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**PHOENIX**  
TECHNOLOGY SERVICES



## **EQT Production - Marcellus**

Wetzel County, WV  
Wetzel County 514379  
Well 514379

Main Wellbore

Design: As Drilled Surveys

## **Standard Survey Report**

02 December, 2013

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WV Department of  
Environmental Protection



Where energy meets innovation.

01/23/2015

<b>Database:</b>	EQT DB	<b>Local Co-ordinate Reference:</b>	Site Wetzel County 514379
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1346.0usft
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Wetzel County 514379	<b>North Reference:</b>	Grid
<b>Well:</b>	Well 514379	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	As Drilled Surveys		

<b>Project</b>	Wetzel County, WV		
<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>	Wetzel County 514379		
<b>Site Position:</b>		<b>Northing:</b>	385,124.00 usft
<b>From:</b>	Map	<b>Easting:</b>	1,678,305.00 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39.55
		<b>Longitude:</b>	-80.64
		<b>Grid Convergence:</b>	-0.73 °

<b>Well</b>	Well 514379					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	385,124.00 usft	<b>Latitude:</b>	39° 33' 6.416 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,678,305.00 usft	<b>Longitude:</b>	80° 38' 27.190 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,330.0 usft

<b>Wellbore</b>	Main Wellbore				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010_14	11/12/2013	-8.61	67.06	52,482

<b>Design</b>	As Drilled Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	156.90	

<b>Survey Program</b>	<b>Date</b>	12/2/2013			
<b>From ()</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	5,524.0	514379 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
0.00	11,292.0	514379 MWD (Main Wellbore)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>Subsea Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
0.0	0.00	0.00	0.0	-1,346.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.26	186.60	103.0	-1,243.0	-0.2	0.0	0.2	0.25	0.25	0.00
203.0	0.28	189.97	203.0	-1,143.0	-0.7	-0.1	0.6	0.03	0.02	3.37
303.0	0.28	191.62	303.0	-1,043.0	-1.2	-0.2	1.0	0.00	0.00	1.65
403.0	0.15	199.16	403.0	-943.0	-1.5	-0.3	1.3	0.13	-0.13	7.54
503.0	0.06	113.23	503.0	-843.0	-1.7	-0.3	1.4	0.16	-0.09	-85.93
603.0	0.07	109.16	603.0	-743.0	-1.7	-0.2	1.5	0.01	0.01	-4.07
703.0	0.07	104.10	703.0	-643.0	-1.8	-0.1	1.6	0.01	0.00	-5.06

