



EQT Production - Marcellus

Doddridge County, WV Grid

Doddridge County 514661

Well #514661

Main Wellbore

Design: As Drilled Surveys

Standard Survey Report

03 November, 2014

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Survey Report



Database: EDM 5000.1 Single User Db	Local Co-ordinate Reference: Site Doddridge County 514661	
Company: EQT Production - Marcellus	TVD Reference: KB @ 1224.0usft	
Project: Doddridge County, WV Grid	MD Reference: KB @ 1224.0usft	
Site: Doddridge County 514661	North Reference: Grid	
Well: Well #514661	Survey Calculation Method: Minimum Curvature	
Wellbore: Main Wellbore		
Design: As Drilled Surveys		

Project Doddridge County, WV Grid

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	Using geodetic scale factor

Site Doddridge County 514661

Site Position:	Northing: 277,717.00 usft	Latitude: 39.26
From: Map	Easting: 1,642,280.20 usft	Longitude: -80.76
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: -0.81 °

Well Well #514661

Well Position +N/-S	0.0 usft	Northing: 277,717.00 usft	Latitude: 39° 15' 20.131 N
+E/-W	0.0 usft	Easting: 1,642,280.20 usft	Longitude: 80° 45' 47.791 W
Position Uncertainty	0.0 usft	Wellhead Elevation: usft	Ground Level: 1,208.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	10/13/2014	-8.49	66.75	52,234

Design 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	163.29

Survey Program Date 11/3/2014

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,450.0	514661 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	17,682.0	514661 PHX MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination

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	-1,224.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.19	291.63	100.0	-1,124.0	0.1	-0.2	-0.1	0.19	0.19	0.00
200.0	0.17	178.60	200.0	-1,024.0	0.0	-0.3	-0.1	0.30	-0.02	0.00
300.0	0.15	157.58	300.0	-924.0	-0.3	-0.3	0.2	0.06	-0.02	-21.02
400.0	0.13	163.88	400.0	-824.0	-0.5	-0.2	0.5	0.03	-0.02	6.30
500.0	0.10	134.99	500.0	-724.0	-0.7	-0.1	0.6	0.06	-0.03	-28.89
600.0	0.11	113.88	600.0	-624.0	-0.8	0.1	0.8	0.04	0.01	-21.11
700.0	0.11	131.34	700.0	-524.0	-0.9	0.2	0.9	0.03	0.00	17.46

06/05/2015



Phoenix Technology Services
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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514661	North Reference:	Grid
Well:	Well #514661	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	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)	
800.0	0.06	110.28	800.0	-424.0	-1.0	0.4	1.0	0.06	-0.05	-21.06	
900.0	0.05	57.30	900.0	-324.0	-1.0	0.4	1.1	0.05	-0.01	-52.98	
1,000.0	0.07	38.56	1,000.0	-224.0	-0.9	0.5	1.0	0.03	0.02	-18.74	
