



## **EQT Production - Marcellus**

**Doddridge County, WV Grid  
Doddridge County 513138  
Well #513138**

**Main Wellbore**

**Design: As Drilled Surveys**

## **Standard Survey Report**

**22 September, 2014**



**Where energy meets innovation.**



Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User 9b	Local Co-ordinate Reference:	Site Doddridge County 513138
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1218.0usft
Project:	Doddridge County, WV GRB	MD Reference:	KP @ 1218.0usft
Site:	Doddridge County 513138	North Reference:	Grid
Well:	Well #513138	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled Surveys		

Project: Doddridge County, WV GRB			
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 513138			
Site Position:	From: Map	Northing: 267,950.50 usft	Latitude: 39.23
		Easting: 1,635,237.60 usft	Longitude: -80.79
Position Uncertainty:	0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: -0.82 °

Well: Well #513138			
Well Position	+N-S: 0.0 usft	Northing: 267,950.50 usft	Latitude: 39° 13' 42.618 N
	+E-W: 0.0 usft	Easting: 1,635,237.60 usft	Longitude: 80° 47' 15.534 W
Position Uncertainty	0.0 usft	Wellhead Elevation: usft	Ground Level: 1,202.0 usft

Wellbore: Main Wellbore					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	8/18/2014	-8.46	66.75	52,242

Design: 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	335.15	

Survey Program		Date:	9/22/2014		
From (')	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	6,673.0	513138 Gyrodata Gyros 100 ft (Main Wellb	GYD_DP_MS	Gyrodata gyro-compassing and drop	
0.00	14,023.0	Phoenix 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	-1,218.0	0.0	0.0	0.0	0.00	0.00	0.00
103.1	0.10	80.49	103.1	-1,114.9	0.0	0.1	0.0	0.10	0.10	0.00
203.1	0.12	55.42	203.1	-1,014.9	0.1	0.3	0.0	0.05	0.02	-25.07
303.1	0.12	47.65	303.1	-914.9	0.2	0.4	0.0	0.02	0.00	-7.77
403.1	0.18	83.22	403.1	-814.9	0.3	0.7	0.0	0.11	0.06	35.57
503.1	0.30	94.70	503.1	-714.9	0.3	1.1	-0.2	0.13	0.12	11.48
603.1	0.35	99.83	603.1	-614.9	0.2	1.6	-0.5	0.06	0.05	5.13
703.1	0.33	100.42	703.1	-514.9	0.1	2.2	-0.8	0.02	-0.02	0.59





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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1218.0usft
Site:	Doddridge County 513138	North Reference:	Grid
Well:	Well #513138	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled Surveys		

