	4,519.2	3,244.2	75.7	-117.3	139.3	0.51	0.43	2.60
4,623.0	6.70	311.16	4,618.5	3,343.5	82.9	-126.2	150.7	0.56	0.26	4.36
4,723.0	6.93	313.55	4,717.8	3,442.8	90.9	-135.0	162.5	0.37	0.23	2.39
4,823.0	6.92	317.49	4,817.1	3,542.1	99.5	-143.4	174.5	0.48	-0.01	3.94

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Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Drilled		

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)	
4,923.0	6.87	319.81	4,916.4	3,641.4	108.5	-151.4	186.2	0.28	-0.05	2.32	
5,023.0	6.73	322.25	5,015.7	3,740.7	117.7	-158.8	197.7	0.32	-0.14	2.44	
5,123.0	6.51	325.49	5,115.0	3,840.0	127.0	-165.6	208.7	0.43	-0.22	3.24	
5,223.0	6.52	327.14	5,214.3	3,939.3	136.5	-171.9	219.4	0.19	0.01	1.65	
Gyro Tie in=6288' MD											
5,288.0	6.57	331.05	5,278.9	4,003.9	142.8	-175.7	226.2	0.69	0.08	6.02	
KOP=6318' MD											
5,318.0	6.40	330.70	5,308.7	4,033.7	145.8	-177.3	229.3	0.58	-0.57	-1.17	
5,350.0	4.50	331.50	5,340.6	4,065.6	148.4	-178.8	232.1	5.94	-5.94	2.50	
5,381.0	1.30	324.00	5,371.5	4,096.5	149.8	-179.6	233.6	10.37	-10.32	-24.19	
5,413.0	1.80	165.40	5,403.5	4,128.5	149.6	-179.7	233.5	9.52	1.56	-495.63	
5,444.0	5.20	160.60	5,434.5	4,159.5	147.8	-179.1	232.0	11.00	10.97	-15.48	
5,476.0	8.00	157.00	5,466.3	4,191.3	144.4	-177.8	228.8	8.84	8.75	-11.25	
5,507.0	10.20	163.60	5,496.9	4,221.9	139.8	-176.1	224.8	7.84	7.10	21.29	
5,539.0	12.60	169.60	5,528.2	4,253.2	133.6	-174.7	219.9	8.36	7.50	18.75	
5,570.0	15.10	173.60	5,558.3	4,283.3	126.3	-173.6	214.7	8.63	8.06	12.90	
5,601.0	17.70	177.10	5,588.1	4,313.1	117.6	-173.0	208.9	8.97	8.39	11.29	
5,633.0	20.30	179.70	5,618.3	4,343.3	107.2	-172.7	202.4	8.54	8.13	8.13	
5,664.0	22.20	182.00	5,647.2	4,372.2	95.9	-172.9	195.9	6.69	6.13	7.42	
5,696.0	24.40	185.10	5,676.6	4,401.6	83.3	-173.7	188.9	7.87	6.88	9.69	
5,727.0	27.00	187.40	5,704.5	4,429.5	69.9	-175.1	182.1	8.98	8.39	7.42	
5,759.0	29.40	188.80	5,732.7	4,457.7	55.0	-177.3	174.8	7.78	7.50	4.38	
5,790.0	32.20	190.30	5,759.4	4,484.4	39.3	-179.9	167.6	9.37	9.03	4.84	
5,821.0	35.10	191.70	5,785.2	4,510.2	22.5	-183.2	160.1	9.68	9.35	4.52	
5,853.0	37.80	192.50	5,810.9	4,535.9	3.9	-187.2	152.2	8.57	8.44	2.50	
5,884.0	41.10	193.70	5,834.8	4,559.8	-15.3	-191.7	144.2	10.93	10.65	3.87	
5,915.0	44.50	194.70	5,857.6	4,582.6	-35.7	-196.8	136.1	11.18	10.97	3.23	
5,947.0	47.70	195.30	5,879.8	4,604.8	-58.0	-202.8	127.6	10.09	10.00	1.88	
5,978.0	52.10	195.20	5,899.7	4,624.7	-80.9	-209.0	118.9	14.20	14.19	-0.32	
6,010.0	56.40	194.50	5,918.4	4,643.4	-106.0	-215.7	109.1	13.55	13.44	-2.19	
6,041.0	60.60	194.00	5,934.6	4,659.6	-131.6	-222.2	99.0	13.62	13.55	-1.61	
6,073.0	64.50	194.10	5,949.4	4,674.4	-159.1	-229.1	88.0	12.19	12.19	0.31	
6,105.0	67.90	194.60	5,962.3	4,687.3	-187.5	-236.3	76.8	10.72	10.63	1.56	
6,136.0	70.70	195.50	5,973.2	4,698.2	-215.5	-243.9	66.1	9.43	9.03	2.90	
6,167.0	72.80	197.70	5,982.9	4,707.9	-243.7	-252.3	55.9	9.56	6.77	7.10	
6,230.0	73.40	198.90	6,001.3	4,726.3	-300.9	-271.2	36.7	2.06	0.95	1.90	
6,324.0	73.70	199.50	6,027.9	4,752.9	-386.1	-300.9	9.5	0.69	0.32	0.64	
6,419.0	74.10	197.80	6,054.2	4,779.2	-472.5	-330.0	-19.0	1.77	0.42	-1.79	
6,514.0	75.00	194.30	6,079.5	4,804.5	-560.5	-355.3	-51.5	3.68	0.95	-3.68	
6,609.0	75.90	194.00	6,103.4	4,828.4	-649.7	-377.8	-86.9	1.00	0.95	-0.32	
6,703.0	73.10	195.20	6,128.5	4,853.5	-737.3	-400.6	-121.2	3.22	-2.98	1.28	
6,798.0	70.90	195.80	6,157.9	4,882.9	-824.4	-424.8	-154.0	2.39	-2.32	0.63	
6,893.0	70.80	197.20	6,189.0	4,914.0	-910.4	-450.3	-185.2	1.40	-0.11	1.47	

