



PHOENIX
TECHNOLOGY SERVICES USA INC.

EQT Production - Marcellus

Ritchie County, WV
Ritchie County 515278
Well #515278

Main Wellbore

Design: 515278 As Drilled Surveys

Standard Survey Report

01 April, 2015



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515278
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515278	North Reference:	Grid
Well:	Well #515278	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515278 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		Using geodetic scale factor

Site	Ritchie County 515278				
Site Position:		Northing:	280,821.80 usft	Latitude:	39.26
From:	Map	Easting:	1,589,015.90 usft	Longitude:	-80.95
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.93 °

Well	Well #515278					
Well Position	+N-S	0.0 usft	Northing:	280,821.80 usft	Latitude:	39° 15' 42.861 N
	+E-W	0.0 usft	Easting:	1,589,015.90 usft	Longitude:	80° 57' 5.482 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,119.0 usft

Wellbore	Main Wellbore				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/16/2015	-8.33	66.77	52,196

Design	515278 As Drilled Surveys				
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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	299.00

Survey Program	Date 4/1/2015				
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From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	4,298.0	515278 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	5,396.0	515278 PHX MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination
0.00	12,433.0	515278 PHX MWD Curve and Lateral (Ma	MWD+IGRF	MWD+IGRF v3:standard declination

Survey											
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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	-1,135.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.04	2.88	103.0	-1,032.0	0.0	0.0	0.0	0.04	0.04	0.00
203.0	0.08	16.04	203.0	-932.0	0.1	0.0	0.0	0.04	0.04	0.00
303.0	0.05	256.18	303.0	-832.0	0.2	0.0	0.1	0.11	-0.03	-119.86
403.0	0.07	119.49	403.0	-732.0	0.2	0.0	0.1	0.11	0.02	-136.69
503.0	0.05	134.35	503.0	-632.0	0.1	0.1	0.0	0.03	-0.02	14.86
603.0	0.06	134.51	603.0	-532.0	0.0	0.2	-0.1	0.01	0.01	0.16

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Well:	Well #515278	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515278 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)	
703.0	0.07	130.15	703.0	-432.0	0.0	0.2	-0.2	0.01	0.01	-4.36	
803.0	0.06	137.90	803.0	-332.0	-0.1	0.3	-0.4	0.01	-0.01	7.75	
903.0	0.05	141.33	903.0	-232.0	-0.2	0.4	-0.4	0.01	-0.01	3.43	
1,003.0	0.06	172.62	1,003.0	-132.0	-0.3	0.4	-0.5	0.03	0.01	31.29	
