



# EQT PRODUCTION

Doddridge County, WV

OXF 153

Well #515969 - Marcellus - Slot 515969

API #47-17006714

Main Wellbore

Design: 515969 As Drilled Surveys

## Standard Survey Report

20 October, 2015



Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Well #515969 - Marcellus - Slot 515969
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 #515969 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515969 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 #515969 - Marcellus - Slot 515969					
Well Position	+N/-S	0.0 usft	Northing:	254,043.50 usft	Latitude:	39° 11' 23.922 N
	+E/-W	0.0 usft	Easting:	1,626,511.20 usft	Longitude:	80° 49' 3.824 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	10/7/2015	-7.72	66.60	52,141

Design	515969 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	312.32	

Survey Program	Date 10/20/2015				
From (')	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	5,018.0	515969 Gyrodata gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
0.00	12,458.0	515969 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	

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	0.29	352.85	103.0	-1,054.0	0.3	0.0	0.2	0.28	0.28	0.00
203.0	0.35	135.57	203.0	-954.0	0.3	0.1	0.1	0.91	0.06	102.72
303.0	0.38	145.70	303.0	-854.0	-0.2	0.6	-0.5	0.07	-0.03	10.13
403.0	0.22	148.52	403.0	-754.0	-0.6	0.8	-1.0	0.16	-0.16	2.82
503.0	0.10	145.49	503.0	-654.0	-0.9	1.0	-1.3	0.12	-0.12	2.03
603.0	0.04	229.54	603.0	-554.0	-1.0	1.0	-1.4	0.10	-0.06	84.05
703.0	0.04	152.23	703.0	-454.0	-1.0	1.0	-1.4	0.05	0.00	-77.31

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Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Well #515989 - Marcellus - Slot 515980
<b>Company:</b>	EQT PRODUCTION	<b>TVD Reference:</b>	KB 10 @ 1187 base
<b>Project:</b>	Doddridge County WV	<b>MD Reference:</b>	KB 10 @ 1187 base
<b>Site:</b>	OXF 1A3	<b>North Reference:</b>	130m
<b>Well:</b>	Well #515989 - Marcellus	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515989 As Directed 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)
803.0	0.06	192.29	803.0	-354.0	-1.1	1.0	-1.5	0.04	0.02	40.06
903.0	0.13	149.25	903.0	-254.0	-1.3	1.1	-1.6	0.10	0.07	-43.04
1,003.0	0.35	134.09	1,003.0	-154.0	-1.6	1.3	-2.0	0.23	0.22	-15.16
1,103.0	0.53	131.65	1,103.0	-54.0	-2.1	1.9	-2.8	0.18	0.18	-2.44
1,203.0	0.57	130.30	1,203.0	46.0	-2.7	2.6	-3.8	0.04	0.04	-1.35
1,303.0	0.69	135.51	1,303.0	146.0	-3.5	3.4	-4.9	0.13	0.12	5.21