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)
803.1	0.38	101.80	803.1	-414.9	0.0	2.8	-1.2	0.05	0.05	1.38
903.1	0.33	100.56	903.1	-314.9	-0.1	3.4	-1.5	0.05	-0.05	-1.24
1,003.1	0.39	105.09	1,003.0	-215.0	-0.3	4.0	-1.9	0.07	0.06	4.53
1,103.1	0.40	110.45	1,103.0	-115.0	-0.5	4.7	-2.4	0.04	0.01	5.36
1,203.1	0.42	82.52	1,203.0	-15.0	-0.5	5.4	-2.8	0.20	0.02	-27.93
1,303.1	0.51	59.20	1,303.0	85.0	-0.3	6.1	-2.8	0.21	0.09	-23.32
1,403.1	0.47	48.57	1,403.0	185.0	0.2	6.8	-2.7	0.10	-0.04	-10.63
1,503.1	0.48	43.09	1,503.0	285.0	0.8	7.4	-2.4	0.05	0.01	-5.48
1,603.1	0.21	28.10	1,603.0	385.0	1.3	7.8	-2.1	0.28	-0.27	-14.99
1,703.1	0.09	348.72	1,703.0	485.0	1.5	7.9	-1.9	0.15	-0.12	-39.38
1,803.1	0.05	206.53	1,803.0	585.0	1.6	7.8	-1.9	0.13	-0.04	-142.19
1,903.1	0.06	225.94	1,903.0	685.0	1.5	7.8	-1.9	0.02	0.01	19.41
2,003.1	0.12	163.63	2,003.0	785.0	1.3	7.8	-2.0	0.11	0.06	-62.31
2,103.1	0.07	148.03	2,103.0	885.0	1.2	7.8	-2.2	0.06	-0.05	-15.60
2,203.1	0.08	127.16	2,203.0	985.0	1.1	7.9	-2.3	0.03	0.01	-20.87
2,303.1	0.18	166.23	2,303.0	1,085.0	0.9	8.0	-2.5	0.13	0.10	39.07
2,403.1	0.13	172.33	2,403.0	1,185.0	0.6	8.1	-2.8	0.05	-0.05	6.10
2,503.1	0.15	204.77	2,503.0	1,285.0	0.4	8.0	-3.0	0.08	0.02	32.44
2,603.1	0.13	201.67	2,603.0	1,385.0	0.2	7.9	-3.2	0.02	-0.02	-3.10
2,703.1	0.09	199.35	2,703.0	1,485.0	0.0	7.9	-3.3	0.04	-0.04	-2.32
2,803.1	0.14	210.92	2,803.0	1,585.0	-0.2	7.8	-3.4	0.05	0.05	11.57
2,903.1	0.06	198.99	2,903.0	1,685.0	-0.3	7.7	-3.5	0.08	-0.08	-11.93
3,003.1	0.11	178.82	3,003.0	1,785.0	-0.5	7.7	-3.7	0.08	0.05	-20.17
3,103.1	0.10	192.58	3,103.0	1,885.0	-0.7	7.7	-3.8	0.03	-0.01	13.76
3,203.1	0.12	170.73	3,203.0	1,985.0	-0.8	7.7	-4.0	0.05	0.02	-21.85
3,303.1	0.08	155.74	3,303.0	2,085.0	-1.0	7.7	-4.2	0.05	-0.04	-14.99
3,403.1	0.12	183.77	3,403.0	2,185.0	-1.2	7.7	-4.3	0.06	0.04	28.03
3,503.1	0.08	195.85	3,503.0	2,285.0	-1.4	7.7	-4.5	0.05	-0.04	12.08
3,603.1	0.08	225.52	3,603.0	2,385.0	-1.5	7.6	-4.5	0.04	0.00	29.67
3,703.1	0.07	287.30	3,703.0	2,485.0	-1.5	7.5	-4.5	0.08	-0.01	61.78
3,803.1	0.18	285.58	3,803.0	2,585.0	-1.4	7.3	-4.4	0.11	0.11	-1.72
3,903.1	0.54	292.38	3,903.0	2,685.0	-1.2	6.7	-3.9	0.36	0.36	6.80
4,003.1	0.58	294.71	4,003.0	2,785.0	-0.8	5.8	-3.2	0.05	0.04	2.33
4,103.1	0.83	299.01	4,103.0	2,885.0	-0.3	4.7	-2.2	0.26	0.25	4.30
4,203.1	0.99	293.42	4,203.0	2,985.0	0.4	3.3	-1.0	0.18	0.16	-5.59
4,303.1	1.28	299.55	4,303.0	3,085.0	1.3	1.5	0.6	0.31	0.29	6.13
4,403.1	1.31	298.12	4,403.0	3,185.0	2.4	-0.4	2.4	0.04	0.03	-1.43
4,503.1	1.38	298.50	4,502.9	3,284.9	3.5	-2.5	4.3	0.07	0.07	0.38
4,603.1	1.31	301.98	4,602.9	3,384.9	4.7	-4.5	6.2	0.11	-0.07	3.48
4,703.1	1.20	306.75	4,702.9	3,484.9	5.9	-6.3	8.1	0.15	-0.11	4.77
4,803.1	1.02	311.44	4,802.9	3,584.9	7.2	-7.8	9.8	0.20	-0.18	4.69
4,903.1	0.89	321.61	4,902.8	3,684.8	8.4	-9.0	11.4	0.21	-0.13	10.17



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Well:	Well #513138	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled Surveys		