1,103.0	0.23	154.64	1,103.0	-32.0	-0.5	0.5	-0.7	0.17	0.17	-17.98	
1,203.0	0.44	141.57	1,203.0	68.0	-1.0	0.8	-1.2	0.22	0.21	-13.07	
1,303.0	0.48	154.79	1,303.0	168.0	-1.7	1.3	-1.9	0.11	0.04	13.22	
1,403.0	0.57	151.71	1,403.0	268.0	-2.5	1.7	-2.7	0.09	0.09	-3.08	
1,503.0	0.43	155.79	1,503.0	368.0	-3.3	2.1	-3.4	0.14	-0.14	4.08	
1,603.0	0.33	170.11	1,603.0	468.0	-3.9	2.3	-3.9	0.14	-0.10	14.32	
1,703.0	0.37	173.06	1,703.0	568.0	-4.5	2.4	-4.2	0.04	0.04	2.95	
1,803.0	0.40	162.87	1,803.0	668.0	-5.2	2.5	-4.7	0.07	0.03	-10.19	
1,903.0	0.41	160.76	1,903.0	768.0	-5.8	2.7	-5.2	0.02	0.01	-2.11	
2,003.0	0.41	171.38	2,003.0	868.0	-6.5	2.9	-5.7	0.08	0.00	10.62	
2,103.0	0.43	167.28	2,103.0	968.0	-7.2	3.0	-6.2	0.04	0.02	-4.10	
2,203.0	0.40	179.98	2,203.0	1,068.0	-8.0	3.1	-6.6	0.10	-0.03	12.70	
2,303.0	0.46	176.67	2,303.0	1,168.0	-8.7	3.1	-7.0	0.06	0.06	-3.31	
2,403.0	0.34	189.69	2,403.0	1,268.0	-9.4	3.1	-7.3	0.15	-0.12	13.02	
2,503.0	0.32	185.49	2,503.0	1,368.0	-10.0	3.0	-7.5	0.03	-0.02	-4.20	
2,603.0	0.34	205.31	2,603.0	1,468.0	-10.5	2.9	-7.6	0.12	0.02	19.82	
2,703.0	0.33	203.93	2,703.0	1,568.0	-11.1	2.6	-7.7	0.01	-0.01	-1.38	
2,803.0	0.30	207.50	2,803.0	1,668.0	-11.5	2.4	-7.7	0.04	-0.03	3.57	
2,903.0	0.23	208.63	2,903.0	1,768.0	-12.0	2.2	-7.7	0.07	-0.07	1.13	
3,003.0	0.28	214.85	3,003.0	1,868.0	-12.3	1.9	-7.7	0.06	0.05	6.22	
3,103.0	0.21	220.08	3,103.0	1,968.0	-12.7	1.7	-7.6	0.07	-0.07	5.23	
3,203.0	0.12	210.29	3,203.0	2,068.0	-12.9	1.5	-7.6	0.09	-0.09	-9.79	
3,303.0	0.14	208.51	3,303.0	2,168.0	-13.1	1.4	-7.6	0.02	0.02	-1.78	
3,403.0	0.16	222.93	3,403.0	2,268.0	-13.3	1.2	-7.5	0.04	0.02	14.42	
3,503.0	0.20	228.23	3,503.0	2,368.0	-13.5	1.0	-7.5	0.04	0.04	5.30	
3,603.0	0.16	220.19	3,603.0	2,468.0	-13.8	0.8	-7.4	0.05	-0.04	-8.04	
3,703.0	0.21	239.34	3,703.0	2,568.0	-14.0	0.6	-7.2	0.08	0.05	19.15	
3,803.0	0.20	242.19	3,803.0	2,668.0	-14.1	0.2	-7.1	0.01	-0.01	2.85	
3,903.0	0.20	235.86	3,903.0	2,768.0	-14.3	-0.1	-6.9	0.02	0.00	-6.33	
Gyro Tie In=3990' MD											
3,993.0	0.43	254.60	3,992.9	2,857.9	-14.5	-0.5	-6.6	0.28	0.26	27.45	
4,040.0	0.40	258.10	4,039.9	2,904.9	-14.6	-0.8	-6.3	0.08	-0.06	48.28	
4,083.0	1.40	238.20	4,082.9	2,947.9	-14.9	-1.4	-6.0	2.40	2.33	-1.16	
4,126.0	3.00	237.70	4,125.9	2,990.9	-15.8	-2.8	-5.2	3.72	3.72	-9.80	
4,169.0	4.20	233.80	4,168.8	3,033.8	-17.3	-5.1	-4.0	2.85	2.79		
4,212.0	5.70	222.90	4,211.7	3,076.7	-19.8	-7.8	-2.8	4.10	3.49	-25.35	
4,277.0	6.70	221.30	4,276.3	3,141.3	-25.0	-12.5	-1.2	1.56	1.54	-2.46	
First MWD Survey=4296' MD											
4,298.0	6.90	222.70	4,297.1	3,162.1	-26.8	-14.1	-0.6	1.24	0.95	6.67	

