

PHOENIX
TECHNOLOGY SERVICES



EQT Production - Marcellus

**Ritchie County, WV
Ritchie County 513759
Well #513759**

Main Wellbore

Design: 513759 As Drilled

Standard Survey Report

01 June, 2015



02/05/2016

Database:	EDM 5000.1 Single User DB	Local Co-ordinate Reference:	Site Ritchie County 513759
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1175.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1175.0usft
Site:	Ritchie County 513759	North Reference:	Grid
Well:	Well #513759	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513759 As Drilled		

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 513759				
Site Position:		Northing:	234,466.60 usft	Latitude:	39.14
From:	Map	Easting:	1,619,096.50 usft	Longitude:	-80.84
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.86 °

Well	Well #513759					
Well Position	+N/-S	0.0 usft	Northing:	234,466.60 usft	Latitude:	39° 8' 9.356 N
	+E/-W	0.0 usft	Easting:	1,619,096.50 usft	Longitude:	80° 50' 34.271 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,159.0 usft

Wellbore	Main Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/21/2015	-7.70	66.58	52,082

Design	513759 As Drilled				
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	191.57	

Survey Program	Date 6/1/2015				
From (°)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	4,833.0	Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
0.00	14,700.0	513759 PHX MWD (Main Wellbore)	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	-1,175.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.42	138.13	103.0	-1,072.0	-0.3	0.3	0.2	0.41	0.41	0.00
203.0	0.35	130.21	203.0	-972.0	-0.8	0.7	0.6	0.09	0.07	-7.92
303.0	0.33	122.23	303.0	-872.0	-1.1	1.2	0.8	0.05	-0.02	19.98
403.0	0.25	142.64	403.0	-772.0	-1.4	1.6	1.1	0.13	-0.08	20.41
503.0	0.25	155.87	503.0	-672.0	-1.8	1.8	1.4	0.06	0.00	8.23
603.0	0.16	163.87	603.0	-572.0	-2.1	1.9	1.7	0.09	-0.05	8.00
703.0	0.10	163.18	703.0	-472.0	-2.4	2.0	1.9	0.06	-0.06	-0.59

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Survey Report



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Site:	Ritchie County 513759	North Reference:	Grid
Well:	Well #513759	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513759 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)
803.0	0.13	171.80	803.0	-372.0	-2.5	2.0	2.1	0.03	0.03	8.62
903.0	0.20	106.58	903.0	-272.0	-2.7	2.2	2.2	0.19	0.07	-65.22
1,003.0	0.27	87.39	1,003.0	-172.0	-2.7	2.6	2.2	0.10	0.07	-19.19
1,103.0	0.38	96.13	1,103.0	-72.0	-2.8	3.2	2.1	0.12	0.11	8.74