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<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Wetzel County 514379	<b>North Reference:</b>	Grid
<b>Well:</b>	Well 514379	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	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)	
803.0	0.06	110.20	803.0	-543.0	-1.8	0.1	1.7	0.01	-0.01	6.10	
903.0	0.06	89.30	903.0	-443.0	-1.8	0.2	1.7	0.02	0.00	-20.90	
1,003.0	0.21	178.53	1,003.0	-343.0	-2.0	0.2	1.9	0.22	0.15	89.23	
1,103.0	0.38	191.84	1,103.0	-243.0	-2.5	0.2	2.4	0.18	0.17	13.31	
1,203.0	0.39	193.86	1,203.0	-143.0	-3.2	0.0	2.9	0.02	0.01	2.02	
1,303.0	0.37	182.02	1,303.0	-43.0	-3.8	-0.1	3.5	0.08	-0.02	-11.84	
1,403.0	0.41	178.35	1,403.0	57.0	-4.5	-0.1	4.1	0.05	0.04	-3.67	
1,503.0	0.38	173.27	1,503.0	157.0	-5.2	0.0	4.7	0.05	-0.03	-5.08	
1,603.0	0.43	165.02	1,603.0	257.0	-5.9	0.1	5.4	0.08	0.05	-8.25	
1,703.0	0.48	165.31	1,703.0	357.0	-6.6	0.3	6.2	0.05	0.05	0.29	
1,803.0	0.56	154.37	1,803.0	457.0	-7.5	0.6	7.1	0.13	0.08	-10.94	
1,903.0	0.82	137.64	1,903.0	557.0	-8.5	1.3	8.3	0.33	0.26	-16.73	
2,003.0	0.87	136.87	2,003.0	657.0	-9.5	2.3	9.7	0.05	0.05	-0.77	
2,103.0	0.87	136.76	2,102.9	756.9	-10.6	3.3	11.1	0.00	0.00	-0.11	
2,203.0	0.92	138.22	2,202.9	856.9	-11.8	4.4	12.6	0.05	0.05	1.46	
2,303.0	0.99	142.51	2,302.9	956.9	-13.1	5.5	14.2	0.10	0.07	4.29	
2,403.0	1.01	143.31	2,402.9	1,056.9	-14.5	6.5	15.9	0.02	0.02	0.80	
2,503.0	1.05	139.51	2,502.9	1,156.9	-15.9	7.6	17.6	0.08	0.04	-3.80	
2,603.0	1.07	141.28	2,602.9	1,256.9	-17.3	8.8	19.4	0.04	0.02	1.77	
2,703.0	1.03	143.86	2,702.9	1,356.9	-18.8	9.9	21.1	0.06	-0.04	2.58	
2,803.0	1.03	142.56	2,802.8	1,456.8	-20.2	11.0	22.9	0.02	0.00	-1.30	
2,903.0	1.06	142.36	2,902.8	1,556.8	-21.6	12.1	24.7	0.03	0.03	-0.20	
3,003.0	1.06	143.59	3,002.8	1,656.8	-23.1	13.2	26.5	0.02	0.00	1.23	
3,103.0	1.13	142.60	3,102.8	1,756.8	-24.6	14.4	28.3	0.07	0.07	-0.99	
3,203.0	1.17	140.50	3,202.8	1,856.8	-26.2	15.6	30.2	0.06	0.04	-2.10	
3,303.0	1.26	140.45	3,302.7	1,956.7	-27.8	17.0	32.3	0.09	0.09	-0.05	
3,403.0	1.18	139.20	3,402.7	2,056.7	-29.5	18.4	34.3	0.08	-0.08	-1.25	
3,503.0	1.03	137.45	3,502.7	2,156.7	-30.9	19.6	36.1	0.15	-0.15	-1.75	
3,603.0	0.69	140.58	3,602.7	2,256.7	-32.0	20.6	37.6	0.34	-0.34	3.13	
3,703.0	0.39	140.66	3,702.7	2,356.7	-32.8	21.2	38.5	0.30	-0.30	0.08	
3,803.0	0.27	138.02	3,802.7	2,456.7	-33.2	21.6	39.0	0.12	-0.12	-2.64	
3,903.0	0.22	144.45	3,902.7	2,556.7	-33.5	21.9	39.4	0.06	-0.05	6.43	
4,003.0	0.11	169.46	4,002.7	2,656.7	-33.8	22.0	39.7	0.13	-0.11	25.01	
4,103.0	0.07	243.06	4,102.7	2,756.7	-33.9	22.0	39.8	0.11	-0.04	73.60	
4,203.0	0.08	270.94	4,202.7	2,856.7	-33.9	21.8	39.8	0.04	0.01	27.88	
4,303.0	0.08	267.24	4,302.7	2,956.7	-33.9	21.7	39.7	0.01	0.00	-3.70	
4,403.0	0.07	321.51	4,402.7	3,056.7	-33.9	21.6	39.7	0.07	-0.01	54.27	
4,503.0	0.19	78.02	4,502.7	3,156.7	-33.8	21.7	39.6	0.23	0.12	116.51	
4,603.0	0.31	63.68	4,602.7	3,256.7	-33.7	22.1	39.6	0.13	-0.13	-14.34	
4,703.0	0.44	65.25	4,702.7	3,356.7	-33.4	22.7	39.6	0.13	0.13	1.57	
4,803.0	0.78	58.84	4,802.7	3,456.7	-32.9	23.6	39.5	0.35	0.34	6.11	
4,903.0	0.87	58.94	4,902.7	3,556.7	-32.1	24.9	39.3	0.09	0.09	0.10	

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Phoenix Technologies, Inc.  
Survey Report



