

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47 - 017 - 06381 County Doddridge District West Union  
Quad West Union 7.5' Pad Name WEU51 Field/Pool Name \_\_\_\_\_  
Farm name Jane Hardin Trustee/Mary Well Number 514661  
Operator (as registered with the OOG) EQT Production Company  
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,345,177 Easting 520,439  
Landing Point of Curve Northing 4,344,949 Easting 520,073  
Bottom Hole Northing 4,342,344 Easting 521,342

Elevation (ft) 1208 GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine

Mud Type(s) and Additive(s)  
SBM 12.5ppg - powdered hydrocarbon resin, calcium carbonate, ground almond hulls, barium sulfate, calcium chloride, lecithin liquid, organophilic clay, polyaminated fatty acid, calcium hydroxide, polyimide surfactant, modified fatty acid, dimer.trimer fatty acid, ground walnut hulls, refined base oil.

Date permit issued 1/31/2014 Date drilling commenced 5/29/2014 Date drilling ceased 11/04/2014  
Date completion activities began 2/9/2015 Date completion activities ceased 3/1/2015  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 334 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft \_\_\_\_\_ Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 101,170,294,314,486,555 Cavern(s) encountered (Y/N) depths Office of Oil & Gas  
Is coal being mined in area (Y/N) N

JUL 15 2015  
Reviewed by:

JR 8/2/15

10/23/2015

API 47-017 - 06381 Farm name Jane Hardin Trustee/Mary Well number 514661

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	26"	40'	New	82.6#/ft	None	Y
Surface	17-1/2"	13-3/8"	1,129'	New	54.5#/ft	301', 877'	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	5,291'	New	40#/ft	630', 3190', 4503'	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	17,682'	New	20#/ft	None	N
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	49	15.6	1.18	57.82	0	8
Surface	Class A	1030	15.6	1.19	1225.7	0	8
Coal							
Intermediate 1	Class A	373/337/1165	14.2/15.6/15.6	1.26/1.18/1.18	2251.62	0	8
Intermediate 2							
Intermediate 3							
Production	Class A/Class H	450/1295	14.2/15.2	1.26/1.97	3118.15	5,375'	72
Tubing							

Drillers TD (ft) 17,682' Loggers TD (ft) \_\_\_\_\_

Deepest formation penetrated Marcellus Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 5,500'

Check all wireline logs run  
 caliper    density    deviated/directional    induction  
 neutron    resistivity    gamma ray    temperature    sonic

Well cored  Yes  No    Conventional    Sidewall   Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING Conductor-N/A

Surface-bow spring centralizers set at 1125', 686', 159'

Intermediate-bow spring centralizers set at 5247', 4811', 4287', 3806', 3500', 3107', 2869', 2301', 1821', 1297', 814', 333'

Production- Composite bodied centralizers on every joint from TD up to 5,025'

WAS WELL COMPLETED AS SHOT HOLE  Yes  No   DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No   DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No   TYPE OF TRACER(S) USED \_\_\_\_\_

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API 47- 017 - 06381

Drilling Contractor: Savanna Drilling

Address: 2204 Timberloch Place Suite 230

City: Woodlands

State: TX

Zip: 77380

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API 47- 017 - 06381

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	0	0	334	334
SAND / SHALE	0	0	101	101
WASHINGTON COAL	101	101	104	104
SAND / SHALE	104	104	170	170
WAYNESBURG A COAL	170	170	172	172
SAND / SHALE	172	172	294	294
COAL	294	294	298	298
SAND / SHALE	298	298	314	314
UNIONTOWN COAL	314	314	317	317
SAND / SHALE	317	317	486	486
REDSTONE COAL	486	486	487	487
SAND / SHALE	487	487	555	555
PITTSBURGH COAL	555	555	558	558
SAND / SHALE	558	558	1,478	1,478
MAXTON	1,478	1,478	1,874	1,874
BIG LIME	1,874	1,874	1,943	1,943
KEENER	1,943	1,943	2,173	2,173
WEIR	2,173	2,173	2,369	2,369
BEREA	2,369	2,369	2,375	2,375
GANTZ	2,375	2,375	2,489	2,489
50F	2,489	2,489	2,579	2,579
30F	2,579	2,579	2,723	2,723
4TH	2,723	2,723	2,916	2,916
BAYARD	2,916	2,916	3,233	3,233
WARREN	3,233	3,233	3,294	3,294
SPEECHLEY	3,294	3,294	3,965	3,965
BALLTOWN A	3,965	3,965	4,241	4,241
BRADFORD	4,241	4,241	4,447	4,447
RILEY	4,447	4,447	4,884	4,884
BENSON	4,884	4,884	5,131	5,130
ALEXANDER	5,131	5,130	6,750	6,314
SONYEA	6,750	6,314	7,087	6,456
MIDDLESEX	7,087	6,456	7,207	6,508
GENESEE	7,207	6,508	7,405	6,594
GENESE0	7,405	6,594	7,488	6,624
TULLY	7,488	6,624	7,583	6,650
HAMILTON	7,583	6,650	7,677	6,675
MARCELLUS	7,677	6,675	17,682	6,753