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6,987.0	72.00	198.80	6,219.0	4,944.0	-995.2	-477.8	-213.9	2.06	1.28	1.70	
7,081.0	72.40	197.40	6,247.8	4,972.8	-1,080.2	-505.6	-242.7	1.48	0.43	-1.49	
7,175.0	73.70	198.90	6,275.2	5,000.2	-1,165.7	-533.6	-271.5	2.06	1.38	1.60	
7,269.0	74.50	197.60	6,300.9	5,025.9	-1,251.5	-561.9	-300.3	1.58	0.85	-1.38	
7,301.0	75.00	196.90	6,309.3	5,034.3	-1,281.0	-571.1	-310.6	2.63	1.56	-2.19	
7,332.0	73.50	198.60	6,317.8	5,042.8	-1,309.4	-580.2	-320.3	7.16	-4.84	5.48	
7,363.0	72.20	201.80	6,326.9	5,051.9	-1,337.2	-590.4	-328.8	10.72	-4.19	10.32	
7,394.0	71.20	205.60	6,336.6	5,061.6	-1,364.1	-602.2	-335.5	12.08	-3.23	12.26	
7,426.0	70.50	208.90	6,347.1	5,072.1	-1,391.0	-616.1	-340.5	9.98	-2.19	10.31	
7,458.0	69.80	211.70	6,358.0	5,083.0	-1,417.0	-631.2	-343.9	8.52	-2.19	8.75	
7,489.0	68.80	215.00	6,369.0	5,094.0	-1,441.2	-647.2	-345.7	10.47	-3.23	10.65	
7,521.0	68.00	217.90	6,380.7	5,105.7	-1,465.2	-664.9	-345.9	8.79	-2.50	9.06	
7,552.0	67.70	220.80	6,392.4	5,117.4	-1,487.4	-683.1	-344.6	8.72	-0.97	9.35	
7,583.0	67.70	223.90	6,404.2	5,129.2	-1,508.5	-702.4	-341.9	9.25	0.00	10.00	
7,613.0	68.20	227.80	6,415.5	5,140.5	-1,527.9	-722.3	-337.5	12.16	1.67	13.00	
7,645.0	69.20	231.00	6,427.1	5,152.1	-1,547.3	-745.0	-331.0	9.83	3.13	10.00	
7,676.0	70.60	236.00	6,437.8	5,162.8	-1,564.6	-768.4	-322.7	15.80	4.52	16.13	
7,708.0	71.10	240.30	6,448.3	5,173.3	-1,580.6	-794.0	-311.7	12.79	1.56	13.44	
7,739.0	70.60	244.10	6,458.4	5,183.4	-1,594.2	-819.9	-299.1	11.69	-1.61	12.26	
7,771.0	71.00	247.50	6,469.0	5,194.0	-1,606.6	-847.5	-284.5	10.11	1.25	10.63	
7,802.0	70.60	250.90	6,479.1	5,204.1	-1,617.0	-874.8	-268.8	10.44	-1.29	10.97	
