



Where energy meets innovation.

EQT PRODUCTION

Marion County, WV

GLO76 Pad

Well #515525 - Marcellus

API #47-04902334

Main Wellbore

Design: 515525 As Drilled Surveys

Standard Survey Report

27 November, 2015



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WV Department of
Environmental Protection

10/28/2016



Where energy meets innovation.

Professional Directional Survey Report



Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #515525 - Marcellus
Project:	Marion County, WV	TVD Reference:	GL 1424 + 23' KB @ 1447 00usft
Site:	GLO76 Pad	MD Reference:	GL 1424 + 23' KB @ 1447 00usft
Well:	Well #515525 - Marcellus	North Reference:	Gnd
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	515525 As Drilled Surveys	Database:	Well_Planner1

Project	Marion 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	GLO76 Pad				
Site Position:	Northing:	389,060.60 usft	Latitude:	39° 33' 50.33 N	
From:	Map	Easting:	1,721,015.30 usft	Longitude:	80° 29' 22.49 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	-0.63 °

Well	Well #515525 - Marcellus					
Well Position	+N/-S	0.00 usft	Northing:	389,078.60 usft	Latitude:	39° 33' 50.50 N
	+E/-W	0.00 usft	Easting:	1,720,927.10 usft	Longitude:	80° 29' 23.62 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	1,447.00 usft	Ground Level:	1,424.00 usft	

Wellbore	Main Wellbore				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	HDGM	11/19/2015	(°)	(°)	(nT)
			-8.65	67.03	52,520

Design	515525 As Drilled Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	170.11	

Survey Program	Date	11/27/2015			
From	To	Survey (Wellbore)	Tool Name	Description	
110.00	5,257.00	515525 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
5,277.00	7,438.00	515525 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	
7,479.00	13,362.00	515525 ProDirectional (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination	

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
110.00	0.02	204.43	110.00	-0.02	-0.01	0.02	0.02	0.02	0.00
210.00	0.31	289.76	210.00	0.06	-0.27	-0.10	0.31	0.29	85.33
310.00	0.33	290.57	310.00	0.25	-0.79	-0.38	0.02	0.02	0.81
410.00	0.31	295.94	410.00	0.47	-1.31	-0.69	0.04	-0.02	5.37
510.00	0.23	296.20	510.00	0.68	-1.73	-0.96	0.08	0.00	0.00
610.00	0.09	288.37	609.99	0.79	-1.98	-1.12	0.14	-0.14	-7.83
710.00	0.05	244.86	709.99	0.80	-2.10	-1.15	0.06	-0.04	-43.51
810.00	0.04	274.77	809.99	0.78	-2.17	-1.14	0.03	0.00	86.91

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Professional Directional Survey Report



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Project: Marion County, WV
Site: GLO76 Pad
Well: Well #515525 - Marcellus
Wellbore: Main Wellbore
Design: 515525 As Drilled Surveys

