



EQT PRODUCTION

PUL96 Pad
Well #515885- Marcellus - Slot 515885
Main Wellbore
API #47-08510220
Design: 515885 As Drilled Surveys

Survey Report

25 January, 2016

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Where energy meets innovation.

Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well Well #515885- Marcellus - Slot 515885
Company:	EQT PRODUCTION	TVD Reference:	KB 23' @ 1206 0usft
Project:	Ritchie County, WV	MD Reference:	KB 23' @ 1206 0usft
Site:	PUL96 Pad	North Reference:	Grid
Well:	Well #515885- Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore	Well License:	
Design:	515885 As Drilled Surveys		

Project:	Ritchie 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		

Site:	PUL96 Pad					
Site Position:	From:	Map	Northing:	262,406.23 usft	Latitude:	39.21
			Easting:	1,578,892.82 usft	Longitude:	-80.99
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.95 °

Well:	Well #515885- Marcellus - Slot 515885					
Well Position	+N-S	0.0 usft	Northing:	262,472.13 usft	Latitude:	39° 12' 39.884 N
	+E-W	0.0 usft	Easting:	1,578,928.63 usft	Longitude:	80° 59' 9.855 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	1,183.0 usft

Wellbore:	Main Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/14/2016	-7.66	66.53	51,973

Design:	515885 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	185.49	

Survey Program	Date:	1/25/2016			
From (')	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	2,699.0	515885 VES Gyro (Main Wellbore)	VES Spec AVG 04-09-15	Triaxial Continuous Gyro Model	
0.00	14,965.0	515885 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	

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	-1,206.0	0.0	0.0	0.0	0.00	0.00	0.00
110.0	0.27	192.44	110.0	-1,096.0	-0.3	-0.1	0.0	0.25	0.25	0.00
210.0	0.33	169.35	210.0	-996.0	-0.8	-0.1	0.8	0.43	0.06	-23.09
310.0	0.15	165.17	310.0	-896.0	-1.2	0.0	1.2	0.16	0.16	-4.18
410.0	0.14	218.52	410.0	-796.0	-1.4	0.0	1.4	0.43	0.00	53.35
510.0	0.02	153.35	510.0	-696.0	-1.5	-0.1	1.5	0.13	-0.12	-65.17
610.0	0.28	315.13	610.0	-596.0	-1.4	-0.2	1.4	0.30	0.26	161.78
710.0	0.46	304.01	710.0	-496.0	-1.0	-0.7	1.0	0.19	0.18	-11.12

