



EQT PRODUCTION

Doddridge County, WV

OXF 153

Well #516251 - Marcellus - Slot 516251

API #47-17006730

Main Wellbore

Design: 516251 As Drilled Surveys

Standard Survey Report

22 September, 2015





Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Well #516251 - Marcellus - Slot 516251
Company:	EQT PRODUCTION	TVD Reference:	KB 16' @ 1157 Duft
Project:	Doddridge County, WV	MD Reference:	KB 16' @ 1157 Duft
Site:	OXF 153	North Reference:	Gnd
Well:	Well #516251 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516251 As Drilled Surveys		

Project Doddridge 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 OXF 153

Site Position:		Northing:	254,054.20 usft	Latitude:	39.19
From:	Map	Easting:	1,626,467.50 usft	Longitude:	-80.82
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.84 °

Well Well #516251 - Marcellus - Slot 516251

Well Position	+N-S	0.0 usft	Northing:	254,054.20 usft	Latitude:	39° 11' 24.022 N
	+E-W	0.0 usft	Easting:	1,626,467.50 usft	Longitude:	80° 49' 4.381 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,141.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/1/2015	-7.72	66.62	52,153

Design 516251 As Drilled Surveys

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	276.56

Survey Program Date 9/22/2015

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	3,671.0	516251 Gyrodata (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	11,472.0	516251 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

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)
0.0	0.00	0.00	0.0	-1,157.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.08	297.68	103.0	-1,054.0	0.0	-0.1	0.1	0.08	0.08	0.00
203.0	0.08	85.23	203.0	-954.0	0.1	-0.1	0.1	0.15	0.00	147.55
303.0	0.07	88.63	303.0	-854.0	0.1	0.1	-0.1	0.01	-0.01	3.40
403.0	0.05	115.99	403.0	-754.0	0.1	0.2	-0.2	0.03	-0.02	27.10
503.0	0.05	59.03	503.0	-654.0	0.1	0.3	-0.2	0.05	0.00	-56.96
603.0	0.13	119.91	603.0	-554.0	0.0	0.4	-0.4	0.11	0.08	17.00
703.0	0.13	136.46	703.0	-454.0	-0.1	0.6	-0.6	0.04	0.00	16.50

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Database:	EQM 5000.1 Single Line 12"	Local Co-ordinate Reference:	Well Head #516251 - Marcellus - SMI 516251
Company:	EQT PRODUCTION	TVD Reference:	KB 15 @ 1157' usft
Project:	Doddridge County, WV	MD Reference:	KB 15 @ 1157' usft
Site:	OXF 16A	North Reference:	Grid
Well:	Well #516251 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516251 Ax Drilled Subways		

