



## **EQT Production - Marcellus**

Doddridge County, WV Grid

Doddridge County 514318

Well #514318

Main Wellbore

Design: 514318 As Drilled Surveys

## **Standard Survey Report**

08 January, 2014



Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 514318
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1134.0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 1134.0usft
<b>Site:</b>	Doddridge County 514318	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514318	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	514318 As Drilled Surveys		

<b>Project</b>	Doddridge County, WV Grid		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	West Virginia North 4701		Using geodetic scale factor

<b>Site</b>	Doddridge County 514318				
<b>Site Position:</b>		<b>Northing:</b>	324,444.00 usft	<b>Latitude:</b>	39.38
<b>From:</b>	Map	<b>Easting:</b>	1,654,140.60 usft	<b>Longitude:</b>	-80.72
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.78 °

<b>Well</b>	Well #514318					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	324,444.00 usft	<b>Latitude:</b>	39° 23' 3.565 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,654,140.60 usft	<b>Longitude:</b>	80° 43' 25.116 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,111.0 usft

<b>Wellbore</b>	Main Wellbore				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	12/25/2013	-8.52	66.92	52,394

<b>Design</b>	514318 As Drilled Surveys				
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<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	174.57

Survey Program		Date	1/8/2014		
From (')	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	5,200.0	514318 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
0.00	14,569.0	514318 MWD (Main Wellbore)	MWD	MWD - Standard	

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	-1,134.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.05	198.00	100.0	-1,034.0	0.0	0.0	0.0	0.05	0.05	0.00
200.0	0.28	208.46	200.0	-934.0	-0.3	-0.1	0.3	0.23	0.23	10.46
300.0	0.31	185.65	300.0	-834.0	-0.8	-0.3	0.8	0.12	0.03	-22.81
400.0	0.35	193.68	400.0	-734.0	-1.3	-0.4	1.3	0.06	0.04	8.03
500.0	0.03	300.39	500.0	-634.0	-1.6	-0.5	1.6	0.36	-0.32	106.71
600.0	0.08	330.65	600.0	-534.0	-1.6	-0.5	1.5	0.06	0.05	30.26
700.0	0.18	251.43	700.0	-434.0	-1.5	-0.7	1.5	0.18	0.10	-79.22



Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 5000.1 Single User Do	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 514318
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1134 0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 1134 0usft
<b>Site:</b>	Doddridge County 514318	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514318	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	514318 Air 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	0.12	223.18	800.0	-334.0	-1.7	-0.9	1.6	0.09	-0.06	-28.25	
900.0	0.04	78.66	900.0	-234.0	-1.7	-1.0	1.6	0.15	-0.08	-144.52	
1,000.0	0.14	266.88	1,000.0	-134.0	-1.7	-1.1	1.6	0.18	0.10	-171.78	
1,100.0	0.41	283.21	1,100.0	-34.0	-1.7	-1.5	1.5	0.28	0.27	16.33	
1,200.0	0.36	262.95	1,200.0	66.0	-1.6	-2.2	1.4	0.14	-0.05	-20.26	
1,300.0	0.50	299.80	1,300.0	166.0	-1.4	-2.9	1.2	0.30	0.14	36.85	
1,400.0	0.77	318.74	1,400.0	266.0	-0.7	-3.7	0.4	0.34	0.27	18.94	
1,500.0	0.89	314.31	1,500.0	366.0	0.3	-4.7	-0.8	0.14	0.12	-4.43	
1,600.0	0.89	308.95	1,600.0	466.0	1.4	-5.9	-1.9	0.08	0.00	-5.36	
1,700.0	0.96	301.92	1,699.9	565.9	2.3	-7.2	-3.0	0.13	0.07	-7.03	
1,800.0	0.83	305.41	1,799.9	665.9	3.1	-8.5	-3.9	0.14	-0.13	3.49	
1,900.0	1.02	285.51	1,899.9	765.9	3.8	-9.9	-4.7	0.37	0.19	-19.90	
2,000.0	1.07	280.83	1,999.9	865.9	4.2	-11.7	-5.3	0.10	0.05	-4.68	
2,100.0	1.12	284.81	2,099.9	965.9	4.6	-13.6	-5.9	0.09	0.05	3.98	
2,200.0	1.10	284.92	2,199.9	1,065.9	5.1	-15.4	-6.6	0.02	-0.02	0.11	
2,300.0	1.10	294.91	2,299.9	1,165.9	5.8	-17.2	-7.4	0.19	0.00	9.99	
2,400.0	1.14	295.69	2,399.8	1,265.8	6.6	-19.0	-8.4	0.04	0.04	0.78	
2,500.0	1.32	290.24	2,499.8	1,365.8	7.5	-21.0	-9.4	0.21	0.18	-5.45	
2,600.0	1.39	292.53	2,599.8	1,465.8	8.3	-23.2	-10.5	0.09	0.07	2.29	
2,700.0	1.41	293.79	2,699.8	1,565.8	9.3	-25.4	-11.6	0.04	0.02	1.26	
2,800.0	1.25	284.42	2,799.7	1,665.7	10.1	-27.6	-12.6	0.27	-0.16	-9.37	
2,900.0	1.18	295.14	2,899.7	1,765.7	10.8	-29.6	-13.5	0.24	-0.07	10.72	
3,000.0	1.28	281.37	2,999.7	1,865.7	11.4	-31.6	-14.4	0.31	0.10	-13.77	
3,100.0	1.70	285.84	3,099.6	1,965.6	12.0	-34.1	-15.2	0.44	0.42	4.47	
3,200.0	1.84	281.14	3,199.6	2,065.6	12.8	-37.2	-16.2	0.20	0.14	-4.70	
3,300.0	2.25	282.87	3,299.5	2,165.5	13.5	-40.6	-17.3	0.41	0.41	1.73	
3,400.0	2.52	283.21	3,399.4	2,265.4	14.4	-44.7	-18.6	0.27	0.27	0.34	
3,500.0	2.42	281.58	3,499.4	2,365.4	15.4	-48.9	-19.9	0.12	-0.10	-1.63	
3,600.0	2.95	281.29	3,599.2	2,465.2	16.3	-53.5	-21.3	0.53	0.53	-0.29	
3,700.0	3.29	281.41	3,699.1	2,565.1	17.4	-58.8	-22.9	0.34	0.34	0.12	
3,800.0	3.77	283.23	3,798.9	2,664.9	18.7	-64.8	-24.7	0.49	0.48	1.82	
3,900.0	4.15	280.30	3,898.7	2,764.7	20.1	-71.6	-26.8	0.43	0.38	-2.93	
4,000.0	4.18	282.14	3,998.4	2,864.4	21.5	-78.7	-28.9	0.14	0.03	1.84	
4,100.0	4.15	286.90	4,098.1	2,964.1	23.3	-85.8	-31.3	0.35	-0.03	4.76	
4,200.0	4.23	282.59	4,197.9	3,063.9	25.2	-92.8	-33.8	0.32	0.08	-4.31	
4,300.0	3.61	283.40	4,297.6	3,163.6	26.7	-99.5	-36.0	0.62	-0.62	0.81	
4,400.0	3.50	281.48	4,397.4	3,263.4	28.0	-105.5	-37.9	0.16	-0.11	-1.92	
4,500.0	3.38	276.69	4,497.3	3,363.3	29.0	-111.4	-39.4	0.31	-0.12	-4.79	
4,600.0	2.71	275.71	4,597.1	3,463.1	29.6	-116.7	-40.5	0.67	-0.67	-0.98	
4,700.0	2.51	268.49	4,697.0	3,563.0	29.8	-121.3	-41.1	0.38	-0.20	-7.22	
4,800.0	2.58	265.22	4,796.9	3,662.9	29.5	-125.7	-41.3	0.16	0.07	-3.27	
4,900.0	2.62	262.03	4,896.8	3,762.8	29.0	-130.2	-41.2	0.15	0.04	-3.19	



Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 8000 1 Single User Db	<b>Local Co-ordinate Reference:</b>	SJA Doddridge County 514318
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1134.0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 1134.0usft
<b>Site:</b>	Doddridge County 514318	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514318	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	514318 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	2.69	258.85	4,996.7	3,862.7	28.2	-134.8	-40.9	0.16	0.07	-3.18
5,100.0	2.65	255.56	5,096.6	3,962.6	27.2	-139.3	-40.3	0.16	-0.04	-3.29
<b>Gyro Tie In MD=5200'</b>										
5,200.0	2.59	253.83	5,196.5	4,062.5	26.0	-143.7	-39.5	0.10	-0.06	-1.73
5,265.0	3.00	251.70	5,261.4	4,127.4	25.1	-146.7	-38.8	0.65	0.63	-3.28
5,359.0	2.90	246.80	5,355.3	4,221.3	23.3	-151.3	-37.5	0.29	-0.11	-5.21
5,422.0	2.30	240.70	5,416.2	4,284.2	22.1	-153.8	-36.5	1.05	-0.95	-9.68
5,453.0	2.10	233.80	5,449.2	4,315.2	21.5	-154.8	-36.0	1.07	-0.65	-22.26
5,485.0	3.00	263.00	5,481.2	4,347.2	21.0	-156.1	-35.7	4.85	2.81	91.25
5,516.0	6.90	284.60	5,512.1	4,378.1	21.4	-158.8	-36.3	13.73	12.58	69.68
5,548.0	10.80	288.20	5,543.7	4,409.7	22.8	-163.5	-38.2	12.30	12.19	11.25
5,579.0	14.20	286.60	5,573.9	4,439.9	24.8	-169.9	-40.7	11.02	10.97	-5.16
5,610.0	16.30	286.10	5,603.8	4,469.8	27.1	-177.7	-43.8	6.79	6.77	-1.61
5,642.0	19.00	286.70	5,634.3	4,500.3	29.8	-187.0	-47.4	8.46	8.44	1.88
5,673.0	22.20	283.70	5,663.3	4,529.3	32.7	-197.5	-51.2	10.87	10.32	-9.68
5,705.0	25.70	285.50	5,692.6	4,558.6	36.0	-210.1	-55.7	11.17	10.94	5.63
5,736.0	28.20	288.50	5,720.2	4,586.2	40.1	-223.5	-61.0	9.18	8.06	9.68
5,767.0	30.30	289.60	5,747.3	4,613.3	45.0	-237.8	-67.3	6.99	6.77	3.55
5,830.0	35.60	292.90	5,800.1	4,666.1	57.5	-269.7	-82.7	8.88	8.41	5.24
5,861.0	39.70	296.60	5,824.7	4,690.7	65.5	-286.9	-92.3	15.10	13.23	11.94
5,924.0	40.10	296.80	5,873.0	4,739.0	83.6	-323.0	-113.8	0.67	0.63	0.32
6,019.0	39.00	290.10	5,946.3	4,812.3	107.7	-378.4	-143.0	4.64	-1.16	-7.05
6,113.0	40.10	289.50	6,018.8	4,884.8	128.0	-434.7	-168.5	1.24	1.17	-0.64
6,207.0	40.80	291.90	6,090.3	4,956.3	149.5	-491.8	-195.4	1.82	0.74	2.55
6,301.0	40.20	291.40	6,161.8	5,027.8	172.0	-548.5	-223.1	0.73	-0.64	-0.53
6,395.0	40.00	290.00	6,233.7	5,099.7	193.4	-605.1	-249.8	0.98	-0.21	-1.49
6,489.0	41.20	293.60	6,305.0	5,171.0	216.2	-661.9	-277.8	2.80	1.28	3.83
6,521.0	41.10	293.20	6,329.1	5,195.1	224.5	-681.2	-288.0	0.88	-0.31	-1.25
6,552.0	41.10	294.10	6,352.5	5,218.5	232.7	-699.9	-297.9	1.91	0.00	2.90
6,584.0	39.40	292.60	6,376.9	5,242.9	240.9	-718.9	-307.8	6.11	-5.31	-4.69
6,615.0	37.40	285.70	6,401.2	5,267.2	247.2	-737.0	-315.8	15.25	-6.45	-22.26
6,646.0	37.10	282.00	6,425.9	5,291.9	251.7	-755.2	-322.0	7.29	-0.97	-11.94
6,678.0	36.40	276.00	6,451.6	5,317.6	254.7	-774.1	-326.8	11.43	-2.19	-18.75
6,709.0	36.40	270.00	6,476.5	5,342.5	255.7	-792.5	-329.5	11.48	0.00	-19.35
6,740.0	36.90	262.50	6,501.4	5,367.4	254.5	-810.9	-330.0	14.52	1.61	-24.19
6,772.0	37.20	256.50	6,527.0	5,393.0	251.0	-829.8	-326.3	11.33	0.94	-18.75
6,803.0	37.90	251.90	6,551.5	5,417.5	245.8	-848.0	-324.9	9.32	2.26	-14.84
6,835.0	38.80	246.80	6,576.6	5,442.6	238.8	-866.6	-319.7	10.28	2.81	-15.94
6,866.0	39.70	241.60	6,600.6	5,466.6	230.3	-884.2	-312.9	11.00	2.90	-16.77
6,897.0	40.10	235.60	6,624.4	5,490.4	219.9	-901.2	-304.2	12.48	1.29	-19.35
6,929.0	40.30	230.20	6,648.9	5,514.9	207.5	-917.6	-293.3	10.91	0.63	-16.88
6,960.0	39.00	225.60	6,672.8	5,538.8	194.2	-932.3	-281.5	10.35	-4.19	-14.84
6,991.0	38.10	220.60	6,697.0	5,563.0	180.1	-945.5	-268.7	10.46	-2.90	-16.13



Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 3000.1 Single User Ob	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 51431B
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1134.0usft
<b>Project:</b>	Doddridge County, WV Gnd	<b>MD Reference:</b>	KB @ 1134.0usft
<b>Site:</b>	Doddridge County 51431B	<b>North Reference:</b>	Gnd
<b>Well:</b>	Well #51431B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	51431B 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)
7,023.0	39.20	214.70	6,722.0	5,588.0	164.3	-957.7	-254.1	12.01	3.44	-18.44
7,054.0	40.90	211.60	6,745.7	5,611.7	147.6	-968.6	-238.6	8.45	5.48	-10.00
7,086.0	42.80	207.20	6,769.6	5,635.6	129.0	-979.0	-221.0	10.92	5.94	-13.75
7,117.0	44.70	203.90	6,792.0	5,658.0	109.7	-988.3	-202.6	9.58	6.13	-10.65
7,149.0	47.20	201.50	6,814.2	5,680.2	88.5	-997.1	-182.4	9.49	7.81	-7.50
7,180.0	50.60	197.50	6,834.6	5,700.6	66.5	-1,004.9	-161.2	14.65	10.97	-12.90
7,211.0	53.70	195.70	6,853.6	5,719.6	43.0	-1,011.9	-138.5	11.00	10.00	-5.81
7,243.0	57.40	193.20	6,871.7	5,737.7	17.5	-1,018.5	-113.7	13.23	11.56	-7.81
7,274.0	60.00	191.00	6,887.8	5,753.8	-8.4	-1,024.0	-88.4	10.35	8.39	-7.10
7,305.0	61.90	188.70	6,902.9	5,768.9	-35.1	-1,028.6	-62.3	8.92	6.13	-7.42
7,336.0	65.00	186.70	6,916.7	5,782.7	-62.6	-1,032.4	-35.3	11.55	10.00	-6.45
7,368.0	67.40	184.60	6,929.7	5,795.7	-91.7	-1,035.2	-6.5	9.61	7.50	-6.56
7,399.0	69.60	182.80	6,941.0	5,807.0	-120.5	-1,037.1	21.9	8.92	7.10	-5.81
7,430.0	72.10	181.80	6,951.2	5,817.2	-149.8	-1,038.3	50.9	8.62	8.06	-3.23
7,462.0	74.70	180.40	6,960.3	5,826.3	-180.4	-1,038.9	81.4	9.14	8.13	-4.38
7,493.0	77.40	178.80	6,967.8	5,833.8	-210.5	-1,038.6	111.4	10.05	8.71	-5.16
7,525.0	78.90	177.40	6,974.4	5,840.4	-241.8	-1,037.6	142.6	6.35	4.69	-4.38
7,556.0	80.70	174.70	6,979.9	5,845.9	-272.3	-1,035.5	173.1	10.35	5.81	-8.71
