



Where energy meets innovation.

EQT PRODUCTION

Wetzel County, WV

Big 177

Well #512915 - MRC - Slot 512915

API# 47-103-03057

Main

Design: 512915 As Drilled

Standard Survey Report

15 September, 2017



02/16/2018



Phoenix Technology Services LP
Survey Report



Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #512915 - MRC - Slot 512915
Project:	Wetzel County, WV	TVD Reference:	KB @23' @ 834.0usft
Site:	Big 177	MD Reference:	KB @23' @ 834.0usft
Well:	Well #512915 - MRC	North Reference:	Grid
Wellbore:	Main	Survey Calculation Method:	Minimum Curvature
Design:	512915 As Drilled	Database:	Compass 5000 NER

Project	Wetzel 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	Big 177				
Site Position:		Northing:	396,138.09 usft	Latitude:	39° 34' 57.245 N
From:	Map	Easting:	1,694,445.70 usft	Longitude:	80° 35' 2.833 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.69 °

Well	Well #512915 - MRC - Slot 512915					
Well Position	+N/-S	0.0 usft	Northing:	396,136.07 usft	Latitude:	39° 34' 57.226 N
	+E/-W	0.0 usft	Easting:	1,694,455.53 usft	Longitude:	80° 35' 2.707 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	811.0 usft

Wellbore	Main				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/30/2017	-8.35	66.90	52,339

Design	512915 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	335.28	

Survey Program	Date 9/15/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
110.0	4,858.0	512915 Gyrodata Gyros (Main)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
4,913.0	5,958.0	512915 SDI Air Curve (Main)	SDI MWD	SDI MWD - Standard ver 1.0.1	
6,040.0	15,279.0	Phoenix MWD Surveys (Main)	MWD+HDGM	OWSG Rev.2 MWD + HDGM	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical 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	0.0	0.0	0.0	0.00	0.00	0.00	0.00
110.0	0.35	66.11	110.0	0.1	0.3	0.0	0.32	0.32	0.00	0.00
210.0	0.36	72.26	210.0	0.4	0.9	0.0	0.04	0.01	6.15	6.15
310.0	0.36	73.42	310.0	0.5	1.5	-0.1	0.01	0.00	1.16	1.16
410.0	0.23	99.01	410.0	0.6	2.0	-0.3	0.18	-0.13	25.59	25.59
510.0	0.36	137.20	510.0	0.3	2.4	-0.7	0.23	0.13	38.19	38.19
610.0	0.11	150.06	610.0	0.0	2.7	-1.1	0.25	-0.25	12.86	12.86
710.0	0.19	231.77	710.0	-0.2	2.6	-1.2	0.21	0.08	81.71	81.71
810.0	0.67	290.88	810.0	-0.1	1.9	-0.8	0.60	0.48	59.11	59.11

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Site:	Big 177	MD Reference:	KB @23' @ 834.0usft
Well:	Well #512915 - MRC	North Reference:	Grid
Wellbore:	Main	Survey Calculation Method:	Minimum Curvature
Design:	512915 As Drilled	Database:	Compass 5000 NER

