

EQT PRODUCTION

Ritchie County, WV

PEN54

Well #516206 - Slot 516206

Main Wellbore

Design: 591206 As Drilled Surveys

Standard Survey Report

11 August, 2016

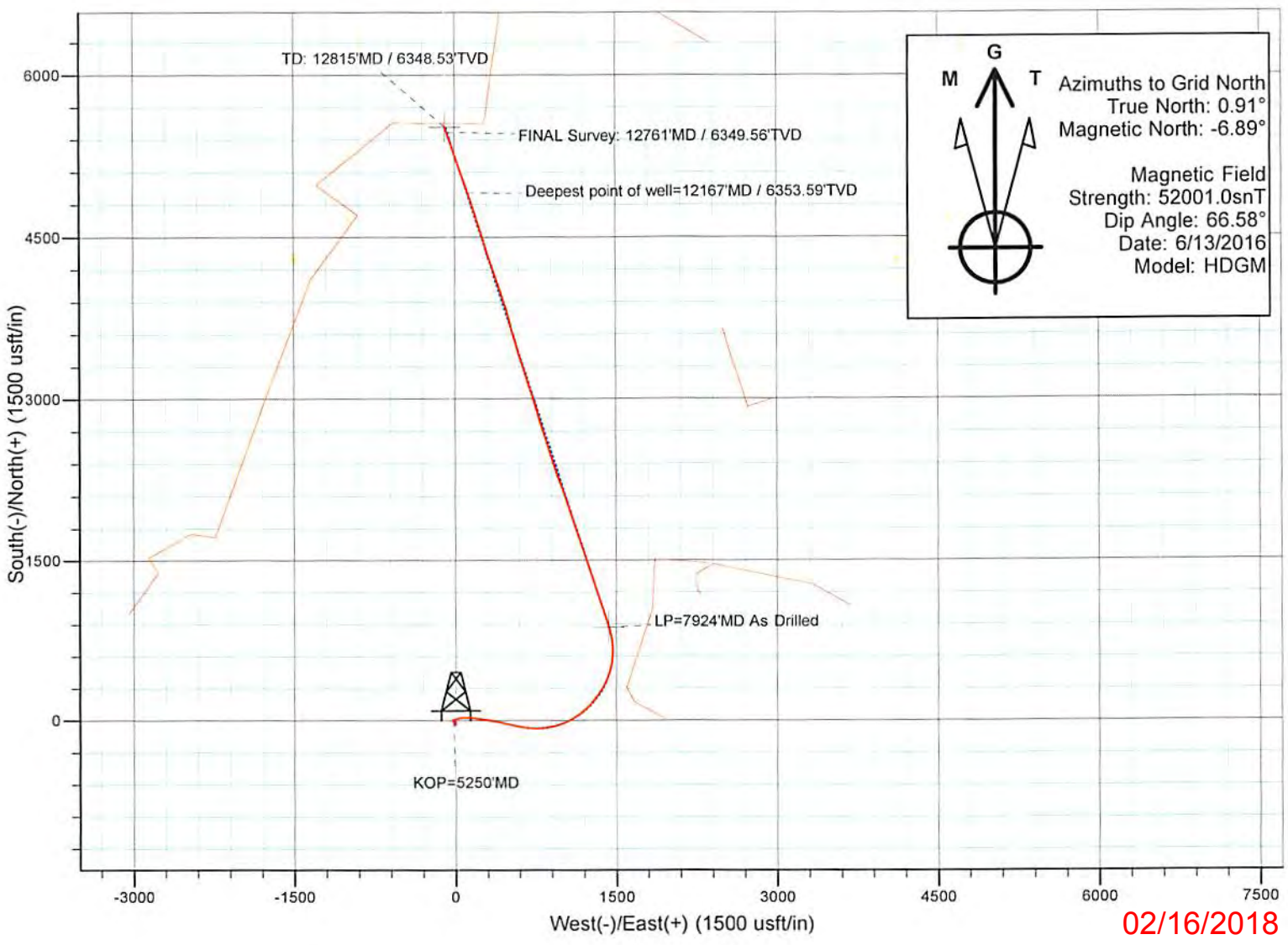
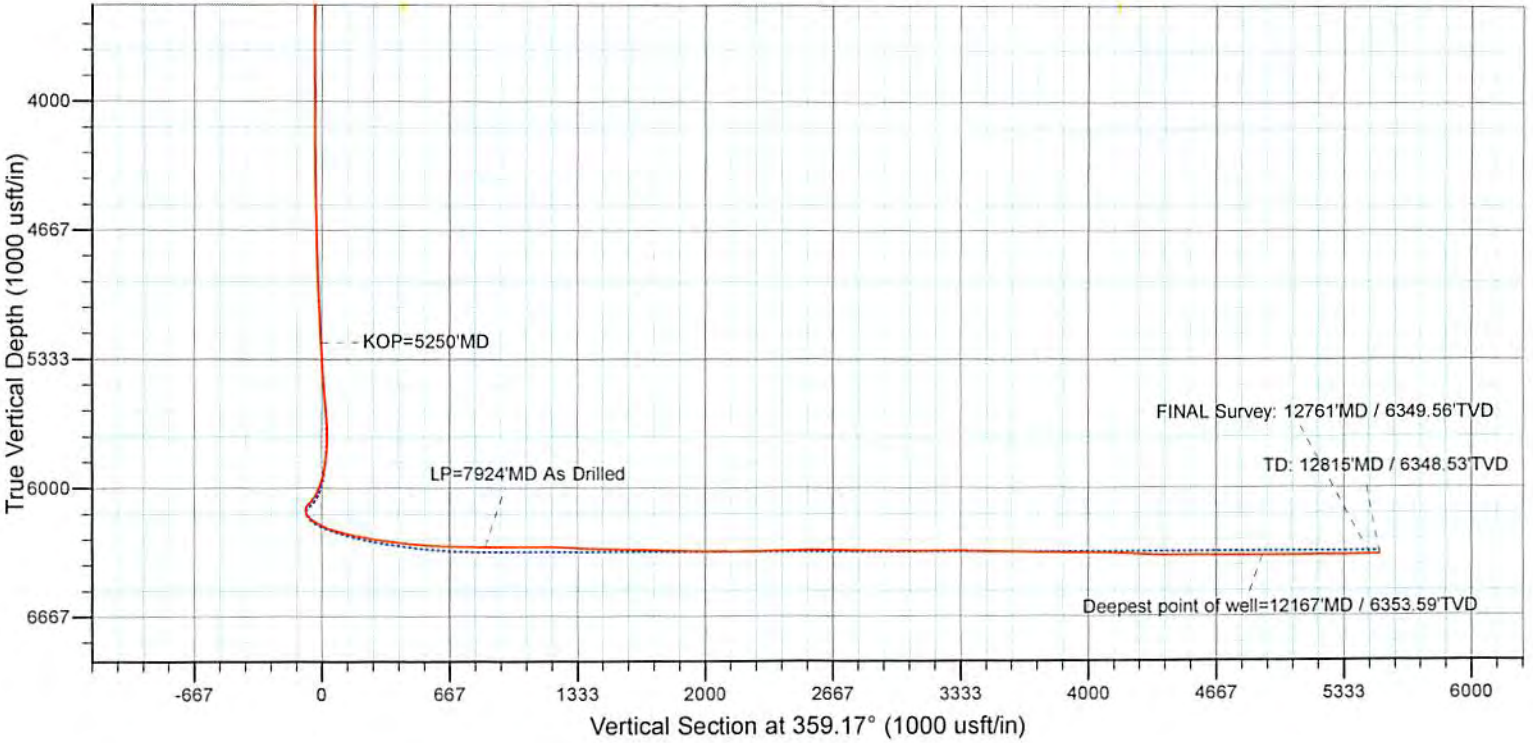