1,403.0	0.96	138.10	1,403.0	246.0	-4.5	4.4	-6.3	0.27	0.27	2.59
1,503.0	1.22	135.05	1,503.0	346.0	-5.9	5.7	-8.2	0.27	0.26	-3.05
1,603.0	1.52	130.09	1,602.9	445.9	-7.5	7.5	-10.6	0.32	0.30	-4.96
1,703.0	1.53	130.82	1,702.9	545.9	-9.2	9.5	-13.2	0.02	0.01	0.73
1,803.0	1.05	111.09	1,802.9	645.9	-10.4	11.4	-15.4	0.65	-0.48	-19.73
1,903.0	5.78	14.51	1,902.7	745.7	-5.9	13.5	-13.9	5.99	4.73	-96.58
2,003.0	7.93	6.09	2,002.0	845.0	5.9	15.5	-7.5	2.37	2.15	-8.42
2,103.0	8.39	355.61	2,101.0	944.0	20.0	15.7	1.9	1.55	0.46	-10.48
2,203.0	8.07	356.42	2,199.9	1,042.9	34.3	14.7	12.2	0.34	-0.32	0.81
2,303.0	8.00	1.03	2,299.0	1,142.0	48.2	14.3	21.9	0.65	-0.07	4.61
2,403.0	7.88	1.74	2,398.0	1,241.0	62.0	14.7	30.9	0.15	-0.12	0.71
2,503.0	5.17	358.74	2,497.3	1,340.3	73.4	14.8	38.5	2.73	-2.71	-3.00
2,603.0	4.54	359.10	2,597.0	1,440.0	81.9	14.6	44.3	0.63	-0.63	0.36
2,703.0	4.39	359.16	2,696.7	1,539.7	89.6	14.5	49.6	0.15	-0.15	0.06
2,803.0	4.09	356.79	2,796.4	1,639.4	97.0	14.3	54.8	0.35	-0.30	-2.37
2,903.0	3.78	355.64	2,896.2	1,739.2	103.9	13.8	59.7	0.32	-0.31	-1.15
3,003.0	3.44	355.30	2,996.0	1,839.0	110.2	13.3	64.3	0.34	-0.34	-0.34
3,103.0	2.38	356.48	3,095.8	1,938.8	115.2	12.9	68.0	1.06	-1.06	1.18
3,203.0	1.40	358.97	3,195.8	2,038.8	118.5	12.8	70.3	0.98	-0.98	2.49
3,303.0	0.92	354.84	3,295.8	2,138.8	120.5	12.7	71.8	0.49	-0.48	-4.13
3,403.0	0.60	351.16	3,395.8	2,238.8	121.9	12.5	72.8	0.32	-0.32	-3.68
3,503.0	0.48	354.66	3,495.7	2,338.7	122.8	12.4	73.5	0.12	-0.12	3.50
3,603.0	0.38	348.26	3,595.7	2,438.7	123.5	12.3	74.1	0.11	-0.10	-6.40
3,703.0	0.38	349.09	3,695.7	2,538.7	124.2	12.2	74.6	0.01	0.00	0.83
3,803.0	0.26	325.51	3,795.7	2,638.7	124.7	12.0	75.1	0.18	-0.12	-23.58
3,903.0	0.31	305.99	3,895.7	2,738.7	125.0	11.6	75.6	0.11	0.05	-19.52
4,003.0	0.33	293.29	3,995.7	2,838.7	125.3	11.2	76.1	0.07	0.02	-12.70
4,103.0	0.43	277.81	4,095.7	2,938.7	125.5	10.5	76.7	0.14	0.10	-15.48
4,203.0	0.57	266.19	4,195.7	3,038.7	125.5	9.7	77.4	0.17	0.14	-11.62
4,303.0	0.71	259.58	4,295.7	3,138.7	125.3	8.5	78.1	0.16	0.14	-6.61
4,403.0	0.77	260.13	4,395.7	3,238.7	125.1	7.3	78.9	0.06	0.06	0.55
4,503.0	0.83	258.61	4,495.7	3,338.7	124.9	5.9	79.7	0.06	0.06	-1.52
4,603.0	0.90	259.87	4,595.7	3,438.7	124.6	4.4	80.6	0.07	0.07	1.26
4,703.0	0.99	259.69	4,695.7	3,538.7	124.3	2.8	81.6	0.09	0.09	-0.18
4,803.0	1.07	262.55	4,795.7	3,638.7	124.0	1.0	82.7	0.10	0.08	2.86
4,903.0	0.93	265.43	4,895.7	3,738.7	123.8	-0.7	83.9	0.15	-0.14	2.88