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<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1346.0usft
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Wetzel County 514379	<b>North Reference:</b>	Grid
<b>Well:</b>	Well 514379	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	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)
5,003.0	0.84	57.07	5,002.7	3,656.7	-31.3	26.1	39.1	0.04	-0.03	-1.87
5,103.0	0.85	54.76	5,102.6	3,756.6	-30.5	27.4	38.8	0.04	0.01	-2.31
5,203.0	0.82	70.37	5,202.6	3,856.6	-29.8	28.6	38.7	0.23	-0.03	15.61
5,303.0	0.80	79.27	5,302.6	3,956.6	-29.5	30.0	38.9	0.13	-0.02	8.90
5,403.0	0.82	87.45	5,402.6	4,056.6	-29.3	31.4	39.3	0.12	0.02	8.18
5,503.0	0.76	93.43	5,502.6	4,156.6	-29.3	32.8	39.8	0.10	-0.06	5.98
<b>Gyro Tie In MD=5524'</b>										
5,524.0	0.64	80.60	5,523.6	4,177.6	-29.3	33.0	39.9	0.94	-0.57	-61.10
5,566.0	5.60	308.40	5,565.5	4,219.5	-28.0	31.7	38.2	14.40	11.81	-314.76
5,598.0	10.00	310.80	5,597.2	4,251.2	-25.2	28.3	34.3	13.78	13.75	7.50
5,630.0	12.40	307.60	5,628.6	4,282.6	-21.3	23.5	28.8	7.74	7.50	-10.00
5,661.0	14.30	310.50	5,658.8	4,312.8	-16.8	17.9	22.5	6.50	6.13	9.35
5,693.0	15.70	309.40	5,689.7	4,343.7	-11.5	11.6	15.1	4.46	4.38	-3.44
5,725.0	17.60	311.10	5,720.3	4,374.3	-5.5	4.6	6.9	6.13	5.94	5.31
5,756.0	21.00	312.20	5,749.6	4,403.6	1.3	-3.0	-2.4	11.03	10.97	3.55
5,788.0	24.60	313.20	5,779.1	4,433.1	9.7	-12.2	-13.7	11.31	11.25	3.13
5,820.0	28.10	314.20	5,807.8	4,461.8	19.5	-22.4	-26.7	11.02	10.94	3.13
5,852.0	31.40	312.90	5,835.5	4,489.5	30.4	-33.9	-41.3	10.51	10.31	-4.06
5,883.0	34.80	314.70	5,861.5	4,515.5	42.2	-46.1	-56.9	11.42	10.97	5.81
5,915.0	38.00	318.20	5,887.3	4,541.3	55.9	-59.2	-74.7	11.92	10.00	10.94
5,946.0	40.30	323.70	5,911.3	4,565.3	71.1	-71.5	-93.5	13.43	7.42	17.74
5,978.0	42.80	324.80	5,935.3	4,589.3	88.4	-83.9	-114.2	8.14	7.81	3.44
6,010.0	43.30	327.30	5,958.6	4,612.6	106.5	-96.1	-135.6	5.56	1.56	7.81
6,041.0	43.20	326.60	5,981.2	4,635.2	124.3	-107.7	-156.6	1.58	-0.32	-2.26
6,073.0	42.80	325.50	6,004.6	4,658.6	142.4	-119.9	-178.0	2.66	-1.25	-3.44
6,105.0	42.40	325.00	6,028.2	4,682.2	160.2	-132.2	-199.2	1.64	-1.25	-1.56
6,168.0	40.70	321.40	6,075.3	4,729.3	193.6	-157.2	-239.8	4.65	-2.70	-5.71
6,200.0	39.90	320.30	6,099.7	4,753.7	209.7	-170.3	-259.7	3.35	-2.50	-3.44
6,232.0	38.90	318.60	6,124.5	4,778.5	225.1	-183.5	-279.1	4.60	-3.13	-5.31
6,263.0	38.20	321.30	6,148.7	4,802.7	239.9	-195.9	-297.5	5.88	-2.26	8.71
6,295.0	37.80	326.00	6,173.9	4,827.9	255.8	-207.6	-316.7	9.13	-1.25	14.69
6,327.0	37.00	326.40	6,199.4	4,853.4	271.9	-218.4	-335.8	2.61	-2.50	1.25
6,358.0	34.50	324.30	6,224.5	4,878.5	286.8	-228.7	-353.6	8.98	-8.06	-6.77
6,390.0	30.80	320.10	6,251.5	4,905.5	300.5	-239.2	-370.2	13.55	-11.56	-13.13
6,422.0	27.10	316.40	6,279.5	4,933.5	312.0	-249.5	-384.9	12.84	-11.56	-11.56
6,453.0	24.20	312.30	6,307.4	4,961.4	321.4	-259.1	-397.3	10.96	-9.35	-13.23
6,485.0	23.10	310.40	6,336.7	4,990.7	329.9	-268.7	-408.9	4.18	-3.44	-5.94
6,517.0	20.50	306.70	6,366.4	5,020.4	337.3	-278.0	-419.4	9.19	-8.13	-11.56
6,548.0	18.60	300.10	6,395.6	5,049.6	343.1	-286.6	-428.0	9.39	-6.13	-24.29
6,580.0	17.80	293.50	6,426.0	5,080.0	347.6	-295.5	-435.7	6.91	-2.50	-20.83
6,612.0	18.30	288.00	6,456.5	5,110.5	351.1	-304.8	-442.5	5.55	1.56	-17.19
6,643.0	19.10	282.70	6,485.8	5,139.8	353.7	-314.4	-448.7	6.06	2.58	-17.70
6,675.0	18.00	277.60	6,516.2	5,170.2	355.5	-324.4	-454.3	6.12	-3.44	-15.94