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	0.21	147.71	803.0	-354.0	-0.3	0.7	-0.8	0.09	0.08	11.25
903.0	0.21	156.63	903.0	-254.0	-0.7	0.9	-1.0	0.03	0.00	8.92
1,003.0	0.32	157.19	1,003.0	-154.0	-1.1	1.1	-1.2	0.11	0.11	0.56
1,103.0	0.34	156.92	1,103.0	-54.0	-1.6	1.3	-1.5	0.02	0.02	-0.27
1,203.0	0.42	161.62	1,203.0	46.0	-2.2	1.5	-1.8	0.09	0.08	4.70
1,303.0	0.50	174.94	1,303.0	146.0	-3.0	1.7	-2.0	0.13	0.08	13.32
1,403.0	0.51	168.71	1,403.0	246.0	-3.9	1.8	-2.3	0.06	0.01	-6.23
1,503.0	0.55	154.09	1,503.0	346.0	-4.8	2.1	-2.7	0.14	0.04	-14.62
1,603.0	0.38	121.95	1,603.0	446.0	-5.4	2.6	-3.2	0.30	-0.17	-32.14
1,703.0	0.41	128.65	1,703.0	546.0	-5.8	3.2	-3.8	0.06	0.03	6.70
1,803.0	0.27	142.54	1,803.0	646.0	-6.2	3.6	-4.3	0.16	-0.14	13.89
1,903.0	0.24	137.12	1,903.0	746.0	-6.5	3.9	-4.6	0.04	-0.03	-5.42
2,003.0	0.26	127.09	2,003.0	846.0	-6.8	4.2	-5.0	0.05	0.02	-10.03
2,103.0	0.43	110.06	2,103.0	946.0	-7.1	4.7	-5.5	0.20	0.17	-17.03
2,203.0	0.46	105.90	2,203.0	1,046.0	-7.3	5.5	-6.3	0.04	0.03	-4.16
2,303.0	0.64	102.76	2,303.0	1,146.0	-7.6	6.4	-7.2	0.18	0.18	-3.14
2,403.0	1.29	96.43	2,402.9	1,245.9	-7.8	8.1	-8.9	0.66	0.65	-6.33
2,503.0	2.08	88.97	2,502.9	1,345.9	-7.9	11.0	-11.8	0.82	0.79	-7.46
2,603.0	2.54	83.11	2,602.8	1,445.8	-7.6	15.0	-15.8	0.52	0.46	-5.86
2,703.0	2.86	78.11	2,702.7	1,545.7	-6.8	19.7	-20.3	0.40	0.32	-5.00
2,803.0	3.20	71.17	2,802.6	1,645.6	-5.4	24.7	-25.2	0.50	0.34	-6.94
2,903.0	3.58	65.58	2,902.4	1,745.4	-3.2	30.2	-30.4	0.50	0.38	-5.59
3,003.0	3.84	61.95	3,002.2	1,845.2	-0.3	36.0	-35.8	0.35	0.26	-3.63
3,103.0	2.80	61.69	3,102.0	1,945.0	2.4	41.1	-40.6	1.04	-1.04	-0.26
3,203.0	2.13	59.64	3,201.9	2,044.9	4.5	44.9	-44.1	0.68	-0.67	-2.05
3,303.0	1.58	58.09	3,301.9	2,144.9	6.2	47.7	-46.6	0.55	-0.55	-1.55
3,403.0	1.19	55.88	3,401.8	2,244.8	7.5	49.7	-48.5	0.39	-0.39	-2.21
3,503.0	0.92	57.09	3,501.8	2,344.8	8.5	51.2	-49.9	0.27	-0.27	1.21
3,603.0	0.44	40.02	3,601.8	2,444.8	9.2	52.1	-50.8	0.52	-0.48	-17.07
Gyro Tie One 3671' MD										
3,671.0	0.34	22.41	3,669.8	2,512.8	9.6	52.4	-51.0	0.23	-0.15	-25.90
3,673.0	0.30	11.60	3,671.8	2,514.8	9.6	52.4	-51.0	3.61	-2.00	542.50
3,704.0	0.70	331.20	3,702.8	2,545.8	9.9	52.3	-50.9	1.65	1.29	-130.32
3,736.0	4.70	306.40	3,734.8	2,577.8	10.8	51.2	-49.6	12.73	12.50	1.60
3,767.0	8.80	310.50	3,765.6	2,608.6	13.1	48.3	-46.5	13.31	13.23	13.23
3,798.0	11.30	312.90	3,796.1	2,639.1	16.7	44.3	-42.1	8.18	8.06	7.74
3,830.0	11.90	312.10	3,827.4	2,670.4	21.1	39.6	-36.9	1.94	1.88	1.50
3,861.0	11.30	302.30	3,857.8	2,700.8	24.8	34.6	-31.6	6.64	-1.94	1.50
3,893.0	10.70	294.50	3,889.2	2,732.2	27.7	29.3	-25.9	5.01	-1.88	-24.38
3,924.0	11.30	283.10	3,919.6	2,762.6	29.6	23.7	-20.2	7.27	1.94	-36.77
3,956.0	12.80	272.30	3,950.9	2,793.9	30.5	17.1	-13.5	8.44	4.69	-33.75
3,987.0	14.10	263.00	3,981.1	2,824.1	30.1	9.9	-6.4	8.13	4.19	-30.00
4,018.0	16.10	255.00	4,011.0	2,854.0	28.6	2.0	1.3	9.30	6.45	-25.81