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)
5,003.1	0.72	319.24	5,002.8	3,784.8	9.4	-9.9	12.7	0.17	-0.17	-2.37
5,103.1	0.76	323.33	5,102.8	3,884.8	10.4	-10.7	14.0	0.07	0.04	4.09
5,203.1	0.83	320.88	5,202.8	3,984.8	11.5	-11.5	15.3	0.08	0.07	-2.45
5,303.1	0.76	315.26	5,302.8	4,084.8	12.6	-12.5	16.6	0.10	-0.07	-5.62
5,320.0	0.80	333.90	5,319.7	4,101.7	12.8	-12.6	16.9	1.51	0.24	110.04
5,352.0	1.80	343.80	5,351.7	4,133.7	13.4	-12.8	17.6	3.19	3.13	30.94
5,383.0	4.30	352.70	5,382.7	4,164.7	15.1	-13.1	19.2	8.18	8.06	28.71
5,415.0	7.30	0.90	5,414.5	4,196.5	18.3	-13.2	22.2	9.70	9.38	25.63
5,446.0	6.30	10.00	5,445.3	4,227.3	21.9	-12.9	25.3	4.73	-3.23	29.35
5,478.0	3.80	35.70	5,477.2	4,259.2	24.5	-12.0	27.3	10.35	-7.81	80.31
5,510.0	4.70	69.10	5,509.1	4,291.1	25.9	-10.2	27.7	8.09	2.81	104.38
5,541.0	6.90	94.40	5,539.9	4,321.9	26.2	-7.1	28.7	10.72	7.10	81.61
5,573.0	9.10	112.60	5,571.6	4,353.6	25.0	-2.9	23.9	10.40	6.88	56.88
5,604.0	11.00	130.10	5,602.2	4,384.2	22.2	1.7	19.4	11.53	6.13	56.45
5,635.0	12.50	144.70	5,633.5	4,415.5	17.4	6.0	13.3	10.37	4.69	45.63
5,667.0	14.20	155.50	5,663.7	4,445.7	11.2	9.5	6.2	9.71	5.48	34.84
5,699.0	16.50	157.40	5,694.5	4,476.5	3.4	12.9	-2.3	7.36	7.19	5.94
5,730.0	18.90	156.60	5,724.1	4,506.1	-5.2	16.6	-11.7	7.78	7.74	-2.58
5,762.0	21.80	155.60	5,754.1	4,536.1	-15.4	21.1	-22.9	9.13	9.06	-3.13
5,794.0	23.90	155.40	5,783.5	4,565.5	-26.7	26.3	-35.3	6.57	6.56	-0.63
5,825.0	19.80	155.10	5,812.3	4,594.3	-37.2	31.1	-46.8	13.23	-13.23	-0.97
5,857.0	15.90	156.40	5,842.8	4,624.8	-46.1	35.1	-56.6	12.25	-12.19	4.06
5,888.0	12.80	157.80	5,872.8	4,654.8	-53.2	38.1	-64.3	10.06	-10.00	4.52
5,920.0	11.60	156.10	5,904.1	4,686.1	-59.4	40.8	-71.1	3.91	-3.75	-5.31
5,951.0	10.50	149.30	5,934.5	4,716.5	-64.7	43.5	-77.0	5.50	-3.55	-21.94
5,983.0	9.30	137.80	5,966.0	4,748.0	-69.1	46.7	-82.4	7.21	-3.75	-35.94
6,014.0	7.00	126.20	5,996.7	4,778.7	-72.1	49.9	-86.4	9.09	-7.42	-37.42
6,045.0	4.00	116.80	6,027.6	4,809.6	-73.7	52.4	-88.9	10.07	-9.68	-30.32
6,077.0	0.90	124.40	6,059.5	4,841.5	-74.3	53.6	-90.0	9.72	-9.69	23.75
6,108.0	2.50	324.50	6,090.5	4,872.5	-73.9	53.4	-89.5	10.84	5.16	-515.81
6,140.0	5.70	341.40	6,122.4	4,904.4	-71.9	52.5	-87.3	10.58	10.00	52.81
6,171.0	8.90	351.40	6,153.2	4,935.2	-68.0	51.6	-83.4	11.07	10.32	32.26
6,203.0	11.30	354.00	6,184.7	4,966.7	-62.5	50.9	-78.1	7.63	7.50	8.13
6,234.0	13.70	354.30	6,214.9	4,996.9	-55.8	50.3	-71.7	7.74	7.74	0.97
6,266.0	15.90	354.90	6,245.9	5,027.9	-47.7	49.5	-64.0	6.89	6.88	1.88
6,300.0	18.40	357.40	6,278.4	5,060.4	-37.7	48.8	-54.7	7.66	7.35	7.35
6,331.0	20.90	356.80	6,307.6	5,089.6	-27.2	48.3	-45.0	8.09	8.06	-1.94
6,363.0	23.90	355.30	6,337.1	5,119.1	-15.1	47.5	-33.6	9.54	9.38	-4.69
6,394.0	27.20	354.40	6,365.1	5,147.1	-1.8	46.3	-21.0	10.72	10.65	-2.90
6,426.0	30.30	353.50	6,393.2	5,175.2	13.5	44.6	-6.5	9.78	9.69	-2.81
6,457.0	33.80	352.70	6,419.4	5,201.4	29.9	42.6	9.2	11.37	11.29	-2.58
6,489.0	36.90	351.90	6,445.5	5,227.5	48.2	40.2	26.9	9.79	9.69	-2.50
6,521.0	40.60	350.50	6,470.5	5,252.5	68.0	37.1	46.1	11.88	11.56	-4.38