May 2016
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Phoenix Technology Services
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Site:	PUL96 Pad	North Reference:	Grnd
Well:	Well #515885- Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore	Well License:	
Design:	515885 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)
810.0	0.38	290.37	810.0	-396.0	-0.6	-1.4	0.8	0.13	-0.08	-13.64
910.0	0.30	311.47	910.0	-296.0	-0.3	-1.9	0.5	0.15	-0.08	21.10
1,010.0	0.36	338.83	1,010.0	-196.0	0.1	-2.2	0.1	0.17	0.06	27.36
1,110.0	0.38	307.98	1,110.0	-96.0	0.6	-2.6	-0.3	0.20	0.02	-30.85
1,210.0	0.45	318.39	1,210.0	4.0	1.1	-3.1	-0.8	0.10	0.07	10.41
1,310.0	0.35	330.16	1,310.0	104.0	1.7	-3.5	-1.3	0.13	-0.10	11.77
1,410.0	0.39	319.27	1,410.0	204.0	2.2	-3.9	-1.8	0.08	0.04	-10.89
1,510.0	0.39	348.83	1,510.0	304.0	2.8	-4.2	-2.3	0.20	0.00	29.56
1,610.0	0.49	30.78	1,610.0	404.0	3.5	-4.0	-3.0	0.33	0.10	41.95
1,710.0	0.73	65.44	1,710.0	504.0	4.1	-3.2	-3.8	0.43	0.24	34.66
1,810.0	0.79	74.72	1,810.0	604.0	4.6	-2.0	-4.3	0.14	0.06	9.28
1,910.0	0.95	94.77	1,909.9	703.9	4.7	-0.5	-4.6	0.34	0.16	20.05
2,010.0	1.00	105.81	2,009.9	803.9	4.4	1.2	-4.5	0.19	0.05	11.04
2,110.0	0.96	104.87	2,109.9	903.9	3.9	2.8	-4.2	0.04	-0.04	-0.94
2,210.0	0.93	114.87	2,209.9	1,003.9	3.4	4.4	-3.9	0.17	-0.03	10.00
2,310.0	0.82	122.09	2,309.9	1,103.9	2.7	5.7	-3.3	0.16	-0.11	7.22
2,410.0	0.93	122.52	2,409.9	1,203.9	1.8	7.0	-2.6	0.11	0.11	0.43
2,510.0	0.65	129.81	2,509.9	1,303.9	1.0	8.1	-2.0	0.30	-0.28	7.29
2,610.0	0.65	127.93	2,609.9	1,403.9	0.3	9.0	-1.4	0.02	0.00	-1.88
Gyro Tie On=2699' MD										
2,699.0	0.76	142.13	2,698.9	1,492.9	-0.4	9.8	-0.7	0.23	0.12	15.96
2,744.0	2.20	261.80	2,743.8	1,537.8	-0.8	9.1	-0.2	5.91	3.20	265.93
2,787.0	6.30	267.70	2,786.7	1,580.7	-1.0	5.9	0.3	9.58	9.53	13.72
2,830.0	10.70	272.10	2,829.2	1,623.2	-1.0	-0.4	1.0	10.34	10.23	10.23
2,873.0	14.50	276.40	2,871.2	1,665.2	-0.2	-9.8	1.3	9.10	8.84	10.00
2,916.0	17.30	278.20	2,912.5	1,706.5	1.3	-21.5	1.1	6.61	6.51	4.19
2,959.0	20.00	278.00	2,953.3	1,747.3	3.2	-35.1	0.7	6.28	6.28	-0.47
3,002.0	22.00	276.80	2,993.4	1,787.4	5.2	-50.3	0.5	4.76	4.65	-2.79
3,045.0	24.10	276.30	3,033.0	1,827.0	7.1	-67.1	0.5	4.90	4.88	-1.16
3,088.0	26.00	276.60	3,071.9	1,865.9	9.2	-85.2	0.5	4.43	4.42	0.70
3,131.0	28.10	276.00	3,110.2	1,904.2	11.3	-104.6	0.6	4.92	4.88	-1.40
3,174.0	30.20	275.40	3,147.8	1,941.8	13.4	-125.4	0.9	4.93	4.88	-1.40
3,217.0	32.40	275.20	3,184.5	1,978.5	15.5	-147.7	1.3	5.12	5.12	-0.47
3,260.0	35.20	275.60	3,220.3	2,014.3	17.7	-171.5	1.8	6.53	6.51	0.93
3,303.0	36.70	275.50	3,255.1	2,049.1	20.2	-196.6	2.2	3.49	3.49	-0.23
3,346.0	37.30	275.30	3,289.4	2,083.4	22.6	-222.4	2.7	1.42	1.40	-0.47
3,390.0	38.40	275.20	3,324.2	2,118.2	25.1	-249.3	3.3	2.50	2.50	-0.23
3,433.0	40.20	276.10	3,357.4	2,151.4	27.7	-276.4	3.7	4.39	4.19	2.09
3,476.0	40.40	277.90	3,390.2	2,184.2	31.1	-304.0	3.4	2.75	0.47	4.19
3,519.0	40.00	278.90	3,423.1	2,217.1	35.2	-331.4	2.5	1.77	-0.93	2.33
3,562.0	40.50	277.00	3,455.9	2,249.9	39.0	-358.9	1.8	3.08	1.16	-4.42
3,605.0	41.70	276.90	3,488.3	2,282.3	42.4	-387.0	1.5	2.79	2.79	-0.23
3,648.0	41.40	278.00	3,520.5	2,314.5	46.1	-415.3	1.1	1.63	-0.70	2.56