1,203.0	0.50	101.66	1,203.0	28.0	-2.9	3.9	2.0	0.13	0.12	5.53
1,303.0	0.66	99.77	1,303.0	128.0	-3.1	4.9	2.0	0.16	0.16	-1.89
1,403.0	1.01	100.06	1,403.0	228.0	-3.3	6.4	2.0	0.35	0.35	0.29
1,503.0	1.21	98.07	1,503.0	328.0	-3.6	8.3	1.9	0.20	0.20	-1.99
1,603.0	1.79	100.63	1,602.9	427.9	-4.1	10.9	1.8	0.58	0.58	2.56
1,703.0	2.24	103.95	1,702.9	527.9	-4.8	14.3	1.9	0.46	0.45	3.32
1,803.0	2.27	104.27	1,802.8	627.8	-5.8	18.1	2.0	0.03	0.03	0.32
1,903.0	2.34	106.05	1,902.7	727.7	-6.8	22.0	2.3	0.10	0.07	1.78
2,003.0	2.36	108.61	2,002.6	827.6	-8.1	25.9	2.7	0.11	0.02	2.56
2,103.0	2.32	111.93	2,102.5	927.5	-9.5	29.7	3.3	0.14	-0.04	3.32
2,203.0	2.28	112.50	2,202.4	1,027.4	-11.0	33.5	4.1	0.05	-0.04	0.57
2,303.0	2.29	115.51	2,302.4	1,127.4	-12.6	37.1	4.9	0.12	0.01	3.01
2,403.0	2.20	117.36	2,402.3	1,227.3	-14.4	40.6	5.9	0.12	-0.09	1.85
2,503.0	2.17	118.40	2,502.2	1,327.2	-16.1	44.0	7.0	0.05	-0.03	1.04
2,603.0	2.10	119.20	2,602.1	1,427.1	-17.9	47.2	8.1	0.08	-0.07	0.80
2,703.0	2.01	119.26	2,702.1	1,527.1	-19.7	50.4	9.2	0.09	-0.09	0.06
2,803.0	1.72	121.05	2,802.0	1,627.0	-21.3	53.2	10.2	0.30	-0.29	1.79
2,903.0	1.70	121.89	2,902.0	1,727.0	-22.9	55.7	11.2	0.03	-0.02	0.84
3,003.0	1.42	117.26	3,002.0	1,827.0	-24.2	58.1	12.1	0.31	-0.28	-4.63
3,103.0	1.36	116.41	3,101.9	1,926.9	-25.3	60.3	12.7	0.06	-0.06	-0.85
3,203.0	1.09	121.19	3,201.9	2,026.9	-26.3	62.1	13.3	0.29	-0.27	4.78
3,303.0	0.85	124.13	3,301.9	2,126.9	-27.3	63.6	13.9	0.25	-0.24	2.94
3,403.0	0.48	137.75	3,401.9	2,226.9	-28.0	64.5	14.5	0.40	-0.37	13.62
3,503.0	0.35	139.96	3,501.9	2,326.9	-28.5	64.9	14.9	0.13	-0.13	2.21
3,603.0	0.27	141.89	3,601.9	2,426.9	-28.9	65.3	15.3	0.08	-0.08	1.93
3,703.0	0.14	154.26	3,701.9	2,526.9	-29.2	65.5	15.5	0.14	-0.13	12.37
3,803.0	0.07	184.43	3,801.9	2,626.9	-29.4	65.5	15.7	0.09	-0.07	30.17
3,903.0	0.20	310.96	3,901.9	2,726.9	-29.4	65.4	15.6	0.25	0.13	126.53
4,003.0	0.40	312.92	4,001.9	2,826.9	-29.0	65.0	15.4	0.20	0.20	1.96
4,103.0	0.63	315.98	4,101.9	2,926.9	-28.4	64.4	14.9	0.23	0.23	3.06
4,203.0	0.92	323.92	4,201.9	3,026.9	-27.3	63.5	14.0	0.31	0.26	7.84
4,303.0	1.01	329.40	4,301.8	3,126.8	-25.9	62.6	12.8	0.18	0.09	5.48
4,403.0	1.07	327.21	4,401.8	3,226.8	-24.4	61.6	11.5	0.07	0.06	2.29
4,503.0	1.36	327.39	4,501.8	3,326.8	-22.6	60.5	10.0	0.29	0.24	0.18
4,603.0	1.55	324.49	4,601.8	3,426.8	-20.5	59.1	8.2	0.20	0.19	-2.80
4,703.0	1.92	330.62	4,701.7	3,526.7	-17.9	57.5	6.0	0.41	0.37	6.13
4,803.0	2.37	330.79	4,801.7	3,626.7	-14.7	55.6	3.2	0.45	0.46	0.17
4,833.0	2.57	330.29	4,831.6	3,656.6	-13.5	55.0	2.2	0.67	0.67	1.67