Local Co-ordinate Reference: Well Well #515525 - Marcellus
TVD Reference: GL 1424 + 23' KB @ 1447 00usft
MD Reference: GL 1424 + 23' KB @ 1447 00usft
North Reference: Grnd
Survey Calculation Method: Minimum Curvature
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)
910.00	0.19	285.08	909.99	0.83	-2.37	-1.22	0.15	0.15	10.31
1,010.00	0.45	299.52	1,009.99	1.06	-2.87	-1.54	0.27	0.26	14.44
1,110.00	0.51	305.21	1,109.99	1.51	-3.58	-2.11	0.08	0.06	5.69
1,210.00	0.61	308.52	1,209.98	2.10	-4.36	-2.82	0.11	0.10	3.31
1,310.00	0.68	310.52	1,309.98	2.82	-5.22	-3.67	0.07	0.07	2.00
1,410.00	0.75	312.48	1,409.97	3.65	-6.16	-4.65	0.07	0.07	1.96
1,510.00	0.91	315.44	1,509.96	4.65	-7.20	-5.82	0.17	0.16	2.96
1,610.00	0.99	315.24	1,609.95	5.83	-8.36	-7.18	0.08	0.08	-0.20
1,710.00	0.99	314.54	1,709.93	7.05	-9.59	-8.59	0.01	0.00	-0.70
1,810.00	1.02	315.59	1,809.92	8.29	-10.82	-10.03	0.04	0.03	1.05
1,910.00	1.00	311.94	1,909.90	9.51	-12.10	-11.45	0.07	-0.02	-3.65
2,010.00	0.95	301.01	2,009.89	10.52	-13.46	-12.68	0.19	-0.05	-10.93
2,110.00	0.99	291.24	2,109.87	11.26	-14.97	-13.67	0.17	0.04	-9.77
2,210.00	0.96	285.37	2,209.86	11.80	-16.58	-14.47	0.10	-0.03	-5.87
2,310.00	0.85	284.69	2,309.84	12.21	-18.11	-15.14	0.11	-0.11	-0.68
2,410.00	0.75	291.67	2,409.84	12.64	-19.44	-15.79	0.14	-0.10	6.98
2,510.00	0.55	294.31	2,509.83	13.08	-20.48	-16.40	0.20	-0.20	2.64
2,610.00	0.60	291.14	2,609.82	13.46	-21.41	-16.94	0.06	0.05	-3.17
2,710.00	0.63	297.16	2,709.82	13.90	-22.38	-17.54	0.07	0.03	6.02
2,810.00	0.61	299.23	2,809.81	14.42	-23.34	-18.21	0.03	-0.02	2.07
2,910.00	0.54	300.49	2,909.81	14.91	-24.21	-18.85	0.07	-0.07	1.26
3,010.00	0.60	306.31	3,009.80	15.46	-25.04	-19.53	0.08	0.06	5.82
3,110.00	0.50	314.90	3,109.80	16.08	-25.77	-20.27	0.13	-0.10	8.59
3,210.00	0.50	318.39	3,209.79	16.72	-26.37	-21.00	0.03	0.00	3.49
3,310.00	0.50	320.92	3,309.79	17.38	-26.93	-21.75	0.02	0.00	2.53
3,410.00	0.51	319.77	3,409.79	18.06	-27.49	-22.51	0.01	0.01	-1.15
3,510.00	0.77	309.81	3,509.78	18.83	-28.30	-23.41	0.28	0.26	-9.96
3,610.00	0.82	308.39	3,609.77	19.70	-29.37	-24.46	0.05	0.05	-1.42
3,710.00	0.82	307.47	3,709.76	20.58	-30.50	-25.52	0.01	0.00	-0.92
3,810.00	0.90	310.11	3,809.75	21.52	-31.67	-26.64	0.09	0.08	2.64
3,910.00	0.92	307.93	3,909.74	22.52	-32.91	-27.84	0.04	0.02	-2.18
4,010.00	1.02	301.25	4,009.72	23.48	-34.30	-29.02	0.15	0.10	-6.68
4,110.00	1.06	297.57	4,109.71	24.37	-35.88	-30.17	0.08	0.04	-3.68
4,210.00	1.07	296.08	4,209.69	25.21	-37.54	-31.28	0.03	0.01	-1.49
4,310.00	1.17	296.53	4,309.67	26.07	-39.29	-32.44	0.10	0.10	0.45
4,410.00	1.00	297.80	4,409.65	26.94	-40.98	-33.58	0.17	-0.17	1.27
4,510.00	0.78	306.10	4,509.64	27.75	-42.30	-34.60	0.25	0.22	8.30
4,610.00	0.81	318.66	4,609.63	28.68	-43.32	-35.69	0.15	0.12	2.55
4,710.00	0.75	349.14	4,709.62	29.85	-43.91	-36.95	0.14	0.09	39.46
4,810.00	0.89	25.82	4,809.61	31.19	-43.69	-38.23	0.53	0.14	36.68
4,910.00	0.82	38.19	4,909.60	32.45	-42.91	-39.34	0.20	0.09	22.37
5,010.00	0.79	43.05	5,009.59	33.52	-42.00	-40.24	0.07	-0.03	4.86
5,110.00	0.68	53.99	5,109.58	34.48	-40.91	-40.99	0.18	0.08	16.90