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Wellbore:	Main Wellbore	Well License:	
Design:	515885 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)
3,691.0	41.00	278.60	3,552.8	2,346.8	50.2	-443.3	0.2	1.31	-0.93	1.40
3,734.0	41.30	277.60	3,585.2	2,379.2	54.2	-471.3	-0.6	1.68	0.70	-2.33
3,777.0	41.80	276.80	3,617.4	2,411.4	57.8	-499.6	-1.0	1.70	1.16	-1.86
3,820.0	41.10	276.20	3,649.6	2,443.6	61.0	-527.9	-1.0	1.87	-1.63	-1.40
3,863.0	40.40	275.20	3,682.2	2,476.2	63.8	-555.8	-0.6	2.23	-1.63	-2.33
3,906.0	41.10	275.20	3,714.8	2,508.8	66.3	-583.8	0.0	1.63	1.63	0.00
3,949.0	41.80	275.00	3,747.0	2,541.0	68.9	-612.1	0.7	1.66	1.63	-0.47
3,992.0	41.20	276.20	3,779.2	2,573.2	71.7	-640.5	1.2	2.32	-1.40	2.79
4,035.0	40.50	276.80	3,811.7	2,605.7	74.8	-668.4	1.1	1.87	-1.63	1.40
4,077.0	39.80	275.40	3,843.8	2,637.8	77.7	-695.4	1.3	2.72	-1.67	-3.33
4,120.0	39.90	276.70	3,876.8	2,670.8	80.6	-722.8	1.5	1.95	0.23	3.02
4,163.0	40.40	277.60	3,909.7	2,703.7	84.1	-750.3	1.2	1.76	1.16	2.09
4,206.0	39.70	276.70	3,942.6	2,736.6	87.5	-777.7	0.9	2.11	-1.63	-2.09
4,249.0	40.20	276.40	3,975.6	2,769.6	90.7	-805.1	0.9	1.25	1.16	-0.70
4,292.0	41.50	276.30	4,008.1	2,802.1	93.8	-833.1	0.9	3.03	3.02	-0.23
4,335.0	40.90	275.50	4,040.5	2,834.5	96.7	-861.3	1.2	1.86	-1.40	-1.86
4,378.0	40.60	276.40	4,073.0	2,867.0	99.6	-889.2	1.5	1.53	-0.70	2.09
4,422.0	41.00	277.30	4,106.4	2,900.4	103.0	-917.7	1.3	1.62	0.91	2.05
4,465.0	41.30	277.80	4,138.7	2,932.7	106.7	-945.8	0.8	1.04	0.70	1.16
4,509.0	41.00	278.40	4,171.9	2,965.9	110.8	-974.4	0.0	1.13	-0.68	1.36
4,552.0	40.50	278.80	4,204.4	2,998.4	115.0	-1,002.2	-1.1	1.31	-1.16	0.93
4,599.0	41.10	278.20	4,240.0	3,034.0	119.6	-1,032.6	-2.2	1.52	1.28	-1.28
4,638.0	41.60	277.70	4,269.3	3,063.3	123.1	-1,058.1	-2.8	1.54	1.28	-1.28
4,680.0	42.00	276.70	4,300.6	3,094.6	126.6	-1,085.9	-3.2	1.85	0.95	-2.38
4,724.0	42.50	276.50	4,333.2	3,127.2	130.0	-1,115.3	-3.2	1.18	1.14	-0.45
4,767.0	41.60	276.20	4,365.1	3,159.1	133.2	-1,143.9	-3.2	2.14	-2.09	-0.70
4,810.0	40.50	275.10	4,397.5	3,191.5	136.0	-1,172.0	-2.7	3.06	-2.56	-2.56
4,853.0	40.40	275.70	4,430.3	3,224.3	138.6	-1,199.7	-2.2	0.93	-0.23	1.40
4,893.0	40.80	276.90	4,460.6	3,254.6	141.5	-1,225.6	-2.1	2.19	1.00	3.00
4,936.0	40.40	277.60	4,493.3	3,287.3	145.0	-1,253.4	-2.5	1.41	-0.93	1.63
4,979.0	40.70	277.40	4,525.9	3,319.9	148.7	-1,281.1	-3.0	0.70	-0.79	-0.47
5,023.0	41.40	278.30	4,559.1	3,353.1	152.6	-1,309.7	-3.7	2.08	1.58	2.05
5,067.0	41.80	278.30	4,592.0	3,386.0	156.8	-1,338.6	-4.6	0.91	0.91	0.00
5,110.0	41.10	277.80	4,624.3	3,418.3	160.8	-1,366.8	-5.4	1.80	-1.63	-1.40
5,152.0	41.50	277.20	4,655.8	3,449.8	164.4	-1,394.3	-5.9	1.38	0.95	-1.43
5,195.0	41.80	276.90	4,687.9	3,481.9	167.9	-1,422.7	-6.2	0.84	0.70	-0.70
5,238.0	40.70	276.30	4,720.3	3,514.3	171.2	-1,450.8	-6.3	2.72	2.56	-1.40
5,281.0	41.10	276.50	4,752.8	3,546.8	174.3	-1,478.8	-6.2	0.98	0.93	0.47
5,324.0	41.10	276.20	4,785.2	3,579.2	177.5	-1,506.9	-6.1	0.46	0.80	-0.70
5,367.0	40.00	275.70	4,817.9	3,611.9	180.4	-1,534.7	-5.8	2.67	-2.56	-1.16
5,410.0	40.30	275.40	4,850.7	3,644.7	183.0	-1,562.3	-5.4	0.83	0.70	-0.70
5,453.0	41.50	277.00	4,883.2	3,677.2	186.1	-1,590.3	-5.3	3.70	2.79	3.72