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Wellbore:	Main Wellbore		
Design:	513759 As Drilled		

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)
4,874.0	2.30	330.30	4,872.6	3,697.6	-12.0	54.1	0.9	0.66	-0.66	0.02
4,937.0	1.90	328.60	4,935.5	3,760.5	-10.0	53.0	-0.8	0.64	-0.63	-2.70
KOP=4969' MD										
4,969.0	2.20	333.00	4,967.5	3,792.5	-9.0	52.4	-1.7	1.06	0.94	13.75
5,000.0	4.90	287.40	4,998.5	3,823.5	-8.1	50.9	-2.3	11.97	8.71	-147.10
5,032.0	9.90	286.10	5,030.2	3,855.2	-6.9	46.9	-2.6	15.63	15.63	-4.06
5,063.0	13.30	294.20	5,060.6	3,885.6	-4.7	41.1	-3.6	12.14	10.97	26.13
5,094.0	15.30	293.80	5,090.6	3,915.6	-1.6	34.1	-5.3	6.46	6.45	-1.29
5,125.0	18.90	285.60	5,120.2	3,945.2	1.4	25.5	-6.5	13.95	11.61	-26.45
5,156.0	21.70	278.40	5,149.3	3,974.3	3.6	15.0	-6.5	12.09	9.03	-23.23
5,188.0	24.80	274.30	5,178.7	4,003.7	4.9	2.5	-5.3	10.92	9.69	-12.81
5,219.0	27.40	274.50	5,206.5	4,031.5	6.0	-11.1	-3.6	8.39	8.39	0.65
5,251.0	30.00	274.90	5,234.6	4,059.6	7.2	-26.4	-1.8	8.15	8.13	1.25
5,283.0	32.10	272.80	5,262.0	4,087.0	8.3	-42.9	0.4	7.38	6.56	-6.56
5,314.0	34.50	270.90	5,287.9	4,112.9	8.9	-59.9	3.3	8.44	7.74	-6.13
5,346.0	36.90	270.90	5,313.9	4,138.9	9.2	-78.6	6.8	7.50	7.50	0.00
5,377.0	38.50	272.90	5,338.4	4,163.4	9.8	-97.5	10.0	6.50	5.16	6.45
5,409.0	40.10	273.20	5,363.2	4,188.2	10.9	-117.8	13.0	5.04	5.00	0.94
5,440.0	43.20	272.40	5,386.4	4,211.4	11.9	-138.3	16.1	10.15	10.00	-2.58
5,472.0	47.00	273.00	5,408.9	4,233.9	13.0	-161.0	19.6	11.95	11.88	1.88
5,503.0	50.50	273.80	5,429.4	4,254.4	14.3	-184.2	22.9	11.46	11.29	2.58
5,535.0	54.90	274.70	5,448.8	4,273.8	16.2	-209.6	26.1	13.93	13.75	2.81
5,566.0	59.30	274.90	5,465.6	4,290.6	18.4	-235.6	29.2	14.20	14.19	0.65
5,597.0	62.90	275.60	5,480.6	4,305.6	20.9	-262.6	32.2	11.78	11.61	2.26
5,629.0	65.80	274.60	5,494.4	4,319.4	23.5	-291.3	35.5	9.49	9.06	-3.13
5,692.0	69.90	273.40	5,518.2	4,343.2	27.5	-349.5	43.1	6.74	6.51	-1.90
5,755.0	70.30	273.30	5,539.6	4,364.6	31.0	-408.6	51.6	0.65	0.63	-0.16
5,818.0	70.60	273.10	5,560.7	4,385.7	34.3	-467.9	60.3	0.56	0.48	-0.32
5,881.0	70.90	273.20	5,581.5	4,406.5	37.6	-527.3	69.0	0.50	0.48	0.16
5,944.0	70.30	273.70	5,602.4	4,427.4	41.1	-586.6	77.4	1.21	-0.95	0.79
6,007.0	70.30	273.50	5,623.6	4,448.6	44.9	-645.8	85.6	0.30	0.00	-0.32
6,070.0	70.30	274.10	5,644.9	4,469.9	48.8	-705.0	93.6	0.90	0.00	0.95
6,132.0	70.20	274.30	5,665.8	4,490.8	53.1	-763.2	101.1	0.34	-0.16	0.32
6,196.0	69.50	273.30	5,687.9	4,512.9	57.1	-823.1	109.2	1.83	-1.09	-1.56
6,258.0	69.10	272.60	5,709.8	4,534.8	60.0	-881.1	117.9	1.24	0.65	0.53
6,321.0	69.40	272.70	5,732.1	4,557.1	62.8	-939.9	127.1	0.50	0.48	0.16
6,383.0	69.70	272.40	5,753.8	4,578.8	65.4	-997.9	136.2	0.66	0.48	-0.48
6,447.0	70.00	272.70	5,775.8	4,600.8	68.0	-1,058.0	145.6	0.64	0.47	0.97
6,510.0	70.40	272.40	5,797.2	4,622.2	70.7	-1,117.2	154.9	0.78	0.63	-0.48
6,573.0	70.80	272.50	5,818.1	4,643.1	73.2	-1,176.6	164.3	0.65	0.63	0.16
6,636.0	69.70	273.60	5,839.4	4,664.4	76.4	-1,235.8	173.1	2.49	1.75	1.75
6,699.0	69.90	273.70	5,861.1	4,686.1	80.1	-1,294.8	181.3	0.35	0.32	0.16
6,762.0	70.20	273.20	5,882.6	4,707.6	83.7	-1,353.9	189.6	0.89	0.48	-0.79