1,100.0	0.04	138.70	1,100.0	-124.0	-0.9	0.6	1.0	0.09	-0.03	100.14	
1,200.0	0.30	83.39	1,200.0	-24.0	-0.9	0.9	1.1	0.28	0.26	-55.31	
1,300.0	0.95	83.64	1,300.0	76.0	-0.8	1.9	1.3	0.65	0.65	0.25	
1,400.0	1.17	89.16	1,400.0	176.0	-0.6	3.8	1.7	0.24	0.22	5.52	
1,500.0	1.16	97.13	1,500.0	276.0	-0.8	5.8	2.4	0.16	-0.01	7.97	
1,600.0	1.22	102.67	1,599.9	375.9	-1.1	7.9	3.3	0.13	0.06	5.54	
1,700.0	1.23	106.24	1,699.9	475.9	-1.7	9.9	4.4	0.08	0.01	3.57	
1,800.0	1.08	110.89	1,799.9	575.9	-2.3	11.8	5.6	0.18	-0.15	4.65	
1,900.0	1.09	115.60	1,899.9	675.9	-3.0	13.6	6.8	0.09	0.01	4.71	
2,000.0	1.05	119.40	1,999.9	775.9	-3.9	15.2	8.1	0.08	-0.04	3.80	
2,100.0	1.03	118.20	2,099.8	875.8	-4.8	16.8	9.4	0.03	-0.02	-1.20	
2,200.0	1.08	117.64	2,199.8	975.8	-5.6	18.4	10.7	0.05	0.05	-0.56	
2,300.0	1.02	119.89	2,299.8	1,075.8	-6.5	20.1	12.0	0.07	-0.06	2.25	
2,400.0	0.97	119.62	2,399.8	1,175.8	-7.4	21.6	13.3	0.05	-0.05	-0.27	
2,500.0	0.99	123.38	2,499.8	1,275.8	-8.3	23.0	14.5	0.07	0.02	3.76	
2,600.0	0.78	128.44	2,599.8	1,375.8	-9.2	24.3	15.8	0.22	-0.21	5.06	
2,700.0	0.68	132.17	2,699.8	1,475.8	-10.0	25.2	16.8	0.11	-0.10	3.73	
2,800.0	0.68	129.37	2,799.7	1,575.7	-10.8	26.1	17.8	0.03	0.00	-2.80	
2,900.0	0.67	130.55	2,899.7	1,675.7	-11.5	27.0	18.8	0.02	-0.01	1.18	
3,000.0	0.71	130.26	2,999.7	1,775.7	-12.3	28.0	19.8	0.04	0.04	-0.29	
3,100.0	0.72	140.40	3,099.7	1,875.7	-13.2	28.8	20.9	0.13	0.01	10.14	
3,200.0	0.74	149.47	3,199.7	1,975.7	-14.2	29.6	22.1	0.12	0.02	9.07	
3,300.0	0.78	150.46	3,299.7	2,075.7	-15.4	30.2	23.4	0.04	0.04	0.99	
3,400.0	0.77	153.17	3,399.7	2,175.7	-16.6	30.9	24.7	0.04	-0.01	2.71	
3,500.0	0.75	158.30	3,499.7	2,275.7	-17.8	31.4	26.1	0.07	-0.02	5.13	
3,600.0	0.76	155.00	3,599.7	2,375.7	-19.0	31.9	27.4	0.04	0.01	-3.30	
3,700.0	0.85	164.30	3,699.7	2,475.7	-20.3	32.4	28.8	0.16	0.09	9.30	
3,800.0	0.95	163.26	3,799.7	2,575.7	-21.8	32.9	30.3	0.10	0.10	-1.04	
3,900.0	1.02	185.70	3,899.6	2,675.6	-23.5	33.0	32.0	0.39	0.07	22.44	
4,000.0	1.03	194.65	3,999.6	2,775.6	-25.2	32.7	33.6	0.16	0.01	8.95	
4,100.0	1.05	203.34	4,099.6	2,875.6	-27.0	32.1	35.0	0.16	0.02	8.69	
4,200.0	1.02	211.04	4,199.6	2,975.6	-28.6	31.3	36.3	0.14	-0.03	7.70	
4,300.0	1.09	225.66	4,299.6	3,075.6	-30.0	30.1	37.4	0.28	0.07	14.62	
4,400.0	1.10	238.19	4,399.6	3,175.6	-31.2	28.6	38.1	0.24	0.01	12.53	
4,500.0	1.15	244.49	4,499.5	3,275.5	-32.1	26.9	38.5	0.13	0.05	6.30	
4,600.0	1.20	246.49	4,599.5	3,375.5	-32.9	25.1	38.8	0.06	0.05	2.00	
4,700.0	1.09	260.94	4,699.5	3,475.5	-33.5	23.2	38.8	0.31	-0.11	14.45	
4,800.0	1.04	270.88	4,799.5	3,575.5	-33.6	21.3	38.4	0.19	-0.05	9.94	
4,900.0	1.04	281.62	4,899.5	3,675.5	-33.4	19.5	37.6	0.19	0.00	10.74	