<b>Database:</b>	EDM 5000.1 Single User Dr.	<b>Local Co-ordinate Reference:</b>	Well Well #515989 - Mercallus - Sls 515989
<b>Company:</b>	EQT PRODUCTION	<b>TVD Reference:</b>	KB 16 @ 115' built
<b>Project:</b>	Coddridge County, WV	<b>MD Reference:</b>	KB 16 @ 115' built
<b>Site:</b>	QXE 133	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #515989 - Mercallus	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515989.kx Dotted 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)
5,003.0	0.91	261.17	4,995.6	3,838.6	123.6	-2.3	85.0	0.07	-0.02	-4.26
Gyro Tie Co=5018' MD										
5,018.0	0.96	265.53	5,010.6	3,853.6	123.6	-2.5	85.1	0.58	0.33	29.07
5,026.0	1.00	264.20	5,018.6	3,861.6	123.6	-2.7	85.2	0.58	0.50	-16.63
KOP=5057' MD/5050' TVD										
5,057.0	1.60	343.40	5,049.6	3,892.6	124.0	-3.1	85.8	5.55	1.94	255.48
5,089.0	5.00	3.00	5,081.6	3,924.6	125.8	-3.1	87.0	11.04	10.63	61.25
5,120.0	7.80	4.70	5,112.4	3,955.4	129.3	-2.9	89.2	9.05	9.03	5.48
5,152.0	10.80	6.70	5,144.0	3,987.0	134.4	-2.4	92.2	9.43	9.38	6.25
5,183.0	13.10	9.70	5,174.3	4,017.3	140.7	-1.4	95.8	7.68	7.42	9.68
5,215.0	15.00	11.80	5,205.3	4,048.3	148.4	0.0	99.9	6.15	5.94	6.56
5,246.0	17.10	11.10	5,235.1	4,078.1	156.8	1.7	104.3	6.80	6.77	-2.26
5,278.0	19.30	11.30	5,265.5	4,108.5	166.6	3.7	109.4	6.88	6.88	0.63
5,310.0	21.20	11.80	5,295.5	4,138.5	177.4	5.9	115.1	5.96	5.94	1.56
5,341.0	23.00	12.20	5,324.2	4,167.2	188.8	8.3	121.0	5.83	5.81	1.29
5,373.0	25.10	11.50	5,353.5	4,196.5	201.6	11.0	127.6	6.62	6.56	-2.19
5,404.0	27.60	10.90	5,381.2	4,224.2	215.1	13.7	134.7	8.11	8.06	-1.94
5,436.0	30.10	11.10	5,409.3	4,252.3	230.3	16.6	142.8	7.82	7.81	0.63
5,467.0	32.50	12.10	5,435.8	4,278.8	246.0	19.8	151.0	7.92	7.74	3.23
5,499.0	34.60	12.80	5,462.4	4,305.4	263.3	23.7	159.8	6.67	6.56	2.19
5,562.0	36.00	13.80	5,513.8	4,356.8	298.7	32.0	177.4	2.40	2.22	1.59
5,625.0	36.10	13.90	5,564.8	4,407.8	334.7	40.9	195.1	0.18	0.16	0.16
5,688.0	37.40	13.80	5,615.3	4,458.3	371.3	49.9	213.1	2.07	2.06	-0.16
5,751.0	38.10	14.30	5,665.1	4,508.1	408.7	59.3	231.3	1.21	1.11	0.79
5,814.0	38.10	13.30	5,714.6	4,557.6	446.5	68.6	249.9	0.98	0.00	-1.59
5,877.0	36.80	15.10	5,764.7	4,607.7	483.6	78.0	268.0	2.70	-2.06	2.86
5,940.0	36.20	15.60	5,815.3	4,658.3	519.8	87.9	285.0	1.06	-0.95	0.79
6,003.0	36.00	14.80	5,866.2	4,709.2	555.6	97.6	301.9	0.81	-0.32	-1.27
6,066.0	35.60	14.90	5,917.3	4,760.3	591.2	107.1	318.9	0.64	-0.63	0.16
6,129.0	36.80	13.10	5,968.1	4,811.1	627.3	116.1	336.5	2.54	1.90	-2.86
6,192.0	36.80	12.10	6,018.6	4,861.6	664.1	124.3	353.3	0.95	0.00	-1.59
6,255.0	36.50	12.70	6,069.1	4,912.1	700.9	132.4	374.0	0.74	-0.48	0.95
6,286.0	36.20	13.20	6,094.1	4,937.1	718.8	136.5	383.0	1.36	-0.97	1.61
6,318.0	36.00	10.30	6,120.0	4,963.0	737.2	140.3	392.6	5.38	-0.63	-9.06
6,349.0	36.50	4.10	6,145.0	4,988.0	755.4	142.6	403.2	11.93	1.61	-20.00
6,381.0	37.00	358.70	6,170.6	5,013.6	774.5	143.1	415.7	10.21	1.56	-16.88
6,412.0	38.30	354.90	6,195.2	5,038.2	793.4	142.0	429.2	8.58	4.19	-12.26
6,444.0	39.80	353.10	6,220.0	5,063.0	813.4	139.9	444.3	5.88	4.69	-5.63
6,475.0	41.30	351.10	6,243.6	5,086.6	833.4	137.1	459.7	6.40	4.84	6.45
6,507.0	42.60	347.90	6,267.4	5,110.4	854.4	133.2	476.8	7.82	4.06	10.00
6,538.0	44.00	344.40	6,289.9	5,132.9	875.1	128.1	494.5	8.96	4.52	11.23
6,570.0	46.00	342.50	6,312.6	5,155.6	896.7	121.7	513.8	7.53	6.25	-5.94
6,601.0	47.80	341.20	6,333.7	5,176.7	918.3	114.6	533.5	6.56	5.81	-4.19