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6,825.0	70.40	273.10	5,903.9	4,728.9	86.9	-1,413.1	198.3	0.35	0.32	-0.16	
6,888.0	70.60	272.80	5,924.9	4,749.9	90.0	-1,472.4	207.2	0.55	0.32	-0.48	
6,951.0	70.60	272.90	5,945.8	4,770.8	93.0	-1,531.8	216.2	0.15	0.00	0.16	
7,014.0	69.80	272.30	5,967.2	4,792.2	95.6	-1,591.0	225.5	1.55	-1.27	-0.95	
7,077.0	69.90	272.00	5,988.9	4,813.9	97.9	-1,650.1	235.2	0.47	0.16	-0.48	
7,140.0	70.40	271.80	6,010.3	4,835.3	99.8	-1,709.3	245.1	0.85	0.79	-0.32	
7,203.0	70.10	272.30	6,031.5	4,856.5	101.9	-1,768.6	254.9	0.89	-0.48	0.79	
7,266.0	70.10	271.30	6,053.0	4,878.0	103.8	-1,827.8	265.0	1.49	0.00	-1.59	
7,329.0	69.80	272.20	6,074.6	4,899.6	105.6	-1,886.9	275.1	1.42	-0.48	1.43	
7,392.0	70.10	272.30	6,096.2	4,921.2	107.9	-1,946.1	284.7	0.50	0.48	0.16	
7,455.0	70.80	273.00	6,117.3	4,942.3	110.7	-2,005.4	293.9	1.53	1.11	1.11	
7,518.0	71.30	272.70	6,137.7	4,962.7	113.6	-2,064.9	302.9	0.91	0.79	-0.48	
7,581.0	70.30	273.80	6,158.4	4,983.4	117.0	-2,124.3	311.5	2.29	-1.59	1.75	
7,643.0	69.50	274.80	6,179.8	5,004.8	121.4	-2,182.3	318.9	1.99	-1.29	1.61	
7,706.0	69.90	274.70	6,201.6	5,026.6	126.3	-2,241.2	325.9	0.65	0.63	-0.16	
7,769.0	70.40	274.60	6,223.0	5,048.0	131.1	-2,300.3	333.0	0.81	0.79	-0.16	
7,841.0	69.50	273.80	6,247.7	5,072.7	136.0	-2,367.7	341.7	1.63	-1.25	-1.11	
7,904.0	70.10	274.10	6,269.4	5,094.4	140.1	-2,426.7	349.6	1.05	0.95	0.48	
7,935.0	70.50	274.10	6,279.9	5,104.9	142.2	-2,455.8	353.4	1.29	1.29	0.00	
7,967.0	70.20	269.10	6,290.7	5,115.7	143.0	-2,485.9	358.6	14.74	-0.94	-15.63	
7,998.0	69.10	264.70	6,301.4	5,126.4	141.5	-2,514.9	365.9	13.77	-3.55	-14.19	
8,030.0	68.30	261.00	6,313.1	5,138.1	137.8	-2,544.5	375.5	11.06	-2.50	-11.56	
8,061.0	68.10	257.80	6,324.6	5,149.6	132.5	-2,572.8	386.4	9.61	-0.65	-10.32	
8,093.0	68.90	254.50	6,336.3	5,161.3	125.3	-2,601.7	399.1	9.91	2.50	-10.31	
8,124.0	69.30	250.50	6,347.4	5,172.4	116.6	-2,629.3	413.2	12.12	1.29	-12.90	
8,156.0	69.10	248.60	6,358.7	5,183.7	108.2	-2,657.3	429.1	5.59	-0.63	-5.94	
8,187.0	67.70	246.00	6,370.2	5,195.2	95.1	-2,683.9	445.3	9.01	-4.52	-8.39	
8,219.0	67.80	242.50	6,382.3	5,207.3	82.2	-2,710.6	463.3	10.13	0.31	-10.94	
8,250.0	68.70	240.70	6,393.8	5,218.8	68.5	-2,735.9	481.7	6.12	2.90	-5.81	
8,282.0	69.80	238.10	6,405.1	5,230.1	53.3	-2,761.7	501.8	8.34	3.44	-8.13	
8,313.0	70.70	235.70	6,415.6	5,240.6	37.3	-2,786.1	522.4	7.84	2.90	-7.74	
8,345.0	72.20	231.00	6,425.8	5,250.8	19.2	-2,810.5	545.0	14.69	4.69	-14.69	
8,376.0	71.70	226.50	6,435.4	5,260.4	-0.2	-2,832.6	568.4	13.90	-1.61	-14.52	
8,407.0	70.90	222.90	6,445.3	5,270.3	-21.1	-2,853.3	593.0	11.30	-2.58	-11.61	
8,439.0	70.60	219.00	6,455.9	5,280.9	-43.9	-2,873.1	619.3	11.54	-0.94	-12.19	
8,470.0	71.30	214.60	6,466.0	5,291.0	-67.3	-2,890.6	645.9	13.60	2.26	-14.19	
8,502.0	72.20	210.80	6,476.0	5,301.0	-92.9	-2,907.0	674.2	11.62	2.81	-11.88	
8,533.0	74.60	209.00	6,484.9	5,309.9	-118.7	-2,921.8	702.4	9.53	7.74	-5.81	
8,564.0	75.40	205.90	6,492.9	5,317.9	-145.2	-2,935.6	731.2	10.00	2.58	-10.00	
8,596.0	76.20	202.90	6,500.8	5,325.8	-173.5	-2,948.4	761.4	9.43	2.50	-9.38	
8,627.0	77.10	200.00	6,507.9	5,332.9	-201.5	-2,959.5	791.1	9.55	2.90	-9.35	
8,659.0	77.50	196.70	6,514.9	5,339.9	-231.2	-2,969.3	822.1	10.14	1.25	-10.31	
8,690.0	77.80	195.70	6,521.6	5,346.6	-260.2	-2,977.7	852.9	3.90	0.97	-3.23	