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 WV Department of Environmental Protection
 Environmental Protection
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Professional Directional
Survey Report



Company: EQT PRODUCTION
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Site: GLO76 Pad
Well: Well #515525 - Marcellus
Wellbore: Main Wellbore
Design: S15525 As Drilled Surveys

Local Co-ordinate Reference: Well Well #515525 - Marcellus
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
5,210.00	1.05	61.74	5,209.57	35.36	-39.48	-41.62	0.21	0.17	7.75
5,257.00	1.14	66.81	5,256.56	35.75	-38.67	-41.86	0.28	0.19	10.79
5,277.00	1.10	79.40	5,276.55	35.86	-38.30	-41.91	1.24	-0.20	62.95
5,320.00	1.40	78.10	5,319.54	36.05	-37.38	-41.93	0.70	0.70	-3.02
5,363.00	1.50	81.10	5,362.53	36.24	-36.31	-41.94	0.29	0.23	6.98
5,406.00	1.80	84.20	5,405.51	36.40	-35.08	-41.88	0.73	0.70	7.21
5,450.00	1.90	83.20	5,449.49	36.55	-33.67	-41.79	0.24	0.23	-2.27
5,493.00	0.40	19.70	5,492.48	36.78	-32.91	-41.89	4.09	-3.49	-147.67
5,536.00	3.30	281.40	5,535.46	37.17	-34.07	-42.47	7.86	6.74	-228.60
5,578.00	6.70	278.60	5,578.29	37.79	-37.77	-43.71	7.92	7.91	-6.51
5,622.00	10.40	281.10	5,620.80	38.91	-44.06	-45.90	8.65	8.60	5.81
5,665.00	13.50	285.60	5,662.86	41.01	-52.70	-49.45	7.52	7.21	10.47
5,708.00	17.10	290.80	5,704.34	44.60	-63.45	-54.84	8.95	8.37	12.09
5,751.00	20.90	293.60	5,744.99	49.92	-76.39	-62.30	9.09	8.84	6.51
5,794.00	24.80	294.10	5,784.60	56.67	-91.66	-71.58	9.08	9.07	1.16
5,837.00	28.90	293.50	5,822.96	64.50	-109.43	-82.34	9.56	9.53	-1.40
5,880.00	30.30	292.10	5,860.35	72.73	-129.01	-93.81	3.63	3.26	-3.26
5,923.00	33.30	290.60	5,896.89	80.96	-150.11	-105.54	7.21	6.98	-3.49
5,966.00	36.10	287.60	5,932.24	88.95	-173.24	-117.36	7.63	6.51	-6.98
6,009.00	38.70	283.00	5,966.40	95.81	-198.43	-128.46	8.87	6.05	-10.70
6,052.00	40.20	277.70	5,999.62	100.69	-225.29	-137.89	8.57	3.49	-12.33
6,095.00	41.60	275.90	6,032.12	104.02	-253.24	-145.97	4.26	3.26	-4.19
6,138.00	40.90	274.70	6,064.45	106.64	-281.47	-153.40	2.46	-1.63	-2.79
6,181.00	42.10	274.00	6,096.65	108.80	-309.88	-160.41	2.99	2.79	-1.63
6,224.00	42.40	271.70	6,128.48	110.23	-338.75	-166.78	3.66	0.70	-5.35
6,267.00	40.90	271.20	6,160.61	110.96	-367.32	-172.40	3.57	-3.49	-1.16
6,310.00	39.00	269.90	6,193.58	111.23	-394.92	-177.41	4.83	-4.42	-3.02
6,353.00	38.10	269.70	6,227.21	111.14	-421.72	-181.92	2.11	-2.09	-0.47
6,396.00	39.20	271.10	6,260.79	111.33	-448.57	-186.72	3.27	2.56	3.26
6,439.00	40.60	273.90	6,293.78	112.54	-476.12	-192.65	5.30	3.26	6.51
6,482.00	39.90	273.20	6,326.60	114.26	-503.85	-199.11	1.94	-1.63	-1.63
6,525.00	41.30	272.70	6,359.24	115.70	-531.80	-205.32	3.34	3.26	-1.16
6,568.00	40.70	272.50	6,391.70	116.98	-559.98	-211.42	1.43	-1.40	-0.47
6,611.00	41.00	272.90	6,424.22	118.31	-588.07	-217.55	0.93	0.70	0.93
6,654.00	39.80	273.40	6,456.97	119.84	-615.90	-223.84	2.89	-2.79	1.16
6,697.00	39.90	275.60	6,489.98	122.00	-643.37	-230.69	3.29	0.23	5.12
6,741.00	39.40	275.50	6,523.86	124.71	-671.31	-238.16	1.15	-1.14	-0.23
6,784.00	40.00	276.50	6,556.94	127.59	-698.63	-245.68	2.04	1.40	2.33
6,827.00	40.50	276.80	6,589.76	130.80	-726.22	-253.59	1.25	1.16	0.70
6,870.00	39.60	275.50	6,622.68	133.77	-753.73	-261.24	2.86	-2.09	-3.02
6,913.00	40.40	276.00	6,655.62	136.54	-781.23	-268.69	2.00	1.86	1.16
6,956.00	39.40	275.90	6,688.61	139.40	-808.66	-276.22	2.33	-2.33	-0.23
6,999.00	40.40	276.90	6,721.60	142.48	-836.07	-283.96	2.76	2.33	2.33