7,834.0	70.00	254.20	6,489.9	5,214.9	-1,626.0	-903.6	-251.2	9.89	-1.88	10.31	
7,865.0	70.50	257.20	6,500.4	5,225.4	-1,633.2	-931.8	-232.9	9.25	1.61	9.68	
7,896.0	70.80	261.50	6,510.7	5,235.7	-1,638.6	-960.6	-213.1	13.12	0.97	13.87	
7,928.0	70.10	262.90	6,521.4	5,246.4	-1,642.7	-990.5	-191.7	4.67	-2.19	4.38	
7,960.0	69.80	266.20	6,532.4	5,257.4	-1,645.6	-1,020.4	-169.4	9.73	-0.94	10.31	
7,991.0	70.10	269.60	6,543.0	5,268.0	-1,646.7	-1,049.5	-146.8	10.35	0.97	10.97	
8,023.0	70.50	272.80	6,553.8	5,278.8	-1,646.0	-1,079.6	-122.3	9.50	1.25	10.00	
8,055.0	70.90	276.00	6,564.4	5,289.4	-1,643.7	-1,109.7	-96.8	9.52	1.25	10.00	
8,086.0	71.40	278.90	6,574.4	5,299.4	-1,639.9	-1,138.8	-71.3	9.00	1.61	9.35	
8,118.0	71.80	281.90	6,584.5	5,309.5	-1,634.4	-1,168.6	-44.1	8.98	1.25	9.38	
8,149.0	71.70	284.50	6,594.2	5,319.2	-1,627.7	-1,197.3	-17.1	7.97	-0.32	8.39	
8,181.0	71.80	287.60	6,604.2	5,329.2	-1,619.3	-1,226.5	11.3	9.21	0.31	9.69	
8,212.0	71.70	290.50	6,613.9	5,338.9	-1,609.7	-1,254.3	39.4	8.89	-0.32	9.35	
8,244.0	70.70	293.80	6,624.3	5,349.3	-1,598.3	-1,282.4	68.6	10.25	-3.13	10.31	
8,275.0	70.30	297.20	6,634.6	5,359.6	-1,585.7	-1,308.8	97.3	10.42	-1.29	10.97	
8,307.0	71.00	300.60	6,645.2	5,370.2	-1,571.1	-1,335.2	127.2	10.26	2.19	10.63	
8,338.0	73.70	303.70	6,654.6	5,379.6	-1,555.4	-1,360.2	156.6	12.91	8.71	10.00	
8,369.0	76.60	306.30	6,662.6	5,387.6	-1,538.2	-1,384.7	186.6	12.38	9.35	8.39	
8,401.0	78.10	309.00	6,669.6	5,394.6	-1,519.1	-1,409.4	217.8	9.47	4.69	8.44	
8,432.0	78.90	312.90	6,675.7	5,400.7	-1,499.2	-1,432.4	248.1	12.60	2.58	12.58	
8,464.0	79.70	316.30	6,681.7	5,406.7	-1,477.1	-1,454.8	279.2	10.74	2.50	10.63	
8,495.0	79.80	319.30	6,687.2	5,412.2	-1,454.5	-1,475.2	309.2	9.53	0.32	9.68	