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
910.0	1.67	329.87	910.0	1.4	0.6	1.0	1.22	1.00	38.99
1,010.0	3.93	343.61	1,009.8	6.0	-1.1	5.9	2.34	2.26	13.74
1,110.0	6.90	346.21	1,109.4	15.1	-3.5	15.2	2.98	2.97	2.60
1,210.0	7.10	350.74	1,208.6	27.0	-5.9	27.0	0.59	0.20	4.53
1,310.0	5.15	3.46	1,308.1	37.6	-6.6	36.9	2.36	-1.95	12.72
1,410.0	3.61	14.23	1,407.8	45.1	-5.6	43.3	1.74	-1.54	10.77
1,510.0	3.34	15.49	1,507.6	51.0	-4.0	48.0	0.28	-0.27	1.26
1,610.0	2.98	14.92	1,607.4	56.3	-2.6	52.2	0.36	-0.36	-0.57
1,710.0	2.65	12.95	1,707.3	61.1	-1.4	56.1	0.34	-0.33	-1.97
1,810.0	2.23	13.84	1,807.2	65.2	-0.4	59.4	0.42	-0.42	0.89
1,910.0	1.80	16.31	1,907.2	68.6	0.5	62.1	0.44	-0.43	2.47
2,010.0	1.39	17.61	2,007.1	71.3	1.3	64.2	0.41	-0.41	1.30
2,110.0	1.11	16.18	2,107.1	73.4	1.9	65.8	0.28	-0.28	-1.43
2,210.0	0.92	10.57	2,207.1	75.1	2.4	67.2	0.21	-0.19	-5.61
2,310.0	0.57	2.75	2,307.1	76.4	2.5	68.3	0.36	-0.35	-7.82
2,410.0	0.39	354.68	2,407.1	77.2	2.5	69.1	0.19	-0.18	-8.07
2,510.0	0.33	340.97	2,507.1	77.8	2.4	69.7	0.10	-0.06	-13.71
2,610.0	0.35	338.68	2,607.1	78.4	2.2	70.3	0.02	0.02	-2.29
2,710.0	0.35	343.30	2,707.1	78.9	2.0	70.9	0.03	0.00	4.62
2,810.0	0.33	332.14	2,807.1	79.5	1.8	71.5	0.07	-0.02	-11.16
2,910.0	0.29	317.23	2,907.1	79.9	1.5	72.0	0.09	-0.04	-14.91
3,010.0	0.35	323.06	3,007.1	80.4	1.1	72.5	0.07	0.06	5.83
3,110.0	0.31	319.16	3,107.1	80.8	0.7	73.1	0.05	-0.04	-3.90
3,210.0	0.27	309.12	3,207.1	81.2	0.4	73.6	0.06	-0.04	-10.04
3,310.0	0.28	313.94	3,307.1	81.5	0.0	74.0	0.03	0.01	4.82
3,410.0	0.26	301.45	3,407.1	81.8	-0.3	74.4	0.06	-0.02	-12.49
3,510.0	0.27	293.88	3,507.1	82.0	-0.8	74.8	0.04	0.01	-7.57
3,610.0	0.35	295.84	3,607.1	82.2	-1.2	75.2	0.08	0.08	1.96
3,710.0	0.33	297.54	3,707.1	82.5	-1.8	75.7	0.02	-0.02	1.70
3,810.0	0.35	289.41	3,807.1	82.7	-2.3	76.1	0.05	0.02	-8.13
3,910.0	0.08	342.70	3,907.1	82.9	-2.6	76.4	0.31	-0.27	53.29
4,010.0	0.18	50.13	4,007.1	83.1	-2.5	76.5	0.17	0.10	67.43
4,110.0	0.19	39.88	4,107.1	83.3	-2.3	76.6	0.03	0.01	-10.25
4,210.0	0.36	75.65	4,207.1	83.5	-1.9	76.6	0.23	0.17	35.77
4,310.0	0.46	85.63	4,307.0	83.6	-1.2	76.4	0.12	0.10	9.98
4,410.0	0.42	90.00	4,407.0	83.6	-0.4	76.1	0.05	-0.04	4.37
4,510.0	0.40	88.46	4,507.0	83.6	0.3	75.8	0.02	-0.02	-1.54
4,610.0	0.36	96.79	4,607.0	83.6	1.0	75.5	0.07	-0.04	8.33
4,710.0	0.30	104.10	4,707.0	83.5	1.5	75.2	0.07	-0.06	7.31
4,810.0	0.34	111.57	4,807.0	83.3	2.1	74.8	0.06	0.04	7.47
4,858.0	0.33	112.72	4,855.0	83.2	2.3	74.6	0.03	-0.02	2.40
4,913.0	0.65	57.76	4,910.0	83.3	2.7	74.6	0.97	0.58	-99.95
4,956.0	3.70	352.68	4,953.0	84.8	2.8	75.9	8.08	7.09	-151.35

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Wellbore:	Main	Survey Calculation Method:	Minimum Curvature
Design:	512915 As Drilled	Database:	Compass 5000 NER

