



Where energy meets innovation.

EQT PRODUCTION

Ritchie County, WV

PEN54

Well #514474 - Slot 514474

Main Wellbore

Design: 514474 As Drilled Surveys

Standard Survey Report

10 August, 2016

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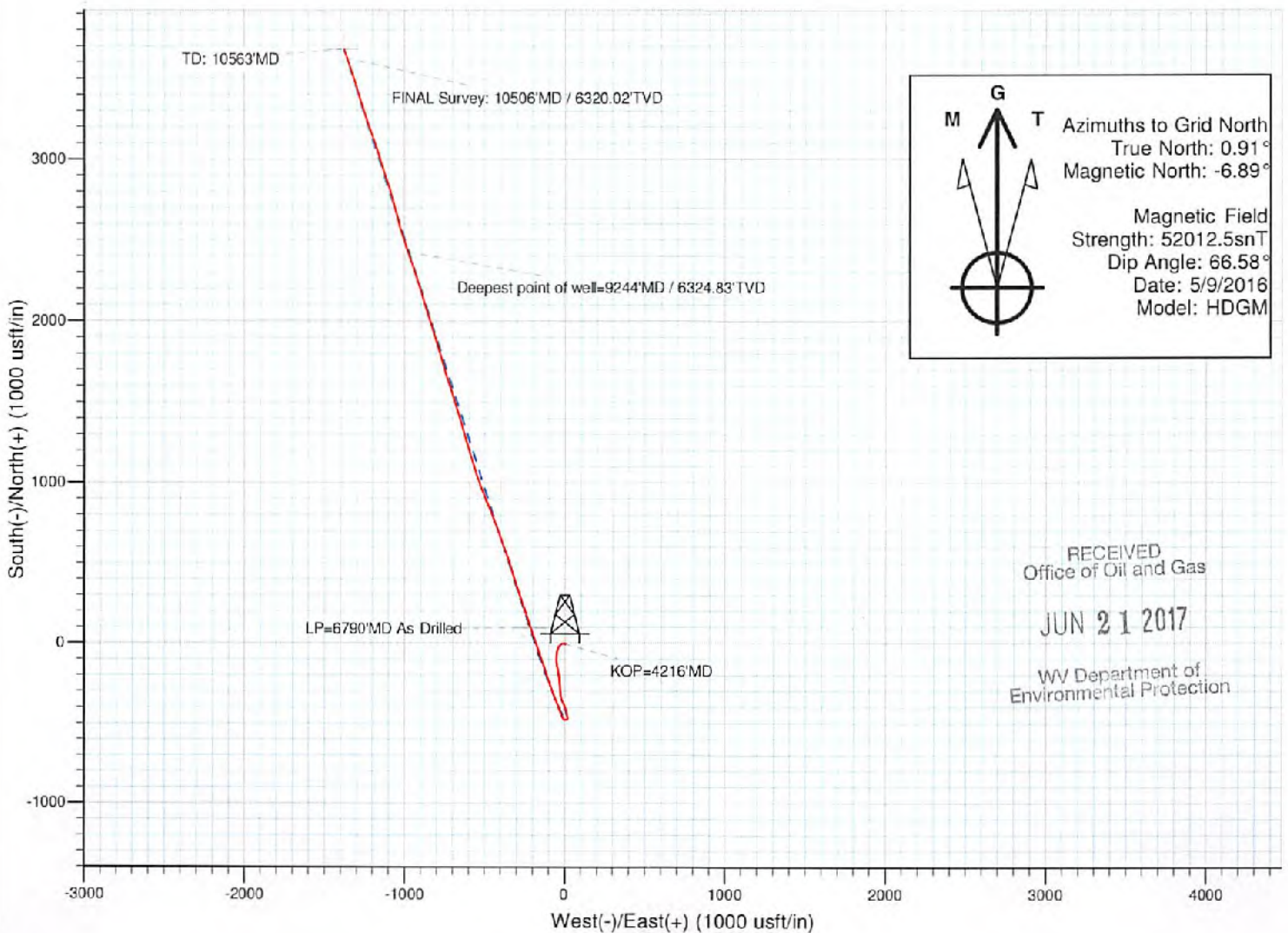
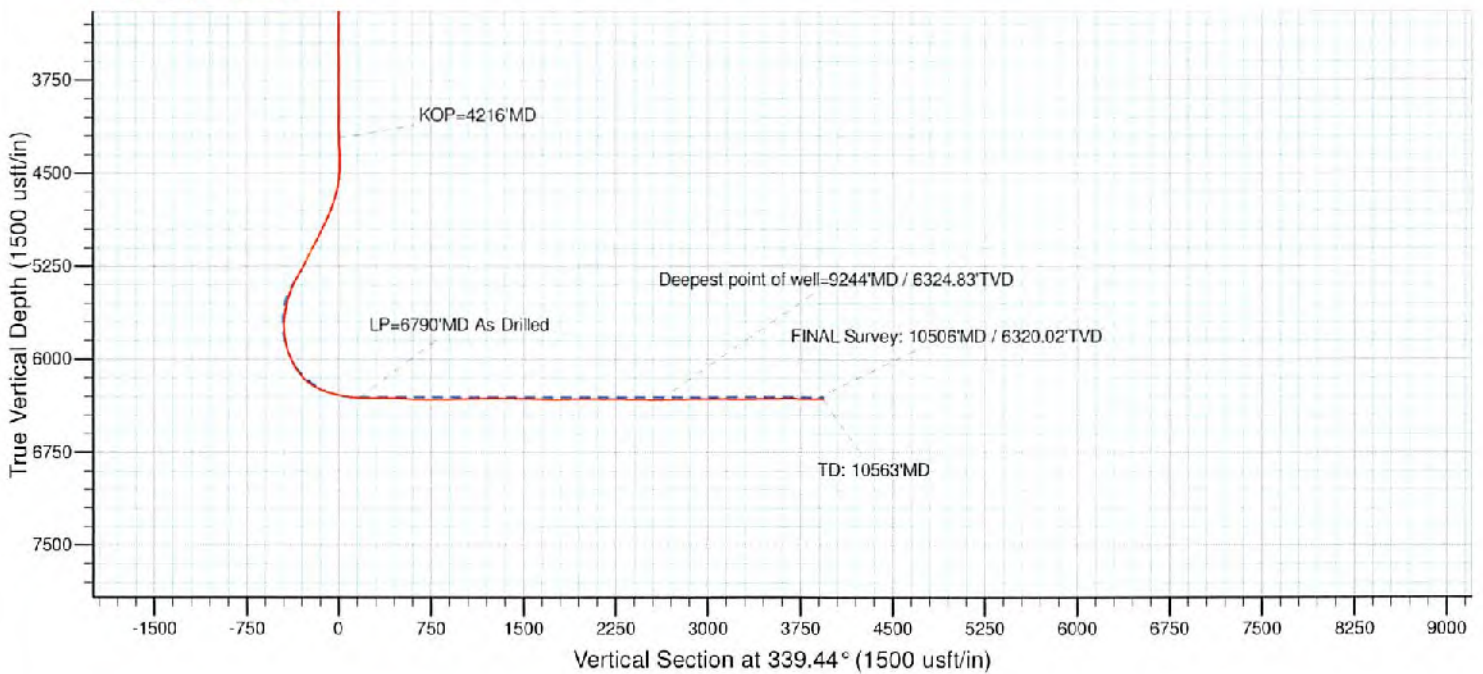