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Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 6000 - Single User Op	<b>Local Co-ordinate Reference:</b>	Well #515989 - Marcellus - Slot 515989
<b>Company:</b>	EQT PRODUCTION	<b>TVD Reference:</b>	KB 1B @ 118' Depth
<b>Project:</b>	Doddridge County, WV	<b>MD Reference:</b>	KB 1B @ 1187' Depth
<b>Site:</b>	OXF 153	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #515989 - Marcellus	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515989 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)	
6,632.0	49.70	338.90	6,354.2	5,197.2	940.2	106.7	554.1	8.29	6.13	-7.42	
6,664.0	51.40	336.60	6,374.5	5,217.5	963.0	97.3	576.5	7.68	5.31	-7.19	
6,695.0	53.30	334.00	6,393.5	5,236.5	985.3	87.0	599.1	9.04	6.13	-8.39	
6,727.0	54.90	331.50	6,412.2	5,255.2	1,008.4	75.2	623.3	8.06	5.00	-7.81	
6,758.0	57.20	329.40	6,429.5	5,272.5	1,030.7	62.5	647.8	9.31	7.42	-6.77	
6,790.0	59.30	327.70	6,446.4	5,289.4	1,053.9	48.3	673.9	7.97	6.56	-5.31	
6,821.0	61.00	326.10	6,461.8	5,304.8	1,076.4	33.6	699.9	7.08	5.48	-5.16	
6,853.0	62.70	324.40	6,476.9	5,319.9	1,099.6	17.5	727.4	7.08	5.31	-5.31	
6,884.0	64.50	322.80	6,490.7	5,333.7	1,122.0	1.0	754.7	7.42	5.81	-5.16	
6,916.0	66.90	321.00	6,503.9	5,346.9	1,144.9	-17.0	783.4	9.08	7.50	-5.63	
-Tully											
6,929.4	67.94	320.48	6,509.0	5,352.0	1,154.5	-24.8	795.7	8.53	7.73	-3.91	
6,947.0	69.30	319.80	6,515.4	5,358.4	1,167.1	-35.3	811.9	8.53	7.75	-3.84	
6,979.0	70.90	318.50	6,526.3	5,369.3	1,189.8	-55.0	841.8	6.29	5.00	-4.06	
-Hamilton											
6,987.4	71.49	318.06	6,529.0	5,372.0	1,195.7	-60.2	849.6	8.63	7.08	-5.21	
7,010.0	73.10	316.90	6,535.9	5,378.9	1,211.6	-74.8	871.1	8.63	7.10	-5.14	
-Marcellus											
7,013.9	73.41	316.64	6,537.0	5,380.0	1,214.3	-77.4	874.8	10.29	8.10	-6.64	
7,042.0	75.70	314.80	6,544.5	5,387.5	1,233.7	-96.3	901.9	10.29	8.13	-6.55	
7,073.0	77.90	313.40	6,551.6	5,394.6	1,254.7	-118.0	932.0	8.35	7.10	-4.52	
7,105.0	79.00	312.10	6,558.0	5,401.0	1,276.0	-141.0	963.4	5.26	3.44	-4.06	
7,136.0	81.10	310.80	6,563.3	5,406.3	1,296.2	-163.9	993.9	7.93	6.77	-4.19	
7,168.0	83.50	309.60	6,567.6	5,410.6	1,316.7	-188.1	1,025.6	8.37	7.50	-3.75	
7,199.0	83.80	307.90	6,571.0	5,414.0	1,336.0	-212.1	1,056.3	5.54	0.97	-5.48	
7,231.0	84.90	306.10	6,574.2	5,417.2	1,355.1	-237.6	1,088.1	6.57	3.44	-5.63	
7,262.0	86.30	304.10	6,576.6	5,419.6	1,372.9	-262.8	1,118.7	7.86	4.52	-6.45	
515989 Plat LP											
7,277.5	86.87	303.66	6,577.5	5,420.5	1,381.5	-275.7	1,134.0	4.63	3.65	-2.86	
515989 Plat LP p8											
7,278.4	86.90	303.63	6,577.6	5,420.6	1,382.1	-276.5	1,134.9	4.63	3.65	-2.86	
7,325.0	88.60	302.30	6,579.4	5,422.4	1,407.4	-315.5	1,180.8	4.63	3.65	-2.86	
LP#7388' MD#6681' TVD											
7,388.0	88.70	301.70	6,580.9	5,423.9	1,440.7	-368.9	1,242.8	0.97	0.16	-0.95	
7,451.0	88.40	303.40	6,582.5	5,425.5	1,474.6	-422.0	1,304.9	2.74	-0.48	2.70	
7,514.0	87.80	302.90	6,584.5	5,427.5	1,509.1	-474.7	1,367.0	1.24	-0.95	-0.79	
7,577.0	88.80	303.20	6,586.4	5,429.4	1,543.4	-527.5	1,429.2	1.66	1.59	0.48	
7,640.0	88.80	303.20	6,587.7	5,430.7	1,577.9	-580.2	1,491.4	0.00	0.00	0.00	
7,703.0	91.40	303.60	6,587.6	5,430.6	1,612.6	-632.8	1,553.6	4.18	4.13	0.63	
7,765.0	92.20	307.20	6,585.7	5,428.7	1,648.5	-683.3	1,615.1	5.95	2.29	5.81	
7,828.0	89.50	305.70	6,584.7	5,427.7	1,685.9	-734.0	1,677.8	4.90	-4.29	-2.36	
7,891.0	87.40	303.80	6,586.4	5,429.4	1,721.8	-785.7	1,740.2	4.49	-3.33	-3.02	
7,954.0	87.10	303.50	6,589.5	5,432.5	1,756.6	-838.1	1,802.4	0.67	-0.48	-1.48	
8,017.0	87.50	302.50	6,592.4	5,435.4	1,790.9	-890.9	1,864.5	1.71	0.63	-1.59	