Phoenix Technology Services  
Survey Report



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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1218.0usft
Site:	Doddridge County 513138	North Reference:	Grid
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Wellbore:	Main Wellbore		
Design:	As Drilled Surveys		

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)
6,552.0	44.50	349.90	6,493.3	5,275.3	88.7	33.5	66.4	12.65	12.58	-1.94
6,584.0	48.60	350.00	6,515.3	5,297.3	111.5	29.5	88.8	12.81	12.81	0.31
6,616.0	52.50	350.10	6,535.6	5,317.6	135.9	25.2	112.7	12.19	12.19	0.31
6,647.0	57.10	349.50	6,553.5	5,335.5	160.8	20.7	137.2	14.92	14.84	-1.94
6,679.0	61.50	348.40	6,569.8	5,351.8	187.8	15.4	163.9	14.06	13.75	-3.44
6,710.0	66.00	347.00	6,583.6	5,365.6	214.9	9.5	191.0	15.07	14.52	-4.52
6,742.0	70.40	345.70	6,595.4	5,377.4	243.8	2.5	220.2	14.26	13.75	-4.06
6,773.0	74.50	345.20	6,604.8	5,386.8	272.4	-4.9	249.3	13.31	13.23	-1.61
6,804.0	78.40	344.20	6,612.0	5,394.0	301.5	-12.9	279.0	12.97	12.58	-3.23
6,836.0	82.40	342.60	6,617.4	5,399.4	331.7	-21.9	310.2	13.44	12.50	-5.00
6,867.0	85.30	341.00	6,620.7	5,402.7	361.0	-31.5	340.8	10.67	9.35	-5.16
6,899.0	87.80	340.00	6,622.6	5,404.6	391.1	-42.2	372.6	8.41	7.81	-3.13
6,930.0	89.50	337.50	6,623.4	5,405.4	419.9	-53.4	403.5	9.75	5.48	-8.06
6,961.0	90.50	334.10	6,623.4	5,405.4	448.2	-66.1	434.5	11.43	3.23	-10.97
7,024.0	90.30	331.80	6,622.9	5,404.9	504.3	-94.8	497.5	3.66	-0.32	-3.65
7,087.0	88.60	333.00	6,623.5	5,405.5	560.1	-124.0	560.4	3.30	-2.70	1.90
7,149.0	87.90	332.70	6,625.4	5,407.4	615.3	-152.2	622.3	1.23	-1.13	-0.48
7,212.0	88.40	332.70	6,627.4	5,409.4	671.2	-181.1	685.2	0.79	0.79	0.00
7,275.0	89.10	332.20	6,628.8	5,410.8	727.1	-210.3	748.1	1.37	1.11	-0.79
7,337.0	88.50	332.10	6,630.1	5,412.1	781.9	-239.2	810.0	0.98	-0.97	-0.16
7,400.0	89.00	332.40	6,631.5	5,413.5	837.6	-268.5	872.9	0.93	0.79	0.48
7,463.0	87.80	333.00	6,633.3	5,415.3	893.6	-297.4	935.9	2.13	-1.90	0.95
7,526.0	87.90	332.30	6,635.6	5,417.6	949.5	-326.3	998.7	1.12	0.16	-1.11
7,588.0	88.30	331.50	6,637.7	5,419.7	1,004.2	-355.5	1,060.6	1.44	0.65	-1.29
7,651.0	87.90	333.10	6,639.8	5,421.8	1,059.9	-384.8	1,123.5	2.62	-0.63	2.54
7,714.0	87.50	332.60	6,642.3	5,424.3	1,115.9	-413.5	1,186.4	1.02	-0.63	-0.79
7,778.0	87.70	333.00	6,645.0	5,427.0	1,172.8	-442.8	1,250.3	0.70	0.31	0.63
7,841.0	87.40	334.10	6,647.7	5,429.7	1,229.2	-470.8	1,313.2	1.81	-0.48	1.75
7,904.0	88.00	334.60	6,650.2	5,432.2	1,285.9	-498.0	1,376.1	1.24	0.95	0.79
7,967.0	88.70	335.70	6,652.0	5,434.0	1,343.0	-524.5	1,439.1	2.07	1.11	1.75
8,030.0	89.40	335.90	6,653.0	5,435.0	1,400.5	-550.3	1,502.1	1.16	1.11	0.32
8,093.0	88.10	335.40	6,654.4	5,436.4	1,457.9	-576.3	1,565.1	2.21	-2.06	-0.79
8,156.0	88.10	335.20	6,656.5	5,438.5	1,515.1	-602.6	1,628.1	0.32	0.00	-0.32
8,219.0	88.80	335.30	6,658.2	5,440.2	1,572.3	-629.0	1,691.0	1.12	1.11	0.16
8,282.0	89.40	335.40	6,659.2	5,441.2	1,629.5	-655.2	1,754.0	0.97	0.95	0.16
8,345.0	88.60	334.80	6,660.3	5,442.3	1,686.7	-681.8	1,817.0	1.59	-1.27	-0.95
8,408.0	88.50	334.60	6,661.9	5,443.9	1,743.6	-708.7	1,880.0	0.35	-0.16	-0.32
8,471.0	89.30	334.60	6,663.1	5,445.1	1,800.5	-735.7	1,943.0	1.27	1.27	0.00
8,533.0	89.80	334.40	6,663.6	5,445.6	1,856.5	-762.4	2,005.0	0.87	0.81	-0.32
8,596.0	89.80	333.80	6,663.8	5,445.8	1,913.1	-789.9	2,068.0	0.95	0.00	-0.95
8,659.0	90.00	333.00	6,663.9	5,445.9	1,969.5	-818.1	2,130.9	1.31	0.32	-1.27
8,723.0	88.50	333.80	6,664.8	5,446.8	2,026.7	-846.8	2,194.9	2.66	-2.34	1.25



Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Doc	Local Co-ordinate Reference:	Site Doddridge County 513138
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1218.0usft
Project:	Doddridge County WV Grid	MD Reference:	KB @ 1218.0usft
Site:	Doddridge County 513138	North Reference:	Grid
Well:	Well #513138	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	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)
8,785.0	87.10	333.10	6,667.1	5,449.1	2,082.1	-874.5	2,256.8	2.52	-2.26	-1.13
8,848.0	87.40	332.90	6,670.2	5,452.2	2,138.2	-903.0	2,319.7	0.57	0.48	-0.32
8,910.0	87.30	333.30	6,673.0	5,455.0	2,193.4	-931.0	2,381.6	0.66	-0.16	0.65
8,973.0	87.90	333.00	6,675.7	5,457.7	2,249.6	-959.5	2,444.5	1.06	0.95	-0.48
9,037.0	88.20	332.80	6,677.8	5,459.8	2,306.5	-988.6	2,508.4	0.56	0.47	-0.31
9,100.0	88.40	332.20	6,679.7	5,461.7	2,362.4	-1,017.7	2,571.3	1.00	0.32	-0.95
9,163.0	88.10	333.00	6,681.6	5,463.6	2,418.3	-1,046.7	2,634.2	1.36	-0.48	1.27
9,226.0	88.10	334.20	6,683.7	5,465.7	2,474.7	-1,074.7	2,697.2	1.90	0.00	1.90
9,289.0	86.90	335.10	6,686.5	5,468.5	2,531.5	-1,101.6	2,760.1	2.38	-1.90	1.43
9,352.0	86.70	335.40	6,690.0	5,472.0	2,588.7	-1,127.9	2,823.0	0.57	-0.32	0.48
9,415.0	87.20	334.20	6,693.3	5,475.3	2,645.6	-1,154.7	2,885.9	2.06	0.79	-1.90
9,479.0	87.40	333.50	6,696.4	5,478.4	2,703.0	-1,182.9	2,949.8	1.14	0.31	-1.09
9,541.0	87.90	332.80	6,698.9	5,480.9	2,758.2	-1,210.9	3,011.7	1.39	0.81	-1.13
9,604.0	87.30	334.10	6,701.5	5,483.5	2,814.5	-1,239.0	3,074.6	2.27	-0.95	2.06
9,668.0	87.30	335.30	6,704.6	5,486.6	2,872.3	-1,266.3	3,138.6	1.87	0.00	1.88
9,731.0	87.80	335.10	6,707.2	5,489.2	2,929.5	-1,292.7	3,201.5	0.85	0.79	-0.32
9,793.0	86.70	335.60	6,710.2	5,492.2	2,985.8	-1,318.6	3,263.4	1.95	-1.77	0.81
9,857.0	86.50	335.30	6,714.0	5,496.0	3,043.9	-1,345.1	3,327.3	0.56	-0.31	-0.47
9,920.0	85.40	336.10	6,718.5	5,500.5	3,101.1	-1,371.0	3,390.2	2.16	-1.75	1.27