09/15/2017



Where energy meets innovation.

Project: Ritchie County, WV
Site: PEN54
Well: Well #514474
Wellbore: Main Wellbore
Design: 514474 As Drilled Surveys
Elevation: KB@23 @ 1039.00usft



Azimuths to Grid North
 True North: 0.91°
 Magnetic North: -6.89°

Magnetic Field
 Strength: 52012.5snT
 Dip Angle: 66.58°
 Date: 5/9/2016
 Model: HDGM

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Environmental Protection

09/15/2017



Professional Directional
Survey Report



Company: EQT PRODUCTION	Local Co-ordinate Reference: Well Well #514474 - Slot 514474
Project: Ritchie County, WV	TVD Reference: KB@23 @ 1039.00usft
Site: PEN54	MD Reference: KB@23 @ 1039.00usft
Well: Well #514474	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
Design: 514474 As Drilled Surveys	Database: Well_Planner1

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Project Ritchie County, WV	JUN 21 2017	
Map System: US State Plane 1927 (Exact solution)	System Datum: Mean Sea Level	WV Department of Environmental Protection
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: 0.00 usft	Slot Radius: 13-3/16 " Grid Convergence: -0.91 °

Well Well #514474 - Slot 514474	
Well Position +N/-S 0.00 usft	Northing: 279,215.27 usft Latitude: 39° 15' 28.054 N
+E/-W 0.00 usft	Easting: 1,595,775.03 usft Longitude: 80° 55' 39.233 W
Position Uncertainty 0.00 usft	Wellhead Elevation: 0.00 usft Ground Level: 1,016.00 usft

Wellbore Main Wellbore					
Magnetics	Model Name HDGM	Sample Date 5/9/2016	Declination (°) -7.80	Dip Angle (°) 66.58	Field Strength (nT) 52,013

Design 514474 As Drilled Surveys				
Audit Notes:				
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.00		
Vertical Section:	Depth From (TVD) (usft) 0.00	+N/-S (usft) 0.00	+E/-W (usft) 0.00	Direction (°) 339.44

Survey Program		Date 8/10/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	4,156.00	Gyrodata Gyro Surveys (1) (Main Wellbore)	Gyrodata_DP_MS	Gyrodata gyro-compassing and drop
4,217.00	5,223.00	Pro D MWD (2) (Main Wellbore)	MWD - OWSG	MWD - OWSG
5,281.00	10,563.00	Pro D MWD (3) (Main Wellbore)	MWD - OWSG	MWD - OWSG

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.08	232.63	100.00	-0.04	-0.05	-0.02	0.06	0.08	0.00
200.00	0.18	131.09	200.00	-0.19	0.01	-0.16	0.21	0.10	-101.54
300.00	0.28	115.83	300.00	-0.40	0.35	-0.49	0.12	0.10	-15.26
400.00	0.31	116.19	400.00	-0.62	0.81	-0.67	0.03	0.03	0.36
500.00	0.30	111.97	500.00	-0.84	1.29	-1.24	0.02	-0.01	-4.22
600.00	0.37	143.38	599.99	-1.20	1.73	-1.73	0.19	0.07	31.41
700.00	0.41	158.85	699.99	-1.79	2.05	-2.40	0.11	0.04	15.47
800.00	0.35	161.61	799.99	-2.41	2.28	-3.05	0.05	-0.06	2.76



Professional Directional Survey Report



Company: EQT PRODUCTION
Project: Ritchie County, WV
Site: PEN54
Well: Well #514474
Wellbore: Main Wellbore
Design: 514474 As Drilled Surveys

Local Co-ordinate Reference: Well Well #514474 - Slot 514474
TVD Reference: KB@23 @ 1039.00usft
MD Reference: KB@23 @ 1039.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