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 513759
Company:	EQT Production - Marcellus	TVD Reference:	KB@18 @ 1175.0usft
Project:	Ritchie County, WV	MD Reference:	KB@18 @ 1175.0usft
Site:	Ritchie County 513759	North Reference:	Grid
Well:	Well #513759	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513759 As Drilled		

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)
8,722.0	77.80	193.60	6,528.3	5,353.3	-290.5	-2,985.6	883.6	6.41	0.00	-6.56
Interp @ 6532.0 (Well #513759 Main Wellbore 513759)										
8,731.2	78.06	192.77	6,530.3	5,355.3	-299.3	-2,987.7	892.6	9.31	2.87	-9.05
8,753.0	78.70	190.80	6,534.7	5,359.7	-320.2	-2,992.1	913.9	9.31	2.92	-9.02
8,785.0	80.60	188.10	6,540.4	5,365.4	-351.2	-2,997.2	945.4	10.20	5.94	-8.44
8,816.0	83.40	185.60	6,544.7	5,369.7	-381.7	-3,000.9	975.9	12.06	9.03	-8.06
8,848.0	83.40	182.90	6,548.4	5,373.4	-413.4	-3,003.2	1,007.5	8.38	0.00	-8.44
8,879.0	81.50	180.70	6,552.5	5,377.5	-444.1	-3,004.2	1,037.7	9.33	-6.13	-7.10
8,911.0	81.50	177.70	6,557.2	5,382.2	-475.7	-3,003.8	1,068.7	9.27	0.00	-9.38
8,942.0	83.10	173.90	6,561.4	5,386.4	-506.4	-3,001.5	1,098.2	13.20	5.16	-12.26
8,974.0	84.90	170.30	6,564.7	5,389.7	-537.9	-2,997.1	1,128.2	12.52	5.63	-11.25
LP/Deepest Point of Well=9026' MD/ 8567' TVD										
9,028.0	89.70	163.50	6,567.2	5,392.2	-590.4	-2,984.9	1,177.2	15.40	8.89	-12.59
513759 LP 1178' VS										
9,033.2	89.92	163.42	6,567.3	5,392.3	-595.4	-2,983.4	1,181.8	4.42	4.13	-1.59
9,091.0	92.30	162.50	6,566.1	5,391.1	-650.6	-2,966.5	1,232.5	4.42	4.13	-1.59
9,154.0	92.50	162.00	6,563.5	5,388.5	-710.6	-2,947.3	1,287.4	0.85	0.32	-0.79
9,217.0	91.20	160.70	6,561.5	5,386.5	-770.2	-2,927.2	1,341.8	2.92	-2.06	-2.06
9,280.0	90.10	160.00	6,560.8	5,385.8	-829.5	-2,906.0	1,395.7	2.07	-1.75	-1.11
9,343.0	90.00	159.60	6,560.7	5,385.7	-888.7	-2,884.2	1,449.2	0.65	-0.16	-0.63
9,406.0	89.80	159.00	6,560.8	5,385.8	-947.6	-2,862.0	1,502.5	1.00	-0.32	-0.95
9,469.0	90.20	158.60	6,560.8	5,385.8	-1,006.3	-2,839.2	1,555.4	0.90	0.63	-0.63
9,532.0	90.80	159.70	6,560.3	5,385.3	-1,065.2	-2,816.8	1,608.6	1.99	0.95	1.75
9,595.0	91.20	161.60	6,559.2	5,384.2	-1,124.6	-2,795.9	1,662.7	3.08	0.63	3.02
9,658.0	90.60	159.80	6,558.2	5,383.2	-1,184.1	-2,775.1	1,716.7	3.01	-0.95	-2.86
9,721.0	89.10	157.90	6,558.3	5,383.3	-1,242.8	-2,752.3	1,769.7	3.84	-2.38	-3.02
9,784.0	88.80	160.20	6,559.5	5,384.5	-1,301.7	-2,729.8	1,822.8	3.68	-0.48	3.65
9,847.0	90.40	162.20	6,559.9	5,384.9	-1,361.3	-2,709.5	1,877.2	4.07	2.54	3.17
9,910.0	90.90	162.50	6,559.2	5,384.2	-1,421.3	-2,690.4	1,932.2	0.93	0.79	0.48
9,973.0	91.20	164.10	6,558.1	5,383.1	-1,481.7	-2,672.3	1,987.6	2.58	0.48	2.54
10,036.0	88.90	162.00	6,558.0	5,383.0	-1,541.9	-2,654.0	2,043.0	4.94	-3.65	-3.33
10,099.0	88.40	162.40	6,559.5	5,384.5	-1,601.9	-2,634.7	2,097.9	1.02	-0.79	0.63
10,162.0	88.50	163.60	6,561.2	5,386.2	-1,662.1	-2,616.3	2,153.2	1.91	0.16	1.90
10,225.0	88.50	163.80	6,562.9	5,387.9	-1,722.5	-2,598.6	2,208.8	0.32	0.00	0.32
10,288.0	88.40	164.20	6,564.6	5,389.6	-1,783.1	-2,581.3	2,264.7	0.65	-0.16	0.63
10,351.0	89.00	163.60	6,566.0	5,391.0	-1,843.6	-2,563.8	2,320.4	1.35	0.95	-0.95
10,414.0	90.10	163.90	6,566.5	5,391.5	-1,904.1	-2,546.2	2,376.2	1.81	1.75	0.48
10,477.0	91.20	163.10	6,565.8	5,390.8	-1,964.5	-2,528.3	2,431.7	2.16	1.75	-1.27
10,539.0	91.50	162.30	6,564.3	5,389.3	-2,023.7	-2,509.8	2,486.0	1.38	0.48	-1.29
10,603.0	91.70	162.00	6,562.5	5,387.5	-2,084.6	-2,490.2	2,541.7	0.56	0.31	-0.47
513759 Plat LP										
10,654.4	91.29	161.18	6,561.2	5,386.2	-2,133.3	-2,474.0	2,586.3	1.77	-0.79	-1.59
10,666.0	91.20	161.00	6,560.9	5,385.9	-2,144.3	-2,470.2	2,596.2	1.77	-0.79	-1.59