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10/23/2015

**PHOENIX**  
TECHNOLOGY SERVICES



## **EQT Production - Marcellus**

Doddridge County, WV Grid

Doddridge County 514661

Well #514661

Main Wellbore

Design: As Drilled Surveys

## **Standard Survey Report**

03 November, 2014



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

<b>Project</b>	Doddridge County, WV Grid		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	West Virginia North 4701		Using geodetic scale factor

<b>Site</b>	Doddridge County 514661		
<b>Site Position:</b>		<b>Northing:</b>	277,717.00 usft
<b>From:</b>	Map	<b>Easting:</b>	1,642,280.20 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39.26
		<b>Longitude:</b>	-80.76
		<b>Grid Convergence:</b>	-0.81 °

<b>Well</b>	Well #514661		
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b> 277,717.00 usft
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b> 1,642,280.20 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	39° 15' 20.131 N
		<b>Longitude:</b>	80° 45' 47.791 W
		<b>Ground Level:</b>	1,208.0 usft

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

<b>Design</b>	As Drilled Surveys		
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**Audit Notes:**

<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	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			
From (')	To (usft)	11/3/2014	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

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	11.03
200.0	0.17	178.60	200.0	-1,024.0	0.0	-0.3	-0.1	0.30	-0.02	11.03
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

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<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1224.0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 1224.0usft
<b>Site:</b>	Doddridge County 514661	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514661	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	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	6.20	
4,600.0	1.20	246.49	4,599.5	3,375.5	-32.9	25.1	38.8	0.06	0.00	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	9.50	
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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Survey										
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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
<b>Gyro Tie In=5450' MD</b>										
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
<b>KOP=5500' MD</b>										
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	4.69	-4.38
6,301.0	59.40	285.10	6,154.8	4,930.8	89.8	-374.0	-193.5	5.02	4.19	-3.23
6,333.0	62.20	285.30	6,170.4	4,946.4	97.1	-400.9	-208.3	8.77	8.75	0.63
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	1.67
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	2.71	1.29	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	1.29	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	1.95
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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<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 514661
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1224.0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 1224.0usft
<b>Site:</b>	Doddridge County 514661	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514661	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	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)
6,710.0	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	-9.06
7,752.0	77.60	177.10	6,692.8	5,468.8	-358.6	-1,362.0	-48.1	11.85	6.77	-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	12.90	-6.45
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

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 514661
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1224.0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 1224.0usft
<b>Site:</b>	Doddridge County 514661	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514661	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	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	-1.61	-3.55	
10,338.0	90.20	151.30	6,678.6	5,454.6	-2,706.3	-298.3	2,506.3	1.93	-0.32	-1.90	
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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<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 1224.0usft
<b>Site:</b>	Doddridge County 514661	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514661	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	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)
10,653.0	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