Where energy meets innovation.

Project: Ritchie County, WV
Site: PEN54
Well: Well #516206
Wellbore: Main Wellbore
Design: 591206 As Drilled Surveys



PRO DIRECTIONAL



02/16/2018

Survey Report

Company: EQT PRODUCTION	Local Co-ordinate Reference: Well Well #516206 - Slot 516206
Project: Ritchie County, WV	TVD Reference: KB@23 @ 1039.0usft
Site: PEN54	MD Reference: KB@23 @ 1039.0usft
Well: Well #516206	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
Design: 591206 As Drilled Surveys	Database: Well_Planner1

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	

Site PEN54		
Site Position:	Northing: 279,215.27 usft	Latitude: 39° 15' 28.054 N
From: Map	Easting: 1,595,775.03 usft	Longitude: 80° 55' 39.233 W
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: -0.91 "

Well Well #516206 - Slot 516206			
Well Position	+N/-S 0.0 usft	Northing: 279,106.53 usft	Latitude: 39° 15' 26.988 N
	+E/-W 0.0 usft	Easting: 1,595,825.78 usft	Longitude: 80° 55' 38.566 W
Position Uncertainty	0.0 usft	Wellhead Elevation: 0.0 usft	Ground Level: 1,016.0 usft

Wellbore Main Wellbore					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/13/2016	-7.80	66.58	52,001

Design 591206 As Drilled Surveys					
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	359.17	

Survey Program		Date 8/11/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	5,199.0	591206 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
5,250.0	12,815.0	#2 Pro MWD (Main Wellbore)	MWD - OWSG	MWD - OWSG

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
100.0	0.58	156.80	100.0	-0.5	0.2	-0.5	0.58	0.58	0.00	0.00
200.0	0.57	164.73	200.0	-1.4	0.5	-1.4	0.08	-0.01	7.93	0.00
300.0	0.54	165.64	300.0	-2.3	0.8	-2.4	0.03	-0.03	0.91	0.00
400.0	0.54	158.82	400.0	-3.2	1.1	-3.3	0.06	0.00	-6.82	0.00
500.0	0.56	144.08	500.0	-4.1	1.5	-4.1	0.14	0.02	-14.74	0.00
600.0	0.52	137.14	600.0	-4.8	2.1	-4.8	0.08	-0.04	-6.94	0.00
700.0	0.52	133.23	700.0	-5.4	2.8	-5.5	0.04	0.00	-3.91	0.00
800.0	0.46	147.40	800.0	-6.1	3.3	-6.1	0.13	-0.06	14.17	0.00
900.0	0.46	170.70	900.0	-6.8	3.6	-6.9	0.19	0.00	23.30	0.00

Survey Report

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Project: Ritchie County, WV	TVD Reference: KB@23 @ 1039.0usft
Site: PEN54	MD Reference: KB@23 @ 1039.0usft
Well: Well #516206	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
Design: 591206 As Drilled Surveys	Database: Well_Planner1