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513155
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Drilled		

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)
8,526.0	79.30	322.90	6,692.8	5,417.8	-1,430.8	-1,494.4	338.7	11.53	-1.61	11.61
8,558.0	79.80	326.10	6,698.6	5,423.6	-1,405.2	-1,512.7	368.7	9.96	1.56	10.00
8,589.0	82.00	328.10	6,703.5	5,428.5	-1,379.5	-1,529.3	397.4	9.54	7.10	6.45
8,621.0	85.10	330.40	6,707.1	5,432.1	-1,352.2	-1,545.5	426.8	12.04	9.69	7.19
8,652.0	88.50	332.30	6,708.9	5,433.9	-1,325.0	-1,560.4	454.9	12.56	10.97	6.13
LP/Deepest Point of Well#8684 MD/ 6709' TVD										
8,684.0	89.70	333.60	6,709.4	5,434.4	-1,296.5	-1,574.9	483.7	5.53	3.75	4.06
8,778.0	91.30	334.10	6,708.5	5,433.5	-1,212.2	-1,616.3	567.4	1.78	1.70	0.53
8,872.0	90.50	334.50	6,707.1	5,432.1	-1,127.5	-1,657.1	650.8	0.95	-0.85	0.43
8,967.0	92.00	334.90	6,705.0	5,430.0	-1,041.6	-1,697.7	734.7	1.63	1.58	0.42
9,062.0	90.70	334.00	6,702.8	5,427.8	-955.9	-1,738.7	818.9	1.66	-1.37	-0.95
9,156.0	92.00	333.30	6,700.5	5,425.5	-871.7	-1,780.4	902.7	1.57	1.38	-0.74
9,251.0	89.90	334.10	6,699.0	5,424.0	-786.6	-1,822.4	987.5	2.37	-2.21	0.84
9,346.0	90.50	334.80	6,698.6	5,423.6	-700.9	-1,863.4	1,071.6	0.97	0.63	0.74
9,440.0	92.00	335.50	6,696.6	5,421.6	-615.6	-1,902.9	1,154.3	1.76	1.60	0.74
9,534.0	90.00	334.90	6,694.9	5,419.9	-530.3	-1,942.3	1,237.0	2.22	-2.13	-0.64
9,629.0	92.60	337.50	6,692.8	5,417.8	-443.4	-1,980.7	1,319.8	3.87	2.74	2.74
9,724.0	91.00	335.80	6,689.8	5,414.8	-356.2	-2,018.3	1,402.1	2.46	-1.68	-1.79
9,818.0	92.00	336.70	6,687.3	5,412.3	-270.2	-2,056.1	1,484.0	1.43	1.06	0.96
9,913.0	89.20	335.50	6,686.4	5,411.4	-183.4	-2,094.6	1,566.8	3.21	-2.95	-1.26
10,007.0	89.00	334.90	6,687.8	5,412.8	-98.0	-2,134.0	1,649.5	0.67	-0.21	-0.64
10,102.0	90.20	334.50	6,688.5	5,413.5	-12.2	-2,174.6	1,733.5	1.33	1.26	-0.42
10,196.0	91.00	333.90	6,687.5	5,412.5	72.5	-2,215.5	1,817.0	1.06	0.85	-0.64
10,291.0	91.70	334.70	6,685.3	5,410.3	158.0	-2,256.7	1,901.2	1.12	0.74	0.84
10,385.0	92.70	333.30	6,681.7	5,406.7	242.5	-2,297.9	1,984.8	1.83	1.06	-1.49
10,480.0	89.00	334.10	6,680.3	5,405.3	327.6	-2,340.0	2,069.5	3.98	-3.89	0.84
10,574.0	89.00	333.50	6,681.9	5,406.9	411.9	-2,381.5	2,153.3	0.64	0.00	-0.64
10,669.0	91.40	335.50	6,681.6	5,406.6	497.7	-2,422.4	2,237.4	3.29	2.53	2.11
10,763.0	92.60	336.20	6,678.3	5,403.3	583.4	-2,460.8	2,319.5	1.48	1.28	0.74
10,857.0	92.80	336.30	6,673.9	5,398.9	669.3	-2,498.6	2,401.3	0.24	0.21	0.11
10,952.0	92.40	335.50	6,669.5	5,394.5	756.0	-2,537.4	2,484.2	0.94	-0.42	-0.84
11,046.0	90.80	334.70	6,666.9	5,391.9	841.2	-2,576.9	2,567.0	1.90	-1.70	-0.85
11,140.0	90.40	333.60	6,665.9	5,390.9	925.8	-2,617.9	2,650.5	1.25	-0.43	-1.17
11,235.0	89.40	332.90	6,666.1	5,391.1	1,010.6	-2,660.7	2,735.6	1.28	-1.05	-0.74
11,329.0	91.70	333.30	6,665.2	5,390.2	1,094.4	-2,703.2	2,819.8	2.48	2.45	0.43
11,424.0	90.80	333.30	6,663.1	5,388.1	1,179.3	-2,745.9	2,904.8	0.95	-0.95	0.00
11,518.0	92.40	336.20	6,660.5	5,385.5	1,264.2	-2,786.0	2,987.9	3.52	1.70	3.09
11,612.0	92.30	335.40	6,656.6	5,381.6	1,349.9	-2,824.5	3,070.0	0.86	-0.11	-0.85
11,707.0	91.80	333.70	6,653.2	5,378.2	1,435.6	-2,865.2	3,154.0	1.86	-0.53	-1.79
11,801.0	90.30	327.70	6,651.5	5,376.5	1,517.6	-2,911.2	3,239.9	6.58	-1.60	-6.98
11,895.0	91.70	329.70	6,649.9	5,374.9	1,597.9	-2,960.0	3,327.2	2.60	1.49	2.13
11,990.0	93.00	332.50	6,646.0	5,371.0	1,680.9	-3,005.9	3,413.7	3.25	1.37	2.95