9,983.0	85.80	336.20	6,723.3	5,505.3	3,158.6	-1,396.4	3,453.0	0.65	0.63	0.16
10,046.0	88.10	335.60	6,726.7	5,508.7	3,216.0	-1,422.1	3,515.9	3.77	3.65	-0.95
10,109.0	90.90	335.70	6,727.2	5,509.2	3,273.4	-1,448.0	3,578.9	4.45	4.44	0.16
10,173.0	91.80	335.90	6,725.7	5,507.7	3,331.8	-1,474.3	3,642.8	1.44	1.41	0.31
10,236.0	90.80	336.10	6,724.3	5,506.3	3,389.3	-1,499.9	3,705.8	1.62	-1.59	0.32
10,300.0	90.80	335.30	6,723.4	5,505.4	3,447.6	-1,526.2	3,769.8	1.25	0.00	-1.25
10,363.0	89.50	334.80	6,723.2	5,505.2	3,504.7	-1,552.8	3,832.8	2.21	-2.06	-0.79
10,426.0	89.30	334.70	6,723.9	5,505.9	3,561.7	-1,579.7	3,895.8	0.35	-0.32	-0.16
10,489.0	89.80	333.90	6,724.4	5,506.4	3,618.5	-1,607.0	3,958.8	1.50	0.79	-1.27
10,552.0	89.60	335.10	6,724.7	5,506.7	3,675.4	-1,634.1	4,021.8	1.93	-0.32	1.90
10,615.0	87.90	334.50	6,726.1	5,508.1	3,732.3	-1,660.9	4,084.8	2.86	-2.70	-0.95
10,678.0	87.90	334.70	6,728.4	5,510.4	3,789.2	-1,687.9	4,147.7	0.32	0.00	0.32
10,741.0	88.50	334.10	6,730.4	5,512.4	3,846.0	-1,715.1	4,210.7	1.35	0.95	-0.95
10,804.0	91.20	334.70	6,730.5	5,512.5	3,902.8	-1,742.3	4,273.7	4.39	4.29	0.95
10,867.0	92.60	335.70	6,728.4	5,510.4	3,960.0	-1,768.8	4,336.6	2.73	2.22	1.59
10,930.0	92.40	335.30	6,725.7	5,507.7	4,017.2	-1,794.9	4,399.6	0.71	-0.32	-0.63
10,993.0	92.20	334.70	6,723.2	5,505.2	4,074.3	-1,821.5	4,462.5	1.00	-0.32	-0.95
11,056.0	90.70	335.30	6,721.6	5,503.6	4,131.4	-1,848.1	4,525.5	2.56	-2.38	0.95
11,120.0	90.00	334.70	6,721.2	5,503.2	4,189.4	-1,875.1	4,589.5	1.44	-1.09	-0.94
11,183.0	90.20	335.30	6,721.1	5,503.1	4,246.5	-1,901.7	4,652.5	1.00	0.32	0.95
11,246.0	90.80	334.90	6,720.5	5,502.5	4,303.6	-1,928.3	4,715.5	1.14	0.95	-0.63
11,310.0	89.50	334.90	6,720.3	5,502.3	4,361.6	-1,955.4	4,779.5	2.03	-2.03	0.00
11,372.0	89.80	334.80	6,720.7	5,502.7	4,417.7	-1,981.8	4,841.5	0.51	0.48	-0.16
11,436.0	90.40	335.00	6,720.6	5,502.6	4,475.6	-2,008.9	4,905.5	0.99	0.94	0.31





Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Dn	Local Co-ordinate Reference:	Site Doddridge County 513136
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1218.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1218.0usft
Site:	Doddridge County 513136	North Reference:	Grid
Well:	Well #513136	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	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)
11,499.0	91.40	335.10	6,719.6	5,501.6	4,532.8	-2,035.5	4,968.5	1.60	1.59	0.16
11,562.0	92.40	335.50	6,717.5	5,499.5	4,590.0	-2,061.8	5,031.4	1.71	1.59	0.63
11,626.0	93.30	335.60	6,714.3	5,496.3	4,648.1	-2,088.3	5,095.4	1.41	1.41	0.16
11,689.0	92.60	333.70	6,711.1	5,493.1	4,705.0	-2,115.2	5,158.3	3.21	-1.11	-3.02
11,753.0	92.50	332.80	6,708.3	5,490.3	4,762.1	-2,144.0	5,222.2	1.41	-0.16	-1.41
11,816.0	91.10	332.90	6,706.3	5,488.3	4,818.1	-2,172.7	5,285.1	2.23	-2.22	0.16
11,879.0	91.30	332.40	6,705.0	5,487.0	4,874.1	-2,201.6	5,348.0	0.85	0.32	-0.79
11,942.0	91.60	333.10	6,703.4	5,485.4	4,930.1	-2,230.5	5,410.9	1.21	0.48	1.11
12,005.0	90.30	332.90	6,702.3	5,484.3	4,986.2	-2,259.1	5,473.9	2.09	-2.06	-0.32
12,068.0	90.90	333.00	6,701.7	5,483.7	5,042.3	-2,287.7	5,536.8	0.97	0.95	0.16
12,131.0	90.90	333.20	6,700.7	5,482.7	5,098.5	-2,316.2	5,599.8	0.32	0.00	0.32
12,195.0	91.50	333.80	6,699.3	5,481.3	5,155.7	-2,344.8	5,663.7	1.33	0.94	0.94
12,258.0	89.80	333.90	6,698.6	5,480.6	5,212.3	-2,372.5	5,726.7	2.70	-2.70	0.16
12,321.0	89.70	332.60	6,698.9	5,480.9	5,268.5	-2,400.9	5,789.7	2.07	-0.16	-2.06
12,384.0	89.70	332.40	6,699.2	5,481.2	5,324.4	-2,430.0	5,852.6	0.32	0.00	-0.32
12,448.0	90.50	332.20	6,699.1	5,481.1	5,381.1	-2,459.7	5,916.5	1.29	1.25	-0.31
12,511.0	90.80	332.40	6,698.4	5,480.4	5,436.8	-2,489.0	5,979.5	0.57	0.48	0.32
12,574.0	91.50	332.90	6,697.1	5,479.1	5,492.8	-2,518.0	6,042.4	1.37	1.11	0.79
12,637.0	92.70	330.40	6,694.8	5,476.8	5,548.2	-2,547.8	6,105.2	4.40	1.90	-3.97
12,700.0	93.90	330.80	6,691.2	5,473.2	5,603.0	-2,578.7	6,167.9	2.01	1.90	0.63
12,763.0	93.80	333.10	6,687.0	5,469.0	5,658.5	-2,608.3	6,230.7	3.65	-0.16	3.65
12,826.0	92.70	335.00	6,683.4	5,465.4	5,715.0	-2,635.8	6,293.5	3.48	-1.75	3.02
12,890.0	92.80	334.90	6,680.3	5,462.3	5,772.9	-2,662.9	6,357.5	0.22	0.16	-0.16
12,953.0	93.20	334.50	6,677.0	5,459.0	5,829.8	-2,689.8	6,420.4	0.90	0.63	-0.63
13,016.0	92.00	333.70	6,674.2	5,456.2	5,886.4	-2,717.2	6,483.3	2.29	-1.90	-1.27