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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514661	North Reference:	Grid
Well:	Well #514661	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	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)
5,000.0	1.22	280.81	4,999.4	3,775.4	-33.1	17.6	36.7	0.18	0.18	-0.81
5,100.0	1.03	283.74	5,099.4	3,875.4	-32.7	15.7	35.8	0.20	-0.19	2.93
5,200.0	1.15	281.97	5,199.4	3,975.4	-32.2	13.8	34.8	0.12	0.12	-1.77
5,300.0	1.43	284.56	5,299.4	4,075.4	-31.7	11.6	33.7	0.29	0.28	2.59
5,400.0	1.87	295.41	5,399.3	4,175.3	-30.7	8.9	32.0	0.54	0.44	10.85
Gyro Tie In=5450' MD										
5,450.0	1.91	295.40	5,449.3	4,225.3	-30.0	7.4	30.9	0.08	0.08	-0.02
KOP=5500' MD										
5,500.0	2.89	304.01	5,499.3	4,275.3	-28.9	5.6	29.3	2.08	1.96	17.23
5,545.0	3.80	307.90	5,544.2	4,320.2	-27.4	3.5	27.2	2.08	2.02	8.64
5,577.0	6.90	303.60	5,576.1	4,352.1	-25.7	1.1	24.9	9.76	9.69	-13.44
5,608.0	10.00	300.10	5,606.7	4,382.7	-23.3	-2.8	21.5	10.13	10.00	-11.29
5,640.0	12.70	295.90	5,638.1	4,414.1	-20.3	-8.4	17.1	8.82	8.44	-13.13
5,671.0	15.10	290.30	5,668.2	4,444.2	-17.5	-15.2	12.3	8.87	7.74	-18.06
5,702.0	16.90	285.90	5,698.0	4,474.0	-14.8	-23.3	7.5	7.00	5.81	-14.19
5,734.0	19.20	283.80	5,728.4	4,504.4	-12.3	-32.9	2.3	7.47	7.19	-6.56
5,765.0	21.10	284.30	5,757.5	4,533.5	-9.7	-43.3	-3.2	6.15	6.13	1.61
5,797.0	23.90	285.30	5,787.1	4,563.1	-6.6	-55.1	-9.6	8.83	8.75	3.13
5,828.0	26.90	286.50	5,815.1	4,591.1	-2.9	-67.9	-16.7	9.82	9.68	3.87
5,860.0	30.50	286.30	5,843.1	4,619.1	1.4	-82.6	-25.1	11.25	11.25	-0.63
5,891.0	33.10	286.10	5,869.5	4,645.5	6.0	-98.3	-34.0	8.39	8.39	-0.65
5,923.0	34.50	285.40	5,896.1	4,672.1	10.8	-115.5	-43.5	4.54	4.38	-2.19
5,954.0	35.90	285.40	5,921.4	4,697.4	15.6	-132.7	-53.0	4.52	4.52	0.00
5,985.0	37.00	286.60	5,946.3	4,722.3	20.6	-150.4	-63.0	4.23	3.55	3.87
6,017.0	38.40	287.20	5,971.6	4,747.6	26.3	-169.1	-73.8	4.52	4.38	1.88
6,049.0	40.20	288.10	5,996.4	4,772.4	32.5	-188.4	-85.3	5.90	5.63	2.81
6,080.0	42.50	287.50	6,019.7	4,795.7	38.7	-207.9	-96.9	7.53	7.42	-1.94
6,112.0	45.10	287.50	6,042.8	4,818.8	45.4	-229.0	-109.3	8.13	8.13	0.00
6,143.0	48.40	287.20	6,064.0	4,840.0	52.1	-250.6	-122.0	10.67	10.65	-0.97
6,174.0	51.40	287.50	6,084.0	4,860.0	59.2	-273.2	-135.2	9.71	9.68	0.97
6,206.0	54.30	287.80	6,103.3	4,879.3	66.9	-297.5	-149.6	9.09	9.06	0.94
6,238.0	56.60	287.50	6,121.4	4,897.4	74.9	-322.6	-164.5	7.23	7.19	-0.94
6,270.0	58.10	286.10	6,138.7	4,914.7	82.7	-348.4	-179.4	5.96	5.96	-3.23
6,301.0	59.40	285.10	6,154.8	4,930.8	89.8	-374.0	-193.5	5.02	4.19	-0.63
6,333.0	62.20	285.30	6,170.4	4,946.4	97.1	-400.9	-208.3	6.77	6.75	-0.31
6,365.0	65.60	285.20	6,184.5	4,960.5	104.7	-428.6	-223.5	10.63	10.63	-0.31
6,395.0	67.80	285.70	6,196.3	4,972.3	112.0	-455.2	-238.2	7.49	7.33	-0.31
6,427.0	69.20	285.90	6,208.1	4,984.1	120.2	-483.8	-254.2	4.41	4.38	0.63
6,458.0	69.70	286.30	6,219.0	4,995.0	128.2	-511.7	-269.9	2.02	1.81	1.29
6,489.0	70.10	286.10	6,229.6	5,005.6	136.3	-539.7	-285.7	1.43	1.29	-0.65
6,553.0	70.90	285.90	6,251.0	5,027.0	153.0	-597.7	-318.3	1.28	1.25	-0.31
6,616.0	71.50	285.30	6,271.3	5,047.3	169.0	-655.1	-350.2	1.31	0.95	-0.95
6,679.0	72.30	285.20	6,290.8	5,066.8	184.7	-712.9	-381.9	1.28	1.27	-0.16