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 513759
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1175 Quasi
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1175 Quasi
Site:	Ritchie County 513759	North Reference:	Grid
Well:	Well #515759	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515759 Az 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)
10,729.0	90.40	160.90	6,560.0	5,385.0	-2,203.8	-2,449.7	2,650.4	1.28	-1.27	-0.16
10,792.0	90.50	160.40	6,559.5	5,384.5	-2,263.3	-2,428.8	2,704.5	0.81	0.16	-0.79
10,854.0	90.50	160.10	6,559.0	5,384.0	-2,321.6	-2,407.9	2,757.5	0.48	0.00	-0.48
10,918.0	90.10	162.30	6,558.7	5,383.7	-2,382.2	-2,387.2	2,812.7	3.49	-0.63	3.44
10,980.0	90.10	162.30	6,558.6	5,383.6	-2,441.3	-2,368.4	2,866.7	0.00	0.00	0.00
11,043.0	90.10	162.30	6,558.5	5,383.5	-2,501.3	-2,349.2	2,921.7	0.00	0.00	0.00
11,106.0	90.10	162.10	6,558.3	5,383.3	-2,561.3	-2,330.0	2,976.6	0.32	0.00	-0.32
11,169.0	90.00	161.60	6,558.3	5,383.3	-2,621.1	-2,310.3	3,031.3	0.81	-0.16	-0.79
11,232.0	89.90	161.40	6,558.3	5,383.3	-2,680.9	-2,290.4	3,085.8	0.35	-0.16	-0.32
11,295.0	90.20	161.90	6,558.3	5,383.3	-2,740.7	-2,270.5	3,140.4	0.93	0.48	0.79
11,358.0	90.10	163.10	6,558.1	5,383.1	-2,800.7	-2,251.6	3,195.5	1.91	-0.16	1.90
11,421.0	89.80	162.30	6,558.2	5,383.2	-2,860.9	-2,232.8	3,250.7	1.36	-0.48	-1.27
11,484.0	89.50	162.00	6,558.6	5,383.6	-2,920.9	-2,213.5	3,305.5	0.67	-0.48	-0.48
11,547.0	89.80	162.00	6,558.9	5,383.9	-2,980.8	-2,194.1	3,360.3	0.48	0.48	0.00
11,610.0	90.00	161.80	6,559.1	5,384.1	-3,040.7	-2,174.5	3,415.1	0.45	0.32	-0.32
11,673.0	90.50	161.80	6,558.8	5,383.8	-3,100.5	-2,154.8	3,469.8	0.79	0.79	0.00
11,736.0	90.80	161.20	6,558.1	5,383.1	-3,160.2	-2,134.8	3,524.3	1.06	0.48	-0.95
11,799.0	91.60	161.20	6,556.7	5,381.7	-3,219.9	-2,114.5	3,578.6	1.27	1.27	0.00
11,862.0	91.80	161.30	6,554.9	5,379.9	-3,279.5	-2,094.3	3,633.0	0.35	0.32	0.16
11,925.0	91.90	161.50	6,552.8	5,377.8	-3,339.2	-2,074.2	3,687.4	0.35	0.16	0.32
11,988.0	91.00	162.50	6,551.3	5,376.3	-3,399.1	-2,054.7	3,742.2	2.14	-1.43	1.59
12,051.0	91.30	162.30	6,550.0	5,375.0	-3,459.1	-2,035.7	3,797.2	0.57	0.48	-0.32
12,114.0	91.20	161.70	6,548.6	5,373.6	-3,519.0	-2,016.2	3,852.0	0.97	-0.16	-0.95
12,177.0	90.20	161.00	6,547.8	5,372.8	-3,578.7	-1,996.1	3,906.4	1.94	-1.59	-1.11
12,240.0	90.40	161.40	6,547.5	5,372.5	-3,638.3	-1,975.8	3,960.7	0.71	0.32	0.63
12,303.0	90.00	162.00	6,547.3	5,372.3	-3,698.2	-1,956.0	4,015.4	1.14	-0.63	0.95
12,366.0	89.80	161.60	6,547.4	5,372.4	-3,758.0	-1,936.3	4,070.1	0.71	-0.32	-0.63
12,429.0	90.00	161.40	6,547.5	5,372.5	-3,817.7	-1,916.3	4,124.6	0.45	0.32	-0.32
12,492.0	89.80	160.90	6,547.6	5,372.6	-3,877.4	-1,896.0	4,178.9	0.85	-0.32	-0.79
12,555.0	89.80	161.00	6,547.8	5,372.8	-3,936.9	-1,875.4	4,233.1	0.16	0.00	0.16
12,618.0	90.60	161.60	6,547.6	5,372.6	-3,996.6	-1,855.2	4,287.5	1.59	1.27	0.95
12,681.0	91.50	161.60	6,546.5	5,371.5	-4,056.4	-1,835.3	4,342.1	1.43	1.43	0.00
12,744.0	91.30	161.10	6,544.9	5,369.9	-4,116.0	-1,815.2	4,396.5	0.85	-0.32	-0.79
12,807.0	90.60	162.00	6,543.9	5,368.9	-4,175.8	-1,795.3	4,451.0	1.81	-1.11	1.43
12,871.0	90.50	163.40	6,543.3	5,368.3	-4,236.9	-1,776.2	4,507.1	2.19	0.16	2.19
12,933.0	90.10	164.20	6,542.9	5,367.9	-4,296.4	-1,758.9	4,561.9	1.44	-0.65	1.29
12,996.0	89.50	163.80	6,543.2	5,368.2	-4,357.0	-1,741.6	4,617.8	1.14	-0.95	-0.63
13,060.0	89.30	163.80	6,543.8	5,368.8	-4,418.4	-1,723.7	4,674.4	0.31	-0.31	0.00
13,123.0	88.80	163.70	6,544.9	5,369.9	-4,478.9	-1,706.1	4,730.1	0.81	-0.79	-0.16
13,186.0	89.60	165.20	6,545.8	5,370.8	-4,539.6	-1,689.2	4,786.2	2.70	1.27	2.38
13,249.0	89.90	164.70	6,546.0	5,371.0	-4,600.4	-1,672.8	4,842.5	0.63	0.48	0.79
13,312.0	90.90	165.40	6,545.6	5,370.6	-4,661.3	-1,656.6	4,898.9	1.94	1.59	1.11

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Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 513759
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ -1175.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ -1175.0usft
Site:	Ritchie County 513759	North Reference:	Gnd
Well:	Well #513759	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513759 As Drilled		