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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)	
900.00	0.18	203.62	699.99	-2.85	2.31	-3.48	0.25	-0.17	42.01	
1,000.00	0.28	270.65	999.99	-2.99	2.00	-3.50	0.27	0.10	67.03	
1,100.00	0.53	292.04	1,099.99	-2.81	1.33	-3.10	0.29	0.25	21.39	
1,200.00	0.52	296.77	1,199.98	-2.43	0.50	-2.45	0.04	-0.01	4.73	
1,300.00	0.47	300.54	1,299.98	-2.02	-0.26	-1.80	0.06	-0.05	3.77	
1,400.00	0.43	298.82	1,399.97	-1.63	-0.94	-1.20	0.04	-0.04	-1.72	
1,500.00	0.34	313.87	1,499.97	-1.25	-1.49	-0.64	0.13	-0.09	15.05	
1,600.00	0.17	258.51	1,599.97	-1.07	-1.85	-0.35	0.28	-0.17	-55.36	
1,700.00	0.11	161.62	1,699.97	-1.19	-1.95	-0.43	0.21	-0.05	-95.89	
1,800.00	0.35	122.65	1,799.97	-1.45	-1.67	-0.77	0.27	0.24	-38.97	
1,900.00	0.38	135.66	1,899.97	-1.85	-1.19	-1.31	0.09	0.03	13.01	
2,000.00	0.37	126.75	1,999.97	-2.28	-0.69	-1.89	0.06	-0.01	-8.91	
2,100.00	0.27	108.66	2,099.97	-2.55	-0.21	-2.31	0.14	-0.10	-18.09	
2,200.00	0.36	101.89	2,199.96	-2.69	0.32	-2.63	0.10	0.09	-6.77	
2,300.00	0.27	103.96	2,299.96	-2.81	0.65	-2.93	0.09	-0.09	2.07	
2,400.00	0.30	91.29	2,399.96	-2.87	1.34	-3.16	0.07	0.03	-12.67	
2,500.00	0.32	114.39	2,499.96	-2.99	1.85	-3.46	0.13	0.02	23.10	
2,600.00	0.16	125.15	2,599.96	-3.19	2.23	-3.77	0.17	-0.16	10.76	
2,700.00	0.14	171.97	2,699.96	-3.39	2.36	-4.00	0.12	-0.02	46.82	
2,800.00	0.18	221.99	2,799.96	-3.63	2.27	-4.19	0.14	0.04	50.02	
2,900.00	0.18	210.21	2,899.96	-3.88	2.09	-4.37	0.04	0.00	-11.78	
3,000.00	0.20	205.41	2,999.96	-4.17	1.93	-4.59	0.03	0.02	-4.80	
3,100.00	0.16	202.68	3,099.96	-4.46	1.81	-4.81	0.04	-0.04	-2.73	
3,200.00	0.15	192.45	3,199.96	-4.72	1.72	-5.02	0.03	-0.01	-10.23	
3,300.00	0.17	201.49	3,299.96	-4.98	1.64	-5.24	0.03	0.02	9.04	
3,400.00	0.18	190.33	3,399.96	-5.28	1.56	-5.49	0.04	0.01	-11.16	
3,500.00	0.15	202.64	3,499.95	-5.55	1.48	-5.72	0.05	-0.03	12.31	
3,600.00	0.15	208.45	3,599.95	-5.79	1.37	-5.90	0.02	0.00	5.81	
3,700.00	0.17	206.54	3,699.95	-6.03	1.24	-6.09	0.02	0.02	-1.91	
3,800.00	0.18	190.96	3,799.95	-6.32	1.14	-6.32	0.05	0.01	-15.58	
3,900.00	0.05	76.44	3,899.95	-6.47	1.15	-6.46	0.21	-0.13	-114.52	
4,000.00	0.31	7.88	3,999.95	-6.19	1.23	-6.23	0.30	0.26	-68.56	
4,100.00	0.70	352.56	4,099.95	-5.31	1.19	-5.39	0.41	0.39	-15.32	
4,156.00	1.03	355.26	4,155.94	-4.47	1.11	-4.58	0.59	0.59	4.82	
4,216.00	1.66	315.03	4,215.93	-3.32	0.45	-3.27	1.82	1.04	-67.05	
KOP=4216'MD										
4,217.00	1.67	314.65	4,216.93	-3.30	0.43	-3.24	1.82	1.45	-38.04	
4,248.00	2.67	296.98	4,247.90	-2.66	-0.54	-2.30	3.84	3.23	-57.00	
4,280.00	3.98	289.66	4,279.85	-1.94	-2.25	-1.03	4.30	4.09	-22.88	
4,311.00	5.14	282.44	4,310.75	-1.28	-4.62	0.42	4.17	3.74	-23.29	
4,342.00	6.19	271.70	4,341.60	-0.94	-7.64	1.81	4.80	3.39	-34.65	
4,374.00	7.19	259.76	4,373.36	-1.24	-11.34	2.82	5.34	3.13	-37.31	
4,405.00	8.11	249.96	4,404.11	-2.33	-15.30	3.19	5.14	2.97	-31.61	

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Professional Directional
Survey Report