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Survey											
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5,497.0	40.80	276.50	4,916.4	3,710.4	189.5	-1,619.0	-5.4	1.76	-1.59	-1.14	
5,540.0	41.30	276.50	4,948.8	3,742.8	192.7	-1,647.1	-5.4	1.16	1.16	0.00	
5,585.0	42.50	278.00	4,982.3	3,776.3	196.5	-1,676.9	-5.8	3.47	2.67	3.33	
5,628.0	42.40	277.60	5,014.0	3,808.0	200.4	-1,705.6	-6.5	0.67	-0.23	-0.93	
5,671.0	42.90	277.60	5,045.6	3,839.6	204.3	-1,734.5	-7.0	1.16	1.16	0.00	
5,714.0	42.90	277.40	5,077.1	3,871.1	208.1	-1,763.5	-7.6	0.32	0.00	-0.47	
5,757.0	42.30	276.40	5,108.8	3,902.8	211.6	-1,792.4	-7.8	2.10	-1.40	-2.33	
5,801.0	41.60	275.90	5,141.5	3,935.5	214.8	-1,821.7	-7.6	1.76	-1.59	-1.14	
5,829.0	41.40	276.70	5,162.5	3,956.5	216.8	-1,840.1	-7.5	2.02	-0.71	2.86	
5,924.0	42.70	279.00	5,233.0	4,027.0	225.5	-1,903.1	-9.1	2.12	1.37	2.42	
6,018.0	42.10	278.80	5,302.4	4,096.4	235.3	-1,965.8	-11.7	0.65	-0.64	-0.21	
6,112.0	41.80	277.70	5,372.3	4,166.3	244.3	-2,027.9	-13.7	0.84	-0.32	-1.17	
6,206.0	41.80	277.50	5,442.4	4,236.4	252.6	-2,090.1	-14.9	0.14	0.00	-0.21	
6,301.0	43.60	276.20	5,512.2	4,306.2	260.3	-2,154.0	-15.3	2.11	1.89	-1.37	
6,395.0	42.80	274.90	5,580.8	4,374.8	266.5	-2,218.1	-14.2	1.27	-0.65	-1.38	
6,490.0	42.90	277.50	5,650.4	4,444.4	273.5	-2,282.3	-13.9	1.86	0.11	2.74	
6,584.0	42.20	275.30	5,719.7	4,513.7	280.6	-2,345.4	-13.8	1.75	-0.74	-2.34	
6,678.0	42.20	275.80	5,789.3	4,583.3	286.7	-2,408.3	-12.8	0.38	0.00	0.53	
6,710.0	42.30	271.80	5,813.0	4,607.0	288.1	-2,429.7	-11.8	8.41	0.31	-12.50	
6,741.0	43.40	266.60	5,835.7	4,629.7	287.8	-2,450.8	-9.1	11.94	3.55	-16.77	
6,772.0	44.10	261.80	5,858.1	4,652.1	285.6	-2,472.1	-4.5	10.94	2.26	-15.48	
6,804.0	44.70	257.90	5,881.0	4,675.0	281.7	-2,494.1	1.9	8.73	1.88	-12.19	
6,835.0	43.70	254.40	5,903.2	4,697.2	276.5	-2,515.1	9.4	8.51	-3.23	-11.29	
6,867.0	41.90	249.60	5,926.7	4,720.7	269.8	-2,535.8	18.4	11.64	-5.63	-15.00	
6,898.0	41.20	244.80	5,949.9	4,743.9	261.8	-2,554.7	28.4	10.51	-2.26	-15.48	
6,930.0	41.10	241.80	5,974.0	4,768.0	252.4	-2,573.5	40.0	6.59	-0.31	-10.00	
6,961.0	41.40	236.80	5,997.3	4,791.3	241.9	-2,591.1	52.3	10.25	0.97	-15.48	
6,992.0	42.20	231.40	6,020.4	4,814.4	229.8	-2,607.8	66.3	11.89	2.58	-17.42	
7,024.0	42.80	226.30	6,044.0	4,838.0	215.6	-2,624.1	82.2	10.93	1.88	-15.94	
7,055.0	44.10	221.80	6,066.6	4,860.6	200.3	-2,638.9	99.1	10.83	4.19	-14.52	
7,087.0	45.50	218.30	6,089.3	4,883.3	183.0	-2,653.4	117.9	8.86	4.38	-10.94	
7,118.0	46.70	214.60	6,110.8	4,904.8	165.0	-2,666.6	137.3	9.43	3.87	-11.94	
7,150.0	47.60	211.40	6,132.5	4,926.5	145.4	-2,679.4	158.3	7.85	2.81	-10.00	
7,181.0	47.70	208.70	6,153.4	4,947.4	125.5	-2,690.9	179.2	6.44	0.32	-8.71	
7,212.0	48.70	206.60	6,174.1	4,968.1	105.1	-2,701.6	200.8	5.99	3.23	-8.77	
7,255.0	50.30	204.20	6,202.0	4,996.0	75.5	-2,715.6	231.7	5.64	3.72	-5.58	
7,286.0	52.30	201.50	6,221.4	5,015.4	53.2	-2,725.0	254.9	9.37	6.45	-8.71	
7,317.0	55.80	199.30	6,239.6	5,033.6	29.7	-2,733.7	279.3	12.67	11.29	-7.10	
7,349.0	59.90	196.80	6,256.6	5,050.6	4.0	-2,742.1	305.8	14.42	12.81	-7.81	
7,380.0	64.30	194.10	6,271.1	5,065.1	-22.4	-2,749.4	332.9	16.14	14.19	-8.71	
7,412.0	68.30	192.00	6,284.0	5,078.0	-51.0	-2,756.0	362.0	13.87	12.50	-6.56	
7,443.0	70.50	189.90	6,294.9	5,088.9	-79.5	-2,761.5	390.9	9.52	7.10	-6.77	
7,475.0	72.50	187.50	6,305.0	5,099.0	-109.5	-2,766.1	421.2	9.47	6.25	-7.50	