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)
1,000.0	0.53	179.67	1,000.0	-7.7	3.7	-7.7	0.10	0.07	8.97
1,100.0	0.98	187.47	1,100.0	-9.0	3.5	-9.1	0.46	0.45	7.80
1,200.0	1.10	186.24	1,199.9	-10.8	3.3	-10.9	0.12	0.12	-1.23
1,300.0	1.25	185.08	1,299.9	-12.8	3.1	-12.9	0.15	0.15	-1.16
1,400.0	1.35	182.86	1,399.9	-15.1	3.0	-15.1	0.11	0.10	-2.22
1,500.0	1.52	179.99	1,499.9	-17.6	2.9	-17.7	0.18	0.17	-2.87
1,600.0	1.68	180.38	1,599.8	-20.4	2.9	-20.4	0.16	0.16	0.39
1,700.0	1.73	180.41	1,699.8	-23.4	2.9	-23.4	0.05	0.05	0.03
1,800.0	1.42	177.06	1,799.7	-26.1	2.9	-26.2	0.32	-0.31	-3.35
1,900.0	1.31	178.75	1,899.7	-28.5	3.0	-28.5	0.12	-0.11	1.69
2,000.0	1.19	183.93	1,999.7	-30.7	3.0	-30.7	0.16	-0.12	5.18
2,100.0	0.98	185.96	2,099.7	-32.6	2.8	-32.6	0.21	-0.21	2.03
2,200.0	0.78	187.96	2,199.7	-34.1	2.6	-34.1	0.20	-0.20	2.00
2,300.0	0.63	192.59	2,299.6	-35.3	2.4	-35.3	0.16	-0.15	4.63
2,400.0	0.58	197.44	2,399.6	-36.3	2.1	-36.4	0.07	-0.05	4.85
2,500.0	0.56	205.16	2,499.6	-37.3	1.8	-37.3	0.08	-0.02	7.72
2,600.0	0.47	213.52	2,599.6	-38.0	1.4	-38.1	0.12	-0.09	8.36
2,700.0	0.44	220.96	2,699.6	-38.7	0.9	-38.7	0.07	-0.03	7.44
2,800.0	0.38	232.50	2,799.6	-39.2	0.4	-39.2	0.10	-0.06	11.54
2,900.0	0.36	235.62	2,899.6	-39.5	-0.2	-39.5	0.03	-0.02	3.12
3,000.0	0.25	251.00	2,999.6	-39.8	-0.6	-39.8	0.14	-0.11	15.38
3,100.0	0.20	245.01	3,099.6	-39.9	-1.0	-39.9	0.06	-0.05	-5.99
3,200.0	0.22	264.02	3,199.6	-40.0	-1.3	-40.0	0.07	0.02	19.01
3,300.0	0.16	271.37	3,299.6	-40.0	-1.7	-40.0	0.06	-0.06	7.35
3,400.0	0.19	290.56	3,399.6	-40.0	-2.0	-39.9	0.07	0.03	19.19
3,500.0	0.14	283.70	3,499.6	-39.9	-2.2	-39.9	0.05	-0.05	-6.86
3,600.0	0.22	323.76	3,599.6	-39.7	-2.5	-39.7	0.14	0.08	40.06
3,700.0	0.22	308.44	3,699.6	-39.4	-2.7	-39.4	0.06	0.00	-15.32
3,800.0	0.22	309.44	3,799.6	-39.2	-3.0	-39.1	0.00	0.00	1.00
3,900.0	0.19	314.49	3,899.6	-39.0	-3.3	-38.9	0.03	-0.03	5.05
4,000.0	0.24	314.29	3,999.6	-38.7	-3.6	-38.6	0.05	0.05	-0.20
4,100.0	0.32	315.81	4,099.6	-38.3	-3.9	-38.3	0.08	0.08	1.52
4,200.0	0.44	324.34	4,199.6	-37.8	-4.3	-37.8	0.13	0.12	8.53
4,300.0	0.76	327.80	4,299.6	-37.0	-4.9	-36.9	0.32	0.32	3.46
4,400.0	1.08	325.86	4,399.6	-35.6	-5.8	-35.5	0.32	0.32	-1.94
4,500.0	1.26	327.11	4,499.6	-33.9	-6.9	-33.8	0.18	0.18	1.25
4,600.0	1.50	330.43	4,599.5	-31.9	-8.2	-31.7	0.25	0.24	3.32
4,700.0	1.85	330.66	4,699.5	-29.3	-9.6	-29.2	0.35	0.35	0.23
4,800.0	2.09	331.54	4,799.4	-26.3	-11.3	-26.1	0.24	0.24	0.88
4,900.0	2.35	331.61	4,899.4	-22.9	-13.1	-22.7	0.26	0.26	0.07
5,000.0	2.64	333.11	4,999.3	-19.0	-15.1	-18.8	0.30	0.29	1.50
5,100.0	3.18	330.54	5,099.1	-14.6	-17.5	-14.3	0.56	0.54	-2.57
5,199.0	4.08	330.74	5,197.9	-9.1	-20.6	-8.8	0.91	0.91	0.20