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,999.0	8.30	346.39	4,995.7	89.2	1.8	80.3	10.79	10.70	-14.63	
5,043.0	13.52	346.43	5,038.9	97.3	-0.1	88.4	11.86	11.86	0.09	
5,085.0	18.27	347.63	5,079.3	108.5	-2.7	99.7	11.34	11.31	2.86	
5,129.0	21.21	348.08	5,120.7	123.1	-5.8	114.2	6.69	6.68	1.02	
5,171.0	23.57	352.24	5,159.6	138.8	-8.5	129.6	6.76	5.62	9.90	
5,215.0	26.77	358.62	5,199.4	157.5	-9.9	147.2	9.53	7.27	14.50	
5,259.0	29.23	1.64	5,238.2	178.1	-9.9	165.9	6.45	5.59	6.86	
5,302.0	30.66	1.24	5,275.5	199.6	-9.3	185.2	3.36	3.33	-0.93	
5,346.0	30.78	0.29	5,313.3	222.0	-9.0	205.4	1.14	0.27	-2.16	
5,390.0	32.85	359.86	5,350.7	245.2	-9.0	226.5	4.73	4.70	-0.98	
5,434.0	35.45	0.23	5,387.1	269.9	-9.0	248.9	5.93	5.91	0.84	
5,477.0	34.84	359.76	5,422.3	294.7	-9.0	271.4	1.55	-1.42	-1.09	
5,521.0	36.35	0.34	5,458.1	320.3	-8.9	294.7	3.52	3.43	1.32	
5,565.0	36.50	0.26	5,493.5	346.4	-8.8	318.3	0.36	0.34	-0.18	
5,609.0	37.84	359.83	5,528.5	373.0	-8.8	342.5	3.10	3.05	-0.98	
5,652.0	37.47	358.90	5,562.6	399.3	-9.1	366.5	1.58	-0.86	-2.16	
5,696.0	36.88	0.88	5,597.6	425.8	-9.1	390.6	3.03	-1.34	4.50	
5,740.0	38.47	3.90	5,632.5	452.7	-8.0	414.6	5.54	3.61	6.86	
5,783.0	39.69	6.15	5,665.8	479.7	-5.6	438.1	4.35	2.84	5.23	
5,827.0	38.63	6.11	5,699.9	507.3	-2.6	461.9	2.41	-2.41	-0.09	
5,871.0	37.33	4.55	5,734.6	534.3	-0.1	485.4	3.67	-2.95	-3.55	
5,914.0	36.80	3.23	5,768.9	560.1	1.6	508.1	2.22	-1.23	-3.07	
5,958.0	37.83	2.20	5,803.9	586.8	2.9	531.8	2.74	2.34	-2.34	
Tie-In										
6,040.0	41.02	0.44	5,867.3	638.8	4.1	578.6	4.12	3.89	-2.15	
First Phoenix MWD Survey										
6,134.0	42.24	357.58	5,937.5	701.3	3.0	635.7	2.40	1.30	-3.04	
6,229.0	39.29	356.33	6,009.5	763.2	-0.3	693.4	3.22	-3.11	-1.32	
6,323.0	38.03	359.20	6,082.9	821.9	-2.6	747.6	2.33	-1.34	3.05	
6,418.0	38.50	0.81	6,157.5	880.7	-2.6	801.0	1.16	0.49	1.69	
6,512.0	38.75	2.35	6,230.9	939.3	-1.0	853.6	1.06	0.27	1.64	
6,606.0	38.17	1.91	6,304.5	997.8	1.2	905.8	0.68	-0.62	-0.47	
6,701.0	38.66	1.56	6,379.0	1,056.8	3.0	958.6	0.56	0.52	-0.37	
6,795.0	39.56	1.05	6,451.9	1,116.0	4.3	1,011.9	1.02	0.96	-0.54	
6,889.0	38.95	1.14	6,524.7	1,175.5	5.5	1,065.5	0.65	-0.65	0.10	
6,983.0	38.82	0.62	6,597.9	1,234.5	6.4	1,118.7	0.37	-0.14	-0.55	
7,008.0	39.95	358.93	6,617.2	1,250.4	6.3	1,133.1	6.23	4.52	-6.76	
As-Drilled KOP:7008'MD/6617.2'TVD										
7,015.0	40.27	358.47	6,622.5	1,254.9	6.2	1,137.3	6.23	4.58	-6.56	
7,046.0	42.89	355.39	6,645.7	1,275.4	5.1	1,156.4	10.72	8.45	-9.94	
7,078.0	45.68	353.65	6,668.6	1,297.7	2.9	1,177.5	9.51	8.72	-5.44	
7,109.0	48.65	351.14	6,689.7	1,320.2	-0.1	1,199.2	11.27	9.58	-8.10	
7,140.0	51.50	348.95	6,709.6	1,343.6	-4.2	1,222.2	10.67	9.19	-7.06	
7,172.0	54.43	346.50	6,728.9	1,368.5	-9.6	1,247.1	11.01	9.16	-7.66	

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Well:	Well #512915 - MRC	North Reference:	Grid
Wellbore:	Main	Survey Calculation Method:	Minimum Curvature
Design:	512915 As Drilled	Database:	Compass 5000 NER