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Phoenix Technology Services
Survey Report



Database:	EDM Survey Single Use - L2	Local Co-ordinate Reference:	Wellbore #316251 - Marcellus - Slot 316251
Company:	EQT PRODUCTION	TVD Reference:	KB 10 @ 1157 ft
Project:	Coal Mine County, WV	MD Reference:	KB 10 @ 1157 ft
Site:	OXF 16A	North Reference:	Grid
Well:	Well #316251 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516251 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)
4,050.0	17.70	250.00	4,041.6	2,884.6	25.8	-6.8	9.7	6.75	5.00	-15.63
4,081.0	19.40	246.50	4,071.0	2,914.0	22.1	-16.0	18.4	6.55	5.48	-11.29
4,113.0	21.00	245.10	4,101.1	2,944.1	17.6	-26.1	27.9	5.22	5.00	-4.38
4,144.0	23.40	242.90	4,129.8	2,972.8	12.4	-36.6	37.8	8.19	7.74	-7.10
4,176.0	27.00	241.80	4,158.7	3,001.7	6.1	-48.6	49.0	11.34	11.25	-3.44
4,207.0	30.00	239.60	4,186.0	3,029.0	-1.2	-61.5	61.0	10.25	9.68	-7.10
4,238.0	32.10	238.30	4,212.5	3,055.5	-9.4	-75.2	73.7	7.11	6.77	-4.19
4,270.0	34.70	236.70	4,239.2	3,082.2	-18.9	-90.1	87.3	8.58	8.13	-5.00
4,301.0	38.20	234.90	4,264.2	3,107.2	-29.2	-105.3	101.3	11.80	11.29	-5.81
4,333.0	41.10	234.60	4,288.8	3,131.8	-41.0	-122.0	116.5	9.08	9.06	-0.94
4,364.0	41.20	234.70	4,312.1	3,155.1	-52.8	-138.6	131.7	0.39	0.32	0.32
4,427.0	41.70	236.40	4,359.4	3,202.4	-76.4	-173.0	163.1	1.95	0.79	2.70
4,490.0	41.20	235.10	4,406.6	3,249.6	-99.9	-207.5	194.7	1.58	-0.79	-2.06
4,553.0	42.10	235.30	4,453.7	3,296.7	-123.8	-241.9	226.1	1.44	1.43	0.32
4,616.0	42.50	236.80	4,500.2	3,343.2	-147.5	-277.0	258.4	1.72	0.63	2.38
4,678.0	41.70	236.00	4,546.3	3,389.3	-170.5	-311.6	290.1	1.55	-1.29	-1.29
4,741.0	41.20	234.90	4,593.5	3,436.5	-194.1	-346.0	321.6	1.40	-0.79	-1.75
4,804.0	40.90	236.70	4,641.0	3,484.0	-217.4	-380.2	352.9	1.94	-0.48	2.86
4,867.0	41.80	236.60	4,688.3	3,531.3	-240.2	-415.0	384.8	1.43	1.43	-0.16
4,955.0	41.50	235.90	4,754.0	3,597.0	-272.7	-463.6	429.4	0.63	-0.34	-0.80
5,018.0	40.90	235.40	4,801.4	3,644.4	-296.1	-497.9	460.8	1.09	-0.95	-0.79
5,081.0	42.40	236.70	4,848.5	3,691.5	-319.5	-532.6	492.6	2.75	2.38	2.06
5,143.0	42.70	236.80	4,894.2	3,737.2	-342.5	-567.7	524.8	0.50	0.48	0.16
5,207.0	40.80	235.40	4,941.9	3,784.9	-366.3	-603.0	557.3	3.31	-2.97	-2.19
5,270.0	40.30	234.60	4,989.8	3,832.8	-389.8	-636.6	587.9	1.15	-0.79	-1.27
5,333.0	42.00	235.80	5,037.2	3,880.2	-413.4	-670.6	619.0	2.98	2.70	1.90
5,396.0	42.10	236.30	5,084.0	3,927.0	-437.0	-705.6	651.1	0.55	0.16	0.79
5,459.0	41.70	236.20	5,130.9	3,973.9	-460.3	-740.6	683.2	0.64	-0.63	-0.16
5,522.0	41.20	235.20	5,178.1	4,021.1	-483.8	-775.1	714.8	1.32	-0.79	-1.59
5,585.0	42.40	236.00	5,225.1	4,068.1	-507.6	-809.7	746.5	2.08	1.90	1.27
5,648.0	42.50	236.80	5,271.6	4,114.6	-531.1	-845.1	779.0	0.87	0.16	1.27
5,712.0	42.50	236.60	5,318.8	4,161.8	-554.8	-881.3	812.2	0.21	0.00	-0.31
5,774.0	42.00	236.60	5,364.7	4,207.7	-577.8	-916.1	844.1	0.81	-0.81	0.00
5,837.0	41.80	237.40	5,411.6	4,254.6	-600.7	-951.4	876.6	0.91	-0.32	-0.16
5,900.0	41.90	235.40	5,458.5	4,301.5	-624.0	-986.4	908.7	2.12	0.16	0.16
5,963.0	41.50	235.00	5,505.5	4,348.5	-647.9	-1,020.8	940.1	0.76	-0.63	-0.63
6,026.0	41.60	236.10	5,552.7	4,395.7	-671.5	-1,055.2	971.7	1.17	0.16	-0.16
6,089.0	41.40	236.00	5,599.9	4,442.9	-694.8	-1,089.9	1,003.4	0.33	-0.32	-0.16
6,152.0	41.70	238.10	5,647.0	4,490.0	-717.5	-1,124.9	1,035.6	2.26	0.48	3.33
6,215.0	41.80	237.60	5,694.0	4,537.0	-739.9	-1,160.4	1,068.4	0.55	0.16	0.16
6,278.0	41.40	237.00	5,741.1	4,584.1	-762.5	-1,195.6	1,100.8	0.90	-0.63	-0.95
6,339.0	42.30	238.90	5,786.6	4,629.6	-784.1	-1,230.1	1,132.6	2.55	1.48	3.11