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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)
6,707.0	16.60	269.50	6,546.7	5,200.7	356.1	-333.8	-458.6	8.70	-4.38	-25.31
6,738.0	15.30	264.00	6,576.5	5,230.5	355.6	-342.3	-461.5	6.43	-4.19	-17.74
6,770.0	13.50	258.00	6,607.5	5,261.5	354.4	-350.2	-463.4	7.30	-5.63	-18.75
6,802.0	12.90	251.40	6,638.7	5,292.7	352.5	-357.2	-464.4	5.07	-1.88	-20.63
6,833.0	12.60	245.40	6,668.9	5,322.9	350.0	-363.6	-464.6	4.38	-0.97	-19.35
6,865.0	12.80	238.80	6,700.1	5,354.1	346.7	-369.8	-464.0	4.57	0.63	-20.63
6,896.0	13.30	229.80	6,730.3	5,384.3	342.6	-375.5	-462.5	6.74	1.61	-29.03
6,928.0	13.90	219.60	6,761.5	5,415.5	337.3	-380.7	-459.6	7.72	1.88	-31.88
6,960.0	13.80	211.10	6,792.5	5,446.5	331.1	-385.1	-455.6	6.36	-0.31	-26.56
6,991.0	15.20	201.60	6,822.5	5,476.5	324.1	-388.5	-450.6	8.89	4.52	-30.65
7,023.0	16.50	195.10	6,853.3	5,507.3	315.8	-391.3	-444.0	6.87	4.06	-20.31
7,055.0	17.30	189.30	6,884.0	5,538.0	306.7	-393.2	-436.4	5.83	2.50	-18.13
7,086.0	18.40	183.00	6,913.5	5,567.5	297.3	-394.2	-428.2	7.16	3.55	-20.32
7,118.0	20.20	175.90	6,943.7	5,597.7	286.8	-394.1	-418.4	9.23	5.63	-22.19
7,150.0	21.60	170.50	6,973.6	5,627.6	275.4	-392.7	-407.5	7.44	4.38	-16.88
7,181.0	23.60	168.00	7,002.2	5,656.2	263.7	-390.5	-395.8	7.16	6.45	-8.06
7,213.0	26.50	164.30	7,031.2	5,685.2	250.6	-387.2	-382.4	10.30	9.06	-11.56
7,245.0	28.90	162.00	7,059.5	5,713.5	236.4	-382.9	-367.7	8.21	7.50	-7.19
7,276.0	31.90	163.70	7,086.2	5,740.2	221.4	-378.3	-352.1	10.07	9.68	5.48
7,308.0	34.40	163.50	7,113.0	5,767.0	204.6	-373.4	-334.7	7.82	7.81	-0.63
7,340.0	38.10	162.20	7,138.8	5,792.8	186.5	-367.8	-315.9	11.81	11.56	-4.06
7,371.0	41.40	159.80	7,162.7	5,816.7	167.8	-361.3	-296.1	11.74	10.65	-7.74
7,403.0	44.30	160.70	7,186.1	5,840.1	147.3	-354.0	-274.4	9.26	9.06	2.81
7,435.0	47.90	159.90	7,208.3	5,862.3	125.6	-346.2	-251.4	11.39	11.25	-2.50
7,466.0	51.70	157.40	7,228.3	5,882.3	103.6	-337.5	-227.7	13.72	12.26	-8.06
7,498.0	54.90	158.90	7,247.4	5,901.4	79.7	-328.0	-202.1	10.68	10.00	4.69
7,530.0	59.10	158.70	7,264.9	5,918.9	54.7	-318.3	-175.2	13.14	13.13	-0.63
7,561.0	63.60	158.10	7,279.7	5,933.7	29.4	-308.3	-148.1	14.62	14.52	-1.94
7,593.0	67.30	159.60	7,293.0	5,947.0	2.3	-297.8	-119.0	12.32	11.56	4.69
7,625.0	71.20	158.20	7,304.3	5,958.3	-25.6	-287.0	-89.1	12.86	12.19	-4.38
7,656.0	75.00	157.40	7,313.4	5,967.4	-53.1	-275.8	-59.4	12.50	12.26	-2.58
7,688.0	78.60	157.50	7,320.7	5,974.7	-81.8	-263.9	-28.3	11.25	11.25	0.31
7,720.0	82.40	157.80	7,325.9	5,979.9	-111.0	-251.9	3.3	11.91	11.88	0.94
7,752.0	84.70	157.70	7,329.5	5,983.5	-140.4	-239.8	35.1	7.19	7.19	-0.31
7,783.0	88.00	157.30	7,331.5	5,985.5	-169.0	-228.0	66.0	10.72	10.65	-1.29
7,815.0	90.00	155.30	7,332.1	5,986.1	-198.3	-215.1	98.0	8.84	6.25	-6.25
7,878.0	91.60	154.20	7,331.2	5,985.2	-255.3	-188.3	160.9	3.08	2.54	-1.75
7,942.0	90.60	154.90	7,330.0	5,984.0	-313.1	-160.8	224.9	1.91	-1.56	1.09
8,005.0	89.60	154.40	7,329.9	5,983.9	-370.0	-133.8	287.8	1.77	-1.59	-0.79
8,068.0	88.90	154.30	7,330.7	5,984.7	-426.8	-106.5	350.8	1.12	-1.11	-0.16
8,132.0	88.50	152.90	7,332.1	5,986.1	-484.1	-78.1	414.6	2.27	-0.63	-2.19
8,195.0	88.70	153.00	7,333.7	5,987.7	-540.2	-49.4	477.5	0.35	0.32	0.16
8,258.0	88.60	152.80	7,335.2	5,989.2	-596.3	-20.7	540.3	0.35	-0.16	-0.32