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Measured Depth (usft)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Local Coordinates	Comment
5,288.0	5,278.9	142.8	-175.7	Gyro Tie In=5288' MD	
5,318.0	5,308.7	145.8	-177.3	KOP=5318' MD	
8,684.0	6,709.4	-1,296.5	-1,574.9	LP/Deepest Point of Well=8684' MD/ 6709' TVD	
12,832.0	6,645.2	2,454.3	-3,338.0	Final Survey=12832' MD/ 6645' TVD	
12,885.0	6,646.0	2,503.0	-3,358.9	Projection to TD=12885' MD/ 6646' TVD	

Measured Depth (usft)	Vertical Depth (usft)	Subsea Depth (usft)	Depth (usft)	Azimuth (°)	Inclination (°)	Turn Rate (/100usft)	Build Rate (/100usft)	Dogleg Rate (/100usft)	Section Rate (/100usft)	Vertical Section (usft)	+E-W (usft)	+N-S (usft)	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,084.0	37.80	6,420.0	5,367.0	1,766.1	-3.0454	5.75	-1.17	3.4963	3,496.3	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,178.0	91.70	6,639.0	5,364.0	1,652.8	-3.0816	1.08	-0.21	3,577.3	3,577.3	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,273.0	89.90	6,637.7	5,362.7	1,940.4	-3.1184	2.12	-1.89	3,659.2	3,659.2	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,367.0	89.50	6,638.2	5,363.2	2,027.1	-3.1546	0.86	-0.43	3,740.2	3,740.2	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,461.0	89.70	6,638.8	5,363.8	2,113.3	-3.1920	1.08	0.21	3,821.8	3,821.8	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,555.0	90.50	6,638.7	5,363.7	2,199.4	-3.2300	0.95	0.85	3,903.7	3,903.7	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,650.0	87.70	6,640.2	5,365.2	2,286.8	-3.2670	3.25	-2.95	3,985.8	3,985.8	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,745.0	88.40	6,643.4	5,368.4	2,374.4	-3.3037	1.20	0.74	4,067.7	4,067.7	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,832.0	89.20	6,645.2	5,370.2	2,454.3	-3.3380	0.92	0.92	4,143.0	4,143.0	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00
12,885.0	89.20	6,646.0	5,371.0	2,503.0	-3.3589	0.00	0.00	4,188.9	4,188.9	3,821.8	2,113.3	2,113.3	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Subsea Depth (usft)	Depth (usft)	Azimuth (°)	Inclination (°)	Turn Rate (/100usft)	Build Rate (/100usft)	Dogleg Rate (/100usft)	Section Rate (/100usft)	Vertical Section (usft)	+E-W (usft)	+N-S (usft)
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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513155
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275' Gnd
Project:	Doddridge County, WV Gnd	MD Reference:	KB@23 @ 1275' Gnd
Site:	Doddridge County 513155	North Reference:	Gnd
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Dilled		