Phoenix Technology Services
Survey Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well Well #515885- Marcellus - Slot 515885
Company:	EQT PRODUCTION	TVD Reference:	KB 23' @ 1206 0usft
Project:	Ritchie County, WV	MD Reference:	KB 23' @ 1206 0usft
Site:	PUL98 Pad	North Reference:	Grd
Well:	Well #515885- Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore	Well License:	
Design:	515885 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)
7,506.0	74.30	184.60	6,313.9	5,107.9	-139.0	-2,769.2	450.9	10.68	5.81	-9.35
7,538.0	75.50	180.80	6,322.2	5,116.2	-169.9	-2,770.7	481.8	12.06	3.75	-11.88
7,569.0	77.20	177.30	6,329.6	5,123.8	-200.0	-2,770.2	511.6	12.27	5.48	-11.29
7,601.0	79.10	174.30	6,336.1	5,130.1	-231.2	-2,767.9	542.4	10.93	5.94	-9.38
7,632.0	80.00	171.40	6,341.7	5,135.7	-261.4	-2,764.1	572.0	9.65	2.90	-9.35
7,664.0	80.50	167.80	6,347.2	5,141.2	-292.5	-2,758.4	602.2	11.20	1.56	-11.25
7,695.0	80.50	164.90	6,352.3	5,146.3	-322.2	-2,751.2	630.9	9.23	0.00	-9.35
7,727.0	82.40	164.50	6,357.0	5,151.0	-352.7	-2,742.8	660.3	6.06	5.94	-1.25
515885 LP@739' VSpt2										
7,744.2	83.40	164.72	6,359.2	5,153.2	-369.1	-2,738.3	676.1	5.95	5.81	1.29
515885 LP@567' VS p6										
7,745.6	83.48	164.74	6,359.3	5,153.3	-370.5	-2,737.9	677.4	5.95	5.81	1.29
515885 LP@739' VS - 515885 LP@567' VS p5 - 515885 LP@567' VS p4										
7,752.9	83.91	164.83	6,360.1	5,154.1	-377.5	-2,736.0	684.2	5.95	5.81	1.29
7,758.0	84.20	164.90	6,360.7	5,154.7	-382.4	-2,734.7	688.9	5.95	5.81	1.29
7,821.0	87.90	164.80	6,365.0	5,159.0	-443.0	-2,718.3	747.3	5.88	5.87	-0.16
7,915.0	90.80	165.90	6,366.1	5,160.1	-534.0	-2,694.5	834.9	3.30	3.09	1.17
8,010.0	89.10	164.60	6,366.1	5,160.1	-625.8	-2,670.3	923.5	2.25	-1.79	-1.37
515885 Plat LP										
8,065.9	89.48	164.72	6,366.9	5,160.9	-679.8	-2,655.5	975.4	0.67	0.64	0.21
8,104.0	89.70	164.80	6,367.1	5,161.1	-716.5	-2,645.5	1,010.8	0.67	0.64	0.21
LP=8199' MD/6367' TVD										
8,199.0	90.00	164.70	6,367.4	5,161.4	-808.1	-2,620.5	1,099.0	0.33	0.32	-0.11
8,293.0	90.70	165.20	6,366.8	5,160.8	-898.9	-2,596.1	1,186.4	0.92	0.74	0.53
8,387.0	89.40	163.40	6,368.7	5,160.7	-989.4	-2,570.7	1,273.5	2.36	-1.38	-1.91
8,482.0	89.90	163.00	6,367.3	5,161.3	-1,080.3	-2,543.2	1,360.7	0.67	0.53	-0.42
8,576.0	90.10	163.40	6,367.3	5,161.3	-1,170.3	-2,516.0	1,447.1	0.48	0.21	0.43
8,670.0	90.70	162.40	6,366.6	5,160.6	-1,260.2	-2,488.4	1,533.2	1.24	0.64	-1.06
8,765.0	90.70	164.90	6,365.5	5,159.5	-1,351.3	-2,461.7	1,620.8	2.63	0.00	2.63
8,859.0	90.90	164.60	6,364.2	5,158.2	-1,442.0	-2,436.9	1,708.1	0.38	0.21	-0.32
8,954.0	91.30	163.80	6,362.4	5,156.4	-1,533.4	-2,411.1	1,795.9	0.94	0.42	-0.84
9,048.0	90.70	165.40	6,360.7	5,154.7	-1,624.0	-2,386.1	1,883.2	1.62	-0.64	1.70
9,142.0	90.50	164.70	6,359.7	5,153.7	-1,714.8	-2,361.9	1,970.6	0.77	-0.21	-0.25
9,237.0	90.60	165.00	6,358.8	5,152.8	-1,806.5	-2,337.1	2,059.0	0.33	0.11	0.32
9,331.0	90.70	165.00	6,357.7	5,151.7	-1,897.3	-2,312.7	2,146.4	0.11	0.16	0.00
9,425.0	90.80	164.70	6,356.5	5,150.5	-1,988.0	-2,288.2	2,233.8	0.31	0.11	-0.32
9,520.0	89.50	165.20	6,356.3	5,150.3	-2,079.8	-2,263.5	2,322.1	1.47	-1.37	0.53
9,614.0	89.80	165.30	6,356.8	5,150.8	-2,170.7	-2,239.6	2,409.8	0.54	0.32	0.11
9,709.0	90.00	165.00	6,357.0	5,151.0	-2,262.5	-2,215.2	2,498.3	0.38	0.21	0.11
9,803.0	90.30	165.10	6,356.8	5,150.8	-2,353.3	-2,191.0	2,585.7	0.34	0.32	0.11
9,898.0	90.10	164.50	6,356.4	5,150.4	-2,445.0	-2,166.1	2,674.0	0.67	-0.21	-0.63
9,992.0	90.20	165.30	6,356.2	5,150.2	-2,535.7	-2,141.6	2,761.4	0.86	0.11	0.85
10,086.0	90.50	164.70	6,355.6	5,149.6	-2,626.5	-2,117.2	2,848.9	0.71	0.32	-0.64