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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)	
4,341.0	7.20	223.20	4,339.8	3,204.8	-30.7	-17.7	0.6	0.71	0.70	1.16	
4,384.0	7.30	223.20	4,382.5	3,247.5	-34.7	-21.5	2.0	0.23	0.23	0.00	
4,427.0	7.40	219.80	4,425.1	3,290.1	-38.8	-25.1	3.2	1.04	0.23	-7.91	
4,470.0	7.50	221.90	4,467.7	3,332.7	-43.0	-28.7	4.3	0.67	0.23	4.88	
4,513.0	7.90	221.40	4,510.4	3,375.4	-47.3	-32.6	5.6	0.94	0.93	-1.16	
4,556.0	7.90	222.00	4,553.0	3,418.0	-51.7	-36.5	6.9	0.19	0.00	1.40	
4,599.0	8.90	226.20	4,595.5	3,460.5	-56.2	-40.9	8.5	2.73	2.33	9.77	
4,642.0	11.00	234.50	4,637.8	3,502.8	-60.9	-46.6	11.3	5.90	4.88	19.30	
4,685.0	13.00	232.30	4,679.9	3,544.9	-66.2	-53.8	14.9	4.77	4.65	-5.12	
4,707.0	13.70	229.60	4,701.3	3,566.3	-69.4	-57.7	16.8	4.26	3.18	-12.27	
4,728.0	15.20	227.70	4,721.6	3,586.6	-72.9	-61.7	18.6	7.49	7.14	-9.05	
4,771.0	17.60	226.50	4,762.9	3,627.9	-81.2	-70.5	22.4	5.64	5.58	-2.79	
4,815.0	20.30	224.90	4,804.5	3,669.5	-91.2	-80.8	26.4	6.25	6.14	-3.64	
4,858.0	22.20	222.20	4,844.6	3,709.6	-102.5	-91.5	30.3	4.97	4.42	-6.28	
4,902.0	23.30	220.20	4,885.2	3,750.2	-115.3	-102.7	33.9	3.06	2.50	-4.55	
4,945.0	24.70	216.60	4,924.4	3,789.4	-129.0	-113.5	36.8	4.71	3.26	-8.37	
4,988.0	25.70	216.80	4,963.3	3,828.3	-143.7	-124.5	39.2	2.33	2.33	0.47	
5,031.0	26.80	217.30	5,001.9	3,866.9	-158.8	-135.9	41.9	2.61	2.56	1.16	
5,074.0	27.20	216.30	5,040.2	3,905.2	-174.5	-147.6	44.5	1.41	0.93	-2.33	
5,117.0	27.50	219.00	5,078.4	3,943.4	-190.1	-159.7	47.5	2.97	0.70	6.28	
5,160.0	29.30	218.60	5,116.2	3,981.2	-206.0	-172.5	51.0	4.21	4.19	-0.93	
5,202.0	30.20	219.70	5,152.7	4,017.7	-222.2	-185.7	54.7	2.51	2.14	2.62	
5,247.0	31.40	221.00	5,191.4	4,056.4	-239.8	-200.6	59.2	3.05	2.67	2.89	
5,290.0	32.80	221.80	5,227.8	4,092.8	-256.9	-215.7	64.1	3.40	3.26	1.86	
5,334.0	34.40	223.60	5,264.4	4,129.4	-274.8	-232.2	69.9	4.28	3.64	4.09	
5,377.0	34.70	223.30	5,299.9	4,164.9	-292.5	-249.0	76.0	0.80	0.70	-0.70	
Final Survey=5390' MD/5310' TVD											
5,393.0	35.00	223.60	5,313.0	4,178.0	-299.1	-255.3	78.3	2.16	1.88	1.88	
Tie In=5396' MD											
5,396.0	35.00	223.60	5,315.4	4,180.4	-300.4	-256.5	78.7	0.00	0.00	0.00	
5,428.0	35.00	223.80	5,341.7	4,206.7	-313.6	-269.1	83.4	0.36	0.00	0.63	
5,460.0	34.70	223.90	5,367.9	4,232.9	-326.8	-281.8	88.0	0.95	-0.94	0.31	
5,491.0	37.10	223.00	5,393.0	4,258.0	-340.0	-294.3	92.6	7.93	7.74	-2.90	
5,523.0	40.80	223.00	5,417.9	4,282.9	-354.7	-308.0	97.4	11.56	11.56	0.00	
5,554.0	44.30	222.70	5,440.7	4,305.7	-370.1	-322.3	102.5	11.31	11.29	-0.97	
5,586.0	46.90	222.30	5,463.1	4,328.1	-387.0	-337.7	107.8	8.17	8.13	-1.25	
5,617.0	49.70	222.00	5,483.7	4,348.7	-404.1	-353.3	113.1	9.06	9.03	-0.97	
5,649.0	52.60	221.90	5,503.8	4,368.8	-422.6	-369.9	118.6	9.07	9.06	-0.97	
5,680.0	55.70	221.20	5,522.0	4,387.0	-441.5	-386.6	124.1	10.17	10.00	-2.26	
5,712.0	58.50	220.80	5,539.3	4,404.3	-461.7	-404.2	129.7	8.81	8.75	-1.25	
5,743.0	61.50	220.10	5,554.8	4,419.8	-482.2	-421.6	135.0	9.87	9.68	-2.26	
5,775.0	64.00	219.30	5,569.5	4,434.5	-504.0	-439.8	140.3	8.12	7.81	-2.50	
5,806.0	66.20	218.60	5,582.6	4,447.6	-525.9	-457.5	145.2	7.39	7.10	-2.26	