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Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #514474 - Slot 514474
Project:	Ritchie County, WV	TVD Reference:	KB@23 @ 1039.00usft
Site:	PEN54	MD Reference:	KB@23 @ 1039.00usft
Well:	Well #514474	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	514474 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)
4,437.00	9.37	241.77	4,435.74	-4.34	-19.72	2.86	5.52	3.94	-25.59
4,469.00	10.34	234.41	4,467.27	-7.24	-24.35	1.77	4.96	3.03	-23.00
4,500.00	11.09	227.23	4,497.73	-10.89	-28.80	-0.08	4.93	2.42	-23.16
4,532.00	12.14	220.18	4,529.07	-15.55	-33.23	-2.89	5.51	3.28	-22.03
4,563.00	13.04	212.74	4,559.33	-20.98	-37.22	-6.57	5.98	2.90	-24.00
4,595.00	13.71	205.28	4,590.46	-27.45	-40.80	-11.37	5.78	2.09	-23.31
4,626.00	14.90	198.61	4,620.50	-34.55	-43.64	-17.02	6.55	3.84	-21.52
4,658.00	16.03	193.02	4,651.35	-42.75	-45.95	-23.89	5.84	3.53	-17.47
4,689.00	17.21	188.59	4,681.05	-51.46	-47.60	-31.46	5.58	3.81	-14.29
4,721.00	18.65	185.96	4,711.50	-61.23	-48.83	-40.18	5.16	4.50	-8.22
4,752.00	19.64	184.72	4,740.78	-71.35	-49.78	-49.32	3.45	3.19	-4.00
4,783.00	21.06	183.04	4,769.85	-82.10	-50.50	-59.14	4.95	4.58	-5.42
4,815.00	22.84	181.45	4,799.53	-94.06	-50.96	-70.16	5.88	5.56	-4.97
4,846.00	24.27	178.78	4,827.94	-106.44	-50.98	-81.75	5.75	4.61	-8.61
4,878.00	25.50	175.64	4,856.97	-119.88	-50.32	-94.58	5.64	3.84	-9.81
4,909.00	26.53	172.20	4,884.83	-133.40	-48.87	-107.74	5.89	3.32	-11.10
4,941.00	27.39	169.29	4,913.36	-147.71	-46.53	-121.98	4.92	2.69	-9.09
4,972.00	27.56	169.33	4,940.86	-161.77	-43.88	-136.05	0.55	0.55	0.13
5,003.00	27.58	170.12	4,968.34	-175.88	-41.32	-150.17	1.18	0.06	2.55
5,035.00	27.72	171.10	4,996.69	-190.54	-38.90	-164.74	1.49	0.44	3.06
5,066.00	27.47	171.92	5,024.16	-204.74	-36.78	-178.78	1.47	-0.81	2.65
5,098.00	28.03	172.91	5,052.48	-219.51	-34.81	-193.30	2.27	1.75	3.09
5,129.00	28.04	173.63	5,079.84	-233.98	-33.10	-207.44	1.09	0.03	2.32
5,160.00	27.82	174.45	5,107.23	-248.42	-31.60	-221.49	1.43	-0.71	2.65
5,192.00	27.55	175.11	5,135.57	-263.22	-30.24	-235.83	1.28	-0.84	2.06
5,223.00	27.33	175.80	5,163.08	-277.46	-29.11	-249.56	1.25	-0.71	2.23
5,281.00	27.40	177.60	5,214.59	-304.08	-27.58	-275.02	1.43	0.12	3.10
5,313.00	27.80	177.10	5,242.95	-318.89	-26.89	-289.13	1.44	1.25	-1.56
5,344.00	28.80	189.50	5,270.25	-333.45	-25.16	-303.37	12.05	3.23	-24.52
5,376.00	30.80	180.10	5,298.06	-348.70	-20.98	-319.11	15.59	5.63	-29.38
5,407.00	32.40	154.80	5,324.50	-363.64	-14.76	-335.29	10.65	5.81	-17.10
5,439.00	30.00	155.20	5,351.87	-378.66	-7.75	-351.81	7.53	-7.50	1.25
5,470.00	26.10	156.90	5,379.22	-391.97	-1.82	-366.36	12.84	-12.58	5.48
5,502.00	23.30	180.40	5,408.29	-404.41	3.06	-379.72	9.87	-8.75	10.94
5,533.00	19.80	185.60	5,437.12	-415.28	6.42	-391.08	12.85	-11.29	16.77
5,564.00	18.80	164.80	5,466.38	-425.18	9.04	-401.27	3.34	-3.23	-2.58
5,596.00	16.90	169.10	5,496.84	-434.73	11.27	-410.99	7.22	-5.94	13.44
5,627.00	14.20	172.30	5,528.70	-442.92	12.63	-419.14	9.14	-8.71	10.32
5,659.00	13.30	170.00	5,557.79	-450.44	13.80	-426.59	3.29	-2.81	-7.19
5,690.00	13.10	168.90	5,587.97	-457.40	15.09	-433.56	1.04	-0.65	-3.55
5,722.00	10.60	173.60	5,619.28	-463.88	16.12	-439.99	8.37	-7.81	14.69
5,753.00	6.20	186.30	5,649.87	-468.91	16.20	-444.73	10.19	-7.74	40.97
5,784.00	6.90	206.10	5,680.61	-472.78	15.13	-447.98	9.32	-4.19	63.87
5,816.00	6.60	233.40	5,712.39	-475.61	12.81	-449.91	9.98	-0.94	85.31