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Phoenix Technology Services
Survey Report



Database:	EOM 5000.1 Single User LP	Local Co-ordinate Reference:	Well #516251 - Marcellus - 3111 516251
Company:	EQT PRODUCTION	TVD Reference:	±E 16' @ 1197' Build
Project:	Doddridge County, WV	MD Reference:	±E 16' @ 1197' Build
Site:	DXF 153	North Reference:	Grid
Well:	Well #516251 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516251 As Directed 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)
6,404.0	42.10	236.50	5,834.7	4,677.7	-807.4	-1,267.0	1,166.6	2.50	-0.31	-3.69
6,467.0	41.80	235.30	5,881.6	4,724.6	-831.0	-1,301.9	1,198.5	1.36	-0.48	-1.90
6,530.0	40.90	235.60	5,928.9	4,771.9	-854.6	-1,336.2	1,229.9	1.46	-1.43	0.48
6,593.0	41.50	235.10	5,976.3	4,819.3	-878.2	-1,370.3	1,261.1	1.09	0.95	-0.79
6,656.0	41.90	233.90	6,023.3	4,866.3	-902.5	-1,404.4	1,292.2	1.42	0.63	-1.90
6,719.0	41.10	234.40	6,070.5	4,913.5	-927.0	-1,438.3	1,323.0	1.37	-1.27	0.79
6,782.0	42.00	234.90	6,117.6	4,960.6	-951.2	-1,472.4	1,354.1	1.52	1.43	0.79
6,845.0	42.10	235.20	6,164.4	5,007.4	-975.3	-1,506.9	1,385.7	0.36	0.16	0.48
6,908.0	41.90	234.30	6,211.2	5,054.2	-999.7	-1,541.4	1,417.2	1.01	-0.32	-1.43
6,939.0	41.60	234.00	6,234.4	5,077.4	-1,011.7	-1,558.1	1,432.4	1.16	-0.97	-0.97
6,971.0	43.00	236.30	6,258.0	5,101.0	-1,024.0	-1,575.8	1,448.6	6.52	4.38	7.19
7,002.0	44.60	240.40	6,280.4	5,123.4	-1,035.3	-1,594.0	1,465.4	10.51	5.16	13.23
7,033.0	45.40	243.20	6,302.3	5,145.3	-1,045.6	-1,613.3	1,483.4	6.89	2.58	9.03
7,065.0	46.10	245.40	6,324.7	5,167.7	-1,055.6	-1,634.0	1,502.8	5.39	2.19	6.88
7,097.0	47.70	248.80	6,346.5	5,189.5	-1,064.7	-1,655.5	1,523.2	9.23	5.00	10.63
7,128.0	49.20	253.30	6,367.1	5,210.1	-1,072.2	-1,677.5	1,544.1	11.89	4.84	14.52
7,160.0	49.90	256.50	6,387.9	5,230.9	-1,078.5	-1,701.0	1,566.7	7.92	2.19	10.00
7,191.0	50.60	258.90	6,407.7	5,250.7	-1,083.6	-1,724.2	1,589.3	6.37	2.26	7.74
7,222.0	52.90	262.00	6,426.9	5,269.9	-1,087.6	-1,748.2	1,612.7	10.80	7.42	10.00
516251 P1#1 LP										
7,222.9	52.96	262.09	6,427.4	5,270.4	-1,087.7	-1,748.9	1,613.3	11.01	7.05	10.61
7,254.0	55.20	265.30	6,445.7	5,288.7	-1,090.5	-1,774.0	1,637.9	11.01	7.19	10.30
7,285.0	56.60	267.50	6,463.0	5,306.0	-1,092.1	-1,799.6	1,663.2	7.41	4.52	7.10
7,316.0	58.70	269.90	6,479.6	5,322.6	-1,092.7	-1,825.8	1,689.1	9.42	6.77	7.74
7,348.0	62.20	271.00	6,495.4	5,338.4	-1,092.4	-1,853.6	1,716.8	11.34	10.94	3.44
7,379.0	66.40	273.30	6,508.9	5,351.9	-1,091.4	-1,881.5	1,744.6	15.11	13.55	7.42
7,411.0	68.50	276.00	6,521.1	5,364.1	-1,089.0	-1,911.0	1,774.2	10.19	6.56	8.44
7,442.0	71.10	280.60	6,531.8	5,374.8	-1,084.8	-1,939.7	1,803.2	16.25	8.39	14.84
7,474.0	73.50	282.80	6,541.6	5,384.6	-1,078.6	-1,969.6	1,833.6	9.96	7.50	6.88
7,505.0	75.30	284.60	6,549.9	5,392.9	-1,071.5	-1,998.6	1,863.2	8.06	5.81	5.81
7,537.0	77.30	286.70	6,557.5	5,400.5	-1,063.1	-2,028.5	1,893.9	8.93	6.25	6.56
7,569.0	79.20	288.30	6,564.0	5,407.0	-1,053.7	-2,058.4	1,924.7	7.70	5.94	5.00
7,600.0	80.80	289.40	6,569.4	5,412.4	-1,043.8	-2,087.3	1,954.5	6.23	5.16	3.55
7,631.0	82.00	290.60	6,574.0	5,417.0	-1,033.4	-2,116.1	1,984.3	5.44	3.87	3.87
7,663.0	82.50	290.40	6,578.3	5,421.3	-1,022.3	-2,145.8	2,015.1	1.68	1.56	0.63
7,695.0	85.30	291.90	6,581.7	5,424.7	-1,010.8	-2,175.5	2,045.8	9.91	8.75	8.66
7,726.0	88.50	293.80	6,583.4	5,426.4	-998.8	-2,204.0	2,075.6	12.00	10.32	8.13
516251 LP 2093' VS #2										
7,749.7	90.28	294.54	6,583.7	5,426.7	-989.0	-2,225.6	2,098.2	8.12	7.50	7.50
516251 LP 2093' VS #3										
7,750.0	90.30	294.55	6,583.7	5,426.7	-988.9	-2,225.9	2,098.4	8.12	7.50	7.50
LP=1768' MD#564' TVD										
7,758.0	90.90	294.80	6,583.6	5,426.6	-985.6	-2,233.2	2,106.0	8.12	7.50	7.12