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

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

Design Annotations		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	

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

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

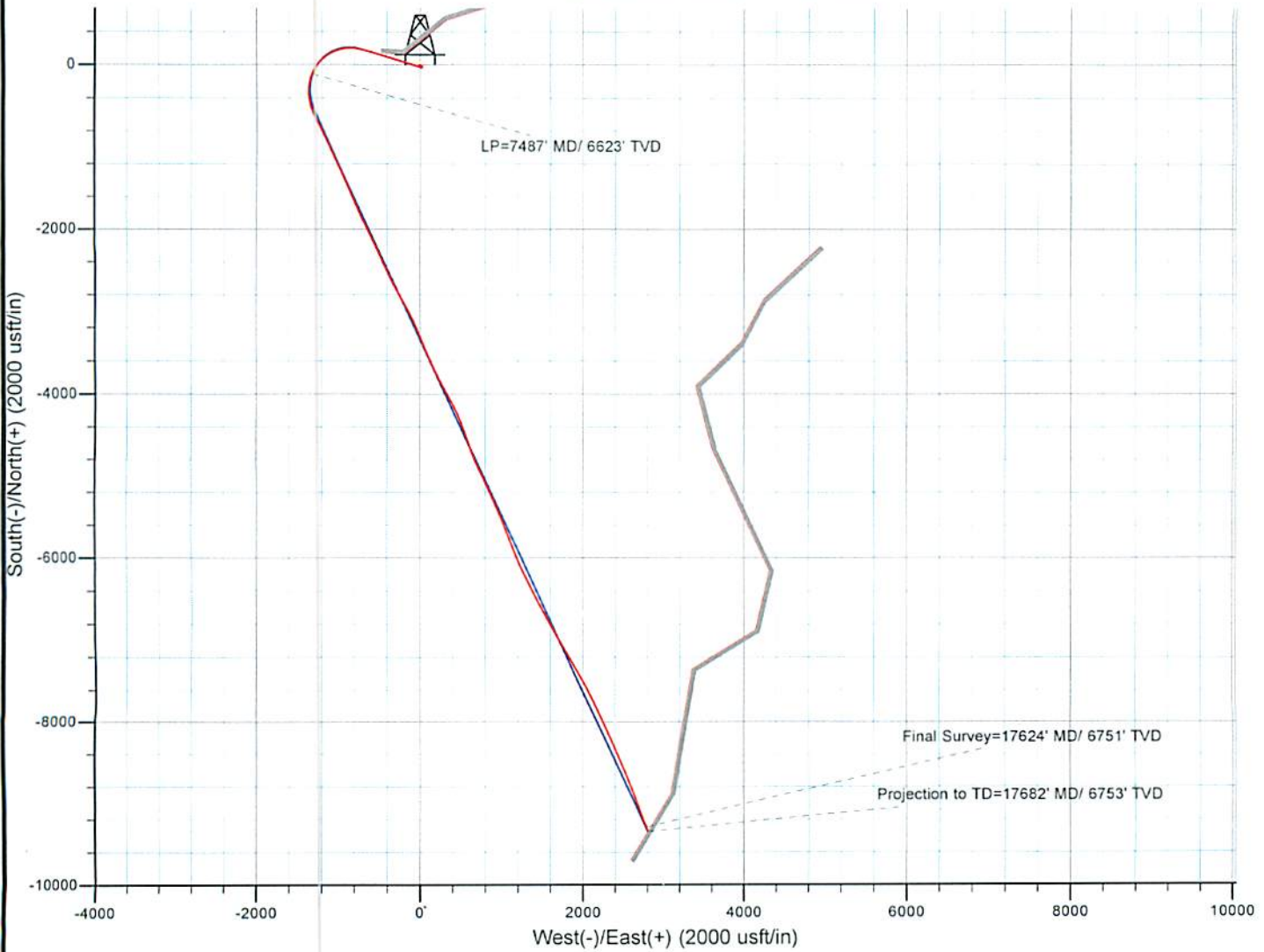
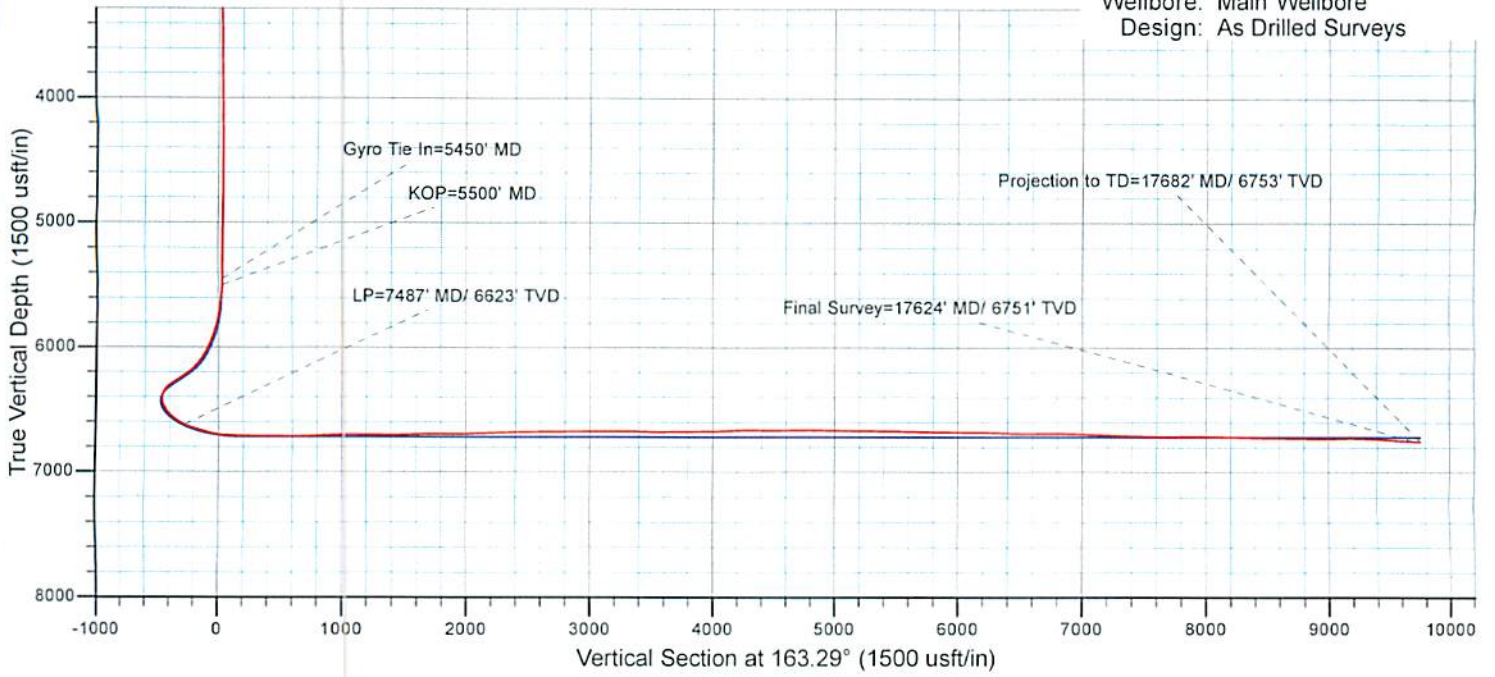