Survey Report PHX

17-06504

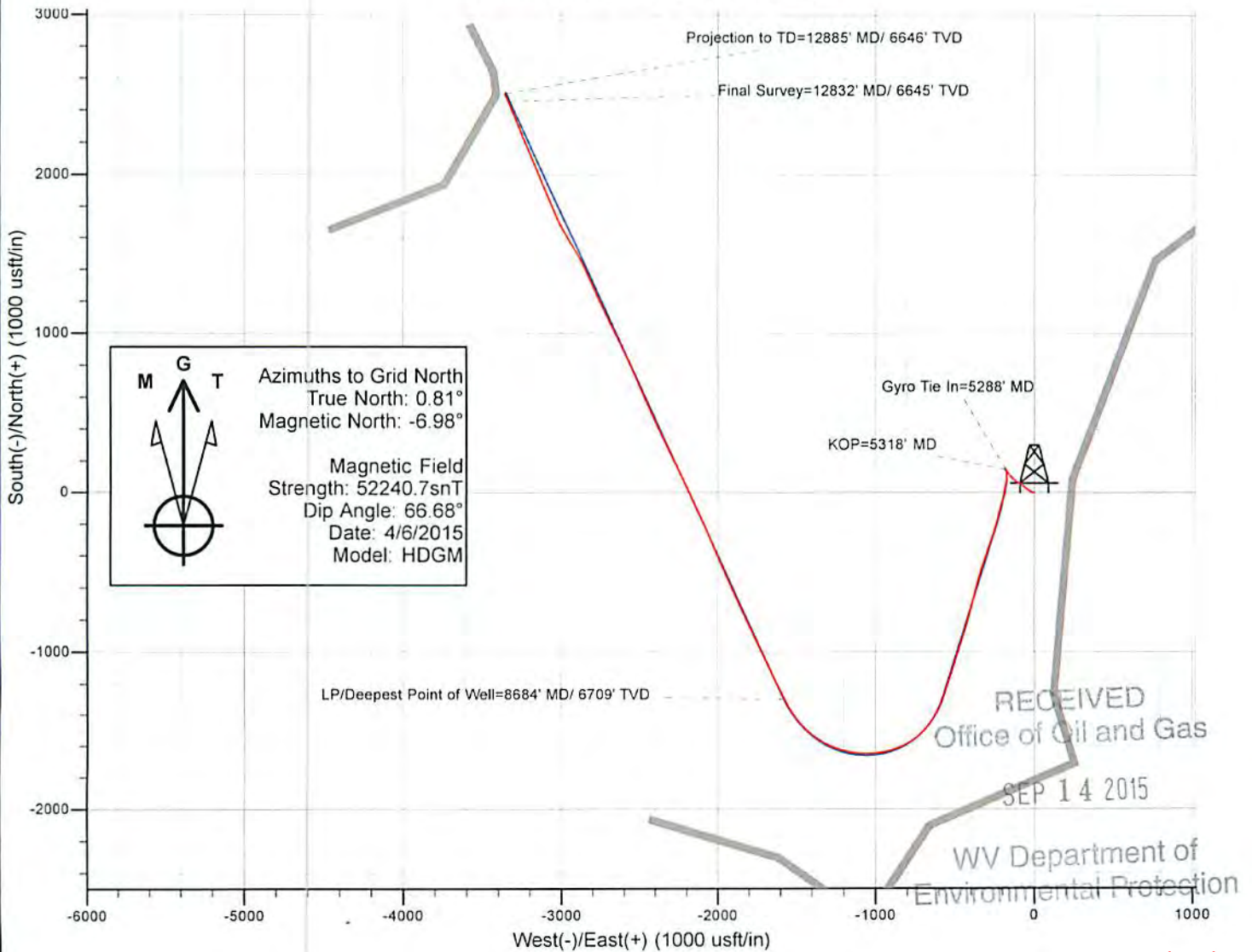
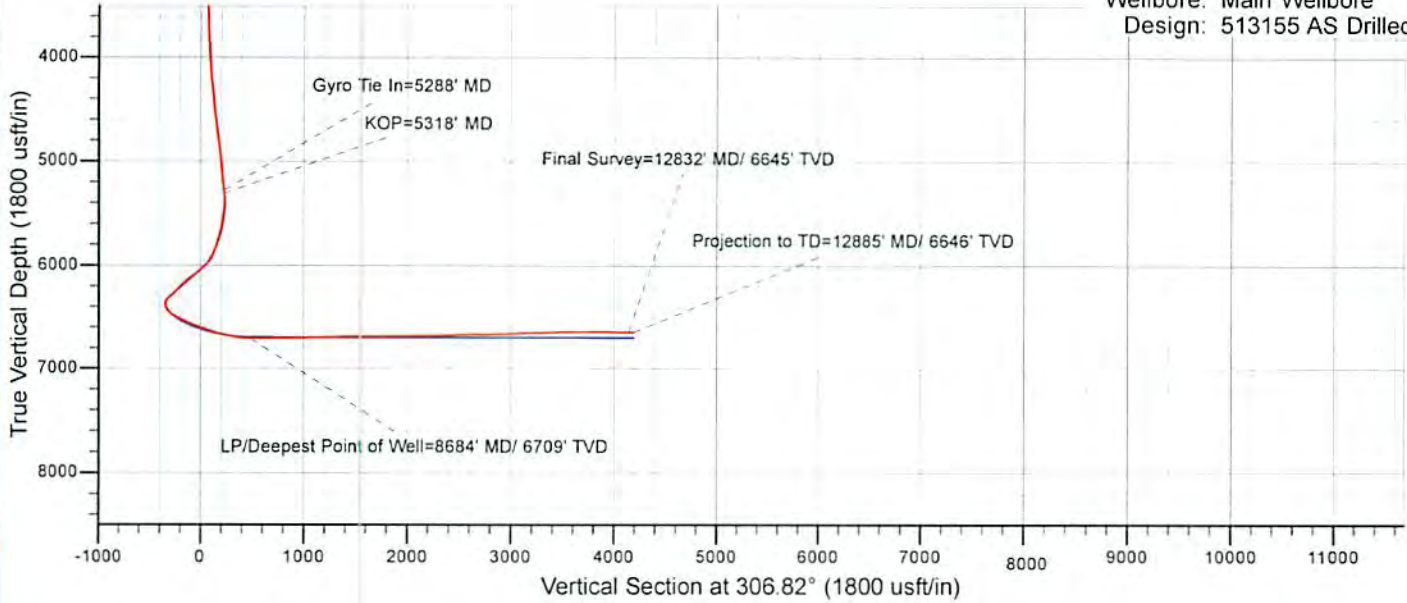


10/16/2015



EQT Production - Marcellus

Project: Doddridge County, WV Grid
 Site: Doddridge County 513155
 Well: Well #513155
 Wellbore: Main Wellbore
 Design: 513155 AS Drilled



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