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5,838.0	68.10	218.30	5,595.0	4,460.0	-549.0	-475.8	150.0	6.00	5.94	-0.94	
5,901.0	69.70	217.80	5,617.7	4,482.7	-595.3	-512.0	159.2	2.65	2.54	-0.79	
5,965.0	68.70	217.60	5,640.4	4,505.4	-642.6	-548.6	168.3	1.59	-1.56	-0.31	
6,028.0	68.80	217.10	5,663.2	4,528.2	-689.3	-584.2	176.8	0.76	0.16	-0.79	
6,092.0	69.90	216.50	5,685.8	4,550.8	-737.3	-620.1	185.0	1.93	1.72	-0.94	
6,155.0	70.20	218.20	5,707.3	4,572.3	-784.3	-656.0	193.6	2.58	0.48	2.70	
6,218.0	70.90	218.60	5,728.3	4,593.3	-830.9	-692.9	203.3	1.26	1.11	0.63	
6,281.0	69.60	219.40	5,749.5	4,614.5	-877.0	-730.2	213.6	2.38	-2.06	1.27	
6,344.0	69.80	219.40	5,771.4	4,636.4	-922.6	-767.7	224.2	0.32	0.32	0.00	
6,407.0	71.10	218.70	5,792.5	4,657.5	-968.7	-805.1	234.6	2.31	2.06	-1.11	
6,470.0	69.60	217.80	5,813.7	4,678.7	-1,015.3	-841.9	244.1	2.73	-2.38	-1.43	
6,533.0	69.30	217.80	5,835.8	4,700.8	-1,061.9	-878.0	253.2	0.48	-0.48	0.00	
6,597.0	70.20	216.90	5,857.9	4,722.9	-1,109.7	-914.4	261.9	1.93	1.41	-1.41	
6,660.0	68.70	216.80	5,880.1	4,745.1	-1,156.9	-949.8	269.9	2.39	-2.38	-0.16	
6,723.0	68.30	216.50	5,903.1	4,768.1	-1,203.9	-984.8	277.7	0.77	-0.63	-0.48	
6,786.0	68.80	217.90	5,926.2	4,791.2	-1,250.6	-1,020.3	286.1	2.22	0.79	2.22	
6,849.0	69.50	218.50	5,948.6	4,813.6	-1,296.9	-1,056.7	295.5	1.42	1.11	0.95	
6,912.0	70.50	219.70	5,970.2	4,835.2	-1,342.8	-1,094.0	305.9	2.39	1.59	1.90	
6,976.0	71.40	220.20	5,991.0	4,856.0	-1,389.2	-1,132.9	317.4	1.59	1.41	0.78	
7,039.0	70.20	219.60	6,011.8	4,876.8	-1,434.8	-1,171.0	328.7	2.11	-1.90	-0.95	
7,102.0	71.10	219.10	6,032.6	4,897.6	-1,480.8	-1,208.7	339.3	1.61	1.43	-0.79	
7,165.0	70.60	218.00	6,053.3	4,918.3	-1,527.3	-1,245.8	349.2	1.83	-0.79	-1.75	
7,228.0	71.20	218.00	6,073.9	4,938.9	-1,574.2	-1,282.4	358.5	0.95	0.95	0.00	
7,259.0	71.90	217.50	6,083.7	4,948.7	-1,597.5	-1,300.5	363.0	2.73	2.26	-1.61	
7,291.0	71.40	219.30	6,093.8	4,958.8	-1,621.3	-1,319.3	368.0	5.56	-1.56	5.63	
7,322.0	70.70	221.60	6,103.9	4,968.9	-1,643.6	-1,338.3	373.8	7.37	-2.26	7.42	
7,354.0	70.20	223.90	6,114.6	4,979.6	-1,665.7	-1,358.8	380.9	6.95	-1.56	7.19	
7,385.0	70.00	227.00	6,125.1	4,990.1	-1,686.2	-1,379.6	389.2	9.42	-0.65	10.00	
7,417.0	69.60	230.40	6,136.2	5,001.2	-1,706.0	-1,402.1	399.3	10.05	-1.25	10.63	
7,448.0	68.90	234.20	6,147.2	5,012.2	-1,723.7	-1,425.1	410.8	11.68	-2.26	12.26	
7,480.0	68.80	238.00	6,158.7	5,023.7	-1,740.4	-1,449.8	424.4	11.08	-0.31	11.88	
7,512.0	68.40	241.40	6,170.4	5,035.4	-1,755.4	-1,475.5	439.6	9.97	-1.25	10.63	
7,543.0	67.60	244.80	6,182.0	5,047.0	-1,768.4	-1,501.2	455.7	10.49	-2.58	10.97	
7,575.0	67.10	248.40	6,194.3	5,059.3	-1,780.1	-1,528.3	473.7	10.50	-1.56	11.25	
7,606.0	67.30	251.90	6,206.4	5,071.4	-1,789.8	-1,555.1	492.5	10.43	0.65	11.29	
7,638.0	68.00	255.30	6,218.5	5,083.5	-1,798.2	-1,583.5	513.3	10.07	2.19	10.63	
7,669.0	68.80	258.80	6,229.9	5,094.9	-1,804.6	-1,611.6	534.7	10.81	2.58	11.29	
7,701.0	69.60	262.60	6,241.3	5,106.3	-1,809.5	-1,641.1	558.2	11.38	2.59	11.88	
7,732.0	70.50	266.40	6,251.9	5,116.9	-1,812.3	-1,670.1	582.2	11.95	2.90	12.26	
7,764.0	70.90	270.50	6,262.5	5,127.5	-1,813.1	-1,700.3	608.2	12.16	1.25	12.81	
7,795.0	71.20	274.40	6,272.5	5,137.5	-1,811.8	-1,729.6	634.4	11.94	0.97	12.58	
7,828.0	71.50	279.10	6,283.1	5,148.1	-1,808.1	-1,760.6	663.4	13.52	0.91	14.24	