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6,710.0	71.10	282.90	6,300.6	5,076.6	191.9	-741.4	-396.9	8.04	-3.87	-7.42	
6,742.0	69.30	278.80	6,311.4	5,087.4	197.6	-771.0	-410.9	13.30	-5.63	-12.81	
6,773.0	67.90	275.20	6,322.7	5,098.7	201.1	-799.6	-422.5	11.72	-4.52	-11.61	
6,805.0	67.00	272.20	6,335.0	5,111.0	203.0	-829.1	-432.8	9.10	-2.81	-9.38	
6,837.0	66.40	268.60	6,347.7	5,123.7	203.2	-858.5	-441.4	10.50	-1.88	-11.25	
6,868.0	66.40	265.00	6,360.1	5,136.1	201.6	-886.9	-448.1	10.64	0.00	-11.61	
6,900.0	65.90	261.80	6,373.0	5,149.0	198.2	-915.9	-453.2	9.28	-1.56	-10.00	
6,931.0	65.20	258.50	6,385.9	5,161.9	193.4	-943.7	-456.6	9.95	-2.26	-10.65	
6,963.0	64.40	255.90	6,399.5	5,175.5	187.0	-972.0	-458.6	7.76	-2.50	-8.13	
6,994.0	63.30	253.10	6,413.2	5,189.2	179.6	-998.8	-459.1	8.85	-3.55	-9.03	
7,026.0	62.80	249.80	6,427.7	5,203.7	170.5	-1,025.8	-458.2	9.32	-1.56	-10.31	
7,057.0	62.90	246.70	6,441.8	5,217.8	160.3	-1,051.4	-455.8	8.90	0.32	-10.00	
7,089.0	63.00	243.70	6,456.4	5,232.4	148.3	-1,077.3	-451.8	8.36	0.31	-9.38	
7,120.0	63.70	240.50	6,470.3	5,246.3	135.4	-1,101.8	-446.4	9.50	2.26	-10.32	
7,152.0	64.30	237.80	6,484.3	5,260.3	120.6	-1,126.5	-439.4	7.81	1.88	-8.44	
7,184.0	64.30	234.20	6,498.2	5,274.2	104.5	-1,150.4	-430.8	10.14	0.00	-11.25	
7,215.0	64.10	231.30	6,511.7	5,287.7	87.6	-1,172.6	-421.0	8.45	-0.65	-9.35	
7,247.0	64.10	227.40	6,525.7	5,301.7	68.9	-1,194.4	-409.3	10.96	0.00	-12.19	
7,279.0	64.00	224.10	6,539.7	5,315.7	48.8	-1,215.0	-396.0	9.28	-0.31	-10.31	
7,310.0	64.50	221.00	6,553.1	5,329.1	28.2	-1,233.9	-381.8	9.15	1.61	-10.00	
7,342.0	64.30	218.30	6,567.0	5,343.0	6.0	-1,252.3	-365.8	7.63	-0.63	-8.44	
7,374.0	65.00	215.00	6,580.7	5,356.7	-17.2	-1,269.6	-348.5	9.57	2.19	-10.31	
7,405.0	66.00	211.60	6,593.5	5,369.5	-40.8	-1,285.0	-330.4	10.49	3.23	-10.97	
7,437.0	68.10	208.30	6,606.0	5,382.0	-66.3	-1,299.7	-310.2	11.54	6.56	-10.31	
7,468.0	70.00	205.20	6,617.1	5,393.1	-92.1	-1,312.8	-289.2	11.17	6.13	-10.00	
LP=7487' MD/ 6623' TVD											
7,487.0	71.06	202.99	6,623.4	5,399.4	-108.5	-1,320.1	-275.6	12.29	5.58	-11.61	
7,500.0	71.80	201.50	6,627.6	5,403.6	-119.9	-1,324.7	-266.0	12.29	5.69	-11.49	
7,531.0	73.90	197.90	6,636.7	5,412.7	-147.8	-1,334.7	-242.2	13.00	6.77	-11.61	
7,563.0	75.00	194.70	6,645.3	5,421.3	-177.4	-1,343.4	-216.3	10.23	3.44	-10.00	
7,595.0	75.20	192.10	6,653.5	5,429.5	-207.4	-1,350.5	-189.6	7.88	0.63	-8.13	
7,626.0	75.10	188.80	6,661.5	5,437.5	-236.9	-1,356.0	-162.9	10.29	-0.32	-10.65	
7,657.0	75.20	185.20	6,669.4	5,445.4	-266.6	-1,359.6	-135.5	11.23	0.32	-11.61	
7,689.0	75.30	183.10	6,677.6	5,453.6	-297.5	-1,361.9	-106.6	6.35	0.31	-6.56	
7,721.0	75.50	180.20	6,685.6	5,461.6	-328.5	-1,362.8	-77.2	8.79	0.63	-8.13	
7,752.0	77.60	177.10	6,692.8	5,468.8	-358.6	-1,362.0	-48.1	11.85	0.77	-10.00	
7,784.0	80.70	174.70	6,698.9	5,474.9	-389.9	-1,359.8	-17.5	12.17	9.69	-7.50	
7,815.0	84.70	172.70	6,702.8	5,478.8	-420.5	-1,356.4	12.8	14.40	12.99	-10.00	
7,847.0	87.30	169.20	6,705.0	5,481.0	-452.0	-1,351.4	44.4	13.60	8.13	-10.94	
7,878.0	87.80	166.00	6,706.4	5,482.4	-482.3	-1,344.7	75.3	10.44	1.61	-10.32	
7,910.0	86.50	161.90	6,708.0	5,484.0	-513.0	-1,335.9	107.2	13.43	-4.06	-12.81	
7,941.0	86.60	157.60	6,709.8	5,485.8	-542.0	-1,325.2	138.1	13.85	0.32	-13.87	
7,973.0	87.40	154.00	6,711.5	5,487.5	-571.1	-1,312.1	169.8	11.51	2.50	-11.25	