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<b>Database:</b>	EQT DB	<b>Local Co-ordinate Reference:</b>	Site Weizel County 514379
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1346.0usft
<b>Project:</b>	Weizel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Weizel County 514379	<b>North Reference:</b>	Grid
<b>Well:</b>	Well 514379	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	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)
8,322.0	90.10	154.00	7,335.9	5,989.9	-653.5	7.9	604.2	3.00	2.34	1.88
8,385.0	91.10	154.70	7,335.2	5,989.2	-710.3	35.2	667.1	1.94	1.59	1.11
8,449.0	92.00	155.10	7,333.5	5,987.5	-768.2	62.3	731.0	1.54	1.41	0.63
8,512.0	91.40	151.50	7,331.6	5,985.6	-824.4	90.6	793.9	5.79	-0.95	-5.71
8,575.0	90.60	148.80	7,330.5	5,984.5	-879.1	122.0	856.4	4.47	-1.27	-4.29
8,639.0	91.20	149.00	7,329.5	5,983.5	-933.9	155.0	919.8	0.99	0.94	0.31
8,702.0	90.20	148.90	7,328.7	5,982.7	-987.8	187.5	982.2	1.60	-1.59	-0.16
8,765.0	88.90	150.20	7,329.2	5,983.2	-1,042.1	219.4	1,044.7	2.92	-2.06	2.06
8,829.0	88.50	150.60	7,330.7	5,984.7	-1,097.8	251.0	1,108.2	0.88	-0.63	0.63
8,892.0	87.30	151.70	7,333.0	5,987.0	-1,152.9	281.4	1,170.9	2.58	-1.90	1.75
8,955.0	88.00	152.90	7,335.6	5,989.6	-1,208.7	310.7	1,233.6	2.20	1.11	1.90
9,019.0	87.40	151.60	7,338.2	5,992.2	-1,265.2	340.4	1,297.4	2.24	-0.94	-2.03
9,082.0	87.80	151.70	7,340.8	5,994.8	-1,320.6	370.3	1,360.0	0.65	0.63	0.16
9,146.0	88.30	153.30	7,343.0	5,997.0	-1,377.4	399.9	1,423.8	2.62	0.78	2.50
9,209.0	89.20	152.90	7,344.3	5,998.3	-1,433.5	428.4	1,486.7	1.56	1.43	-0.63
9,272.0	90.00	153.00	7,344.8	5,998.8	-1,489.6	457.0	1,549.5	1.28	1.27	0.16
9,335.0	89.70	151.40	7,344.9	5,998.9	-1,545.4	486.4	1,612.3	2.58	-0.48	-2.54
9,399.0	90.20	151.30	7,345.0	5,999.0	-1,601.5	517.1	1,676.0	0.80	0.78	-0.16
9,462.0	89.10	150.70	7,345.4	5,999.4	-1,656.6	547.6	1,738.7	1.99	-1.75	-0.95
9,526.0	88.90	151.40	7,346.5	6,000.5	-1,712.6	578.6	1,802.3	1.14	-0.31	1.09
9,589.0	89.20	150.60	7,347.5	6,001.5	-1,767.7	609.1	1,865.0	1.36	0.48	-1.27
9,652.0	89.30	149.90	7,348.4	6,002.4	-1,822.4	640.4	1,927.5	1.12	0.16	-1.11
9,716.0	89.80	149.20	7,348.9	6,002.9	-1,877.6	672.8	1,991.0	1.34	0.78	-1.09
9,779.0	89.30	149.70	7,349.4	6,003.4	-1,931.8	704.8	2,053.5	1.12	-0.79	0.79
9,842.0	88.70	151.90	7,350.5	6,004.5	-1,986.8	735.6	2,116.1	3.62	-0.95	3.49
9,905.0	88.70	151.30	7,351.9	6,005.9	-2,042.2	765.5	2,178.8	0.95	0.00	-0.95
9,969.0	89.60	151.70	7,352.8	6,006.8	-2,098.5	796.1	2,242.5	1.54	1.41	0.63
10,032.0	90.50	152.10	7,352.8	6,006.8	-2,154.0	825.7	2,305.3	1.56	1.43	0.63
10,095.0	90.30	151.70	7,352.4	6,006.4	-2,209.6	855.4	2,368.0	0.71	-0.32	-0.63
10,159.0	90.00	150.10	7,352.2	6,006.2	-2,265.5	886.5	2,431.7	2.54	-0.47	-2.50
10,222.0	90.10	150.70	7,352.1	6,006.1	-2,320.3	917.7	2,494.3	0.97	0.16	0.95
10,285.0	90.40	153.50	7,351.9	6,005.9	-2,376.0	947.1	2,557.1	4.47	0.48	4.44
10,348.0	90.00	154.40	7,351.6	6,005.6	-2,432.6	974.8	2,620.0	1.56	-0.63	1.43
10,412.0	89.40	154.20	7,352.0	6,006.0	-2,490.2	1,002.6	2,683.9	0.99	-0.94	-0.31
10,475.0	89.40	154.70	7,352.6	6,006.6	-2,547.1	1,029.7	2,746.9	0.79	0.00	0.79
10,539.0	89.30	154.40	7,353.4	6,007.4	-2,604.9	1,057.2	2,810.8	0.49	-0.16	-0.47
10,602.0	89.40	154.30	7,354.1	6,008.1	-2,661.7	1,084.5	2,873.7	0.22	0.16	-0.16
10,665.0	90.50	155.30	7,354.1	6,008.1	-2,718.7	1,111.3	2,936.7	2.36	1.75	1.59
10,729.0	90.50	154.70	7,353.6	6,007.6	-2,776.7	1,138.4	3,000.6	0.94	0.00	-0.94
10,792.0	90.40	154.60	7,353.1	6,007.1	-2,833.6	1,165.3	3,063.6	0.22	-0.16	-0.16
10,856.0	90.80	154.90	7,352.4	6,006.4	-2,891.5	1,192.6	3,127.5	0.78	0.63	0.47
10,919.0	90.40	152.10	7,351.7	6,005.7	-2,947.8	1,220.7	3,190.4	4.49	-0.63	-4.44