17-06381



# EQT Production - Marcellus

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



**514661 - 47-017-06381-0000 - Perforations**

<b>Stage Number</b>	<b>Perforation Date</b>	<b>Top Perf Depth (ftKB)</b>	<b>Bottom Perf Depth (ftKB)</b>	<b>Number of Shots</b>	<b>Formation</b>
Initiation Sleeve	1/29/2015	17,656.00	17,659.00	10	MARCELLUS
1	2/10/2015	17,535.00	17,656.00	32	MARCELLUS
2	2/10/2015	17,355.00	17,477.00	40	MARCELLUS
3	2/11/2015	17,175.00	17,297.00	40	MARCELLUS
4	2/11/2015	16,995.00	17,117.00	40	MARCELLUS
5	2/11/2015	16,815.00	16,938.00	40	MARCELLUS
6	2/11/2015	16,635.00	16,754.00	40	MARCELLUS
7	2/12/2015	16,457.00	16,577.00	40	MARCELLUS
8	2/12/2015	16,275.00	16,397.00	40	MARCELLUS
9	2/12/2015	16,095.00	16,217.00	40	MARCELLUS
10	2/13/2015	15,915.00	16,035.00	40	MARCELLUS
11	2/13/2015	15,735.00	15,857.00	40	MARCELLUS
12	2/13/2015	15,555.00	15,677.00	40	MARCELLUS
13	2/14/2015	15,375.00	15,492.00	40	MARCELLUS
14	2/14/2015	15,195.00	15,317.00	40	MARCELLUS
15	2/15/2015	15,017.00	15,137.00	40	MARCELLUS
16	2/16/2015	14,834.00	14,957.00	40	MARCELLUS
17	2/16/2015	14,655.00	14,777.00	40	MARCELLUS
18	2/16/2015	14,475.00	14,597.00	40	MARCELLUS
19	2/17/2015	14,295.00	14,417.00	40	MARCELLUS
20	2/17/2015	14,115.00	14,237.00	40	MARCELLUS
21	2/18/2015	13,935.00	14,059.00	40	MARCELLUS
22	2/18/2015	13,760.00	13,877.00	40	MARCELLUS
23	2/18/2015	13,575.00	13,697.00	40	MARCELLUS
24	2/19/2015	13,395.00	13,517.00	40	MARCELLUS
25	2/19/2015	13,215.00	13,337.00	40	MARCELLUS
26	2/19/2015	13,035.00	13,157.00	40	MARCELLUS
27	2/19/2015	12,855.00	12,977.00	40	MARCELLUS
28	2/20/2015	12,672.00	12,797.00	40	MARCELLUS
29	2/20/2015	12,485.00	12,598.00	40	MARCELLUS
30	2/21/2015	12,315.00	12,437.00	40	MARCELLUS
31	2/21/2015	12,135.00	12,257.00	40	MARCELLUS
32	2/21/2015	11,955.00	12,078.00	40	MARCELLUS
33	2/22/2015	11,772.00	11,897.00	40	MARCELLUS
34	2/22/2015	11,595.00	11,717.00	40	MARCELLUS
35	2/23/2015	11,405.00	11,535.00	40	MARCELLUS
36	2/23/2015	11,235.00	11,357.00	40	MARCELLUS
37	2/23/2015	11,055.00	11,177.00	40	MARCELLUS
38	2/23/2015	10,875.00	11,000.00	40	MARCELLUS
39	2/24/2015	10,696.00	10,817.00	40	MARCELLUS
40	2/24/2015	10,519.00	10,637.00	40	MARCELLUS
41	2/25/2015	10,335.00	10,457.00	40	MARCELLUS
42	2/25/2015	10,155.00	10,277.00	40	MARCELLUS
43	2/25/2015	9,975.00	10,097.00	40	MARCELLUS
44	2/27/2015	9,795.00	9,917.00	40	MARCELLUS
45	2/27/2015	9,615.00	9,737.00	40	MARCELLUS
46	2/27/2015	9,435.00	9,557.00	40	MARCELLUS
47	2/27/2015	9,259.00	9,377.00	40	MARCELLUS
48	2/28/2015	9,075.00	9,197.00	40	MARCELLUS
49	2/28/2015	8,895.00	9,017.00	40	MARCELLUS
50	2/28/2015	8,715.00	8,837.00	40	MARCELLUS
51	2/28/2015	8,535.00	8,657.00	40	MARCELLUS
52	3/1/2015	8,355.00	8,477.00	40	MARCELLUS
53	3/1/2015	8,174.00	8,298.00	40	MARCELLUS
54	3/1/2015	7,995.00	8,117.00	40	MARCELLUS
55	3/1/2015	7,815.00	7,937.00	40	MARCELLUS