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Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514661
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514661	North Reference:	Grid
Well:	Well #514661	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	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)	
8,004.0	89.60	153.00	6,712.3	5,488.3	-598.9	-1,298.3	200.3	7.79	7.10	-3.23	
8,067.0	90.50	153.00	6,712.2	5,488.2	-655.0	-1,269.7	262.3	1.43	1.43	0.00	
8,130.0	90.90	152.50	6,711.5	5,487.5	-711.0	-1,240.8	324.2	1.02	0.63	-0.79	
8,194.0	89.40	153.20	6,711.3	5,487.3	-767.9	-1,211.6	387.2	2.59	-2.34	1.09	
8,257.0	89.20	154.60	6,712.1	5,488.1	-824.5	-1,183.9	449.3	2.24	-0.32	2.22	
8,320.0	88.90	153.20	6,713.1	5,489.1	-881.1	-1,156.2	511.5	2.27	-0.48	-2.22	
8,383.0	88.50	152.50	6,714.6	5,490.6	-937.1	-1,127.5	573.4	1.28	-0.63	-1.11	
8,447.0	90.20	154.50	6,715.3	5,491.3	-994.4	-1,098.9	636.5	4.10	2.66	3.13	
8,510.0	92.40	155.80	6,713.9	5,489.9	-1,051.5	-1,072.4	698.8	4.06	3.49	2.06	
8,573.0	92.90	155.70	6,710.9	5,486.9	-1,108.9	-1,046.6	761.2	0.81	0.79	-0.16	
8,636.0	92.70	154.10	6,707.9	5,483.9	-1,165.9	-1,019.9	823.5	2.56	-0.32	-2.54	
8,699.0	92.40	153.00	6,705.1	5,481.1	-1,222.2	-991.9	885.5	1.81	-0.48	-1.75	
8,763.0	92.40	155.10	6,702.4	5,478.4	-1,279.7	-963.9	948.6	3.28	0.00	3.28	
8,826.0	91.70	155.70	6,700.1	5,476.1	-1,337.0	-937.7	1,011.0	1.46	-1.11	0.95	
8,889.0	90.20	155.40	6,699.1	5,475.1	-1,394.3	-911.6	1,073.4	2.43	-2.38	-0.48	
8,952.0	89.50	156.30	6,699.2	5,475.2	-1,451.8	-885.8	1,135.8	1.81	-1.11	1.43	
9,016.0	89.50	156.30	6,699.8	5,475.8	-1,510.4	-860.1	1,199.4	0.00	0.00	0.00	
9,079.0	89.30	155.50	6,700.5	5,476.5	-1,567.9	-834.4	1,261.8	1.31	-0.32	-1.27	
9,142.0	89.00	155.90	6,701.4	5,477.4	-1,625.3	-808.5	1,324.3	0.79	-0.48	0.63	
9,204.0	89.40	155.30	6,702.3	5,478.3	-1,681.8	-782.9	1,385.7	1.16	0.65	-0.97	
9,267.0	91.50	156.90	6,701.8	5,477.8	-1,739.4	-757.3	1,448.2	4.19	3.33	2.54	
9,330.0	91.60	156.10	6,700.1	5,476.1	-1,797.1	-732.2	1,510.7	1.28	0.16	-1.27	
9,393.0	91.90	154.70	6,698.1	5,474.1	-1,854.4	-706.0	1,573.1	2.27	0.48	-2.22	
9,456.0	92.10	154.30	6,695.9	5,471.9	-1,911.2	-678.9	1,635.3	0.71	0.32	-0.63	
9,519.0	90.50	154.30	6,694.5	5,470.5	-1,968.0	-651.6	1,697.5	2.54	-2.54	0.00	
9,583.0	89.60	153.90	6,694.5	5,470.5	-2,025.5	-623.6	1,760.7	1.54	-1.41	-0.63	
9,646.0	89.40	152.80	6,695.0	5,471.0	-2,081.8	-595.4	1,822.8	1.77	-0.32	-1.75	
9,709.0	89.50	153.40	6,695.6	5,471.6	-2,138.0	-566.9	1,884.8	0.97	0.16	0.95	
9,772.0	90.90	154.30	6,695.4	5,471.4	-2,194.6	-539.1	1,946.9	2.64	2.22	1.43	
9,835.0	91.70	156.10	6,694.0	5,470.0	-2,251.7	-512.7	2,009.3	3.13	1.27	2.86	
9,898.0	92.00	156.90	6,691.9	5,467.9	-2,309.5	-487.6	2,071.8	1.36	0.48	1.27	
9,961.0	92.00	156.00	6,689.7	5,465.7	-2,367.2	-462.4	2,134.3	1.43	0.00	-1.43	
10,024.0	92.10	155.40	6,687.5	5,463.5	-2,424.6	-436.5	2,196.7	0.96	0.16	-0.95	
10,087.0	92.40	154.30	6,685.0	5,461.0	-2,481.6	-409.8	2,259.0	1.81	0.48	-1.75	
10,150.0	92.70	154.50	6,682.2	5,458.2	-2,538.3	-382.6	2,321.2	0.57	0.48	0.32	
10,213.0	91.40	154.70	6,679.9	5,455.9	-2,595.2	-355.6	2,383.4	2.09	-2.06	0.32	
10,275.0	90.40	152.50	6,679.0	5,455.0	-2,650.7	-328.0	2,444.5	3.90	-1.81	-3.55	
10,338.0	90.20	151.30	6,678.6	5,454.6	-2,706.3	-298.3	2,506.3	1.99	0.32	1.99	
10,401.0	90.60	151.60	6,678.2	5,454.2	-2,761.6	-268.2	2,567.9	0.79	0.63	0.48	
10,464.0	90.90	152.90	6,677.4	5,453.4	-2,817.4	-238.9	2,629.7	2.12	0.48	2.06	
10,528.0	90.70	150.40	6,676.5	5,452.5	-2,873.7	-208.5	2,692.4	3.92	-0.31	-3.91	
10,591.0	89.40	151.10	6,676.4	5,452.4	-2,928.7	-177.7	2,753.9	2.34	-2.06	1.11	