Survey Report

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Well: Well #516206	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
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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)	
5,250.0	4.10	327.50	5,248.8	-6.0	-22.5	-5.7	0.45	0.04	-6.35	
KOP=5250'MD										
5,282.0	4.10	327.10	5,280.7	-4.1	-23.7	-3.7	0.09	0.00	-1.25	
5,313.0	3.70	342.40	5,311.7	-2.2	-24.6	-1.8	3.58	-1.29	49.35	
5,345.0	3.40	15.10	5,343.6	-0.3	-24.7	0.1	6.31	-0.94	102.19	
5,376.0	4.20	38.90	5,374.5	1.5	-23.7	1.8	5.65	2.58	76.77	
5,408.0	5.40	53.40	5,406.4	3.3	-21.8	3.6	5.30	3.75	45.31	
5,439.0	7.50	60.00	5,437.2	5.2	-18.8	5.5	7.17	6.77	21.29	
5,470.0	9.80	63.50	5,467.9	7.4	-14.7	7.6	7.61	7.42	11.29	
5,502.0	12.60	66.20	5,499.3	10.0	-9.1	10.1	8.90	8.75	8.44	
5,533.0	14.90	69.80	5,529.4	12.7	-2.3	12.8	7.91	7.42	11.61	
5,565.0	17.30	72.50	5,560.1	15.6	6.1	15.5	7.85	7.50	8.44	
5,596.0	19.70	75.60	5,589.5	18.3	15.6	18.1	8.36	7.74	10.00	
5,628.0	22.00	78.30	5,619.4	20.8	26.7	20.5	7.79	7.19	8.44	
5,659.0	24.40	80.80	5,647.9	23.0	38.7	22.5	8.37	7.74	8.06	
5,690.0	26.80	83.00	5,675.9	24.9	52.0	24.2	8.33	7.74	7.10	
5,722.0	28.80	85.40	5,704.2	26.4	66.8	25.4	7.16	6.25	7.50	
5,753.0	30.90	88.10	5,731.1	27.3	82.2	26.1	8.04	6.77	8.71	
5,785.0	33.20	91.00	5,758.2	27.4	99.2	26.0	8.65	7.19	9.06	
5,816.0	35.80	92.90	5,783.7	26.8	116.7	25.1	9.08	8.39	6.13	
5,847.0	38.20	94.80	5,808.5	25.5	135.3	23.6	8.57	7.74	6.13	
5,879.0	41.50	95.50	5,833.0	23.7	155.8	21.4	10.41	10.31	2.19	
5,911.0	44.60	96.70	5,856.4	21.4	177.5	18.8	10.02	9.69	3.75	
5,942.0	47.10	97.90	5,878.0	18.5	199.5	15.6	8.53	8.06	3.87	
5,974.0	50.70	98.80	5,899.0	15.0	223.4	11.8	11.45	11.25	2.81	
6,005.0	53.80	99.10	5,918.0	11.2	247.6	7.6	10.03	10.00	0.97	
6,036.0	56.40	98.50	5,935.8	7.3	272.7	3.4	8.54	8.39	-1.94	
6,068.0	58.50	98.60	5,953.0	3.3	299.4	-1.0	6.57	6.56	0.31	
6,099.0	60.60	98.90	5,968.7	-0.8	325.8	-5.5	6.83	6.77	0.97	
6,131.0	62.50	99.30	5,983.9	-5.2	353.6	-10.3	6.04	5.94	1.25	
6,162.0	63.30	100.70	5,998.1	-10.0	380.8	-15.5	4.78	2.58	4.52	
6,194.0	64.90	101.90	6,012.0	-15.6	409.0	-21.6	6.03	5.00	3.75	
6,225.0	66.80	102.00	6,024.7	-21.5	436.7	-27.8	6.14	6.13	0.32	
6,257.0	68.80	102.20	6,036.8	-27.7	465.6	-34.5	6.28	6.25	0.63	
6,288.0	70.90	102.30	6,047.5	-33.9	494.1	-41.0	6.78	6.77	0.32	
6,319.0	72.50	103.00	6,057.2	-40.3	522.8	-47.9	5.59	5.16	2.26	
6,351.0	74.50	103.30	6,066.3	-47.3	552.7	-55.3	6.31	6.25	0.94	
6,382.0	76.70	103.20	6,074.0	-54.2	581.9	-62.6	7.10	7.10	-0.32	
6,414.0	77.40	101.60	6,081.2	-60.9	612.3	-69.8	5.34	2.19	-5.00	
6,445.0	77.90	99.00	6,087.8	-66.3	642.1	-75.6	8.35	1.61	-8.39	
6,476.0	78.00	96.30	6,094.3	-70.3	672.2	-80.1	8.52	0.32	-8.71	
6,508.0	77.80	93.80	6,101.0	-73.1	703.3	-83.3	7.66	-0.63	-7.81	
6,539.0	77.80	91.70	6,107.5	-74.5	733.6	-85.2	6.62	0.00	-6.77	