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Phoenix Technology Services
Survey Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well Well #515885- Marcellus - Slot 515885
Company:	EQT PRODUCTION	TVD Reference:	KB 23' @ 1206 0usft
Project:	Ritchie County, WV	MD Reference:	KB 23' @ 1206 0usft
Site:	PUL86 Pad	North Reference:	Grd
Well:	Well #515885- Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore	Well License:	
Design:	515885 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)
10,181.0	89.10	165.40	6,355.9	5,149.9	-2,718.3	-2,092.7	2,937.3	1.65	-1.47	0.74
10,275.0	89.60	165.10	6,357.0	5,151.0	-2,809.2	-2,088.8	3,024.9	0.62	0.53	-0.32
10,370.0	89.90	165.20	6,357.4	5,151.4	-2,901.0	-2,044.5	3,113.4	0.33	0.32	0.11
10,464.0	89.70	164.60	6,357.8	5,151.8	-2,991.8	-2,020.0	3,200.8	0.67	-0.21	-0.64
10,559.0	90.30	166.00	6,357.8	5,151.8	-3,083.7	-1,995.9	3,289.4	1.60	0.63	1.47
10,653.0	90.30	166.20	6,357.3	5,151.3	-3,174.9	-1,973.3	3,377.5	0.21	0.00	0.21
10,747.0	90.60	166.80	6,356.5	5,150.5	-3,266.3	-1,951.3	3,465.8	0.71	0.32	0.64
10,842.0	90.40	164.20	6,355.7	5,149.7	-3,358.3	-1,927.6	3,554.5	2.74	-0.21	-2.74
10,936.0	90.30	163.80	6,355.1	5,149.1	-3,448.6	-1,901.6	3,641.4	0.44	-0.11	-0.43
11,030.0	90.70	164.10	6,354.3	5,148.3	-3,539.0	-1,875.7	3,728.2	0.53	0.43	0.32
11,125.0	88.60	163.10	6,354.9	5,148.9	-3,630.1	-1,848.8	3,815.7	2.45	-2.21	-1.05
11,219.0	88.60	163.10	6,357.2	5,151.2	-3,720.0	-1,821.5	3,902.0	0.00	0.00	0.00
11,313.0	88.90	163.40	6,359.2	5,153.2	-3,810.0	-1,794.4	3,988.3	0.45	0.32	0.32
11,407.0	89.30	163.20	6,360.7	5,154.7	-3,900.0	-1,767.4	4,074.7	0.48	0.43	-0.21
11,502.0	89.30	162.90	6,361.8	5,155.9	-3,990.9	-1,739.7	4,161.9	0.32	0.00	-0.32
11,596.0	89.30	162.10	6,363.0	5,157.0	-4,080.5	-1,711.5	4,247.8	0.85	0.00	-0.85
11,691.0	89.10	163.10	6,364.3	5,158.3	-4,171.2	-1,683.1	4,334.6	1.07	-0.21	1.05
11,785.0	89.30	163.10	6,365.7	5,159.7	-4,261.1	-1,655.7	4,420.9	0.21	0.21	0.00