13,080.0	91.70	333.20	6,672.1	5,454.1	5,943.6	-2,745.8	6,547.2	0.91	-0.47	-0.78
13,143.0	89.70	334.30	6,671.3	5,453.3	6,000.1	-2,773.7	6,610.2	3.62	-3.17	1.75
13,206.0	89.60	333.80	6,671.7	5,453.7	6,056.8	-2,801.3	6,673.2	0.81	-0.16	-0.79
13,269.0	89.00	334.10	6,672.5	5,454.5	6,113.4	-2,828.9	6,736.2	1.06	-0.95	0.48
13,332.0	89.20	335.30	6,673.5	5,455.5	6,170.3	-2,855.8	6,799.2	1.93	0.32	1.90
13,395.0	88.30	336.10	6,674.9	5,456.9	6,227.7	-2,881.8	6,862.2	1.91	-1.43	1.27
13,458.0	88.70	336.30	6,676.5	5,458.5	6,285.4	-2,907.2	6,925.1	0.71	0.63	0.32
13,521.0	89.00	335.50	6,677.8	5,459.8	6,342.8	-2,932.9	6,988.1	1.36	0.48	-1.27
13,584.0	87.00	334.90	6,680.0	5,462.0	6,400.0	-2,959.3	7,051.1	3.31	-3.17	-0.95
13,647.0	87.00	335.20	6,683.3	5,465.3	6,457.0	-2,985.8	7,114.0	0.48	0.00	0.48
13,710.0	86.40	335.20	6,686.9	5,468.9	6,514.1	-3,012.2	7,176.9	0.95	-0.95	0.00
13,773.0	86.90	335.30	6,690.6	5,472.6	6,571.3	-3,038.6	7,239.8	0.81	0.79	0.16
13,836.0	87.20	335.30	6,693.8	5,475.8	6,628.4	-3,064.8	7,302.7	0.48	0.48	0.00
13,899.0	87.90	335.40	6,696.5	5,478.5	6,685.6	-3,091.1	7,365.6	1.12	1.11	0.16
13,962.0	88.40	335.60	6,698.5	5,480.5	6,742.9	-3,117.2	7,428.6	0.85	0.79	0.32

Last Survey=13973' MD/6699' TVD

13,973.0	88.60	336.20	6,698.8	5,480.8	6,753.0	-3,121.7	7,439.6	5.75	1.82	5.45
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Projection to TD=14023' MD/6700' TVD

04/01/2016



Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Do	Local Co-ordinate Reference:	Site Doddridge County 513138
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1218.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1218.0usft
Site:	Doddridge County 513138	North Reference:	Grid
Well:	Well #513138	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled Surveys		

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)
14,023.0	88.60	336.20	6,700.0	5,482.0	6,798.7	-3,141.9	7,489.6	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
13,973.0	6,698.8	6,753.0	-3,121.7	Last Survey=13973' MD/ 6699' TVD
14,023.0	6,700.0	6,798.7	-3,141.9	Projection to TD=14023' MD/ 6700' TVD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_





# EQT Production - Marcellus

Project: Doddridge County, WV Grid  
 Site: Doddridge County 513138  
 Well: Well #513138  
 Wellbore: Main Wellbore  
 Design: As Drilled Surveys