Survey Report

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6,571.0	77.80	89.20	6,114.3	-74.8	764.9	-85.9	7.64	0.00	-7.81	
6,602.0	77.60	86.70	6,120.9	-73.7	795.1	-85.2	7.91	-0.65	-8.06	
6,634.0	77.10	83.60	6,127.9	-71.1	826.2	-83.0	9.58	-1.56	-9.69	
6,665.0	76.50	81.20	6,135.0	-67.1	856.2	-79.5	7.78	-1.94	-7.74	
6,696.0	76.60	79.20	6,142.2	-61.9	885.9	-74.8	6.28	0.32	-6.45	
6,728.0	77.40	77.10	6,149.4	-55.5	916.4	-68.8	6.87	2.50	-6.56	
6,759.0	78.10	73.60	6,156.0	-47.9	945.7	-61.6	11.26	2.26	-11.29	
6,790.0	77.10	70.60	6,162.7	-38.6	974.5	-52.7	9.99	-3.23	-9.68	
6,822.0	75.90	67.70	6,170.1	-27.5	1,003.6	-42.0	9.58	-3.75	-9.06	
6,853.0	75.80	64.90	6,177.7	-15.4	1,031.1	-30.4	8.76	-0.32	-9.03	
6,885.0	75.60	62.50	6,185.6	-1.7	1,058.9	-17.0	7.29	-0.63	-7.50	
6,916.0	75.60	59.70	6,193.3	12.8	1,085.2	-2.9	8.75	0.00	-9.03	
6,948.0	76.20	57.40	6,201.1	29.0	1,111.6	12.9	7.22	1.88	-7.19	
6,979.0	77.40	55.80	6,208.2	45.6	1,136.8	29.2	6.34	3.87	-5.16	
7,011.0	78.90	53.40	6,214.8	63.8	1,162.4	46.9	8.71	4.69	-7.50	
7,042.0	79.40	50.50	6,220.6	82.5	1,186.3	65.3	9.33	1.61	-9.35	
7,074.0	79.70	47.40	6,226.4	103.2	1,210.1	85.7	9.57	0.94	-9.69	
7,105.0	80.40	45.00	6,231.8	124.3	1,232.1	106.5	7.95	2.26	-7.74	
7,137.0	81.10	42.90	6,236.9	147.1	1,254.0	128.9	6.84	2.19	-6.56	
7,168.0	81.40	40.70	6,241.6	169.9	1,274.4	151.4	7.08	0.97	-7.10	
7,200.0	80.90	38.40	6,246.6	194.3	1,294.6	175.5	7.27	-1.56	-7.19	
7,231.0	80.30	36.40	6,251.6	218.6	1,313.1	199.5	6.65	-1.94	-6.45	
7,263.0	80.60	34.70	6,256.9	244.3	1,331.5	224.9	5.32	0.94	-5.31	
7,294.0	81.00	32.80	6,261.9	269.7	1,348.5	250.1	6.19	1.29	-6.13	
7,326.0	81.40	30.40	6,266.8	296.6	1,365.1	276.8	7.52	1.25	-7.50	
7,357.0	82.20	28.40	6,271.2	323.4	1,380.1	303.3	6.89	2.58	-6.45	
7,389.0	83.40	26.10	6,275.2	351.6	1,394.7	331.3	8.06	3.75	-7.19	
7,420.0	83.80	23.70	6,278.7	379.5	1,407.6	359.1	7.80	1.29	-7.74	
7,452.0	83.90	21.00	6,282.1	408.9	1,419.7	388.3	8.39	0.31	-8.44	
7,483.0	84.50	18.10	6,285.2	438.0	1,430.0	417.2	9.51	1.94	-9.35	
7,514.0	84.90	14.80	6,288.1	467.6	1,438.8	446.7	10.68	1.29	-10.65	
7,546.0	85.10	12.60	6,290.9	498.6	1,446.3	477.6	6.88	0.63	-6.88	
7,577.0	85.20	10.00	6,293.5	528.9	1,452.4	507.8	8.36	0.32	-8.39	
7,609.0	85.60	7.50	6,296.1	560.4	1,457.2	539.2	7.89	1.25	-7.81	
7,640.0	86.20	5.50	6,298.3	591.1	1,460.7	569.9	6.72	1.94	-6.45	
7,672.0	87.40	3.00	6,300.1	623.0	1,463.1	601.7	8.65	3.75	-7.81	
7,703.0	88.00	359.50	6,301.3	653.9	1,463.8	632.7	11.45	1.94	-11.29	
7,735.0	87.80	357.00	6,302.5	685.9	1,462.8	664.6	7.83	-0.63	-7.81	
7,766.0	87.80	354.30	6,303.7	716.8	1,460.4	695.5	8.70	0.00	-8.71	
7,798.0	88.30	351.90	6,304.8	748.5	1,456.6	727.3	7.66	1.56	-7.50	
7,829.0	88.80	349.60	6,305.6	779.1	1,451.6	758.0	7.59	1.61	-7.42	
7,924.0	89.60	342.70	6,306.9	871.3	1,428.9	850.5	7.31	0.84	-7.26	
LP=7924'MD As Drilled										
8,018.0	90.50	342.60	6,306.8	961.0	1,400.9	940.6	0.96	0.96	-0.11	