7,587.0	83.60	173.30	6,984.1	5,850.1	-302.8	-1,032.3	203.8	10.37	9.35	-4.52
7,619.0	87.00	172.10	6,986.7	5,852.7	-334.4	-1,028.2	235.7	11.26	10.63	-3.75
7,714.0	91.20	168.40	6,988.2	5,854.2	-428.0	-1,012.1	330.4	5.89	4.42	-3.89
7,808.0	90.80	167.20	6,986.6	5,852.6	-519.9	-992.3	423.7	1.35	-0.43	-1.28
7,902.0	89.10	165.80	6,986.7	5,852.7	-611.3	-970.3	516.8	2.34	-1.81	-1.49
7,996.0	89.00	166.60	6,988.2	5,854.2	-702.5	-947.9	609.8	0.86	-0.11	0.85
8,090.0	88.80	167.30	6,990.0	5,856.0	-794.1	-926.7	702.9	0.77	-0.21	0.74
8,185.0	88.20	164.50	6,992.5	5,858.5	-886.2	-903.6	796.8	3.01	-0.83	-2.95
8,279.0	89.20	165.40	6,994.6	5,860.6	-976.9	-879.2	889.4	1.43	1.06	0.96
8,373.0	89.60	164.40	6,995.6	5,861.6	-1,067.7	-854.7	982.1	1.15	0.43	-1.06
8,467.0	87.70	163.00	6,997.8	5,863.8	-1,157.9	-828.3	1,074.4	2.51	-2.02	-1.49
8,561.0	88.80	164.70	7,000.7	5,866.7	-1,248.1	-802.2	1,166.7	2.15	1.17	1.81
8,654.0	89.80	165.00	7,001.8	5,867.8	-1,337.9	-777.9	1,258.3	1.12	1.08	0.32
8,748.0	89.70	163.60	7,002.3	5,868.3	-1,428.4	-752.4	1,350.8	1.49	-0.11	-1.49
8,844.0	89.60	164.80	7,002.8	5,868.8	-1,520.7	-726.3	1,445.2	1.25	-0.10	1.25
8,938.0	89.30	166.40	7,003.7	5,869.7	-1,611.8	-702.9	1,538.1	1.73	-0.32	1.70
9,032.0	90.60	167.10	7,003.8	5,869.8	-1,703.3	-681.4	1,631.2	1.57	1.38	0.74
9,127.0	90.40	167.30	7,003.0	5,869.0	-1,795.9	-660.3	1,725.4	0.30	-0.21	0.21
9,221.0	86.30	162.90	7,004.1	5,870.1	-1,886.7	-636.2	1,818.1	5.19	-2.23	-4.68
9,316.0	88.70	164.70	7,006.5	5,872.5	-1,977.9	-609.7	1,911.4	1.94	0.42	1.89
9,410.0	89.20	164.40	7,008.3	5,874.3	-2,068.5	-584.6	2,003.9	0.62	0.53	-0.32
9,504.0	89.80	164.40	7,009.1	5,875.1	-2,159.0	-559.4	2,096.5	0.64	0.64	0.00
9,598.0	90.30	162.40	7,009.0	5,875.0	-2,249.1	-532.5	2,188.7	2.19	0.53	-2.13
9,692.0	89.80	163.60	7,008.9	5,874.9	-2,339.0	-505.0	2,280.8	1.38	-0.53	1.28
9,786.0	88.80	164.70	7,010.1	5,876.1	-2,429.4	-479.4	2,373.2	1.58	-1.06	1.17



Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 514318
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB (D) 1134.0usft
<b>Project:</b>	Doddridge County, WV Gas	<b>MD Reference:</b>	KB (D) 1134.0usft
<b>Site:</b>	Doddridge County 514318	<b>North Reference:</b>	Qnd
<b>Well:</b>	Well #514318	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	514318 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)
9,880.0	89.30	164.30	7,011.6	5,877.6	-2,520.0	-454.2	2,465.7	0.68	0.53	-0.43
9,974.0	90.10	167.10	7,012.1	5,878.1	-2,611.1	-431.0	2,558.6	3.10	0.85	2.98
10,068.0	90.60	166.60	7,011.6	5,877.6	-2,702.6	-409.6	2,651.7	0.75	0.53	-0.53
10,162.0	90.10	167.70	7,011.0	5,877.0	-2,794.2	-388.7	2,745.0	1.29	-0.53	1.17
10,256.0	90.70	168.90	7,010.3	5,876.3	-2,886.3	-369.7	2,838.4	1.43	0.64	1.28
10,350.0	89.10	168.20	7,010.5	5,876.5	-2,978.4	-351.0	2,931.9	1.86	-1.70	-0.74
10,444.0	89.10	167.60	7,012.0	5,878.0	-3,070.3	-331.3	3,025.2	0.64	0.00	-0.64
10,538.0	89.40	167.20	7,013.2	5,879.2	-3,162.0	-310.8	3,118.5	0.53	0.32	-0.43
10,633.0	89.90	167.00	7,013.8	5,879.8	-3,254.6	-289.6	3,212.7	0.57	0.53	-0.21
10,727.0	90.10	166.00	7,013.8	5,879.8	-3,346.0	-267.7	3,305.7	1.08	0.21	-1.06
10,821.0	90.20	165.60	7,013.5	5,879.5	-3,437.2	-244.6	3,398.6	0.44	0.11	-0.43
10,915.0	90.10	164.90	7,013.3	5,879.3	-3,528.1	-220.7	3,491.4	0.75	-0.11	-0.74
11,009.0	89.90	163.60	7,013.3	5,879.3	-3,618.5	-195.2	3,583.9	1.40	-0.21	-1.38
11,103.0	89.80	164.00	7,013.5	5,879.5	-3,708.8	-168.9	3,676.2	0.44	-0.11	0.43
11,198.0	89.80	165.10	7,013.9	5,879.9	-3,800.4	-143.6	3,769.8	1.16	0.00	1.16
11,292.0	90.60	164.80	7,013.5	5,879.5	-3,891.1	-119.2	3,862.4	0.91	0.85	-0.32
11,385.0	91.00	166.60	7,012.2	5,878.2	-3,981.2	-96.3	3,954.3	1.98	0.43	1.94
11,480.0	89.60	161.70	7,011.7	5,877.7	-4,072.6	-70.3	4,047.7	5.36	-1.47	-5.16
11,574.0	89.30	163.30	7,012.6	5,878.6	-4,162.2	-42.0	4,139.6	1.73	-0.32	1.70
11,669.0	89.50	164.80	7,013.6	5,879.6	-4,253.6	-15.9	4,233.0	1.59	0.21	1.58
11,763.0	88.90	166.00	7,014.9	5,880.9	-4,344.5	7.7	4,325.8	1.43	-0.64	1.28
11,857.0	89.10	167.10	7,016.6	5,882.6	-4,435.9	29.6	4,418.9	1.19	0.21	1.17
11,951.0	89.50	170.10	7,017.7	5,883.7	-4,528.1	48.2	4,512.3	3.22	0.43	3.19
12,045.0	88.90	169.40	7,019.0	5,885.0	-4,620.6	64.9	4,606.0	0.98	-0.64	-0.74
12,140.0	90.40	169.30	7,019.6	5,885.6	-4,713.9	82.5	4,700.6	1.58	1.58	-0.11
12,234.0	90.60	169.00	7,018.8	5,884.8	-4,806.2	100.2	4,794.2	0.38	0.21	-0.32
12,328.0	91.10	169.40	7,017.4	5,883.4	-4,898.6	117.8	4,887.7	0.68	0.53	0.43
12,423.0	90.90	168.40	7,015.8	5,881.8	-4,991.8	136.1	4,982.3	1.07	-0.21	-1.05
12,517.0	89.80	167.10	7,015.2	5,881.2	-5,083.6	156.0	5,075.6	1.81	-1.17	-1.38
12,611.0	90.50	168.40	7,014.9	5,880.9	-5,175.5	175.9	5,168.9	1.57	0.74	1.38
12,705.0	90.00	167.70	7,014.5	5,880.5	-5,267.4	195.4	5,262.3	0.92	-0.53	-0.74
12,799.0	89.10	165.80	7,015.3	5,881.3	-5,358.9	216.9	5,355.4	2.24	-0.96	-2.02
12,894.0	90.50	167.70	7,015.6	5,881.6	-5,451.4	238.7	5,449.5	2.48	1.47	2.00
12,988.0	90.10	165.80	7,015.1	5,881.1	-5,542.9	260.3	5,542.7	2.07	-0.43	-2.02
13,082.0	89.40	163.90	7,015.5	5,881.5	-5,633.6	284.8	5,635.3	2.15	-0.74	-2.02
13,176.0	90.20	165.60	7,015.8	5,881.8	-5,724.3	309.6	5,727.9	2.00	0.85	1.81
13,270.0	90.50	166.20	7,015.3	5,881.3	-5,815.5	332.5	5,820.8	0.71	0.32	0.64
13,364.0	91.50	165.90	7,013.6	5,879.6	-5,906.7	355.1	5,913.8	1.11	1.06	-0.32
13,458.0	90.90	163.40	7,011.7	5,877.7	-5,997.3	380.0	6,006.3	2.73	-0.64	-2.66
13,552.0	90.50	161.50	7,010.5	5,876.5	-6,086.9	408.3	6,098.2	2.07	-0.43	-2.02
13,646.0	90.20	159.70	7,009.9	5,875.9	-6,175.6	439.5	6,189.5	1.94	-0.32	-1.91
13,740.0	90.20	161.70	7,009.6	5,875.6	-6,264.3	470.6	6,280.7	2.13	0.00	2.13



Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 514318
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1134.0usft
<b>Project:</b>	Doddridge County, WV Gas	<b>MD Reference:</b>	KB @ 1134.0usft
<b>Site:</b>	Doddridge County 514318	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514318	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	514318 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)
13,834.0	90.30	164.70	7,009.2	5,875.2	-6,354.2	497.8	6,372.8	3.19	0.11	3.19
13,929.0	90.30	165.80	7,008.7	5,874.7	-6,446.1	522.0	6,466.6	1.16	0.00	1.16
14,023.0	91.30	169.20	7,007.4	5,873.4	-6,537.9	542.3	6,559.8	3.77	1.06	3.62
14,117.0	92.10	169.40	7,004.6	5,870.6	-6,630.2	559.8	6,653.4	0.88	0.85	0.21
14,211.0	91.90	167.10	7,001.3	5,867.3	-6,722.2	578.9	6,746.8	2.45	-0.21	-2.45
14,306.0	92.00	167.00	6,998.1	5,864.1	-6,814.7	600.2	6,840.9	0.15	0.11	-0.11
14,400.0	92.50	167.10	6,994.4	5,860.4	-6,906.2	621.2	6,934.0	0.54	0.53	0.11
14,494.0	92.10	166.50	6,990.6	5,856.6	-6,997.7	642.7	7,027.1	0.77	-0.43	-0.64
<b>Last Survey MD=14513'</b>										
14,513.0	92.30	166.60	6,989.9	5,855.9	-7,016.1	647.1	7,045.9	1.18	1.05	0.53
<b>Projection to TD MD=14569'</b>										
14,569.0	92.30	166.60	6,987.6	5,853.6	-7,070.6	660.0	7,101.3	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,200.0	5,196.5	26.0	-143.7	Gyro Tie In MD=5200'
14,513.0	6,989.9	-7,016.1	647.1	Last Survey MD=14513'
14,569.0	6,987.6	-7,070.6	660.0	Projection to TD MD=14569'

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



Project: Doddridge County, WV Grid  
 Site: Doddridge County 514318  
 Well: Well #514318  
 Wellbore: Main Wellbore  
 Design: 514318 As Drilled Surveys