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Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514661
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514661	North Reference:	Grid
Well:	Well #514661	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	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)
10,653.0	89.60	151.80	6,677.0	5,453.0	-2,983.1	-148.1	2,814.6	1.17	0.32	1.13
10,716.0	90.40	152.50	6,677.0	5,453.0	-3,038.8	-118.7	2,876.4	1.69	1.27	1.11
10,779.0	91.20	152.20	6,676.1	5,452.1	-3,094.6	-89.4	2,938.2	1.36	1.27	-0.48
10,842.0	91.20	154.30	6,674.8	5,450.8	-3,150.9	-61.1	3,000.3	3.33	0.00	3.33
10,906.0	91.00	156.70	6,673.5	5,449.5	-3,209.1	-34.6	3,063.7	3.76	-0.31	3.75
10,969.0	90.10	156.90	6,672.9	5,448.9	-3,267.0	-9.7	3,126.3	1.46	-1.43	0.32
11,032.0	89.50	157.80	6,673.2	5,449.2	-3,325.1	14.5	3,188.9	1.72	-0.95	1.43
11,095.0	90.50	159.50	6,673.2	5,449.2	-3,383.8	37.5	3,251.7	3.13	1.59	2.70
11,158.0	90.00	158.00	6,672.9	5,448.9	-3,442.5	60.3	3,314.5	2.51	-0.79	-2.38
11,221.0	87.40	155.60	6,674.3	5,450.3	-3,500.4	85.1	3,377.1	5.62	-4.13	-3.81
11,284.0	87.30	155.70	6,677.2	5,453.2	-3,557.7	111.0	3,439.4	0.22	-0.16	0.16
11,347.0	89.00	154.80	6,679.3	5,455.3	-3,614.9	137.4	3,501.8	3.05	2.70	-1.43
11,410.0	90.60	154.50	6,679.5	5,455.5	-3,671.8	164.4	3,564.1	2.58	2.54	-0.48
11,473.0	90.70	153.30	6,678.8	5,454.8	-3,728.4	192.1	3,626.2	1.91	0.16	-1.90
11,536.0	90.70	152.50	6,678.0	5,454.0	-3,784.5	220.8	3,688.2	1.27	0.00	-1.27
11,600.0	90.60	151.80	6,677.3	5,453.3	-3,841.1	250.7	3,751.0	1.10	-0.16	-1.09
11,663.0	90.90	153.00	6,676.4	5,452.4	-3,896.9	279.9	3,812.8	1.96	0.48	1.90
11,726.0	89.80	151.00	6,676.1	5,452.1	-3,952.5	309.4	3,874.6	3.62	-1.75	-3.17
11,789.0	89.60	150.20	6,676.4	5,452.4	-4,007.4	340.4	3,936.1	1.31	-0.32	-1.27
11,852.0	91.10	150.10	6,676.0	5,452.0	-4,062.0	371.7	3,997.4	2.39	2.38	-0.16
11,915.0	93.40	152.20	6,673.5	5,449.5	-4,117.2	402.1	4,059.0	4.94	3.65	3.33
11,979.0	93.10	154.00	6,669.9	5,445.9	-4,174.2	431.0	4,121.8	2.85	-0.47	2.81
12,042.0	92.50	155.70	6,666.8	5,442.8	-4,231.1	457.7	4,184.1	2.86	-0.95	2.70
12,105.0	91.30	156.80	6,664.7	5,440.7	-4,288.7	483.1	4,246.6	2.58	-1.90	1.75
12,168.0	89.70	158.10	6,664.2	5,440.2	-4,346.9	507.3	4,309.2	3.27	-2.54	2.06
12,231.0	89.50	159.40	6,664.6	5,440.6	-4,405.6	530.1	4,372.0	2.09	-0.32	2.06
12,294.0	89.70	160.40	6,665.1	5,441.1	-4,464.8	551.7	4,434.9	1.62	0.32	1.59
12,357.0	89.80	161.90	6,665.3	5,441.3	-4,524.4	572.1	4,497.9	2.39	0.16	2.38
12,420.0	89.90	161.20	6,665.5	5,441.5	-4,584.2	592.0	4,560.8	1.12	0.16	-1.11
12,484.0	90.50	160.20	6,665.3	5,441.3	-4,644.6	613.2	4,624.8	1.82	0.94	-1.56
12,544.0	90.90	160.40	6,664.5	5,440.5	-4,701.1	633.4	4,684.7	0.75	0.67	0.33
12,568.0	91.20	159.90	6,664.1	5,440.1	-4,723.6	641.6	4,708.6	2.43	1.25	-2.08
12,631.0	90.20	157.60	6,663.3	5,439.3	-4,782.3	664.4	4,771.4	3.98	-1.59	-3.65
12,694.0	89.60	156.90	6,663.4	5,439.4	-4,840.4	688.8	4,834.1	1.46	-0.95	-1.11
12,756.0	89.00	154.80	6,664.2	5,440.2	-4,897.0	714.1	4,895.6	3.52	-0.97	-3.39
12,819.0	88.90	154.40	6,665.4	5,441.4	-4,953.9	741.1	4,957.8	0.65	-0.16	-0.63
12,881.0	88.90	153.70	6,666.6	5,442.6	-5,009.6	768.3	5,019.0	1.13	0.00	-1.13
12,944.0	89.70	156.40	6,667.3	5,443.3	-5,066.7	794.8	5,081.3	4.47	1.27	4.29
13,008.0	89.90	156.00	6,667.5	5,443.5	-5,125.3	820.7	5,144.9	0.70	0.31	-0.63
13,071.0	89.10	154.10	6,668.1	5,444.1	-5,182.4	847.2	5,207.2	3.27	-1.27	-3.02
13,134.0	88.40	153.50	6,669.5	5,445.5	-5,238.9	875.0	5,269.3	1.46	-1.11	-0.95
13,197.0	89.10	155.00	6,670.8	5,446.8	-5,295.7	902.4	5,331.5	2.63	1.11	2.38
13,259.0	89.70	158.10	6,671.5	5,447.5	-5,352.5	927.1	5,393.1	5.09	0.97	5.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514661