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515278
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515278	North Reference:	Grid
Well:	Well #515278	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515278 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)
7,859.0	71.80	282.70	6,292.9	5,157.9	-1,802.6	-1,789.5	691.3	11.06	0.97	11.61
7,891.0	72.40	286.60	6,302.7	5,167.7	-1,794.9	-1,819.0	720.8	11.75	1.88	12.19
7,923.0	73.00	289.90	6,312.2	5,177.2	-1,785.3	-1,848.0	750.8	10.02	1.88	10.31
7,954.0	74.10	294.10	6,321.0	5,186.0	-1,774.2	-1,875.5	780.3	13.47	3.55	13.55
7,986.0	75.20	297.10	6,329.5	5,194.5	-1,760.8	-1,903.4	811.1	9.67	3.44	9.38
8,017.0	75.50	297.80	6,337.3	5,202.3	-1,747.0	-1,930.0	841.1	2.39	0.97	2.26
8,049.0	75.80	300.10	6,345.2	5,210.2	-1,732.0	-1,957.1	872.1	7.03	0.94	7.19
8,081.0	76.50	303.30	6,352.9	5,217.9	-1,715.7	-1,983.5	903.1	9.95	2.19	10.00
8,112.0	77.40	306.00	6,359.9	5,224.9	-1,698.5	-2,008.4	933.2	8.97	2.90	8.71
8,144.0	78.60	308.70	6,366.6	5,231.6	-1,679.5	-2,033.3	964.2	9.06	3.75	8.44
8,175.0	79.50	311.50	6,372.5	5,237.5	-1,659.9	-2,056.5	994.0	9.33	2.90	9.03
8,207.0	80.00	314.20	6,378.2	5,243.2	-1,638.5	-2,079.6	1,024.6	8.45	1.56	8.44
8,239.0	81.10	316.40	6,383.4	5,248.4	-1,616.1	-2,101.8	1,054.9	7.60	3.44	6.88
8,270.0	82.90	319.80	6,387.7	5,252.7	-1,593.2	-2,122.3	1,083.9	12.32	5.81	10.97
8,302.0	84.70	323.00	6,391.2	5,256.2	-1,568.4	-2,142.2	1,113.3	11.42	5.63	10.00
8,333.0	85.50	326.30	6,393.8	5,258.8	-1,543.2	-2,160.0	1,141.1	10.92	2.58	10.65
8,365.0	86.50	328.60	6,396.1	5,261.1	-1,516.3	-2,177.2	1,169.2	7.82	3.13	7.19
LP= 8397' MD/6397' TVD										
8,397.0	88.80	330.50	6,397.4	5,262.4	-1,488.7	-2,193.4	1,196.7	9.32	7.19	5.94
8,428.0	90.00	333.30	6,397.7	5,262.7	-1,461.4	-2,208.0	1,222.8	9.83	3.87	9.03
8,491.0	90.20	333.40	6,397.6	5,262.6	-1,405.1	-2,236.3	1,274.8	0.35	0.32	0.16
8,555.0	90.40	332.60	6,397.2	5,262.2	-1,348.0	-2,265.3	1,327.8	1.29	0.31	-1.25
8,618.0	90.30	332.40	6,396.9	5,261.9	-1,292.2	-2,294.4	1,380.4	0.35	-0.16	-0.32
8,681.0	91.10	333.60	6,396.1	5,261.1	-1,236.0	-2,323.0	1,432.6	2.29	1.27	1.90
8,744.0	90.90	332.50	6,395.0	5,260.0	-1,179.9	-2,351.5	1,484.8	1.77	-0.32	-1.75
8,807.0	90.40	334.50	6,394.3	5,259.3	-1,123.5	-2,379.7	1,536.7	3.27	-0.79	3.17
8,870.0	90.00	333.40	6,394.1	5,259.1	-1,066.9	-2,407.3	1,588.3	1.86	-0.63	-1.75
8,933.0	89.50	334.30	6,394.3	5,259.3	-1,010.4	-2,435.1	1,640.0	1.63	-0.79	1.43
8,996.0	88.60	335.50	6,395.4	5,260.4	-953.3	-2,461.8	1,691.0	2.38	-1.43	1.90
9,059.0	88.60	336.60	6,396.9	5,261.9	-895.8	-2,487.4	1,741.3	1.75	0.00	1.75
9,122.0	89.00	336.20	6,398.2	5,263.2	-838.1	-2,512.6	1,791.3	0.90	0.63	-0.63
9,185.0	89.30	337.10	6,399.2	5,264.2	-780.2	-2,537.6	1,841.2	1.51	0.48	1.43
9,248.0	89.40	336.80	6,399.9	5,264.9	-722.3	-2,562.2	1,890.9	0.50	0.16	-0.48
9,311.0	89.40	335.60	6,400.5	5,265.5	-664.6	-2,587.6	1,941.1	1.90	0.00	-1.90
9,375.0	89.70	335.10	6,401.1	5,266.1	-606.4	-2,614.3	1,992.6	0.91	0.47	-0.78
9,438.0	89.60	336.30	6,401.4	5,266.4	-549.0	-2,640.3	2,043.1	1.91	-0.16	-0.16
9,501.0	89.80	337.00	6,401.8	5,266.8	-491.2	-2,665.2	2,093.0	1.16	0.32	-0.16
9,564.0	90.10	336.90	6,401.8	5,266.8	-433.2	-2,689.9	2,142.7	0.50	0.48	-0.16
9,627.0	90.10	336.50	6,401.7	5,266.7	-375.4	-2,714.8	2,192.5	0.63	0.00	-0.63
9,691.0	90.60	336.40	6,401.3	5,266.3	-316.7	-2,740.4	2,243.3	0.80	0.78	-0.78
9,754.0	90.80	336.10	6,400.5	5,265.5	-259.0	-2,765.8	2,293.5	0.57	0.32	-0.48
9,817.0	89.10	335.90	6,400.6	5,265.6	-201.5	-2,791.4	2,343.8	2.72	-2.70	-0.32
9,880.0	88.70	335.40	6,401.8	5,266.8	-144.1	-2,817.3	2,394.3	1.02	-0.63	-0.79