Professional Directional Survey Report



Company: EQT PRODUCTION	Local Co-ordinate Reference: Well Well #514474 - Slot 514474
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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)
5,847.00	7.80	255.60	5,743.15	-477.19	9.34	-450.07	9.70	3.87	71.61
5,879.00	9.10	273.50	5,774.81	-477.58	4.71	-448.81	9.12	4.06	55.94
5,910.00	10.50	291.10	5,805.36	-478.41	-0.37	-445.93	10.61	4.52	56.77
5,942.00	11.70	305.20	5,836.77	-473.49	-5.74	-441.31	9.24	3.75	44.06
5,973.00	12.90	321.70	5,867.07	-468.96	-10.46	-435.41	11.93	3.87	53.23
6,005.00	14.90	334.30	5,898.14	-462.45	-14.46	-427.91	11.30	6.25	39.38
6,036.00	17.30	339.10	5,927.92	-454.55	-17.83	-419.33	8.85	7.74	15.48
6,068.00	20.40	338.40	5,958.20	-444.92	-21.58	-408.99	9.71	9.69	-2.19
6,099.00	23.50	338.70	5,986.95	-434.13	-25.82	-397.41	10.01	10.00	0.97
6,130.00	26.10	339.70	6,015.09	-421.98	-30.43	-384.41	8.50	8.39	3.23
6,162.00	29.40	339.30	6,043.40	-408.02	-35.65	-369.51	10.33	10.31	-1.25
6,194.00	32.30	338.90	6,070.87	-392.70	-41.50	-353.10	9.09	9.06	-1.25
6,225.00	35.30	338.90	6,096.63	-376.61	-47.71	-335.86	9.68	9.68	0.00
6,256.00	38.50	338.50	6,121.42	-359.27	-54.47	-317.25	10.35	10.32	-1.29
6,288.00	42.90	338.60	6,145.67	-339.85	-62.10	-296.39	13.75	13.75	0.31
6,319.00	47.20	339.10	6,167.57	-319.40	-70.01	-274.46	13.92	13.87	1.61
6,351.00	51.70	339.80	6,188.37	-296.63	-78.54	-250.15	14.16	14.06	2.19
6,382.00	56.70	340.30	6,206.49	-273.00	-87.11	-225.02	16.18	16.13	1.61
6,413.00	60.60	340.90	6,222.62	-248.04	-95.90	-198.55	12.69	12.58	1.94
6,445.00	64.50	341.50	6,237.37	-221.18	-105.05	-170.17	12.30	12.19	1.83
6,476.00	68.00	341.60	6,249.85	-194.25	-114.03	-141.82	11.29	11.29	0.32
6,508.00	71.00	341.40	6,261.06	-165.83	-123.54	-111.87	9.39	9.38	-0.63
6,539.00	73.90	341.30	6,270.40	-137.82	-132.99	-82.34	9.36	9.35	-0.32
6,571.00	76.10	341.10	6,278.69	-108.57	-142.95	-51.44	6.90	6.88	-0.63
6,602.00	78.90	341.30	6,285.39	-79.92	-152.70	-21.19	9.05	9.03	0.65
6,633.00	80.00	341.60	6,291.07	-51.03	-162.40	9.26	3.67	3.55	0.97
6,665.00	80.60	341.60	6,296.46	-21.10	-172.35	40.78	1.88	1.88	0.00
6,696.00	81.30	341.60	6,301.34	7.95	-182.02	71.37	2.26	2.26	0.00
6,727.00	82.70	341.30	6,305.65	37.06	-191.78	102.05	4.62	4.52	-0.97
6,759.00	84.90	341.20	6,309.11	67.18	-202.01	133.85	6.88	6.88	-0.31
6,790.00	87.30	341.30	6,311.22	96.46	-211.95	164.76	7.75	7.74	0.32
LP=6790'MD As Drilled									
6,885.00	91.70	341.60	6,312.04	186.50	-242.16	259.67	4.64	4.63	0.32
6,979.00	88.90	341.40	6,311.55	275.63	-271.99	353.60	2.99	-2.96	-0.21
7,073.00	89.10	342.30	6,313.19	364.94	-301.26	447.50	0.98	0.21	0.96
7,168.00	85.10	342.00	6,318.00	455.23	-330.34	542.25	4.22	-4.21	-0.32
7,263.00	89.10	341.60	6,322.80	545.35	-359.97	637.03	4.23	4.21	-0.42
7,357.00	90.10	341.00	6,323.46	634.38	-390.10	730.98	1.24	1.06	-0.64
7,451.00	90.50	339.60	6,322.97	722.88	-421.79	824.97	1.55	0.43	-1.49
7,546.00	91.20	338.50	6,321.56	811.58	-455.75	919.95	1.37	0.74	-1.16
7,640.00	91.00	335.90	6,319.75	898.54	-491.41	1,013.89	1.72	-0.21	-1.70
7,735.00	91.30	338.70	6,317.65	986.47	-527.30	1,108.82	1.92	0.32	1.89
7,829.00	90.90	342.20	6,316.04	1,075.02	-558.75	1,202.78	3.75	-0.43	3.72