10/23/2015

**514661 - 47-017-06381-0000 - Stimulated Stages**

Stage Number	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
Initiation Sleeve	1/29/2015	11.7	6,200	8,012	5,297	0	686	0
1	2/10/2015	79.0	9,083	9,083	4,899	221,087	9,361	0
2	2/10/2015	86.8	8,518	8,766	5,831	298,733	8,303	0
3	2/11/2015	86.8	8,655	9,271	5,535	299,444	9,762	0
4	2/11/2015	87.2	8,221	8,587	4,998	299,714	8,912	0
5	2/11/2015	95.6	8,737	8,911	5,249	297,868	8,272	0
6	2/12/2015	89.2	8,856	9,080	5,084	298,435	8,244	0
7	2/12/2015	85.5	8,194	8,992	5,232	299,159	10,225	0
8	2/12/2015	88.4	8,509	9,123	5,478	300,125	9,741	0
9	2/13/2015	89.2	8,450	9,027	5,491	301,027	9,973	0
10	2/13/2015	86.8	8,417	9,012	5,268	301,333	9,001	0
11	2/13/2015	90.0	8,561	8,857	5,163	299,680	8,482	0
12	2/14/2015	89.7	8,615	8,979	5,263	298,368	8,133	0
13	2/14/2015	85.1	8,523	9,010	5,307	302,244	8,608	0
14	2/15/2015	85.5	8,603	9,090	5,796	298,351	8,229	0
15	2/15/2015	85.9	8,626	8,877	5,463	300,229	8,712	0
16	2/16/2015	83.6	8,521	8,966	4,820	298,234	7,797	0
17	2/16/2015	87.8	8,550	8,998	4,785	300,937	7,929	0
18	2/17/2015	87.3	8,517	8,939	4,899	298,936	7,855	0
19	2/17/2015	89.6	8,565	8,923	5,149	300,009	7,834	0
20	2/18/2015	87.9	8,636	8,887	4,738	298,965	7,779	0
21	2/18/2015	96.2	8,240	8,683	5,212	297,508	7,597	0
22	2/18/2015	97.1	8,363	8,685	5,022	298,473	7,842	0
23	2/18/2015	100.7	8,225	8,519	5,249	296,975	7,599	0
24	2/19/2015	96.5	8,249	8,606	5,184	301,311	7,423	0
25	2/19/2015	97.7	8,200	8,612	5,133	299,293	7,051	0
26	2/19/2015	93.8	8,573	8,901	5,212	297,155	6,856	0
27	2/20/2015	95.9	8,461	9,119	4,315	295,123	8,979	0
28	2/20/2015	87.7	8,634	9,148	5,225	298,075	6,669	0
29	2/21/2015	98.2	8,097	8,370	5,145	294,999	7,228	0
30	2/21/2015	92.3	8,592	9,077	5,348	302,201	7,966	0
31	2/21/2015	84.3	8,519	9,072	5,146	300,333	7,470	0
32	2/22/2015	96.3	8,400	9,063	5,197	300,396	6,921	0
33	2/22/2015	95.5	8,494	8,824	5,094	297,289	7,209	0
34	2/22/2015	99.1	8,499	8,966	5,106	296,995	7,288	0
35	2/23/2015	96.3	8,530	8,767	5,167	296,815	6,909	0
36	2/23/2015	99.7	8,567	8,846	5,023	298,725	6,463	0
37	2/23/2015	99.5	8,750	9,139	5,311	299,041	6,823	0
38	2/24/2015	98.2	8,673	8,913	5,207	299,408	6,602	0
39	2/24/2015	95.2	8,631	9,143	5,364	298,999	7,205	0
40	2/24/2015	99.1	8,495	8,882	5,312	298,999	7,032	0
41	2/25/2015	100.0	8,372	8,768	5,342	298,609	7,148	0
42	2/25/2015	100.0	8,557	8,802	4,986	296,535	6,538	0
43	2/26/2015	99.5	8,348	8,622	4,193	298,676	7,449	0
44	2/27/2015	99.5	7,961	8,220	5,319	298,827	7,193	0
45	2/27/2015	99.6	8,110	8,575	5,009	299,366	6,513	0
46	2/27/2015	99.9	8,163	8,833	5,054	298,654	6,826	0
47	2/27/2015	98.9	8,421	8,585	4,966	299,055	7,236	0
48	2/28/2015	98.5	8,451	8,667	4,981	301,531	7,282	0
49	2/28/2015	99.6	8,056	8,690	5,262	300,336	7,857	0
50	2/28/2015	95.1	8,540	8,616	4,985	298,526	6,690	0
51	2/28/2015	100.2	8,358	8,648	4,880	300,733	7,270	0
52	3/1/2015	100.0	8,338	8,681	5,019	300,575	6,938	0
53	3/1/2015	100.0	8,018	8,640	5,276	299,429	6,307	0
54	3/1/2015	100.1	8,206	8,424	5,078	298,425	6,230	0
55	3/1/2015	100.2	8,421	8,699	5,298	297,490	6,123	0

10/23/2015

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/9/2015
Job End Date:	3/1/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06381-00-00
Operator Name:	EQT Production
Well Name and Number:	514661
Longitude:	-80.76327500
Latitude:	39.25559200
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,753
Total Base Water Volume (gal):	17,747,940
Total Base Non Water Volume:	0



17-06381

## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	FTS International	Carrier/Base Fluid	Water	7732-18-5	100.00000	89.71345	None
Sand (Proppant)	FTS International	Proppant	Crystalline Silica	14808-60-7	100.00000	9.91454	None
MC MX 437-5	Multi-Chem	Calcium nitrate solution	Calcium nitrate	10124-37-5	60.00000	0.05404	None
FRW-600	FTS International	Friction reducer	Hydrotreated light distillate	64742-47-8	30.00000	0.02266	None
			Ammonium acetate	631-61-8	6.00000	0.00453	None
Hydrochloric Acid (15%)	FTS International	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.02434	None
CI-150	FTS International	Acid Corrosion Inhibitor	Isopropanol	67-63-0	30.00000	0.00736	None
			Dimethylformamide	68-12-2	10.00000	0.00245	None
			Organic amine resin salt	Proprietary	30.00000	0.00009	None
			Ethylene glycol	107-21-1	30.00000	0.00009	None
			Aromatic aldehyde	Proprietary	10.00000	0.00003	None