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515278
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515278	North Reference:	Gnd
Well:	Well #515278	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515278 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)	
9,943.0	89.10	336.10	6,403.0	5,268.0	-86.7	-2,843.2	2,444.8	1.28	0.63	1.11	
10,006.0	88.00	335.50	6,404.6	5,269.6	-29.2	-2,869.0	2,495.2	1.99	-1.75	-0.95	
10,069.0	88.10	335.20	6,406.8	5,271.8	28.0	-2,895.3	2,545.9	0.50	0.16	-0.48	
10,132.0	88.80	334.20	6,408.5	5,273.5	84.9	-2,922.2	2,597.0	1.94	1.11	-1.59	
10,195.0	90.60	332.50	6,408.8	5,273.8	141.2	-2,950.5	2,649.1	3.93	2.86	-2.70	
10,258.0	91.60	331.50	6,407.6	5,272.6	196.9	-2,980.0	2,701.9	2.24	1.59	-1.59	
10,322.0	89.80	332.80	6,406.8	5,271.8	253.4	-3,009.9	2,755.5	3.47	-2.81	2.03	
10,385.0	89.10	333.40	6,407.4	5,272.4	309.6	-3,038.4	2,807.6	1.46	-1.11	0.95	
10,448.0	89.20	333.50	6,408.3	5,273.3	366.0	-3,066.6	2,859.6	0.22	0.16	0.16	
10,511.0	88.40	334.40	6,409.7	5,274.7	422.6	-3,094.2	2,911.2	1.91	-1.27	1.43	
10,575.0	88.60	333.80	6,411.3	5,276.3	480.1	-3,122.2	2,963.5	0.99	0.31	-0.94	
10,638.0	88.70	335.30	6,412.8	5,277.8	537.0	-3,149.3	3,014.8	2.39	0.16	2.38	
10,701.0	89.10	334.50	6,414.0	5,279.0	594.0	-3,176.0	3,065.8	1.42	0.63	-1.27	
Deepest Point of Well= 10764' MD/6415' TVD											
10,764.0	89.40	332.50	6,414.9	5,279.9	650.4	-3,204.1	3,117.7	3.21	0.48	-3.17	
10,827.0	92.00	332.90	6,414.1	5,279.1	706.4	-3,233.0	3,170.1	4.18	4.13	0.63	
10,890.0	92.40	335.40	6,411.7	5,276.7	763.0	-3,260.4	3,221.6	4.02	0.63	3.97	
10,953.0	90.20	336.30	6,410.2	5,275.2	820.5	-3,286.2	3,272.0	3.77	-3.49	1.43	
11,016.0	90.00	336.70	6,410.1	5,275.1	878.2	-3,311.3	3,321.9	0.71	-0.32	0.63	
11,079.0	90.70	336.80	6,409.7	5,274.7	936.1	-3,336.2	3,371.8	1.12	1.11	0.16	
11,142.0	91.10	335.30	6,408.8	5,273.8	993.7	-3,361.7	3,422.0	2.46	0.63	-2.38	
11,205.0	91.40	334.80	6,407.4	5,272.4	1,050.8	-3,388.3	3,473.0	0.93	0.48	-0.79	
11,268.0	90.40	335.80	6,406.4	5,271.4	1,108.0	-3,414.6	3,523.7	2.24	-1.59	1.59	
11,331.0	90.10	334.80	6,406.1	5,271.1	1,165.3	-3,441.0	3,574.5	1.66	-0.48	-1.59	
11,394.0	90.50	335.20	6,405.8	5,270.8	1,222.4	-3,467.6	3,625.5	0.90	0.63	0.63	
11,457.0	87.60	335.50	6,406.8	5,271.8	1,279.6	-3,493.9	3,676.2	4.63	-4.60	0.48	
11,521.0	87.70	334.90	6,409.5	5,274.5	1,337.7	-3,520.7	3,727.8	0.95	0.16	-0.94	
11,584.0	88.10	334.10	6,411.8	5,276.8	1,394.5	-3,547.8	3,779.0	1.42	0.63	-1.27	
11,647.0	88.90	336.10	6,413.4	5,278.4	1,451.6	-3,574.3	3,829.9	3.42	1.27	3.17	
11,710.0	89.50	335.10	6,414.3	5,279.3	1,509.0	-3,600.3	3,880.5	1.85	0.95	-1.59	
11,773.0	90.20	333.70	6,414.5	5,279.5	1,565.8	-3,627.5	3,931.8	2.48	1.11	-2.22	
11,836.0	91.80	335.30	6,413.4	5,278.4	1,622.6	-3,654.7	3,983.1	3.59	2.54	2.54	
11,899.0	90.40	336.70	6,412.1	5,277.1	1,680.2	-3,680.3	4,033.4	3.14	-2.22	2.22	
11,962.0	90.30	336.50	6,411.8	5,276.8	1,738.0	-3,705.3	4,083.3	0.35	-0.16	-0.32	
12,025.0	90.90	335.10	6,411.1	5,276.1	1,795.4	-3,731.1	4,133.8	2.42	0.95	-2.22	
12,088.0	90.50	335.90	6,410.3	5,275.3	1,852.8	-3,757.2	4,184.4	1.42	-0.63	1.27	
12,151.0	90.60	336.00	6,409.7	5,274.7	1,910.3	-3,782.9	4,234.7	0.22	0.16	1.27	
12,214.0	89.10	336.20	6,409.9	5,274.9	1,967.9	-3,808.4	4,285.0	2.40	-2.38	0.32	
12,277.0	88.90	335.40	6,411.0	5,276.0	2,025.4	-3,834.3	4,335.4	1.31	-0.32	-1.27	
12,340.0	89.70	334.80	6,411.8	5,276.8	2,082.5	-3,860.8	4,386.3	1.59	1.27	-0.95	
Final Survey= 12381' MD/6412' TVD											
12,381.0	90.40	335.20	6,411.7	5,276.7	2,119.6	-3,878.1	4,419.5	1.97	1.71	0.98	
Projection to TD= 12433' MD/6411' TVD											