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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514661	North Reference:	Grid
Well:	Well #514661	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	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)
13,322.0	89.90	157.30	6,671.7	5,447.7	-5,410.8	951.0	5,455.8	1.31	0.32	-1.27
13,385.0	88.90	155.70	6,672.4	5,448.4	-5,468.6	976.1	5,518.3	2.99	-1.59	-2.54
13,448.0	88.30	155.90	6,673.9	5,449.9	-5,526.0	1,001.9	5,580.8	1.00	-0.95	0.32
13,511.0	89.30	159.50	6,675.2	5,451.2	-5,584.3	1,025.8	5,643.5	5.93	1.59	5.71
13,574.0	89.10	159.80	6,676.1	5,452.1	-5,643.4	1,047.7	5,706.3	0.57	-0.32	0.48
13,637.0	88.00	157.40	6,677.7	5,453.7	-5,702.0	1,070.7	5,769.1	4.19	-1.75	-3.81
13,700.0	88.30	156.90	6,679.7	5,455.7	-5,760.0	1,095.1	5,831.7	0.93	0.48	-0.79
13,763.0	89.10	158.10	6,681.2	5,457.2	-5,818.2	1,119.2	5,894.3	2.29	1.27	1.90
13,826.0	89.90	158.10	6,681.7	5,457.7	-5,876.7	1,142.7	5,957.1	1.27	1.27	0.00
13,889.0	90.40	160.70	6,681.6	5,457.6	-5,935.6	1,164.9	6,019.9	4.20	0.79	4.13
13,952.0	90.00	157.20	6,681.3	5,457.3	-5,994.4	1,187.5	6,082.7	5.59	-0.63	-5.56
14,015.0	89.80	156.20	6,681.4	5,457.4	-6,052.3	1,212.4	6,145.3	1.62	-0.32	-1.59
14,078.0	89.80	155.00	6,681.7	5,457.7	-6,109.6	1,238.5	6,207.8	1.90	0.00	-1.90
14,141.0	88.30	153.20	6,682.7	5,458.7	-6,166.3	1,266.0	6,269.9	3.72	-2.38	-2.86
14,204.0	88.10	153.40	6,684.7	5,460.7	-6,222.6	1,294.3	6,332.0	0.45	-0.32	0.32
14,267.0	87.60	152.20	6,687.0	5,463.0	-6,278.6	1,323.1	6,393.9	2.06	-0.79	-1.90
14,330.0	88.30	152.90	6,689.3	5,465.3	-6,334.4	1,352.1	6,455.7	1.57	1.11	1.11
14,393.0	89.20	153.20	6,690.7	5,466.7	-6,390.6	1,380.6	6,517.7	1.51	1.43	0.48
14,457.0	89.50	153.20	6,691.4	5,467.4	-6,447.7	1,409.5	6,580.7	0.47	0.47	0.00
14,519.0	90.50	152.80	6,691.4	5,467.4	-6,502.9	1,437.6	6,641.7	1.74	1.61	-0.65
14,583.0	90.40	153.20	6,690.9	5,466.9	-6,560.0	1,466.7	6,704.7	0.64	-0.16	0.63
14,646.0	90.60	152.40	6,690.4	5,466.4	-6,616.0	1,495.5	6,766.6	1.31	0.32	-1.27
14,710.0	89.90	151.80	6,690.1	5,466.1	-6,672.5	1,525.4	6,829.4	1.44	-1.09	-0.94
14,773.0	89.50	150.40	6,690.4	5,466.4	-6,727.7	1,555.9	6,891.0	2.31	-0.63	-2.22
14,836.0	88.00	149.90	6,691.8	5,467.8	-6,782.3	1,587.2	6,952.3	2.51	-2.38	-0.79
14,899.0	87.60	149.60	6,694.2	5,470.2	-6,836.7	1,618.9	7,013.5	0.79	-0.63	-0.48
14,962.0	87.00	148.90	6,697.2	5,473.2	-6,890.8	1,651.1	7,074.6	1.46	-0.95	-1.11
15,025.0	86.70	149.10	6,700.6	5,476.6	-6,944.7	1,683.5	7,135.5	0.57	-0.48	0.32
15,088.0	87.80	149.20	6,703.6	5,479.6	-6,998.7	1,715.8	7,196.5	1.75	1.75	0.16
15,150.0	88.40	150.20	6,705.7	5,481.7	-7,052.2	1,747.0	7,256.8	1.88	0.97	1.61
15,213.0	88.80	150.30	6,707.2	5,483.2	-7,106.9	1,778.3	7,318.1	0.65	0.63	0.16
15,276.0	88.00	149.30	6,709.0	5,485.0	-7,161.3	1,810.0	7,379.4	2.03	-1.27	-1.59
15,339.0	88.20	149.10	6,711.1	5,487.1	-7,215.4	1,842.2	7,440.4	0.45	0.32	-0.32
15,402.0	88.60	149.30	6,712.8	5,488.8	-7,269.5	1,874.4	7,501.5	0.71	0.63	0.32
15,464.0	89.20	149.60	6,714.0	5,490.0	-7,322.9	1,906.0	7,561.7	1.08	0.97	0.48
15,527.0	89.80	149.40	6,714.6	5,490.6	-7,377.2	1,937.9	7,622.9	1.00	0.95	-0.32
15,589.0	89.90	149.50	6,714.8	5,490.8	-7,430.6	1,969.4	7,683.1	0.23	0.16	0.16
15,652.0	90.20	149.70	6,714.7	5,490.7	-7,484.9	2,001.3	7,744.3	0.57	0.48	0.32
15,714.0	90.50	151.10	6,714.3	5,490.3	-7,538.8	2,031.9	7,804.7	2.31	0.48	2.26
15,776.0	90.80	152.70	6,713.6	5,489.6	-7,593.5	2,061.1	7,865.5	2.63	0.48	2.58
15,839.0	90.40	154.00	6,713.0	5,489.0	-7,649.8	2,089.4	7,927.5	2.16	-0.63	2.06
15,901.0	89.70	154.50	6,712.9	5,488.9	-7,705.6	2,116.3	7,988.8	1.39	-1.13	0.81



Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514661
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514661	North Reference:	Grid
Well:	Well #514661	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	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)
15,964.0	88.00	155.40	6,714.2	5,490.2	-7,762.7	2,143.0	8,051.1	3.05	-2.70	1.43
16,026.0	88.10	155.40	6,716.3	5,492.3	-7,819.0	2,168.8	8,112.5	0.16	0.16	0.00
16,089.0	88.30	155.20	6,718.3	5,494.3	-7,876.3	2,195.1	8,174.8	0.45	0.32	-0.32
16,152.0	88.70	154.90	6,719.9	5,495.9	-7,933.4	2,221.7	8,237.1	0.79	0.63	-0.48
16,215.0	88.50	154.90	6,721.4	5,497.4	-7,990.4	2,248.4	8,299.5	0.32	-0.32	0.00
16,277.0	88.90	156.10	6,722.8	5,498.8	-8,046.8	2,274.1	8,360.9	2.04	0.65	1.94
16,340.0	89.30	156.40	6,723.8	5,499.8	-8,104.4	2,299.5	8,423.4	0.79	0.63	0.48
16,403.0	88.30	155.40	6,725.2	5,501.2	-8,161.9	2,325.2	8,485.8	2.24	-1.59	-1.59
16,466.0	89.00	156.50	6,726.6	5,502.6	-8,219.5	2,350.9	8,548.3	2.07	1.11	1.75
16,528.0	89.70	157.40	6,727.3	5,503.3	-8,276.5	2,375.1	8,609.9	1.84	1.13	1.45
16,592.0	89.80	156.90	6,727.6	5,503.6	-8,335.5	2,400.0	8,673.6	0.80	0.16	-0.78
16,654.0	89.30	155.60	6,728.1	5,504.1	-8,392.2	2,425.0	8,735.1	2.25	-0.81	-2.10
16,717.0	88.30	155.00	6,729.4	5,505.4	-8,449.4	2,451.3	8,797.5	1.85	-1.59	-0.95
16,780.0	88.40	155.20	6,731.2	5,507.2	-8,506.6	2,477.8	8,859.8	0.35	0.16	0.32
16,843.0	89.50	157.50	6,732.4	5,508.4	-8,564.3	2,503.0	8,922.3	4.05	1.75	3.65
16,905.0	90.60	158.00	6,732.3	5,508.3	-8,621.6	2,526.5	8,984.0	1.95	1.77	0.81
16,969.0	91.30	157.60	6,731.3	5,507.3	-8,680.9	2,550.7	9,047.7	1.26	1.09	-0.63
17,031.0	92.20	158.00	6,729.4	5,505.4	-8,738.3	2,574.1	9,109.4	1.59	1.45	0.65
17,094.0	91.50	158.30	6,727.4	5,503.4	-8,796.7	2,597.6	9,172.1	1.21	-1.11	0.48
17,157.0	87.40	159.00	6,728.0	5,504.0	-8,855.4	2,620.5	9,234.9	6.60	-6.51	1.11
17,220.0	87.70	159.20	6,730.7	5,506.7	-8,914.2	2,642.9	9,297.7	0.57	0.48	0.32
17,283.0	87.90	159.90	6,733.1	5,509.1	-8,973.2	2,664.9	9,360.5	1.15	0.32	1.11
17,345.0	86.40	159.00	6,736.2	5,512.2	-9,031.1	2,686.7	9,422.3	2.82	-2.42	-1.45
17,408.0	86.90	159.30	6,739.8	5,515.8	-9,089.9	2,709.1	9,485.0	0.93	0.79	0.48
17,471.0	87.10	159.20	6,743.1	5,519.1	-9,148.7	2,731.3	9,547.8	0.35	0.32	-0.16
17,533.0	87.20	158.60	6,746.2	5,522.2	-9,206.5	2,753.6	9,609.5	0.98	0.16	-0.97
17,596.0	87.30	159.00	6,749.2	5,525.2	-9,265.2	2,776.4	9,672.2	0.65	0.16	0.63
Final Survey=17624' MD/ 6751' TVD										
17,624.0	87.50	159.00	6,750.5	5,526.5	-9,291.3	2,786.4	9,700.1	0.71	0.71	0.00
Projection to TD=17682' MD/ 6753' TVD										
17,682.0	87.50	159.00	6,753.0	5,529.0	-9,345.4	2,807.2	9,757.9	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
5,450.0	5,449.3	-30.0	7.4	Gyro Tie In=5450' MD
5,500.0	5,499.3	-28.9	5.6	KOP=5500' MD
7,487.0	6,623.4	-108.5	-1,320.1	LP=7487' MD/ 6623' TVD
17,624.0	6,750.5	-9,291.3	2,786.4	Final Survey=17624' MD/ 6751' TVD
17,682.0	6,753.0	-9,345.4	2,807.2	Projection to TD=17682' MD/ 6753' TVD



Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 514661
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1224.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1224.0usft
Site:	Doddridge County 514661	North Reference:	Grid
Well:	Well #514661	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled Surveys		

Checked By: _____ Approved By: _____ Date: _____



EQT Production - Marcellus

Project: Doddridge County, WV Grid
Site: Doddridge County 514661
Well: Well #514661
Wellbore: Main Wellbore
Design: As Drilled Surveys