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)
13,375.0	90.50	163.80	6,544.8	5,369.8	-4,722.0	-1,639.9	4,955.0	2.62	-0.63	-2.54
13,438.0	89.80	161.80	6,544.7	5,369.7	-4,782.2	-1,621.2	5,010.2	3.36	-1.11	-3.17
13,501.0	90.00	161.60	6,544.8	5,369.8	-4,842.0	-1,601.5	5,064.9	0.45	0.32	-0.32
13,564.0	90.20	161.20	6,544.7	5,369.7	-4,901.7	-1,581.4	5,119.3	0.71	0.32	-0.63
13,627.0	90.20	160.60	6,544.4	5,369.4	-4,961.3	-1,560.7	5,173.5	0.95	0.00	-0.95
13,690.0	90.30	159.70	6,544.2	5,369.2	-5,020.5	-1,539.4	5,227.3	1.44	0.16	-1.43
13,753.0	90.20	159.70	6,543.9	5,368.9	-5,079.6	-1,517.5	5,280.8	0.16	-0.16	0.00
13,815.0	90.10	160.10	6,543.7	5,368.7	-5,137.8	-1,496.2	5,333.5	0.67	-0.16	0.65
13,878.0	90.20	159.70	6,543.6	5,368.6	-5,197.0	-1,474.5	5,387.2	0.65	0.16	-0.63
13,941.0	89.80	159.90	6,543.6	5,368.6	-5,256.1	-1,452.8	5,440.7	0.71	-0.63	0.32
14,004.0	88.80	162.30	6,544.3	5,369.3	-5,315.7	-1,432.4	5,495.0	4.13	-1.59	3.81
14,067.0	89.00	161.80	6,545.5	5,370.5	-5,375.6	-1,413.0	5,549.8	0.85	0.32	-0.79
14,130.0	90.50	164.20	6,545.8	5,370.8	-5,435.9	-1,394.6	5,605.1	4.49	2.38	3.81
14,192.0	90.30	163.10	6,545.4	5,370.4	-5,495.4	-1,377.1	5,659.9	1.80	-0.32	-1.77
14,254.0	90.20	161.90	6,545.1	5,370.1	-5,554.5	-1,358.5	5,714.1	1.94	-0.16	-1.94
14,317.0	90.00	161.00	6,545.0	5,370.0	-5,614.2	-1,338.4	5,768.6	1.46	-0.32	-1.43
14,380.0	89.70	159.40	6,545.2	5,370.2	-5,673.5	-1,317.1	5,822.4	2.58	-0.48	-2.54
14,443.0	89.60	160.00	6,545.6	5,370.6	-5,732.6	-1,295.2	5,875.9	0.97	-0.16	0.95
14,506.0	89.30	160.10	6,546.2	5,371.2	-5,791.8	-1,273.7	5,929.6	0.50	-0.48	0.16
14,569.0	89.70	160.80	6,546.7	5,371.7	-5,851.2	-1,252.6	5,983.5	1.28	0.63	1.11
14,632.0	89.90	160.90	6,546.9	5,371.9	-5,910.7	-1,232.0	6,037.7	0.35	0.32	0.16
Final Survey=14642' MD/ 6547' TVD										
14,642.0	90.00	160.90	6,546.9	5,371.9	-5,920.1	-1,228.7	6,046.3	1.00	1.00	0.00
513759 Plat TD										
14,695.6	90.00	160.90	6,546.9	5,371.9	-5,970.8	-1,211.2	6,092.4	0.00	0.00	0.00
Projection to TD=14700' MD/ 6547' TVD										
14,700.0	90.00	160.90	6,546.9	5,371.9	-5,974.9	-1,209.7	6,096.1	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,969.0	4,967.5	-9.0	52.4	KOP=4969' MD
9,028.0	6,567.2	-590.4	-2,984.9	LP/Deepest Point of Well=9028' MD/ 6567' TVD
14,642.0	6,546.9	-5,920.1	-1,228.7	Final Survey=14642' MD/ 6547' TVD
14,700.0	6,546.9	-5,974.9	-1,209.7	Projection to TD=14700' MD/ 6547' TVD