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Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 5000 1 Single Data Co.	<b>Local Co-ordinate Reference:</b>	Well Well #515569 - Marcellus - Slot #15569
<b>Company:</b>	EQT PRODUCTION	<b>TVD Reference:</b>	W 10.00 (157.00)
<b>Project:</b>	DeWette County, WV	<b>MD Reference:</b>	N 10.00 (157.00)
<b>Site:</b>	DKR 103	<b>North Reference:</b>	0.00
<b>Well:</b>	Well #515569 - Marcellus	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515569 as 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)
8,081.0	89.20	301.70	6,594.3	5,437.3	1,824.9	-945.0	1,927.4	2.94	2.66	-1.25
8,144.0	89.70	301.40	6,594.9	5,437.9	1,857.9	-998.7	1,989.3	0.93	0.79	-0.48
<b>Orbitopia:</b>										
8,162.0	89.58	301.28	6,595.0	5,438.0	1,867.3	-1,014.1	2,007.0	0.91	-0.65	-0.65
8,206.0	89.30	301.00	6,595.4	5,438.4	1,890.0	-1,051.8	2,050.2	0.91	-0.65	-0.65
8,269.0	89.20	300.90	6,596.3	5,439.3	1,922.4	-1,105.8	2,111.9	0.22	-0.16	-0.16
8,332.0	88.30	300.90	6,597.6	5,440.6	1,954.7	-1,159.8	2,173.7	1.43	-1.43	0.00
8,391.0	85.50	299.50	6,600.8	5,443.8	1,984.4	-1,210.7	2,231.3	5.30	-4.75	-2.37
8,454.0	86.80	299.20	6,605.0	5,448.0	2,015.2	-1,265.5	2,292.5	2.12	2.06	-0.48
8,517.0	87.40	301.50	6,608.2	5,451.2	2,047.0	-1,319.8	2,354.1	3.77	0.95	3.65
8,580.0	86.40	297.80	6,611.6	5,454.6	2,078.1	-1,374.5	2,415.4	6.08	-1.59	-5.87
8,642.0	86.60	298.10	6,615.4	5,458.4	2,107.1	-1,429.1	2,475.4	0.58	0.32	0.48
8,706.0	88.60	301.80	6,618.1	5,461.1	2,139.0	-1,484.5	2,537.8	6.57	3.13	5.78
8,768.0	89.50	303.70	6,619.1	5,462.1	2,172.5	-1,536.7	2,598.9	3.39	1.45	3.06
8,831.0	88.60	305.10	6,620.2	5,463.2	2,208.1	-1,588.6	2,661.3	2.64	-1.43	2.22
8,895.0	88.50	305.10	6,621.8	5,464.8	2,244.9	-1,641.0	2,724.8	0.16	-0.16	0.00
8,957.0	87.60	304.30	6,623.9	5,466.9	2,280.2	-1,691.9	2,786.2	1.94	-1.45	-1.29
9,021.0	87.50	304.10	6,626.6	5,469.6	2,316.1	-1,744.8	2,849.5	0.35	-0.16	-0.31
9,084.0	89.00	305.70	6,628.6	5,471.6	2,352.2	-1,796.5	2,912.0	3.48	2.38	2.54
<b>Depth Point=147' MD/529' TVD</b>										
9,147.0	89.80	304.40	6,629.2	5,472.2	2,388.3	-1,848.0	2,974.4	2.42	1.27	-2.06
9,211.0	92.40	305.00	6,628.0	5,471.0	2,424.8	-1,900.6	3,037.9	4.17	4.06	0.94
9,274.0	95.10	306.80	6,623.9	5,466.9	2,461.6	-1,951.6	3,100.3	5.15	4.29	2.86
9,337.0	95.30	305.90	6,618.2	5,461.2	2,498.8	-2,002.1	3,162.7	1.46	0.32	-1.43
9,400.0	95.20	305.10	6,612.4	5,455.4	2,535.2	-2,053.2	3,225.0	1.27	-0.16	-1.27
9,463.0	94.30	305.80	6,607.2	5,450.2	2,571.6	-2,104.3	3,287.3	1.81	-1.43	1.11
9,526.0	93.80	304.30	6,602.7	5,445.7	2,607.7	-2,155.7	3,349.7	2.50	-0.79	-2.38
9,589.0	92.60	303.50	6,599.2	5,442.2	2,642.8	-2,208.0	3,411.9	2.29	-1.90	-1.27
9,653.0	92.20	303.30	6,596.5	5,439.5	2,678.0	-2,261.3	3,475.1	0.70	-0.63	-0.31
9,716.0	92.00	303.00	6,594.2	5,437.2	2,712.4	-2,314.0	3,537.2	0.57	-0.32	-0.48
9,779.0	94.70	303.60	6,590.6	5,433.6	2,747.0	-2,366.6	3,599.3	4.39	4.29	0.95
9,842.0	96.00	305.40	6,584.7	5,427.7	2,782.5	-2,418.3	3,661.5	3.51	2.06	2.86
9,906.0	95.60	304.20	6,578.2	5,421.2	2,818.8	-2,470.6	3,724.6	1.97	-0.63	-1.88
9,969.0	94.80	304.40	6,572.5	5,415.5	2,854.2	-2,522.4	3,786.7	1.31	-1.27	0.32
10,032.0	93.10	303.20	6,568.2	5,411.2	2,889.1	-2,574.6	3,848.9	3.30	-2.70	-1.90
10,095.0	93.10	302.60	6,564.8	5,407.8	2,923.3	-2,627.5	3,910.9	0.95	0.00	-0.95
10,158.0	93.70	300.80	6,561.0	5,404.0	2,956.4	-2,681.0	3,972.7	0.01	0.95	1.86
10,221.0	93.90	300.60	6,556.8	5,399.8	2,988.5	-2,735.0	4,034.3	0.45	-0.32	-0.32
10,284.0	95.50	300.40	6,551.7	5,394.7	3,020.3	-2,789.1	4,095.8	2.50	0.54	-0.32
10,347.0	94.80	300.20	6,546.0	5,389.0	3,052.0	-2,843.3	4,157.1	1.16	-1.11	0.32
10,410.0	93.60	300.40	6,541.4	5,384.4	3,083.7	-2,897.5	4,218.6	1.93	-1.90	0.32
10,473.0	93.90	301.30	6,537.3	5,380.3	3,115.9	-2,951.5	4,280.2	1.50	0.48	1.43
10,536.0	91.60	299.20	6,534.3	5,377.3	3,147.6	-3,005.9	4,341.7	1.84	-3.65	0.83