11,879.0	89.20	165.30	6,366.9	5,160.9	-4,351.5	-1,630.2	4,507.8	2.34	-0.11	2.34
11,974.0	89.30	165.20	6,368.1	5,162.1	-4,443.4	-1,606.0	4,596.4	0.15	0.11	-0.11
12,068.0	90.20	165.90	6,368.5	5,162.5	-4,534.4	-1,582.5	4,684.2	1.21	0.96	0.74
12,163.0	90.30	166.10	6,368.1	5,162.1	-4,626.6	-1,559.5	4,773.2	0.24	0.11	0.21
12,257.0	90.90	165.70	6,367.1	5,161.1	-4,717.8	-1,536.6	4,861.2	0.77	0.64	-0.43
12,351.0	91.10	164.90	6,365.5	5,159.5	-4,808.7	-1,512.8	4,948.8	0.88	0.21	-0.85
12,446.0	91.00	164.20	6,363.8	5,157.8	-4,900.2	-1,487.5	5,036.9	0.74	-0.11	-0.74
12,540.0	89.50	160.90	6,363.3	5,157.3	-4,989.9	-1,459.3	5,122.8	3.86	-1.60	-3.51
12,634.0	88.60	163.40	6,364.9	5,158.9	-5,079.3	-1,430.5	5,208.4	2.83	-0.96	2.66
12,729.0	88.70	163.60	6,367.1	5,161.1	-5,170.4	-1,403.5	5,295.9	0.24	0.11	0.21
Deepest Point=12823' MD/6368' TVD										
12,823.0	90.00	166.10	6,368.2	5,162.2	-5,261.1	-1,379.0	5,383.2	3.00	1.38	2.66
12,918.0	91.20	167.50	6,367.2	5,161.2	-5,353.6	-1,357.3	5,472.7	1.94	1.26	1.47
13,012.0	91.30	168.30	6,365.2	5,159.2	-5,445.5	-1,337.6	5,561.7	0.86	0.11	0.85
13,106.0	91.50	167.70	6,362.9	5,156.9	-5,537.4	-1,318.0	5,650.9	0.67	0.21	-0.84
13,201.0	91.50	167.10	6,360.4	5,154.4	-5,630.1	-1,297.3	5,740.6	0.63	0.00	-0.63
13,295.0	91.80	167.10	6,357.7	5,151.7	-5,721.7	-1,276.3	5,829.2	0.32	0.32	0.00
13,389.0	90.00	166.50	6,356.2	5,150.2	-5,813.2	-1,254.9	5,917.7	2.02	-1.91	-0.64
13,484.0	90.00	167.10	6,356.2	5,150.2	-5,905.7	-1,233.2	6,007.2	0.63	0.00	0.63
13,578.0	90.00	166.70	6,356.2	5,150.2	-5,997.2	-1,211.9	6,095.7	0.43	0.00	-0.43
13,672.0	90.00	166.10	6,356.2	5,150.2	-6,088.6	-1,189.8	6,184.0	0.64	0.00	-0.64
13,767.0	89.70	165.20	6,356.4	5,150.4	-6,180.6	-1,166.2	6,272.8	1.00	-0.32	-0.95
13,861.0	89.80	166.00	6,356.9	5,150.9	-6,271.7	-1,142.8	6,360.6	0.86	0.11	0.85
13,955.0	90.30	163.80	6,356.8	5,150.8	-6,362.4	-1,118.4	6,448.0	2.40	0.53	-2.34
14,049.0	90.00	163.20	6,356.5	5,150.5	-6,452.5	-1,091.7	6,534.5	0.71	-0.32	-0.64