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7,042.00	38.90	276.90	6,754.70	145.77	-863.31	-291.89	3.49	-3.49	0.00
7,085.00	38.90	277.90	6,788.17	149.25	-890.09	-299.91	1.46	0.00	2.33
7,128.00	38.30	277.10	6,821.77	152.75	-916.68	-307.93	1.81	-1.40	-1.86
7,171.00	40.80	277.50	6,854.93	156.24	-943.84	-316.03	5.84	5.81	0.93
7,214.00	41.70	277.80	6,887.25	160.01	-971.94	-324.57	2.14	2.09	0.70
7,257.00	40.50	277.10	6,919.66	163.68	-999.97	-333.00	2.99	-2.79	-1.63
7,300.00	41.50	276.30	6,952.11	166.97	-1,027.98	-341.05	2.63	2.33	-1.86
7,343.00	42.30	275.40	6,984.12	169.89	-1,056.55	-348.84	2.33	1.86	-2.09
Final Survey=7333' MD/6974' TVD									
7,438.00	41.50	274.90	7,054.82	175.59	-1,119.74	-365.30	0.91	-0.84	-0.53
PROJ to Bit=7428' MD/7044' TVD									
7,479.00	38.10	268.80	7,086.33	176.49	-1,145.93	-370.69	12.62	-8.29	-14.88
First ProMWD 7479'MD									
7,511.00	37.10	261.70	7,111.70	174.88	-1,165.37	-372.45	13.89	-3.13	-22.19
7,543.00	36.50	256.80	7,137.33	171.32	-1,184.19	-372.16	9.36	-1.88	-15.31
7,574.00	36.80	252.70	7,162.20	166.45	-1,202.03	-370.43	7.95	0.97	-13.23
7,606.00	36.30	247.80	7,187.91	160.02	-1,219.95	-367.18	9.25	-1.56	-15.31
7,637.00	37.00	243.80	7,212.79	152.43	-1,236.82	-362.60	8.03	2.26	-12.90
7,669.00	38.00	240.70	7,238.18	143.36	-1,254.05	-356.62	6.67	3.13	-9.69
7,701.00	38.10	235.10	7,263.38	132.89	-1,270.75	-349.17	10.79	0.31	-17.50
7,732.00	37.80	228.90	7,287.84	121.17	-1,285.76	-340.20	12.33	-0.97	-20.00
7,764.00	38.10	224.00	7,313.08	107.61	-1,300.01	-329.30	9.46	0.94	-15.31
7,795.00	38.50	219.70	7,337.41	93.31	-1,312.82	-317.41	8.69	1.29	-13.87
7,827.00	39.80	215.30	7,362.23	77.28	-1,325.10	-303.73	9.58	4.06	-13.75
7,858.00	41.50	211.20	7,385.75	60.40	-1,336.16	-288.99	10.21	5.48	-13.23
7,890.00	43.00	209.00	7,409.44	41.78	-1,346.94	-272.51	6.58	4.69	-6.88
7,922.00	44.00	205.30	7,432.66	22.18	-1,356.98	-254.93	8.55	3.13	-11.56
7,953.00	45.60	201.40	7,454.66	2.13	-1,365.63	-236.66	10.26	5.16	-12.58
7,985.00	47.30	198.00	7,476.71	-19.70	-1,373.43	-216.49	9.35	5.31	-10.63
8,016.00	49.10	194.40	7,497.37	-41.88	-1,379.87	-195.74	10.42	5.81	-11.61
8,048.00	50.90	191.10	7,517.94	-65.79	-1,385.27	-173.12	9.70	5.63	-10.31
8,079.00	53.20	188.50	7,537.01	-89.87	-1,389.42	-150.11	9.94	7.42	-8.39
8,111.00	55.40	186.10	7,555.68	-115.65	-1,392.71	-125.28	9.18	6.88	-7.50
8,143.00	57.60	183.40	7,573.35	-142.23	-1,394.91	-99.47	9.84	6.88	-8.44
8,174.00	60.60	180.60	7,589.27	-168.81	-1,395.83	-73.44	12.40	9.68	-9.03
8,205.00	63.30	177.60	7,603.84	-196.16	-1,395.39	-46.43	12.20	8.71	-9.68
8,237.00	65.70	175.10	7,617.62	-224.98	-1,393.55	-17.72	10.29	7.50	-7.81
8,269.00	68.00	173.20	7,630.20	-254.24	-1,390.55	11.63	9.03	7.19	-5.94
8,300.00	70.10	170.60	7,641.29	-282.90	-1,386.46	40.56	10.36	6.77	-8.39
8,332.00	72.70	168.10	7,651.49	-312.70	-1,380.85	70.88	10.99	8.13	-7.81
8,363.00	76.20	165.50	7,659.81	-341.77	-1,374.03	100.69	13.88	11.29	-8.39
8,395.00	80.10	163.10	7,666.38	-371.91	-1,365.55	131.84	14.23	12.19	-7.50
8,426.00	83.20	161.80	7,670.88	-401.15	-1,356.30	162.23	10.83	10.00	-4.19
8,458.00	85.90	159.90	7,673.92	-431.23	-1,345.86	193.66	10.30	8.44	-5.94

Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #515525 - Marcellus
Project:	Marion County, WV	TVD Reference:	GL 1424 + 23' KB @ 1447 00usft
Site:	GLO76 Pad	MD Reference:	GL 1424 + 23' KB @ 1447 00usft
Well:	Well #515525 - Marcellus	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	515525 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)
8,489.00	89.00	157.00	7,675.30	-460.03	-1,334.48	223.99	13.69	10.00	-9.35
8,521.00	91.20	154.10	7,675.24	-489.16	-1,321.24	254.96	11.37	6.88	-8.06
8,553.00	91.90	153.20	7,674.37	-517.82	-1,307.04	285.63	3.56	2.19	-2.81
8,584.00	89.80	152.40	7,673.91	-545.39	-1,292.87	315.22	7.25	-6.77	-2.58
8,616.00	89.20	152.30	7,674.19	-573.73	-1,278.02	345.70	1.90	-1.88	-0.31
8,663.00	88.80	152.40	7,675.01	-615.36	-1,256.22	390.45	0.88	-0.85	0.21
8,710.00	89.00	152.40	7,675.92	-657.00	-1,234.45	435.21	0.43	0.43	0.00
8,805.00	89.60	151.90	7,677.08	-740.99	-1,190.07	525.58	0.82	0.63	-0.53
8,900.00	89.50	153.90	7,677.82	-825.56	-1,146.80	616.32	2.11	-0.11	2.11
8,995.00	89.80	152.80	7,678.40	-910.46	-1,104.19	707.28	1.20	0.32	-1.16
9,090.00	89.40	154.50	7,679.07	-995.58	-1,062.02	798.38	1.84	-0.42	1.79
9,184.00	90.10	155.10	7,679.48	-1,080.64	-1,022.00	889.04	0.98	0.74	0.64
9,279.00	88.20	154.20	7,680.89	-1,166.47	-981.33	980.59	2.21	-2.00	-0.95
9,374.00	88.50	155.00	7,683.62	-1,252.25	-940.60	1,072.09	0.90	0.32	0.84
9,468.00	88.80	155.90	7,685.84	-1,337.73	-901.56	1,163.00	1.01	0.32	0.96
9,563.00	87.40	153.10	7,688.99	-1,423.42	-860.69	1,254.44	3.29	-1.47	-2.95
9,658.00	86.70	153.10	7,693.88	-1,508.03	-817.76	1,345.16	0.74	-0.74	0.00
9,752.00	89.10	153.50	7,697.32	-1,591.94	-775.56	1,435.08	2.59	2.55	0.43
9,846.00	88.20	152.60	7,699.53	-1,675.71	-732.97	1,524.91	1.35	-0.96	-0.96
9,941.00	88.00	151.50	7,702.68	-1,759.58	-688.47	1,615.18	1.18	-0.21	-1.16