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Database:	ECM 5000 1 Single Deer DE	Local Co-ordinate Reference:	Well Well #112001 - Marsfield - Slot 516251
Company:	EQT PRODUCTION	TVD Reference:	KS 15 @ 1127 usft
Project:	Doddridge County, WV	MD Reference:	KS 15 @ 1127 usft
Site:	DNF -62	North Reference:	End
Well:	Well #516331 - Marsfield	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516331 As Drilled - Survey		

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)
7,789.0	91.40	295.40	6,583.0	5,426.0	-972.4	-2,261.2	2,135.4	2.52	1.61	1.94
7,853.0	88.90	297.30	6,582.8	5,425.8	-944.0	-2,318.6	2,195.6	4.91	-3.91	2.97
516251 Plot LP										
7,900.2	86.50	296.70	6,584.7	5,427.7	-922.7	-2,360.5	2,239.8	5.24	-5.08	-1.27
7,916.0	85.70	296.50	6,585.8	5,428.8	-915.6	-2,374.7	2,254.6	5.24	-5.08	-1.27
7,979.0	88.40	297.00	6,589.0	5,432.0	-887.3	-2,430.9	2,313.7	4.36	4.29	0.79
8,043.0	89.30	296.10	6,590.3	5,433.3	-858.7	-2,488.1	2,373.8	1.99	1.41	-1.41
8,106.0	87.70	295.70	6,591.9	5,434.9	-831.1	-2,544.7	2,433.2	2.62	-2.54	-0.63
8,170.0	87.70	295.20	6,594.5	5,437.5	-803.7	-2,602.5	2,493.7	0.78	0.00	-0.78
8,233.0	88.30	294.80	6,596.7	5,439.7	-777.1	-2,659.5	2,553.4	1.14	0.95	-0.63
Deepal Point 516331 MD/ASLP TVD										
8,296.0	89.60	294.90	6,597.9	5,440.9	-750.6	-2,716.7	2,613.2	2.07	2.06	0.16
8,359.0	91.90	295.50	6,597.0	5,440.0	-723.8	-2,773.7	2,672.9	3.77	3.65	0.95
8,422.0	92.60	295.00	6,594.6	5,437.6	-696.9	-2,830.6	2,732.6	1.37	1.11	-0.79
8,485.0	91.00	295.00	6,592.6	5,435.6	-670.3	-2,887.7	2,792.3	2.54	-2.54	0.00
8,548.0	89.50	297.10	6,592.3	5,435.3	-642.6	-2,944.3	2,851.7	4.10	-2.38	3.33
8,611.0	89.80	297.20	6,592.7	5,435.7	-613.9	-3,000.4	2,910.6	0.50	0.48	0.16
8,675.0	90.10	297.10	6,592.7	5,435.7	-584.7	-3,057.3	2,970.6	0.49	0.47	-0.16
8,738.0	90.50	296.90	6,592.4	5,435.4	-556.1	-3,113.4	3,029.6	0.71	0.63	-0.32