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,203.0	57.25	344.51	6,746.3	1,393.4	-16.1	1,272.4	10.53	9.10	-6.42
7,235.0	60.33	342.95	6,762.9	1,419.6	-23.7	1,299.4	10.49	9.63	-4.88
7,266.0	62.90	342.16	6,777.6	1,445.7	-31.9	1,326.5	8.59	8.29	-2.55
7,298.0	66.25	340.96	6,791.3	1,473.1	-41.1	1,355.2	11.00	10.47	-3.75
7,329.0	69.38	340.01	6,803.0	1,500.1	-50.7	1,383.8	10.49	10.10	-3.06
7,361.0	71.44	339.53	6,813.8	1,528.4	-61.1	1,413.8	6.59	6.44	-1.50
7,392.0	73.27	339.32	6,823.2	1,556.1	-71.5	1,443.3	5.94	5.90	-0.68
7,423.0	76.01	338.49	6,831.4	1,583.9	-82.2	1,473.1	9.21	8.84	-2.68
7,455.0	78.89	336.83	6,838.3	1,612.8	-94.1	1,504.3	10.33	9.00	-5.19
7,486.0	81.53	335.17	6,843.6	1,640.7	-106.5	1,534.9	10.02	8.52	-5.35
7,518.0	83.45	333.52	6,847.8	1,669.3	-120.2	1,566.6	7.88	6.00	-5.16
7,549.0	85.51	332.43	6,850.8	1,696.8	-134.3	1,597.4	7.51	6.65	-3.52
7,576.0	87.50	332.07	6,852.4	1,720.7	-146.8	1,624.3	7.47	7.35	-1.32
As-Drilled LP:7576'MD/6852.4'TVD - Hamilton Target									
7,580.0	87.79	332.02	6,852.6	1,724.2	-148.7	1,628.3	7.47	7.36	-1.32
7,612.0	88.39	331.76	6,853.6	1,752.4	-163.8	1,660.3	2.04	1.88	-0.81
7,643.0	88.79	331.52	6,854.4	1,779.7	-178.5	1,691.2	1.50	1.29	-0.77
7,738.0	86.92	332.70	6,858.0	1,863.6	-222.9	1,786.0	2.33	-1.97	1.24
7,832.0	87.62	332.33	6,862.4	1,946.9	-266.2	1,879.7	0.84	0.74	-0.39
7,926.0	89.35	332.92	6,864.9	2,030.3	-309.4	1,973.6	1.94	1.84	0.63
8,021.0	90.53	332.86	6,865.0	2,114.9	-352.7	2,068.5	1.24	1.24	-0.06
8,115.0	91.76	332.69	6,863.1	2,198.4	-395.7	2,162.4	1.32	1.31	-0.18
8,209.0	90.82	332.72	6,861.0	2,282.0	-438.8	2,256.3	1.00	-1.00	0.03
8,304.0	91.95	332.56	6,858.7	2,366.3	-482.4	2,351.2	1.20	1.19	-0.17
8,398.0	91.53	331.46	6,855.9	2,449.3	-526.5	2,445.0	1.25	-0.45	-1.17
8,492.0	90.45	331.20	6,854.3	2,531.7	-571.6	2,538.7	1.18	-1.15	-0.28
8,587.0	89.68	331.86	6,854.1	2,615.2	-616.9	2,633.5	1.07	-0.81	0.69
8,681.0	90.08	331.97	6,854.3	2,698.2	-661.2	2,727.4	0.44	0.43	0.12
8,775.0	88.81	332.27	6,855.3	2,781.2	-705.1	2,821.2	1.39	-1.35	0.32
8,870.0	88.56	331.71	6,857.4	2,865.1	-749.7	2,916.0	0.65	-0.26	-0.59
8,965.0	89.10	332.95	6,859.4	2,949.2	-793.8	3,010.9	1.42	0.57	1.31
9,059.0	89.93	333.31	6,860.2	3,033.1	-836.3	3,104.8	0.96	0.88	0.38
9,153.0	90.28	332.80	6,860.0	3,116.9	-878.9	3,198.7	0.66	0.37	-0.54
9,248.0	91.15	333.11	6,858.8	3,201.5	-922.1	3,293.7	0.97	0.92	0.33
9,342.0	88.01	326.78	6,859.5	3,282.8	-969.2	3,387.2	7.52	-3.34	-6.73
9,436.0	88.35	329.24	6,862.5	3,362.4	-1,018.9	3,480.4	2.64	0.36	2.62
9,530.0	89.53	328.32	6,864.2	3,442.8	-1,067.6	3,573.8	1.59	1.26	-0.98
9,624.0	89.59	328.97	6,865.0	3,523.1	-1,116.5	3,667.1	0.69	0.06	0.69
9,719.0	90.05	331.03	6,865.2	3,605.4	-1,164.0	3,761.7	2.22	0.48	2.17
9,813.0	90.67	331.22	6,864.7	3,687.7	-1,209.4	3,855.5	0.69	0.66	0.20
9,907.0	90.92	332.23	6,863.4	3,770.4	-1,254.0	3,949.3	1.11	0.27	1.07
10,002.0	91.25	333.31	6,861.6	3,854.9	-1,297.4	4,044.2	1.19	0.35	1.14
10,096.0	90.48	333.27	6,860.1	3,938.9	-1,339.7	4,138.1	0.82	-0.82	-0.04

Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #512915 - MRC - Slot 512915
Project:	Wetzel County, WV	TVD Reference:	KB @23' @ 834.0usft
Site:	Big 177	MD Reference:	KB @23' @ 834.0usft
Well:	Well #512915 - MRC	North Reference:	Grid
Wellbore:	Main	Survey Calculation Method:	Minimum Curvature
Design:	512915 As Drilled	Database:	Compass 5000 NER

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,191.0	90.13	333.48	6,859.6	4,023.8	-1,382.2	4,233.0	0.43	-0.37	0.22
10,285.0	89.58	333.87	6,859.9	4,108.0	-1,423.9	4,327.0	0.72	-0.59	0.41
10,379.0	88.64	332.25	6,861.3	4,191.8	-1,466.5	4,420.9	1.99	-1.00	-1.72
10,474.0	89.56	333.13	6,862.8	4,276.2	-1,510.1	4,515.8	1.34	0.97	0.93
10,568.0	89.64	334.08	6,863.5	4,360.4	-1,551.9	4,609.8	1.01	0.09	1.01
10,662.0	90.41	333.01	6,863.4	4,444.6	-1,593.7	4,703.7	1.40	0.82	-1.14
10,757.0	89.21	333.19	6,863.8	4,529.3	-1,636.7	4,798.7	1.28	-1.26	0.19
10,851.0	89.92	332.28	6,864.5	4,612.8	-1,679.8	4,892.6	1.23	0.76	-0.97
10,945.0	89.61	332.96	6,864.9	4,696.3	-1,723.0	4,986.5	0.80	-0.33	0.72
11,040.0	90.53	333.03	6,864.7	4,781.0	-1,766.1	5,081.4	0.97	0.97	0.07
11,134.0	89.95	332.22	6,864.3	4,864.4	-1,809.4	5,175.3	1.06	-0.62	-0.86
11,228.0	90.88	331.83	6,863.7	4,947.4	-1,853.5	5,269.1	1.07	0.99	-0.41
11,322.0	89.32	330.40	6,863.5	5,029.7	-1,898.9	5,362.9	2.25	-1.66	-1.52
11,416.0	89.56	329.39	6,864.4	5,111.1	-1,946.0	5,456.5	1.10	0.26	-1.07
11,511.0	89.64	330.71	6,865.1	5,193.4	-1,993.4	5,551.1	1.39	0.08	1.39
11,605.0	90.02	332.89	6,865.4	5,276.2	-2,037.9	5,644.9	2.35	0.40	2.32
11,700.0	91.47	331.84	6,864.1	5,360.4	-2,081.9	5,739.7	1.88	1.53	-1.11
11,794.0	91.19	331.79	6,861.9	5,443.2	-2,126.3	5,833.5	0.30	-0.30	-0.05
11,888.0	90.22	332.54	6,860.8	5,526.3	-2,170.2	5,927.4	1.30	-1.03	0.80
11,982.0	88.93	332.71	6,861.5	5,609.8	-2,213.4	6,021.3	1.38	-1.37	0.18
12,077.0	89.29	331.55	6,863.0	5,693.7	-2,257.8	6,116.1	1.28	0.38	-1.22
12,171.0	90.87	331.15	6,862.8	5,776.2	-2,302.9	6,209.9	1.73	1.68	-0.43
12,265.0	89.09	331.55	6,862.9	5,858.7	-2,347.9	6,303.7	1.94	-1.89	0.43
12,359.0	88.87	331.79	6,864.5	5,941.4	-2,392.5	6,397.5	0.35	-0.23	0.26
12,453.0	90.27	331.24	6,865.2	6,024.1	-2,437.4	6,491.3	1.60	1.49	-0.59
12,548.0	90.70	332.38	6,864.4	6,107.8	-2,482.2	6,586.1	1.28	0.45	1.20
12,642.0	89.85	332.06	6,864.0	6,190.9	-2,526.1	6,680.0	0.97	-0.90	-0.34
12,736.0	88.91	333.28	6,865.0	6,274.4	-2,569.2	6,773.9	1.64	-1.00	1.30
12,831.0	87.90	332.24	6,867.6	6,358.9	-2,612.7	6,868.7	1.53	-1.06	-1.09
12,925.0	88.82	332.22	6,870.3	6,442.0	-2,656.5	6,962.6	0.98	0.98	-0.02
13,019.0	88.88	331.46	6,872.2	6,524.9	-2,700.8	7,056.4	0.81	0.06	-0.81
13,113.0	88.27	331.02	6,874.6	6,607.3	-2,746.0	7,150.1	0.80	-0.65	-0.47
13,208.0	89.44	331.63	6,876.5	6,690.6	-2,791.6	7,244.9	1.39	1.23	0.64
13,302.0	88.93	331.60	6,877.8	6,773.3	-2,836.3	7,338.7	0.54	-0.54	-0.03
13,396.0	89.44	332.65	6,879.1	6,856.4	-2,880.2	7,432.5	1.24	0.54	1.12
13,490.0	88.73	333.32	6,880.6	6,940.1	-2,922.9	7,526.4	1.04	-0.76	0.71
13,585.0	89.45	330.67	6,882.1	7,023.9	-2,967.5	7,621.2	2.89	0.76	-2.79
13,679.0	90.30	329.89	6,882.3	7,105.6	-3,014.1	7,714.9	1.23	0.90	-0.83
13,773.0	90.55	330.01	6,881.6	7,186.9	-3,061.2	7,808.5	0.30	0.27	0.13
13,868.0	90.42	331.76	6,880.8	7,269.9	-3,107.4	7,903.2	1.85	-0.14	1.84
13,962.0	89.18	332.73	6,881.2	7,353.1	-3,151.2	7,997.0	1.67	-1.32	1.03
14,056.0	89.88	331.63	6,881.9	7,436.2	-3,195.0	8,090.9	1.39	0.74	-1.17
14,150.0	89.07	332.72	6,882.8	7,519.4	-3,238.9	8,184.8	1.44	-0.86	1.16
14,245.0	90.16	331.62	6,883.4	7,603.4	-3,283.3	8,279.6	1.63	1.15	-1.16

Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #512915 - MRC - Slot 512915
Project:	Wetzel County, WV	TVD Reference:	KB @23' @ 834.0usft
Site:	Big 177	MD Reference:	KB @23' @ 834.0usft
Well:	Well #512915 - MRC	North Reference:	Grid
Wellbore:	Main	Survey Calculation Method:	Minimum Curvature
Design:	512915 As Drilled	Database:	Compass 5000 NER

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,340.0	88.95	332.98	6,884.2	7,687.5	-3,327.4	8,374.5	1.92	-1.27	1.43
14,434.0	89.58	333.41	6,885.4	7,771.4	-3,369.8	8,468.4	0.81	0.67	0.46
14,529.0	89.04	332.85	6,886.5	7,856.1	-3,412.7	8,563.3	0.82	-0.57	-0.59
14,623.0	88.01	332.80	6,888.9	7,939.7	-3,455.7	8,657.2	1.10	-1.10	-0.05
14,717.0	88.70	332.82	6,891.6	8,023.3	-3,498.6	8,751.1	0.73	0.73	0.02
14,811.0	88.52	332.74	6,893.9	8,106.8	-3,541.6	8,845.0	0.21	-0.19	-0.09
14,906.0	89.38	333.02	6,895.7	8,191.4	-3,584.9	8,939.9	0.95	0.91	0.29
15,000.0	88.79	332.95	6,897.2	8,275.1	-3,627.6	9,033.8	0.63	-0.63	-0.07
15,094.0	88.15	332.87	6,899.7	8,358.8	-3,670.4	9,127.7	0.69	-0.68	-0.09
15,188.0	88.89	333.02	6,902.1	8,442.5	-3,713.1	9,221.6	0.80	0.79	0.16
15,202.0	89.21	333.29	6,902.3	8,455.0	-3,719.4	9,235.6	2.99	2.29	1.93
Final Phoenix MWD Survey									
15,279.0	89.21	333.29	6,903.4	8,523.7	-3,754.0	9,312.5	0.00	0.00	0.00
As-Drilled TD:15279'MD/6903.4'TVD - Deepest Point @ 15279'MD/6903.4'TVD									

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
512915 - As-Drilled KOF - hit/miss target - Shape - actual wellpath hits target center - Point	0.00	0.00	6,617.2	1,250.4	6.3	397,386.44	1,694,461.83	39° 35' 9.584 N	80° 35' 2.820 W
512915 - As-Drilled LP - actual wellpath hits target center - Point	0.00	0.00	6,852.4	1,720.7	-146.8	397,856.73	1,694,308.71	39° 35' 14.214 N	80° 35' 4.848 W
512915 - As-Drilled TD - actual wellpath hits target center - Point	0.00	360.00	6,903.4	8,523.7	-3,754.0	404,659.80	1,690,701.50	39° 36' 21.016 N	80° 35' 51.983 W