10,035.00	87.60	152.70	7,706.29	-1,842.59	-644.52	1,704.51	1.34	-0.43	1.28
10,130.00	89.10	154.10	7,709.03	-1,927.50	-602.00	1,795.46	2.16	1.58	1.47
10,225.00	89.00	153.80	7,710.60	-2,012.83	-560.29	1,886.69	0.33	-0.11	-0.32
10,320.00	88.90	153.50	7,712.34	-2,097.95	-518.13	1,977.78	0.33	-0.11	-0.32
10,414.00	89.30	153.60	7,713.82	-2,182.10	-476.26	2,067.87	0.44	0.43	0.11
10,509.00	86.90	154.00	7,716.97	-2,267.29	-434.35	2,158.99	2.56	-2.53	0.42
10,604.00	87.20	153.60	7,721.86	-2,352.41	-392.46	2,250.05	0.53	0.32	-0.42
10,699.00	87.20	153.10	7,726.50	-2,437.22	-349.90	2,340.90	0.53	0.00	-0.53
10,794.00	87.20	152.80	7,731.14	-2,521.72	-306.75	2,431.56	0.32	0.00	-0.32
10,888.00	87.60	153.00	7,735.41	-2,605.32	-263.97	2,521.26	0.48	0.43	0.21
10,983.00	87.70	152.30	7,739.30	-2,689.63	-220.36	2,611.81	0.74	0.11	-0.74
11,078.00	87.80	152.10	7,743.03	-2,773.60	-176.09	2,702.14	0.24	0.11	-0.21
11,172.00	88.40	152.00	7,746.15	-2,858.59	-132.05	2,791.45	0.65	0.64	-0.11
11,267.00	89.70	155.00	7,747.72	-2,941.58	-89.68	2,882.47	3.44	1.37	3.16
11,361.00	90.10	154.70	7,747.89	-3,026.67	-49.73	2,973.15	0.53	0.43	-0.32
11,456.00	90.50	154.70	7,747.39	-3,112.56	-9.13	3,064.73	0.42	0.42	0.00
11,551.00	88.30	154.10	7,748.38	-3,198.22	31.91	3,156.17	2.40	-2.32	-0.63
11,646.00	88.40	153.80	7,751.12	-3,283.53	73.61	3,247.38	0.33	0.11	-0.32
11,740.00	88.80	154.10	7,753.42	-3,367.96	114.88	3,337.64	0.53	0.43	0.32
11,835.00	90.90	155.50	7,753.66	-3,453.91	155.33	3,429.26	2.66	2.21	1.47
11,930.00	91.50	155.00	7,751.68	-3,540.17	195.09	3,521.06	0.82	0.63	-0.53
12,024.00	89.80	152.70	7,750.61	-3,624.53	236.51	3,611.29	3.04	-1.81	-2.45
12,119.00	89.90	151.80	7,750.86	-3,708.60	280.75	3,701.71	0.95	0.11	-0.95
12,214.00	89.90	151.30	7,751.02	-3,792.13	326.00	3,791.77	0.53	0.00	-0.53