Survey Report

Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #516206 - Slot 516206
Project:	Ritchie County, WV	TVD Reference:	KB@23 @ 1039.0usft
Site:	PEN54	MD Reference:	KB@23 @ 1039.0usft
Well:	Well #516206	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	591206 As Drilled Surveys	Database:	Well_Planner1

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)	
8,113.0	90.70	341.60	6,305.8	1,051.4	1,371.7	1,031.4	1.07	0.21	-1.05	
8,207.0	89.60	341.30	6,305.6	1,140.5	1,341.8	1,121.0	1.21	-1.17	-0.32	
8,301.0	88.60	341.60	6,307.0	1,229.6	1,311.9	1,210.5	1.11	-1.06	0.32	
8,396.0	87.80	342.10	6,310.0	1,319.8	1,282.3	1,301.1	0.99	-0.84	0.53	
8,490.0	87.90	342.20	6,313.5	1,409.3	1,253.5	1,390.9	0.15	0.11	0.11	
8,584.0	87.70	341.80	6,317.2	1,498.6	1,224.5	1,480.7	0.48	-0.21	-0.43	
8,679.0	89.30	341.40	6,319.6	1,588.7	1,194.5	1,571.2	1.74	1.68	-0.42	
8,773.0	88.70	341.10	6,321.3	1,677.7	1,164.3	1,660.7	0.71	-0.64	-0.32	
8,867.0	88.60	341.20	6,323.5	1,766.6	1,133.9	1,750.0	0.15	-0.11	0.11	
8,962.0	88.60	341.90	6,325.8	1,856.7	1,103.9	1,840.5	0.74	0.00	0.74	
9,056.0	88.80	342.30	6,328.0	1,946.1	1,075.0	1,930.4	0.48	0.21	0.43	
9,150.0	89.10	341.80	6,329.7	2,035.6	1,046.0	2,020.2	0.62	0.32	-0.53	
9,245.0	90.00	341.20	6,330.4	2,125.6	1,015.9	2,110.7	1.14	0.95	-0.63	
9,339.0	89.70	337.70	6,330.7	2,213.6	982.9	2,199.2	3.74	-0.32	-3.72	
9,433.0	91.70	340.50	6,329.5	2,301.4	949.4	2,287.4	3.66	2.13	2.98	
9,527.0	91.50	342.50	6,326.9	2,390.5	919.5	2,377.0	2.14	-0.21	2.13	
9,622.0	91.90	341.90	6,324.1	2,481.0	890.5	2,467.8	0.76	0.42	-0.63	
9,715.0	89.90	342.90	6,322.6	2,569.6	862.4	2,556.8	2.40	-2.15	1.08	
9,810.0	90.60	342.50	6,322.2	2,660.3	834.2	2,647.9	0.85	0.74	-0.42	
9,904.0	88.10	343.20	6,323.3	2,750.1	806.4	2,738.1	2.76	-2.66	0.74	
9,998.0	88.50	343.40	6,326.1	2,840.1	779.4	2,828.5	0.48	0.43	0.21	
10,092.0	89.30	343.10	6,327.9	2,930.1	752.4	2,918.9	0.91	0.85	-0.32	
10,186.0	90.00	342.40	6,328.4	3,019.8	724.5	3,009.0	1.05	0.74	-0.74	
10,281.0	90.70	341.30	6,327.9	3,110.1	694.9	3,099.7	1.37	0.74	-1.16	
10,375.0	89.70	343.00	6,327.5	3,199.6	666.1	3,189.6	2.10	-1.06	1.81	
10,470.0	89.90	342.00	6,327.9	3,290.2	637.5	3,280.6	1.07	0.21	-1.05	
10,564.0	89.10	343.40	6,328.7	3,379.9	609.6	3,370.7	1.72	-0.85	1.49	
10,658.0	89.30	343.20	6,330.0	3,470.0	582.5	3,461.2	0.30	0.21	-0.21	
10,753.0	88.10	344.40	6,332.1	3,561.2	556.1	3,552.7	1.79	-1.26	1.26	
10,847.0	88.50	343.90	6,334.9	3,651.5	530.4	3,643.5	0.68	0.43	-0.53	
10,941.0	90.20	347.00	6,336.0	3,742.5	506.8	3,734.8	3.76	1.81	3.30	
11,035.0	88.70	343.10	6,336.9	3,833.3	482.5	3,825.9	4.44	-1.60	-4.15	
11,129.0	90.30	341.20	6,337.7	3,922.8	453.7	3,915.8	2.64	1.70	-2.02	
11,224.0	89.40	341.80	6,338.0	4,012.9	423.6	4,006.3	1.14	-0.95	0.63	
11,318.0	88.00	339.80	6,340.1	4,101.6	392.7	4,095.5	2.60	-1.49	-2.13	
11,412.0	88.20	339.30	6,343.2	4,189.6	359.9	4,184.0	0.57	0.21	-0.53	
11,507.0	86.90	341.00	6,347.3	4,278.9	327.6	4,273.7	2.25	-1.37	1.79	
11,601.0	88.70	342.00	6,350.9	4,368.0	297.8	4,363.2	2.19	1.91	1.06	
11,695.0	89.80	343.10	6,352.1	4,457.6	269.6	4,453.3	1.65	1.17	1.17	
11,790.0	91.00	343.40	6,351.5	4,548.6	242.3	4,544.6	1.30	1.26	0.32	
11,884.0	89.10	342.60	6,351.4	4,638.5	214.8	4,634.9	2.19	-2.02	-0.85	
11,978.0	89.30	341.90	6,352.7	4,728.0	186.1	4,724.8	0.77	0.21	-0.74	
12,072.0	89.60	341.00	6,353.6	4,817.1	156.2	4,814.3	1.01	0.32	-0.96	