17-06381

			Quaternary ammonium compound	Proprietary	10.00000	0.00003	None
B-10	FTS International	High pH buffer					
			Potassium carbonate	584-08-7	48.00000	0.00649	None
			Potassium hydroxide	1310-58-3	20.00000	0.00270	None
HVG-1	FTS International	Gelling agent					
			Petroleum distillate	64742-47-8	55.00000	0.00245	None
			Guar gum	9000-30-0	50.00000	0.00223	None
			Surfactant	68439-51-0	2.00000	0.00009	None
			Clay	14808-60-7	2.00000	0.00009	None
CS-500-SI	FTS International	Scale inhibitor					
			Ethylene glycol	107-21-1	10.00000	0.00245	None
APB-1	FTS International	Breaker					
			Ammonium persulfate	7727-54-0	95.00000	0.00029	None
FE-100L	FTS International	Iron control					
			Citric acid	77-92-9	55.00000	0.00017	None
NE-100	FTS International	Non-emulsifier					
			2-Butoxyethanol	111-76-2	10.00000	0.00010	None
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00001	None
			2-Propanol	67-63-0	10.00000	0.00001	None

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water  
 \*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

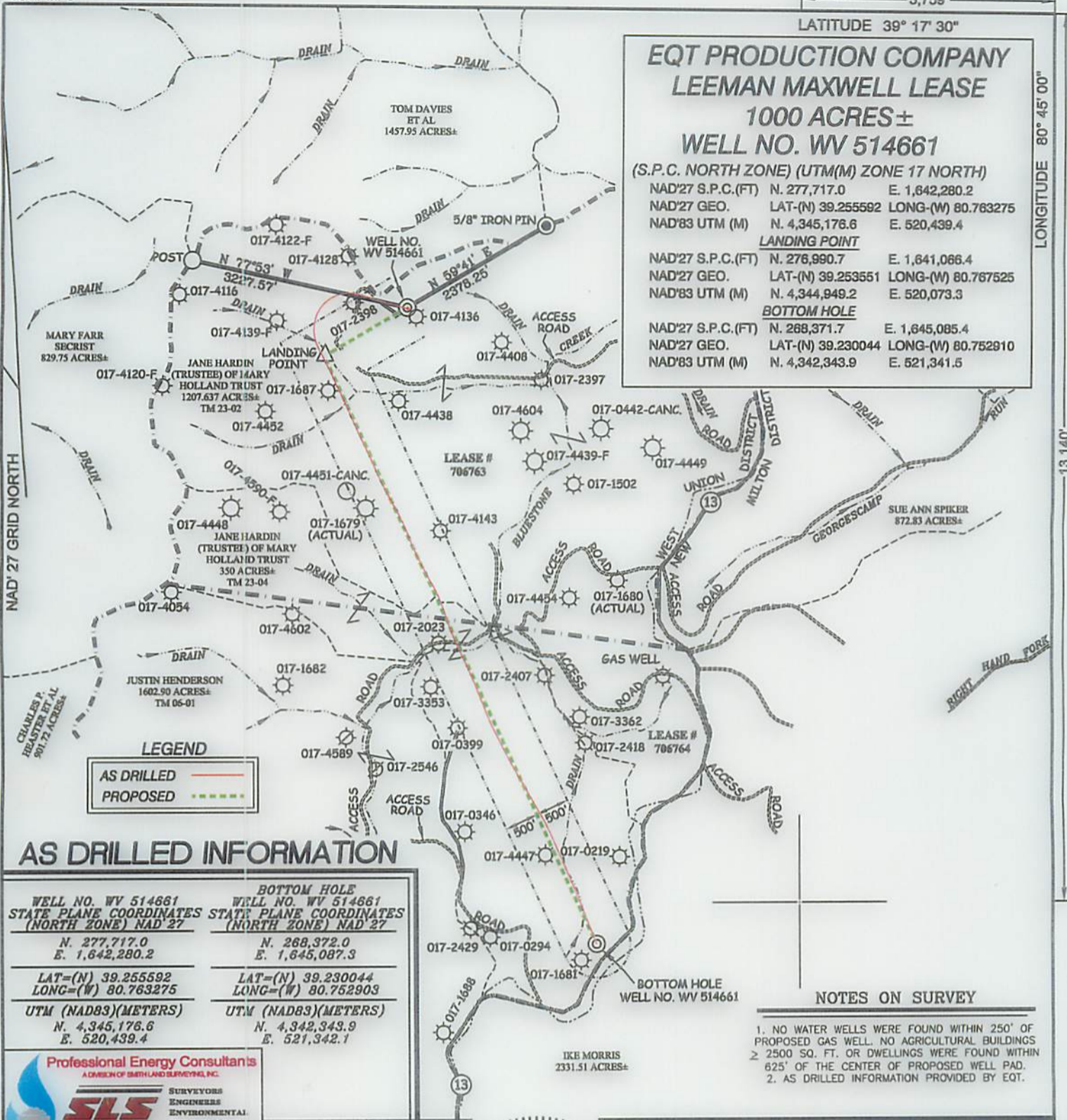
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