Phoenix Technology Services
Survey Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well Well #515885- Marcellus - Slot 515885
Company:	EQT PRODUCTION	TVD Reference:	KB 23' @ 1206 0usft
Project:	Ritchie County, WV	MD Reference:	KB 23' @ 1206 0usft
Site:	PUL86 Pad	North Reference:	Grd
Well:	Well #515885- Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore	Well License:	
Design:	515885 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)
14,144.0	89.70	163.50	6,356.8	5,150.8	-6,543.6	-1,064.4	6,621.9	0.45	-0.32	0.32
14,238.0	89.60	162.60	6,357.3	5,151.3	-6,633.5	-1,037.0	6,708.2	0.96	-0.11	-0.96
14,332.0	89.70	163.10	6,357.9	5,151.9	-6,723.3	-1,009.3	6,794.3	0.54	0.11	0.53
14,521.0	89.50	163.80	6,359.2	5,153.2	-6,904.5	-955.5	6,968.2	0.39	-0.11	0.37
14,615.0	89.60	163.80	6,360.0	5,154.0	-6,994.7	-929.3	7,054.9	0.11	0.11	0.00
14,709.0	89.50	164.40	6,360.7	5,154.7	-7,085.1	-903.5	7,141.8	0.65	-0.11	0.64
14,804.0	90.20	165.10	6,361.0	5,155.0	-7,176.8	-878.5	7,230.1	1.04	0.74	0.74
Final Survey=14898' MD/6360' TVD										
14,898.0	90.70	165.70	6,360.2	5,154.2	-7,267.7	-854.8	7,317.8	0.83	0.53	0.64
PROJ to TD=14965' MD/6359' TVD - 515885 Extended TD p4 - 515885 Extended TD p5 - 515885 Extended TD t2 - 515885 Extended TD - 51										
14,965.0	90.70	165.70	6,359.4	5,153.4	-7,332.7	-838.3	7,380.4	0.00	0.00	0.00

Target Name	- hit/miss target	- Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (-677.3)	+E/-W (-2,648.8)	Northing (usft)	Easting (usft)	Latitude	Longitude
515885 Plat LP			0.00	0.00	6,427.0	-677.3	-2,648.8	261,794.85	1,576,279.83	39° 12' 32.756 N	80° 59' 43.360 W
- actual wellpath misses target center by 60.6usft at 8065.9usft MD (6366.9 TVD, -679.8 N, -2655.5 E)											
- Point											

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,699.0	2,698.9	-0.4	9.8	Gyro Tie On=2699' MD
8,199.0	6,367.4	-808.1	-2,620.5	LP=8199' MD/6367' TVD
12,823.0	6,368.2	-5,261.1	-1,379.0	Deepest Point=12823' MD/6368' TVD
14,898.0	6,360.2	-7,267.7	-854.8	Final Survey=14898' MD/6360' TVD
14,965.0	6,359.4	-7,332.7	-838.3	PROJ to TD=14965' MD/6359' TVD

Checked By: _____ Approved By: _____ Date: _____

Project: Ritchie County, WV
 Site: PUL96 Pad
 Well: Well #515885- Marcellus
 Wellbore: Main Wellbore
 Design: 515885 As Drilled Surveys