Survey Report

Company: EQT PRODUCTION	Local Co-ordinate Reference: Well Well #516206 - Slot 516206
Project: Ritchie County, WV	TVD Reference: KB@23 @ 1039.0usft
Site: PEN54	MD Reference: KB@23 @ 1039.0usft
Well: Well #516206	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
Design: 591206 As Drilled Surveys	Database: Well_Planner1

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)
12,167.0	90.40	340.30	6,353.6	4,906.7	124.7	4,904.4	1.12	0.84	-0.74
Deepest point of well=12167'MD / 6353.59'TVD									
12,261.0	90.60	339.90	6,352.8	4,995.1	92.8	4,993.3	0.48	0.21	-0.43
12,356.0	89.80	340.80	6,352.4	5,084.6	60.8	5,083.2	1.27	-0.84	0.95
12,450.0	90.10	342.00	6,352.5	5,173.7	30.8	5,172.7	1.32	0.32	1.28
12,545.0	90.70	341.10	6,351.9	5,263.8	0.8	5,263.2	1.14	0.63	-0.95
12,639.0	90.30	340.70	6,351.0	5,352.6	-30.0	5,352.5	0.60	-0.43	-0.43
12,733.0	90.90	340.00	6,350.1	5,441.1	-61.6	5,441.5	0.98	0.64	-0.74
12,761.0	91.10	339.90	6,349.6	5,467.4	-71.2	5,467.9	0.80	0.71	-0.36
FINAL Survey: 12761'MD / 6349.56'TVD									
12,815.0	91.10	339.90	6,348.5	5,518.1	-89.8	5,518.9	0.00	0.00	0.00
TD: 12815'MD / 6348.53'TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TD=12815'MD	0.00	360.00	0.0	5,518.1	-89.8	284,624.66	1,595,736.02	39° 16' 21.509 N	80° 55' 40.822 W
- actual wellpath misses target center by 5518.9usft at 0.0usft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Point									
LP=7924'MD As Drilled	0.00	360.00	0.0	871.3	1,428.9	279,977.80	1,597,254.68	39° 15' 35.823 N	80° 55' 20.578 W
- actual wellpath misses target center by 1673.6usft at 0.0usft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Point									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
5,250.0	5,248.8	-6.0	-22.5	KOP=5250'MD	
7,924.0	6,306.9	871.3	1,428.9	LP=7924'MD As Drilled	
12,167.0	6,353.6	4,906.7	124.7	Deepest point of well=12167'MD / 6353.59'TVD	
12,761.0	6,349.6	5,467.4	-71.2	FINAL Survey: 12761'MD / 6349.56'TVD	
12,815.0	6,348.5	5,518.1	-89.8	TD: 12815'MD / 6348.53'TVD	

Checked By: _____	Approved By: _____	Date: _____
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