Received  
 Office of Oil & Gas  
 JUL 15 2015

# EQT PRODUCTION COMPANY LEEMAN MAXWELL LEASE 1000 ACRES± WELL NO. WV 514661

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 277,717.0	E. 1,642,280.2
NAD'27 GEO.	LAT-(N) 39.255592	LONG-(W) 80.763275
NAD'83 UTM (M)	N. 4,345,176.6	E. 520,439.4
<b>LANDING POINT</b>		
NAD'27 S.P.C.(FT)	N. 276,990.7	E. 1,641,066.4
NAD'27 GEO.	LAT-(N) 39.253551	LONG-(W) 80.767525
NAD'83 UTM (M)	N. 4,344,949.2	E. 520,073.3
<b>BOTTOM HOLE</b>		
NAD'27 S.P.C.(FT)	N. 268,371.7	E. 1,645,085.4
NAD'27 GEO.	LAT-(N) 39.230044	LONG-(W) 80.752910
NAD'83 UTM (M)	N. 4,342,343.9	E. 521,341.5



## AS DRILLED INFORMATION

<b>WELL NO. WV 514661</b>	<b>BOTTOM HOLE WELL NO. WV 514661</b>
<b>STATE PLANE COORDINATES (NORTH ZONE) NAD 27</b>	<b>STATE PLANE COORDINATES (NORTH ZONE) NAD 27</b>
N. 277,717.0 E. 1,642,280.2	N. 268,372.0 E. 1,645,087.3
LAT=(N) 39.255592 LONG=(W) 80.763275	LAT=(N) 39.230044 LONG=(W) 80.752903
UTM (NAD83)(METERS) N. 4,345,176.6 E. 520,439.4	UTM (NAD83)(METERS) N. 4,342,343.9 E. 521,342.1

### NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- AS DRILLED INFORMATION PROVIDED BY EQT.

**Professional Energy Consultants**  
A DIVISION OF SMITH AND SURVEYING, INC.

**SLS**  
SURVEYORS  
ENGINEERS  
ENVIRONMENTAL  
PROJECT MGMT.

(304) 482-6064 WWW.SLSURVEYS.COM

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.



P.S. 677 *Gregory A. Smith*

(\*) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

DATE OCTOBER 1, 20 13

REVISED 03/05/14 & 11/13/14

OPERATORS WELL NO. WV 514661

API WELL NO. 47-017-06381

STATE WEST VIRGINIA COUNTY WEST UNION PERMIT 10/23/2015

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 8051ASDRILLED514661

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2,000'

**STATE OF WEST VIRGINIA**  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,224'(GROUND) 1,208'(PROPOSED) WATERSHED BLUESTONE CREEK  
DISTRICT WEST UNION COUNTY DODDRIDGE QUADRANGLE WEST UNION 7.5'

SURFACE OWNER JANE HARDIN (TRUSTEE) OF MARY HOLLAND TRUST ACREAGE 1207.637±

ROYALTY OWNER LEEMAN MAXWELL HEIRS (1000 AC.±) (2164 AC.±)

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD   
FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS  
ESTIMATED DEPTH 6661'

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330