Professional Directional Survey Report



Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #515525 - Marcellus
Project:	Marion County, WV	TVD Reference:	GL 1424 + 23' KB @ 1447 00usft
Site:	GLO76 Pad	MD Reference:	GL 1424 + 23' KB @ 1447 00usft
Well:	Well #515525 - Marcellus	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	515525 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)
12,308.00	89.50	153.40	7,751.52	-3,875.39	369.62	3,881.28	2.27	-0.43	2.23
12,403.00	87.40	153.70	7,754.08	-3,960.41	411.92	3,972.30	2.23	-2.21	0.32
12,498.00	87.20	153.10	7,758.56	-4,045.26	454.41	4,063.19	0.67	-0.21	-0.63
12,592.00	87.30	152.50	7,763.07	-4,128.77	497.33	4,152.83	0.65	0.11	-0.64
12,687.00	90.00	153.40	7,765.31	-4,213.34	540.51	4,243.57	3.00	2.84	0.95
12,782.00	90.50	153.30	7,764.89	-4,298.25	583.12	4,334.53	0.54	0.53	-0.11
12,876.00	91.00	153.00	7,763.66	-4,382.11	625.58	4,424.43	0.62	0.53	-0.32
12,971.00	89.80	153.70	7,763.00	-4,467.01	668.18	4,515.39	1.46	-1.26	0.74
13,066.00	88.60	153.40	7,764.33	-4,552.06	710.49	4,606.44	1.30	-1.26	-0.32
13,161.00	89.40	153.90	7,765.98	-4,637.17	752.65	4,697.53	0.99	0.64	0.53
13,255.00	89.80	154.30	7,766.64	-4,721.73	793.71	4,787.89	0.60	0.43	0.43
13,309.00	89.90	154.00	7,766.78	-4,770.32	817.26	4,839.80	0.59	0.19	-0.56
Last Survey: 13309'MD / 7766.78'TVD									
13,362.00	89.90	154.00	7,766.87	-4,817.96	840.49	4,890.72	0.00	0.00	0.00
PTB: 13362'MD									



Where energy meets innovation

Professional Directional

Survey Report



Company: EQT PRODUCTION
Project: Manon County, WV
Site: GLO76 Pad
Well: Well #515525 - Marcellus
Wellbore: Main Wellbore
Design: 515525 As Drilled Surveys