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515278
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515278	North Reference:	Grid
Well:	Well #515278	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515278 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)
12,433.0	90.40	335.20	6,411.4	5,276.4	2,166.9	-3,899.9	4,461.5	0.00	0.00	0.00

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,993.0	3,992.9	-14.5	-0.5	Gyro Tie In=3990' MD
4,298.0	4,297.1	-26.8	-14.1	First MWD Survey=4295' MD
5,393.0	5,313.0	-299.1	-255.3	Final Survey=5390' MD/5310' TVD
5,396.0	5,315.4	-300.4	-256.5	Tie In=5396' MD
8,397.0	6,397.4	-1,488.7	-2,193.4	LP= 8397' MD/6397' TVD
10,764.0	6,414.9	650.4	-3,204.1	Deepest Point of Well= 10764' MD/6415' TVD
12,381.0	6,411.7	2,119.6	-3,878.1	Final Survey= 12381' MD/6412' TVD
12,433.0	6,411.4	2,166.9	-3,899.9	Projection to TD= 12433' MD/6411' TVD

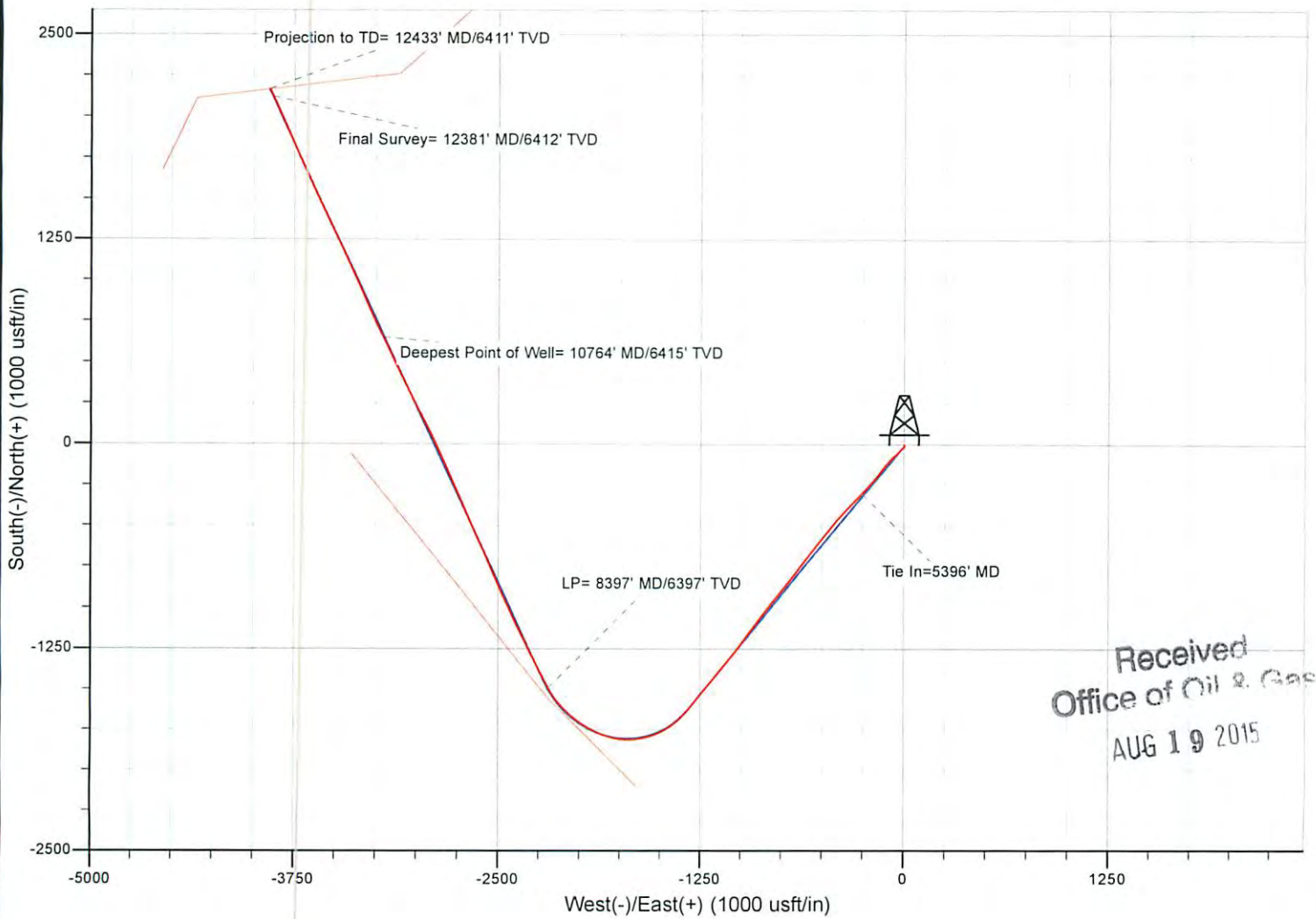
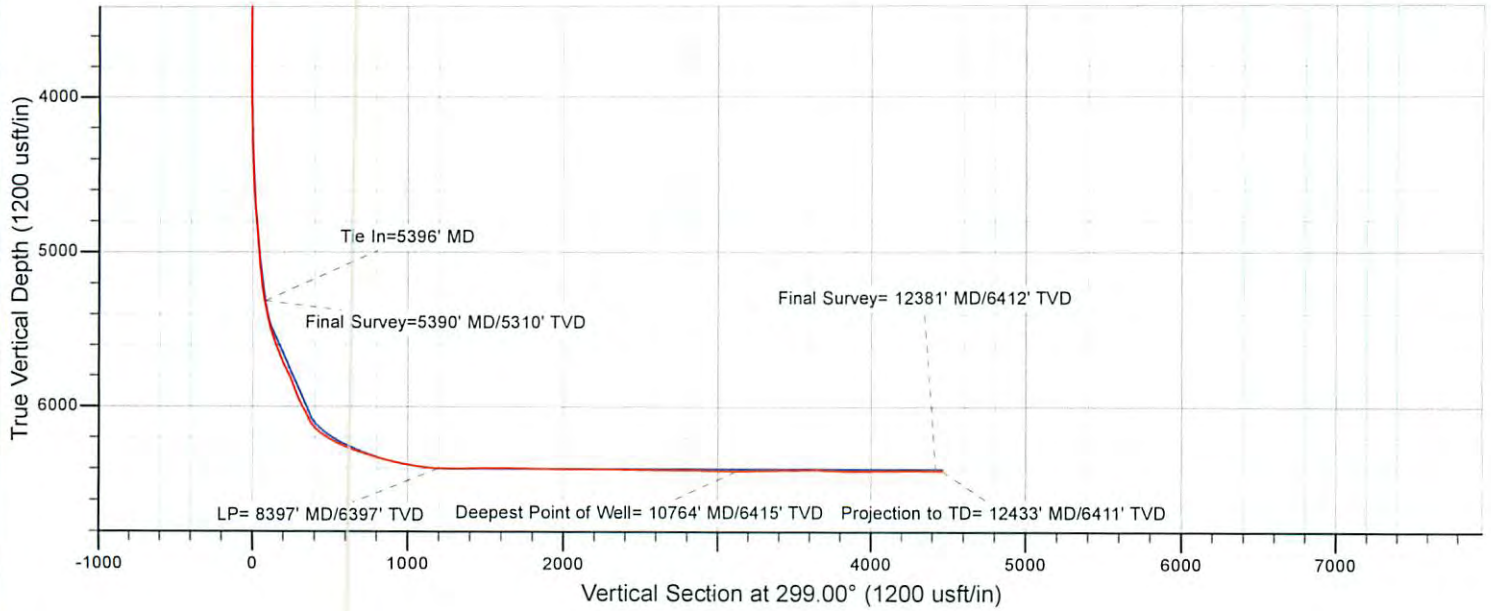
Checked By: _____ Approved By: _____ Date: _____

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EQT Production - Marcellus

Project: Ritchie County, WV
 Site: Ritchie County 515278
 Well: Well #515278
 Wellbore: Main Wellbore
 Design: 515278 As Drilled Surveys



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