Professional Directional Survey Report



Company: EQT PRODUCTION	Local Co-ordinate Reference: Well Well #514474 - Slot 514474
Project: Ritchie County, WV	TVD Reference: KB@23 @ 1039.00usft
Site: PEN54	MD Reference: KB@23 @ 1039.00usft
Well: Well #514474	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
Design: 514474 As Drilled Surveys	Database: Well_Planner1

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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)
7,924.00	89.60	342.90	6,315.63	1,165.65	-587.23	1,297.63	1.55	-1.37	0.74
8,018.00	89.40	344.00	6,316.45	1,255.75	-614.01	1,391.40	1.19	-0.21	1.17
8,113.00	88.30	343.40	6,318.35	1,348.91	-640.66	1,486.12	1.32	-1.16	-0.63
8,207.00	88.80	343.20	6,320.73	1,436.92	-667.67	1,579.67	0.57	0.53	-0.21
8,301.00	89.40	342.70	6,322.21	1,528.77	-695.22	1,673.68	0.83	0.64	-0.53
8,395.00	90.20	341.40	6,322.54	1,616.19	-724.19	1,767.58	1.62	0.85	-1.38
8,490.00	90.20	343.60	6,322.21	1,706.79	-752.76	1,862.44	2.32	0.00	2.32
8,584.00	90.80	343.30	6,321.39	1,796.89	-779.53	1,956.21	0.71	0.64	-0.32
8,679.00	89.50	343.30	6,321.14	1,887.86	-806.83	2,050.99	1.37	-1.37	0.00
8,773.00	90.00	342.10	6,321.55	1,977.63	-834.78	2,144.83	1.38	0.53	-1.28
8,867.00	90.50	342.50	6,321.14	2,067.18	-863.36	2,238.71	0.68	0.53	0.43
8,962.00	88.80	343.10	6,321.72	2,157.92	-891.45	2,333.54	1.90	-1.79	0.63
9,056.00	89.10	342.70	6,323.44	2,247.75	-919.09	2,427.36	0.53	0.32	-0.43
9,150.00	89.50	341.50	6,324.59	2,337.19	-947.98	2,521.25	1.35	0.43	-1.28
9,244.00	90.20	340.00	6,324.83	2,425.93	-978.97	2,615.22	1.75	0.74	-1.60
Deepest point of well=9244'MD / 6324.83'TVD									
9,338.00	90.80	341.80	6,324.01	2,514.78	-1,009.65	2,709.18	2.12	0.64	2.02
9,433.00	91.30	344.90	6,322.27	2,605.79	-1,036.78	2,803.92	3.20	0.53	3.16
9,527.00	91.10	345.50	6,320.30	2,696.65	-1,060.79	2,897.43	0.67	-0.21	0.64
9,621.00	89.40	344.40	6,319.89	2,787.42	-1,085.19	2,990.99	2.15	-1.81	-1.17
9,715.00	89.40	340.50	6,320.88	2,877.03	-1,113.53	3,084.83	4.15	0.00	-4.15