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,958.0	5,803.9	586.8	2.9	Tie-In
6,040.0	5,867.3	638.8	4.1	First Phoenix MWD Survey
7,008.0	6,617.2	1,250.4	6.3	As-Drilled KOP:7008'MD/6617.2'TVD
7,576.0	6,852.4	1,720.7	-146.8	As-Drilled LP:7576'MD/6852.4'TVD
7,576.0	6,852.4	1,720.7	-146.8	Hamilton Target
15,202.0	6,902.3	8,455.0	-3,719.4	Final Phoenix MWD Survey
15,279.0	6,903.4	8,523.7	-3,754.0	As-Drilled TD:15279'MD/6903.4'TVD
15,279.0	6,903.4	8,523.7	-3,754.0	Deepest Point @ 15279'MD/6903.4'TVD

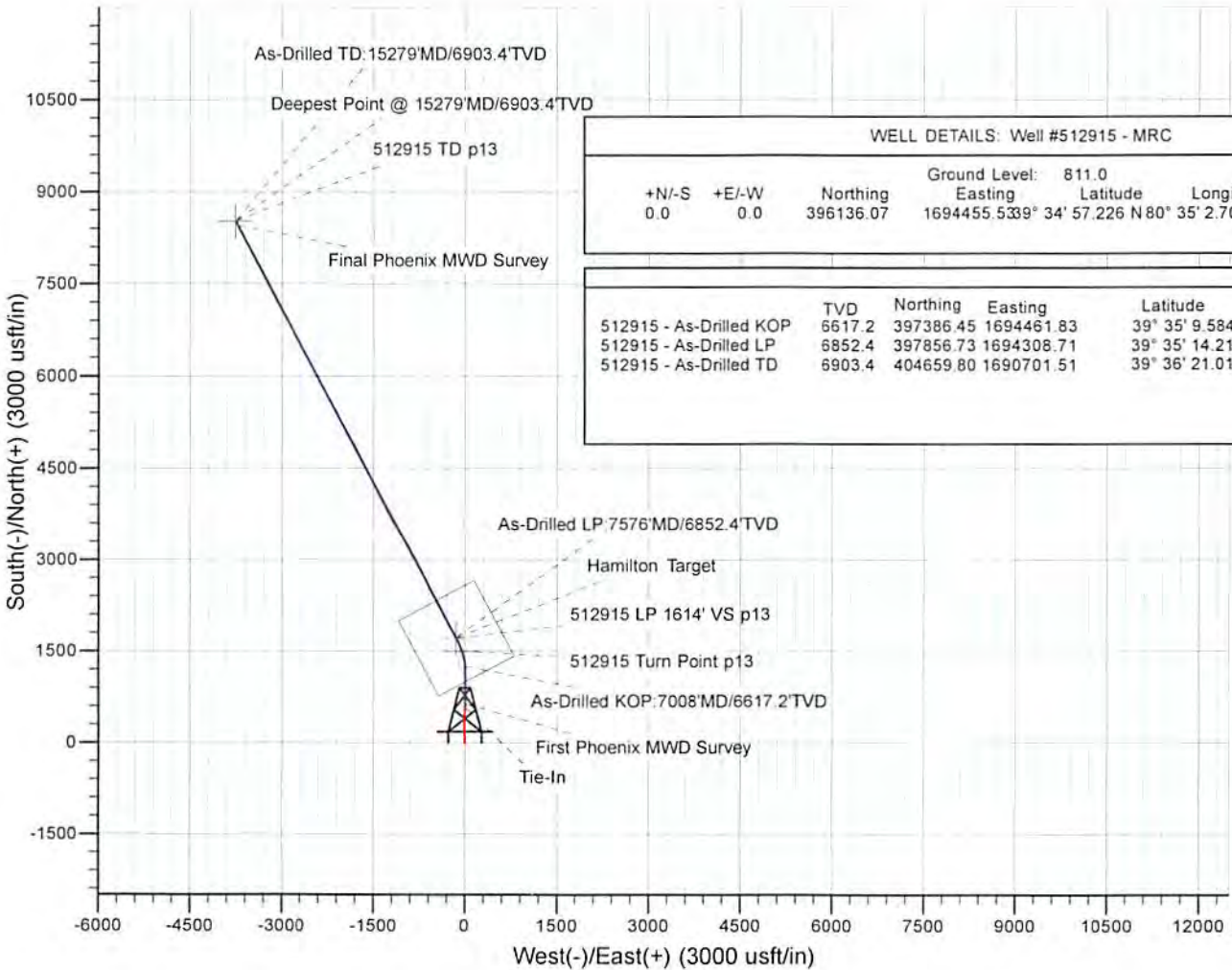
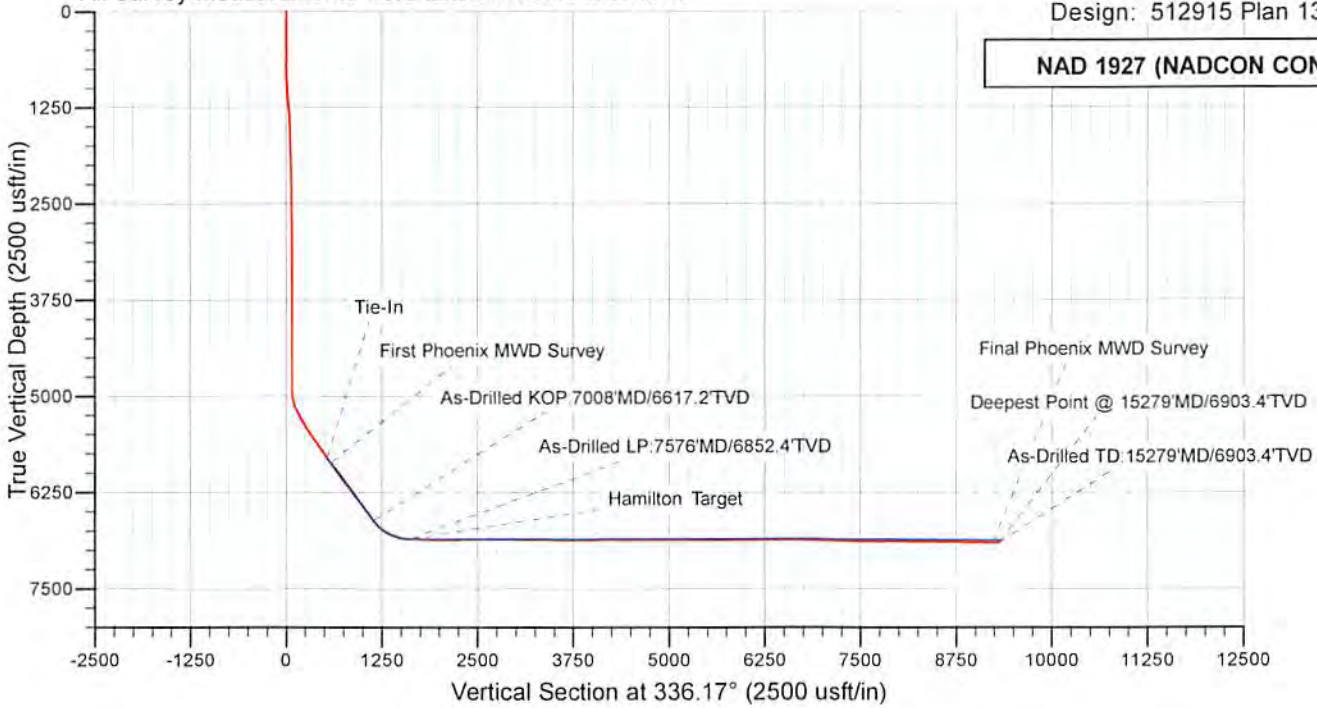
Checked By: _____ Approved By: _____ Date: _____

Project: Wetzel County, WV
 Site: Big 177
 API#47-103-03057 Well: Well #512915 - MRC
 Wellbore: Main
 Design: 512915 Plan 13

KB Elevation=1319 FT
 Ground Elevation=1296 FT

All Survey Measurements were taken from KB Elevation

NAD 1927 (NADCON CONUS)



WELL DETAILS: Well #512915 - MRC							
+N/-S	+E/-W	Northing	Ground Level:	811.0	Longitude	Slot	
0.0	0.0	396136.07	Easting	1694455.5339° 34'	57.226 N 80° 35' 2.707 W	512915	

	TVD	Northing	Easting	Latitude	Longitude
512915 - As-Drilled KOP	6617.2	397386.45	1694461.83	39° 35' 9.584 N	80° 35' 2.820 W
512915 - As-Drilled LP	6852.4	397856.73	1694308.71	39° 35' 14.214 N	80° 35' 4.848 W
512915 - As-Drilled TD	6903.4	404659.80	1690701.51	39° 36' 21.016 N	80° 35' 51.983 W

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WV Department of
Environmental Protection

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