Local Co-ordinate Reference: Well Well #515525 - Marcellus
TVD Reference: GL 1424 + 23' KB @ 1447 00usft
MD Reference: GL 1424 + 23' KB @ 1447 00usft
North Reference: Gnd
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
515525 Plat LP2a - actual wellpath misses target center by 203.88usft at 8124.20usft MD (7563.09 TVD, -126.52 N, -1393.77 E) - Point	0.00	360.00	7,670.00	-42.90	-1,545.90	389,035.70	1,719,381.20	39° 33' 49.90 N	80° 29' 43.36 W
515525 Plat TDa - actual wellpath misses target center by 32.83usft at 9944.44usft MD (7702.81 TVD, -1762.61 N, -686.83 E) - Point	0.00	0.00	7,670.00	-1,763.70	-686.20	387,314.90	1,720,240.90	39° 33' 32.99 N	80° 29' 32.14 W
515525 LP 275' VS a - actual wellpath misses target center by 4.93usft at 8541.49usft MD (7674.73 TVD, -507.54 N, -1312.20 E) - Point	0.00	360.00	7,670.00	-508.04	-1,313.50	388,570.55	1,719,613.60	39° 33' 45.33 N	80° 29' 40.32 W
515525 Plat LPa - actual wellpath misses target center by 289.53usft at 8071.33usft MD (7532.39 TVD, -83.83 N, -1388.48 E) - Point	0.00	360.00	7,670.00	61.20	-1,597.90	389,139.80	1,719,329.20	39° 33' 50.93 N	80° 29' 44.03 W
515525 Plat TD2a - actual wellpath misses target center by 96.88usft at 13361.47usft MD (7766.87 TVD, -4817.49 N, 840.26 E) - Point	0.00	360.00	7,670.00	-4,817.90	839.80	384,260.70	1,721,766.90	39° 33' 2.97 N	80° 29' 12.22 W
515525 LP 275' VS - actual wellpath misses target center by 12.34usft at 8541.03usft MD (7674.74 TVD, -507.13 N, -1312.40 E) - Point	0.00	360.00	7,687.00	-508.04	-1,313.50	388,570.55	1,719,613.60	39° 33' 45.33 N	80° 29' 40.32 W
515525 Plat LP - actual wellpath misses target center by 297.97usft at 8079.00usft MD (7537.01 TVD, -89.87 N, -1389.42 E) - Point	0.00	360.00	7,687.00	61.20	-1,597.90	389,139.80	1,719,329.20	39° 33' 50.93 N	80° 29' 44.03 W
515525 Plat LP2 - actual wellpath misses target center by 213.11usft at 8133.59usft MD (7568.26 TVD, -134.33 N, -1394.39 E) - Point	0.00	360.00	7,687.00	-42.90	-1,545.90	389,035.70	1,719,381.20	39° 33' 49.90 N	80° 29' 43.36 W
515525 Plat TD - actual wellpath misses target center by 15.84usft at 9945.10usft MD (7702.83 TVD, -1763.18 N, -686.52 E) - Point	0.00	0.00	7,687.00	-1,763.70	-686.20	387,314.90	1,720,240.90	39° 33' 32.99 N	80° 29' 32.14 W
515525 Plat TD2 - actual wellpath misses target center by 79.88usft at 13361.50usft MD (7766.87 TVD, -4817.51 N, 840.27 E) - Point	0.00	360.00	7,687.00	-4,817.90	839.80	384,260.70	1,721,766.90	39° 33' 2.97 N	80° 29' 12.22 W
BHL 515525 Plat TD - actual wellpath misses target center by 78.88usft at 13361.51usft MD (7766.87 TVD, -4817.52 N, 840.27 E) - Point	0.00	360.00	7,688.00	-4,817.90	839.80	384,260.70	1,721,766.90	39° 33' 2.97 N	80° 29' 12.22 W
LP 515525 LP 275' - actual wellpath misses target center by 13.33usft at 8541.01usft MD (7674.74 TVD, -507.11 N, -1312.41 E) - Point	0.00	360.00	7,688.00	-508.04	-1,313.50	388,570.55	1,719,613.60	39° 33' 45.33 N	80° 29' 40.32 W

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,343.00	6,984.12	169.89	-1,056.55	Final Survey=7333' MD/6974' TVD
7,438.00	7,054.82	175.59	-1,119.74	PROJ to Bit=7428' MD/7044' TVD
7,479.00	7,086.33	176.49	-1,145.93	First ProMWD 7479'MD
13,309.00	7,766.78	-4,770.32	817.26	Last Survey: 13309'MD / 7766.78'TVD
13,362.00	7,766.87	-4,817.96	840.49	PTB: 13362'MD