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Phoenix Technologies, Inc.  
Survey Report



<b>Database:</b>	EQT DB	<b>Local Co-ordinate Reference:</b>	Site Wetzel County 514379
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1346.0usft
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Wetzel County 514379	<b>North Reference:</b>	Grid
<b>Well:</b>	Well 514379	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	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)
10,982.0	89.50	150.10	7,351.8	6,005.8	-3,003.0	1,251.2	3,253.1	3.48	-1.43	-3.17
11,046.0	89.10	148.70	7,352.6	6,006.6	-3,058.1	1,283.8	3,316.5	2.27	-0.63	-2.19
11,109.0	88.70	148.10	7,353.8	6,007.8	-3,111.7	1,316.8	3,378.8	1.14	-0.63	-0.95
11,173.0	88.50	148.80	7,355.4	6,009.4	-3,166.2	1,350.2	3,442.1	1.14	-0.31	1.09
<b>Final Survey MD=11236'</b>										
11,236.0	89.70	151.90	7,356.3	6,010.3	-3,221.0	1,381.4	3,504.7	5.28	1.90	4.92
<b>Projection to TD MD=11292'</b>										
11,292.0	89.70	151.90	7,356.6	6,010.6	-3,270.4	1,407.8	3,560.5	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
5,524.0	5,523.6	-29.3	33.0	Gyro Tie In MD=5524'
11,236.0	7,356.3	-3,221.0	1,381.4	Final Survey MD=11236'
11,292.0	7,356.6	-3,270.4	1,407.8	Projection to TD MD=11292'