8,801.0	91.20	297.20	6,591.5	5,434.5	-527.4	-3,169.5	3,088.6	1.21	1.11	0.48
8,864.0	91.60	297.00	6,589.9	5,432.9	-498.8	-3,225.6	3,147.6	0.71	0.63	-0.32
8,927.0	93.70	298.30	6,587.0	5,430.0	-469.5	-3,281.3	3,206.3	3.92	3.33	2.06
8,990.0	93.60	297.60	6,583.0	5,426.0	-440.1	-3,336.9	3,264.8	1.12	-0.16	-1.11
9,053.0	93.10	296.10	6,579.3	5,422.3	-411.7	-3,393.0	3,323.8	2.51	-0.79	-2.38
9,116.0	93.00	295.50	6,576.0	5,419.0	-384.3	-3,449.6	3,383.2	0.96	-0.16	-0.95
9,178.0	93.60	295.20	6,572.4	5,415.4	-357.8	-3,505.6	3,441.8	1.08	0.97	-0.48
9,241.0	93.10	294.60	6,568.7	5,411.7	-331.3	-3,562.6	3,501.5	1.24	-0.79	-0.95
9,304.0	93.10	294.00	6,565.3	5,408.3	-305.4	-3,619.9	3,561.4	0.95	0.00	-0.95
9,367.0	93.60	294.70	6,561.6	5,404.6	-279.5	-3,677.2	3,621.3	1.36	0.79	1.11
9,430.0	94.90	296.20	6,557.0	5,400.0	-252.5	-3,734.0	3,680.7	3.15	2.06	2.38
9,493.0	94.00	296.50	6,552.1	5,395.1	-224.6	-3,790.3	3,739.8	1.51	-1.43	0.48
9,556.0	94.50	296.50	6,547.4	5,390.4	-196.6	-3,846.5	3,798.9	0.79	0.79	0.00
9,619.0	92.00	295.50	6,543.8	5,386.8	-169.0	-3,903.0	3,858.2	4.27	-3.97	-1.59
9,682.0	91.80	297.30	6,541.8	5,384.8	-141.0	-3,959.4	3,917.4	2.87	-0.32	2.86
9,745.0	92.10	296.90	6,539.6	5,382.6	-112.3	-4,015.5	3,976.4	0.79	0.48	-0.63
9,809.0	93.00	296.50	6,536.8	5,379.8	-83.6	-4,072.6	4,036.4	1.54	1.41	-0.63
9,872.0	91.60	297.00	6,534.2	5,377.2	-55.3	-4,128.8	4,095.5	2.36	-2.22	0.79
9,935.0	91.60	297.00	6,532.5	5,375.5	-26.7	-4,184.9	4,154.5	0.00	0.00	0.00
9,999.0	92.00	296.30	6,530.5	5,373.5	2.0	-4,242.1	4,214.6	1.26	0.63	-1.09
10,062.0	92.40	295.90	6,528.0	5,371.0	29.7	-4,298.6	4,273.9	0.90	0.63	-0.63
10,125.0	91.20	295.70	6,526.1	5,369.1	57.1	-4,355.3	4,333.3	1.93	-1.90	-0.32
10,187.0	91.50	295.00	6,524.6	5,367.6	83.6	-4,411.3	4,392.0	1.23	0.48	-1.13
10,250.0	90.40	296.60	6,523.6	5,366.6	111.1	-4,468.0	4,451.5	3.08	-1.75	2.54



Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Well #516251 - Marcellus - Slot 516251
Company:	EQT PRODUCTION	TVD Reference:	KB 18 @ 1157' Dush
Project:	Doddrige County, WV	MD Reference:	KB 18 @ 1157' Dush
Site:	D&F 153	North Reference:	Grid
Well:	Well #516251 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516251 A3 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)
10,313.0	90.70	297.40	6,523.0	5,366.0	139.7	-4,524.1	4,510.5	1.36	0.48	1.27
10,376.0	91.20	295.50	6,521.9	5,364.9	167.7	-4,580.5	4,569.7	3.12	0.79	-3.02
10,440.0	91.70	293.80	6,520.3	5,363.3	194.4	-4,638.7	4,630.6	2.77	0.78	-2.66
10,503.0	90.30	295.50	6,519.2	5,362.2	220.7	-4,695.9	4,690.4	3.50	-2.22	2.70
10,566.0	90.60	297.20	6,518.7	5,361.7	248.6	-4,752.4	4,749.7	2.74	0.48	2.70
10,630.0	90.20	295.10	6,518.3	5,361.3	276.8	-4,809.8	4,810.0	3.34	-0.63	-3.28
10,692.0	90.70	294.60	6,517.8	5,360.8	302.9	-4,866.1	4,868.9	1.14	0.81	-0.81
10,755.0	90.40	296.50	6,517.2	5,360.2	330.1	-4,922.9	4,928.4	3.05	-0.48	3.02
10,818.0	90.80	296.70	6,516.5	5,359.5	358.3	-4,979.3	4,987.6	0.71	0.63	0.32
10,881.0	91.40	296.40	6,515.3	5,358.3	386.4	-5,035.6	5,046.8	1.06	0.95	-0.48
10,944.0	92.00	296.20	6,513.4	5,356.4	414.3	-5,092.0	5,106.1	1.00	0.95	-0.32
11,007.0	92.10	295.50	6,511.2	5,354.2	441.8	-5,148.7	5,165.5	1.12	0.16	-1.11
11,070.0	92.70	295.30	6,508.5	5,351.5	468.8	-5,205.6	5,225.1	1.00	0.95	-0.32
11,133.0	92.00	295.90	6,506.0	5,349.0	496.0	-5,262.3	5,284.6	1.46	-1.11	0.95
11,195.0	90.20	296.10	6,504.8	5,347.8	523.1	-5,318.0	5,343.0	2.92	-2.90	0.32
11,259.0	90.90	295.70	6,504.1	5,347.1	551.1	-5,375.6	5,403.4	1.26	1.09	-0.63
11,321.0	90.80	296.00	6,503.2	5,346.2	578.1	-5,431.4	5,461.9	0.51	-0.16	0.48
11,384.0	90.30	296.90	6,502.6	5,345.6	606.2	-5,487.8	5,521.1	1.63	-0.79	1.43
Final Survey=11426' MD/6502' TVD										
11,426.0	90.60	296.40	6,502.3	5,345.3	625.0	-5,525.3	5,560.6	1.39	0.71	-1.19
516251 Plat TD p3										
11,471.9	90.60	296.40	6,501.8	5,344.8	645.4	-5,566.4	5,603.7	0.00	0.00	0.00
PROJ to Bit=11472' MD/6502' TVD - 516251 Plat TD										
11,472.0	90.60	296.40	6,501.8	5,344.8	645.5	-5,566.5	5,603.8	0.00	0.00	0.00