9,809.00	89.10	342.70	6,322.11	2,966.21	-1,143.20	3,178.75	2.36	-0.32	2.34
9,904.00	89.00	342.00	6,323.68	3,056.72	-1,172.00	3,273.62	0.74	-0.11	-0.74
9,998.00	92.00	340.70	6,322.86	3,145.77	-1,202.05	3,367.55	3.48	3.19	-1.38
10,092.00	90.90	341.60	6,320.49	3,234.70	-1,232.41	3,461.47	1.51	-1.17	0.96
10,186.00	91.30	341.40	6,318.68	3,323.83	-1,262.23	3,555.40	0.48	0.43	-0.21
10,281.00	89.80	342.60	6,317.77	3,414.17	-1,291.59	3,650.29	2.02	-1.58	1.26
10,375.00	89.00	341.10	6,318.75	3,503.48	-1,320.86	3,744.20	1.81	-0.85	-1.60
10,469.00	89.50	340.80	6,319.98	3,592.33	-1,351.54	3,838.15	0.62	0.53	-0.32
10,506.00	90.40	341.10	6,320.02	3,627.30	-1,383.62	3,875.14	2.56	2.43	0.81
FINAL Survey: 10506'MD / 6320.02'TVD									
10,563.00	90.40	341.10	6,319.62	3,681.22	-1,382.06	3,932.12	0.00	0.00	0.00
TD: 10563'MD									

Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #514474 - Slot 514474
Project:	Ritchie County, WV	TVD Reference:	KB@23 @ 1039.00usft
Site:	PEN54	MD Reference:	KB@23 @ 1039.00usft
Well:	Well #514474	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	514474 As Drilled Surveys	Database:	Well_Planner1

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
LP=6790'MD As Drilled	0.00	360.00	0.00	96.46	-211.95	279,311.73	1,595,563.08	39° 15' 28.975 N	80° 55' 41.947 W
- actual wellpath misses target center by 232.87usft at 0.08usft MD (0.08 TVD, 0.00 N, 0.00 E)									
- Point									
TD: 10563'MD	0.00	360.00	0.00	3,681.23	-1,382.08	282,896.49	1,594,392.94	39° 16' 4.218 N	80° 55' 57.548 W
- actual wellpath misses target center by 3932.12usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
4,216.00	4,215.93	-3.32	0.45	KOP=4216'MD
6,790.00	6,311.22	96.46	-211.95	LP=6790'MD As Drilled
9,244.00	6,324.83	2,425.93	-978.97	Deepest point of well=9244'MD / 6324.83'TVD
10,506.00	6,320.02	3,627.30	-1,383.62	FINAL Survey: 10506'MD / 6320.02'TVD
10,563.00	6,319.62	3,681.22	-1,382.08	TD: 10563'MD

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