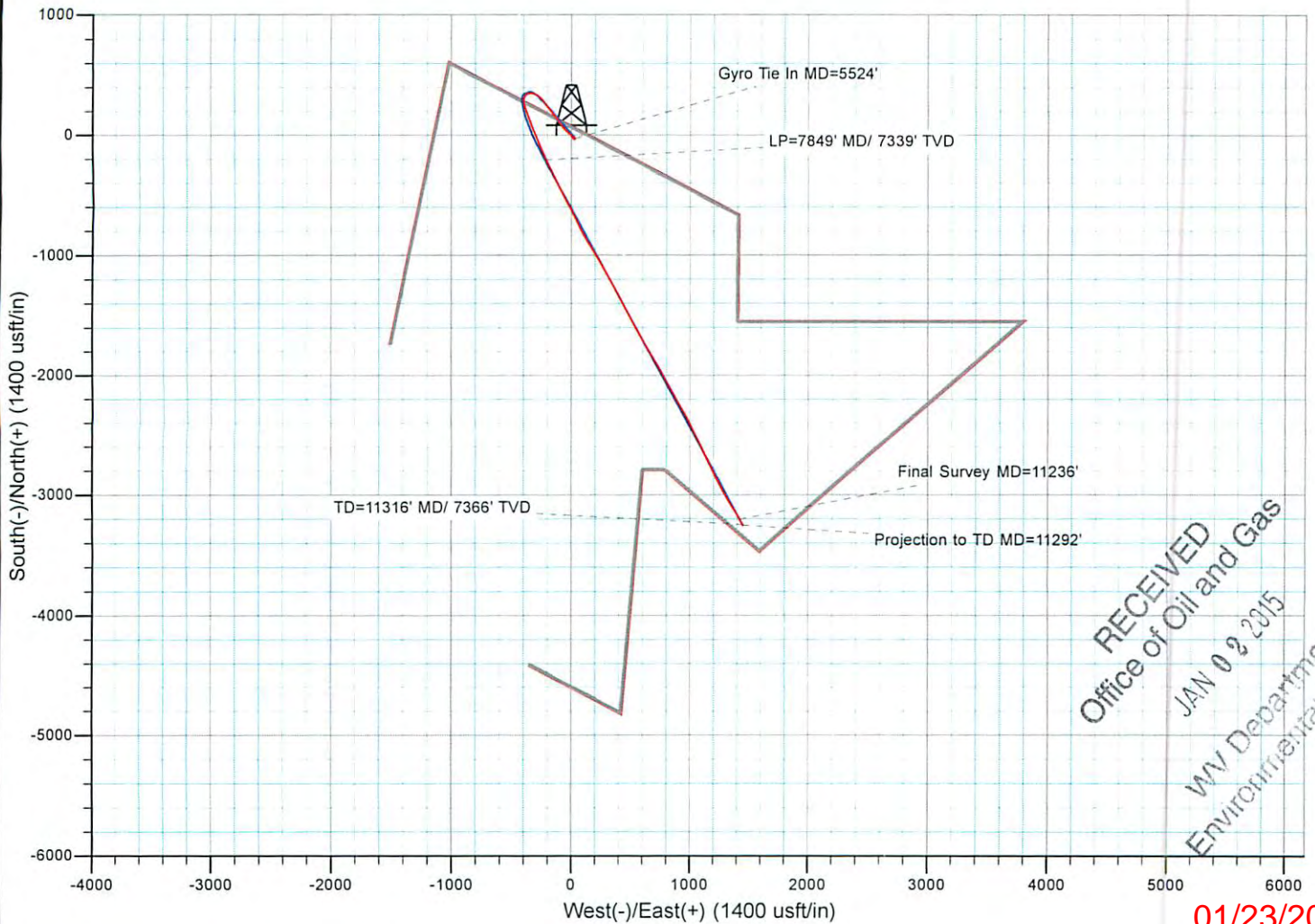
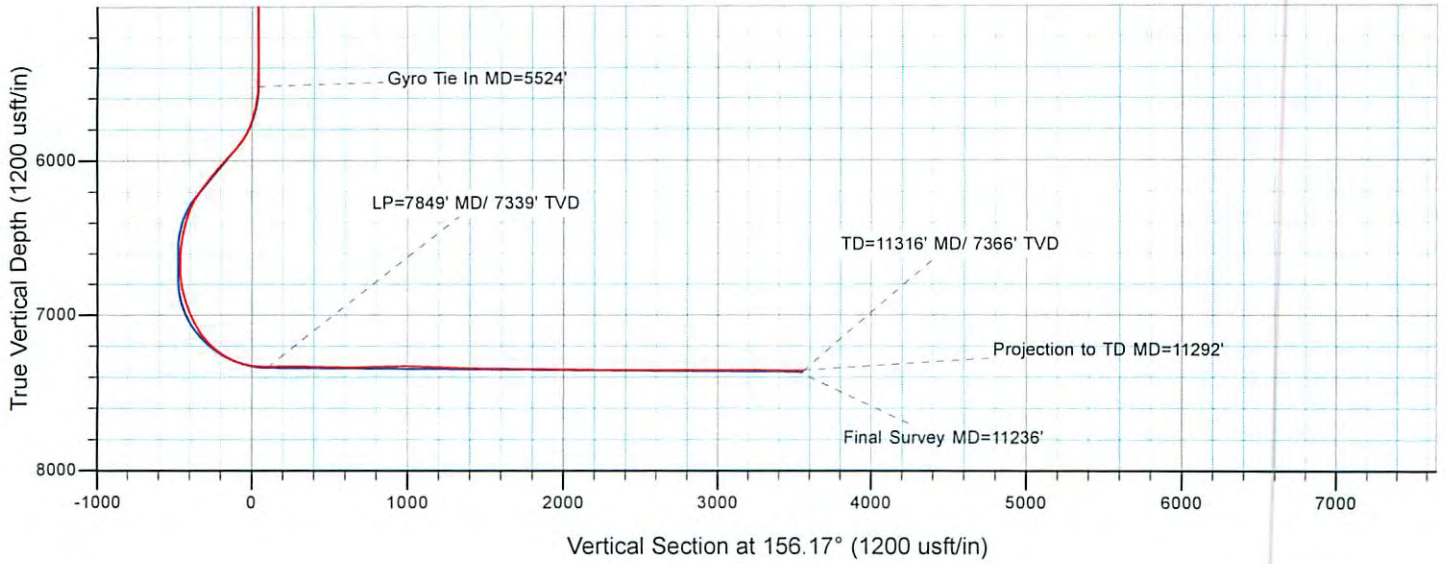
Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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# EQT Production - Marcellus

Project: Wetzel County, WV  
 Site: Wetzel County 514379  
 Well: Well 514379  
 Wellbore: Main Wellbore  
 Design: As Drilled Surveys



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