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (-924.9)	+E/-W (-2,361.4)	Northing (usft)	Easting (usft)	Latitude	Longitude
516251 Plat LP	0.00	360.00	6,590.0	-924.9	-2,361.4	253,129.30	1,624,106.10	39° 11' 14.537 N	80° 49' 34.196 W
- actual wellpath misses target center by 5.8usft at 7900.3usft MD (6584.7 TVD, -922.6 N, -2360.7 E)									
- Point									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,671.0	3,669.8	9.6	52.4	Gyro Tie On=3671' MD
7,758.0	6,583.6	-985.6	-2,233.2	LP=7758' MD/6584' TVD
8,296.0	6,597.9	-750.6	-2,716.7	Deepest Point=8296' MD/6598' TVD
11,426.0	6,502.3	625.0	-5,525.3	Final Survey=11426' MD/6502' TVD
11,472.0	6,501.8	645.5	-5,566.5	PROJ to Bit=11472' MD/6502' TVD

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Phoenix Technology Services
Survey Report



Database: EDM 5000.1 Single User Db	Local Co-ordinate Reference: Well Well #516251 - Marcellus - Slot 516251
Company: EQT PRODUCTION	TVD Reference: KB 16' @ 1157.0usft
Project: Doddridge County, WV	MD Reference: KB 16' @ 1157.0usft
Site: OXF 153	North Reference: Grid
Well: Well #516251 - Marcellus	Survey Calculation Method: Minimum Curvature
Wellbore: Main Wellbore	
Design: 516251 As Drilled Surveys	

Checked By: _____ Approved By: _____ Date: _____

EQT PRODUCTION

Project: Doddridge County, WV
 Site: OXF 153
 Well: Well #516251 - Marcellus
 Wellbore: Main Wellbore
 Design: 516251 As Drilled Surveys