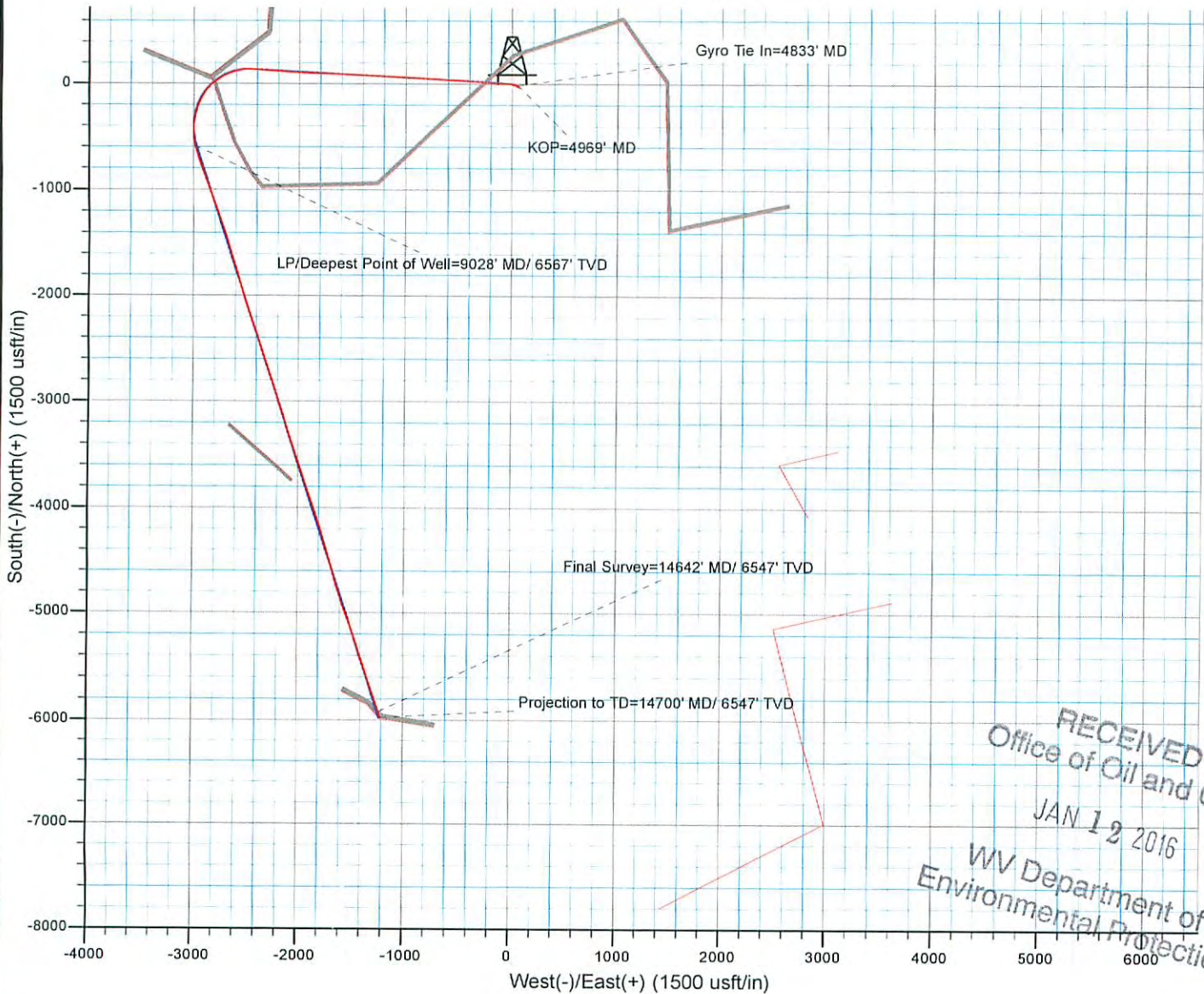
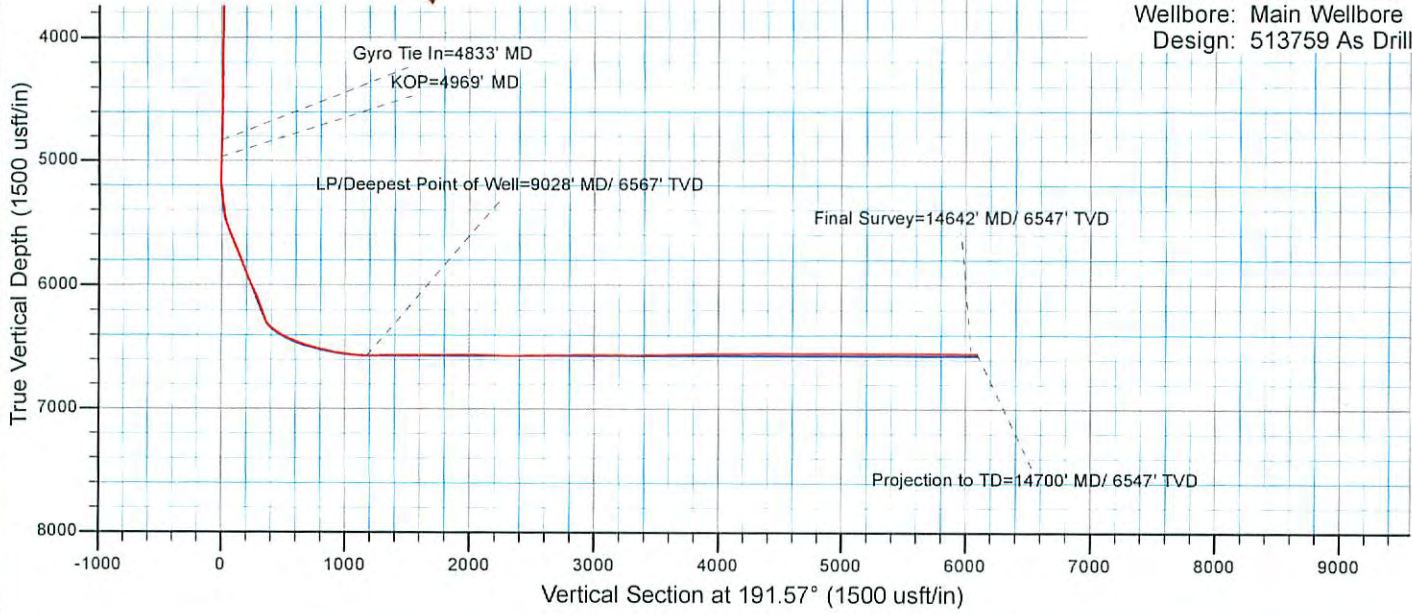
Checked By: _____ Approved By: _____ Date/AN 1-8-2016

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EQT Production - Marcellus

Project: Ritchie County, WV
 Site: Ritchie County 513759
 Well: Well #513759
 Wellbore: Main Wellbore
 Design: 513759 As Drilled



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