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# Phoenix Technology Services

## Survey Report



<b>Database:</b>	EDM 5069 T Single User 01	<b>Local Co-ordinate Reference:</b>	Well Well #515988 - Marcellus - Slot 515989
<b>Company:</b>	EQT PRODUCTION	<b>TVD Reference:</b>	KB 1B @ 1157' Over
<b>Project:</b>	Doddridge County, WV	<b>MD Reference:</b>	KB 1B @ 1157' Over
<b>Site:</b>	D&F 163	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #515989 - Marcellus	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515989 As 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)
10,599.0	92.30	301.00	6,532.1	5,375.1	3,179.2	-3,060.3	4,403.3	3.06	1.11	2.86
10,662.0	93.40	303.50	6,529.0	5,372.0	3,212.8	-3,113.5	4,465.2	4.33	1.75	3.97
10,725.0	93.70	303.10	6,525.1	5,368.1	3,247.3	-3,166.1	4,527.3	0.79	0.48	-0.63
10,788.0	93.20	303.90	6,521.3	5,364.3	3,282.0	-3,218.5	4,589.4	1.50	-0.79	1.27
10,851.0	92.00	305.30	6,518.4	5,361.4	3,317.7	-3,270.3	4,651.8	2.93	-1.90	2.22
10,914.0	89.90	305.20	6,517.4	5,360.4	3,354.1	-3,321.8	4,714.3	3.34	-3.33	-0.16
10,977.0	90.00	305.00	6,517.5	5,360.5	3,390.3	-3,373.3	4,776.8	0.35	0.16	-0.32
11,040.0	91.20	306.10	6,516.8	5,359.8	3,426.9	-3,424.6	4,839.4	2.58	1.90	1.75
11,103.0	91.40	307.40	6,515.4	5,358.4	3,464.6	-3,475.0	4,902.1	2.09	0.32	2.06
11,167.0	90.90	307.30	6,514.1	5,357.1	3,503.4	-3,525.9	4,965.8	0.80	-0.78	-0.16
11,229.0	91.20	306.90	6,512.9	5,355.9	3,540.8	-3,575.3	5,027.5	0.81	0.48	-0.65
11,293.0	91.60	305.20	6,511.4	5,354.4	3,578.5	-3,627.1	5,091.1	2.73	0.63	-2.66
11,356.0	91.50	302.10	6,509.7	5,352.7	3,613.4	-3,679.5	5,153.4	4.92	-0.16	-4.92
11,420.0	92.00	301.30	6,507.7	5,350.7	3,647.0	-3,733.9	5,216.3	1.47	0.78	-1.25
11,482.0	92.10	301.10	6,505.5	5,348.5	3,679.1	-3,786.9	5,277.0	0.36	0.16	-0.32
11,545.0	90.80	302.10	6,503.9	5,346.9	3,712.1	-3,840.5	5,338.9	2.60	-2.06	1.59
11,608.0	90.10	302.30	6,503.4	5,346.4	3,745.6	-3,893.9	5,400.9	1.16	-1.11	0.32
11,671.0	90.20	302.10	6,503.2	5,346.2	3,779.2	-3,947.2	5,463.0	0.35	0.16	-0.32
11,735.0	90.80	302.50	6,502.7	5,345.7	3,813.4	-4,001.3	5,526.0	1.13	0.94	0.63
11,798.0	90.60	302.40	6,501.9	5,344.9	3,847.2	-4,054.4	5,588.0	0.35	-0.32	-0.16
11,861.0	91.10	302.10	6,501.0	5,344.0	3,880.8	-4,107.7	5,650.1	0.93	0.79	-0.48
11,924.0	91.30	302.20	6,499.7	5,342.7	3,914.3	-4,161.0	5,712.1	0.35	0.32	0.16
11,987.0	91.30	301.80	6,498.2	5,341.2	3,947.7	-4,214.4	5,774.0	0.63	0.00	-0.63
12,051.0	91.40	302.20	6,496.7	5,339.7	3,981.6	-4,268.7	5,837.0	0.64	0.16	0.63
12,114.0	91.40	302.40	6,495.2	5,338.2	4,015.3	-4,321.9	5,899.0	0.32	0.00	0.32
12,176.0	91.40	302.70	6,493.7	5,336.7	4,048.6	-4,374.2	5,960.1	0.48	0.00	0.48
12,239.0	91.20	300.50	6,492.2	5,335.2	4,081.6	-4,427.8	6,022.0	3.51	-0.32	-3.49
12,303.0	89.20	300.20	6,492.0	5,335.0	4,114.0	-4,483.0	6,084.6	3.16	-3.13	-0.47
12,366.0	89.30	300.30	6,492.8	5,335.8	4,145.7	-4,537.5	6,146.2	0.22	0.16	0.16
Final Survey=12396' MD/6493' TVD										
12,396.0	89.30	300.20	6,493.2	5,336.2	4,160.8	-4,563.4	6,175.5	0.33	0.00	-0.33
515989 Plat TD - 515989 Plat TD pK										
12,457.4	89.30	300.20	6,494.0	5,337.0	4,191.7	-4,616.5	6,235.6	0.00	0.00	0.00
PROJ to Bit=12453' MD/6494' TVD										
12,458.0	89.30	300.20	6,494.0	5,337.0	4,192.0	-4,617.0	6,236.1	0.00	0.00	0.00



Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Well #515989 - Marcellus - Slot 515989
Company:	EQT PRODUCTION	TVD Reference:	KB 18' @ 1157.0usft
Project:	Doddridge County, WV	MD Reference:	KB 18' @ 1157.0usft
Site:	OXE 153	North Reference:	Gnd
Well:	Well #515989 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515989 As Drilled Surveys		

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,929.4	6,509.0	-Tully			
6,987.4	6,529.0	-Hamilton			
7,013.9	6,537.0	-Marcellus			
8,162.0	6,595.0	Onondaga			

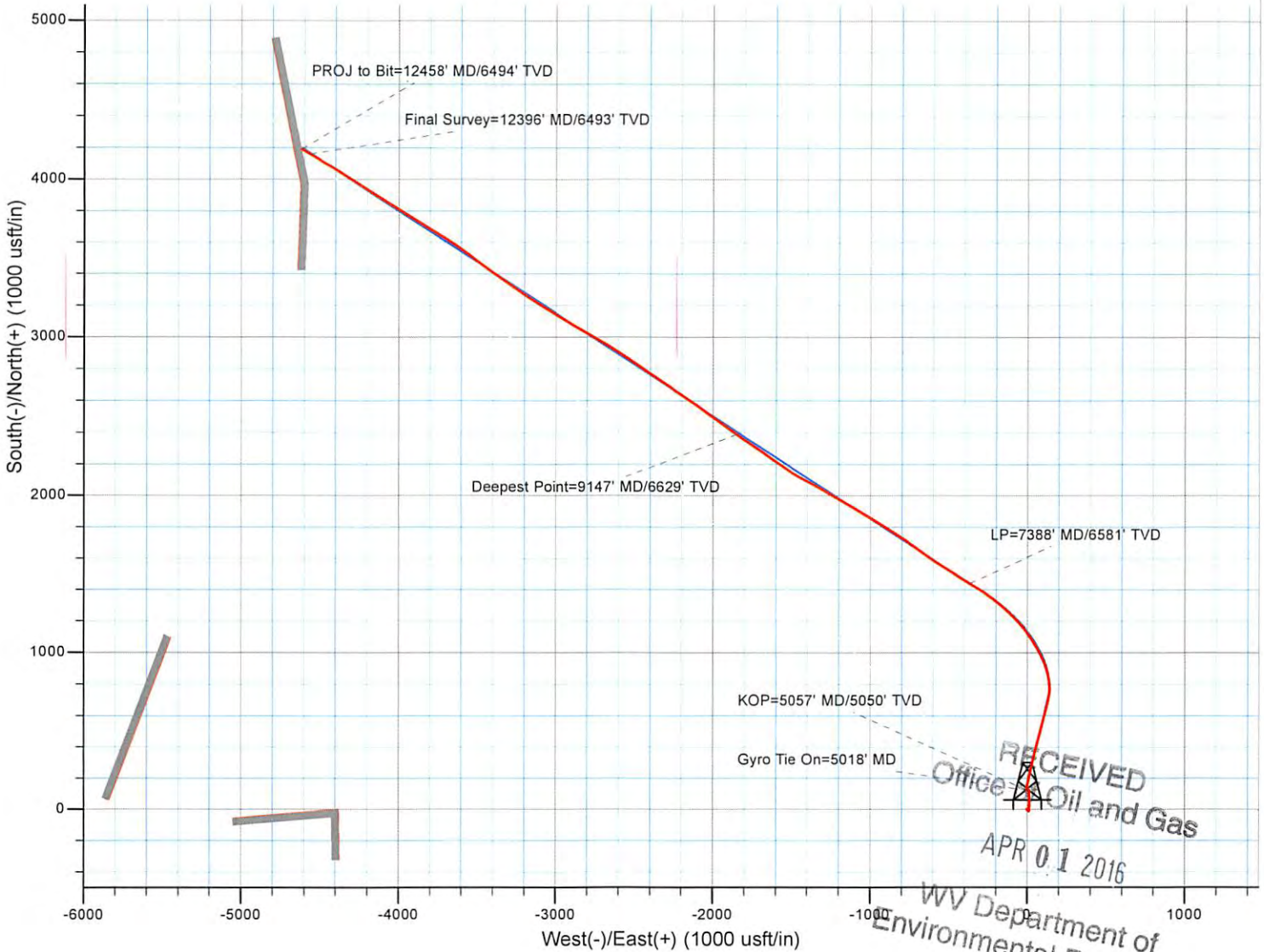
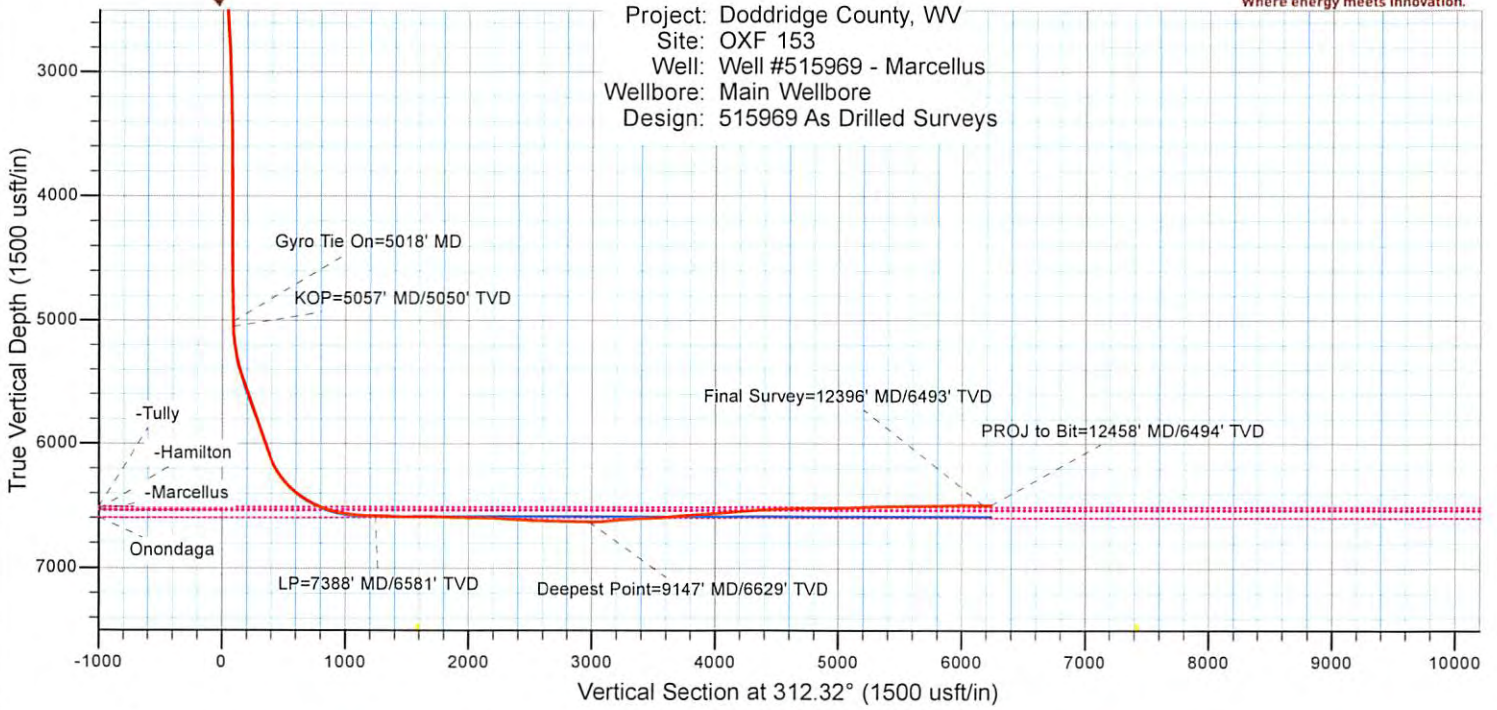
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,018.0	5,010.6	123.6	-2.5	Gyro Tie On=5018' MD
5,057.0	5,049.6	124.0	-3.1	KOP=5057' MD/5050' TVD
7,388.0	6,580.9	1,440.7	-368.9	LP=7388' MD/6581' TVD
9,147.0	6,629.2	2,388.3	-1,848.0	Deepest Point=9147' MD/6629' TVD
12,396.0	6,493.2	4,160.8	-4,563.4	Final Survey=12396' MD/6493' TVD
12,458.0	6,494.0	4,192.0	-4,617.0	PROJ to Bit=12458' MD/6494' TVD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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Project: Doddridge County, WV  
 Site: OXF 153  
 Well: Well #515969 - Marcellus  
 Wellbore: Main Wellbore  
 Design: 515969 As Drilled Surveys



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