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

API 47- 085 - 10137 County RITCHIE District UNION
Quad OXFORD 7.5' Pad Name OXF163 Field/Pool Name
Farm name HAROLD K. PIERCE Well Number 513761
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 4,331,876.0 Easting 513,590.2
Landing Point of Curve Northing 4,331,990.6 Easting 513,857.5
Bottom Hole Northing 4,329,651.9 Easting 514,701.3

Elevation (ft) 1159 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)
Water base Mud 12.5 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phophates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 9/22/2014 Date drilling commenced 12/3/2014 Date drilling ceased 5/19/2015
Date completion activities began 9/22/2015 Date completion activities ceased 10/4/2015
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 176',453',517' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1156' Void(s) encountered (Y/N) depths N
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

03/25/2016
AX WS 03/23/16

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API 47- 085 - 10137 Farm name HAROLD K. PIERCE Well number 513761

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	24"	20"	40'	NEW	A-500 78.7LB/FT	NONE	Y
Surface	17.5"	13.375"	1057'	NEW	J-55 54.5LB/FT	551'	Y
Coal							
Intermediate 1	12.375"	9.625"	3032'	NEW	A-500 40LB/FT	1769'	Y
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	15356'	NEW	P-110 20LB/FT	NONE	N
Tubing							
Packer type and depth set							

Comment Details N/A

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ^{3}/sks)	Volume (ft^3)	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	38	15.6	1.18	44.84	0	8
Surface	CLASS A	803	15.6	1.18	948.9	0	8
Coal							
Intermediate 1	CLASS A	1031	15.6	1.18	1218.5	0	8
Intermediate 2							
Intermediate 3							
Production	Class A / Class H	680/1070	14.2 / 15.2	1.26 / 1.97	2964.7	2,829' MD	72
Tubing							

Drillers TD (ft) 15,371' MD Loggers TD (ft) N/A

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 4,749' MD

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

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Well cored ☐ Yes ■ No ☐ Conventional ☐ Sidewall Were cuttings collected ■ Yes ☐ No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

CONDUCTOR- NONE
SURFACE- JOINTS: 1,11, 21
INTERMEDIATE- RAN AT LEAST EVERY 500' FEET
PRODUCTION- 270 Composite Centralizers. One on every joint from TD to 4,000 MD

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- 085 - 10137 Farm name HAROLD K. PIERCE Well number 513761

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					Please See Attached

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations 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)
						Please	see	attached

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Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS		
MARCELLUS	6,534 TVD	7,056 MD	

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ■ Open Flow OIL TEST ■ Flow ☐ Pump

SHUT-IN PRESSURE Surface 1,981 psi Bottom Hole N/A psi DURATION OF TEST 103.00 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	12,584 mcfpd	N/A bpd	523 bpd	821 bpd	☐ Estimated ■ Orifice ☐ Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H_2S, ETC)
	0		0		

Please insert additional pages as applicable.

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Drilling Contractor KEANE & SONS DRILLING (RIG 2143)
Address 14235 OLD ROUTE 6 City MANSFIELD State PA Zip 16933

Logging Company Phoenix Technology Services
Address 1805 Brittmoore Road City HOUSTON State TX Zip 77043

Cementing Company ALLIED CEMENTING SERVICES
Address 333 Technology Drive, Suite 290 City Canonsburg State PA Zip 15317

Stimulating Company Keane
Address 2121 Sage Road City Houston State TX Zip 77056
Please insert additional pages as applicable.

Completed by Jim Helmick Telephone (412) 395-5518
Signature _____ Title VP Completions Date 3/18/2016

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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API 47- 085 - 10137 Farm name HAROLD K. PIERCE Well number 513761

Drilling Contractor Savanna Drilling
Address 2204 Timberloch Place Suite 230 City Woodlands State TX Zip 77380

Logging Company GYRODATA
Address 601 MAYER ST City BRIDGEVILLE State PA Zip 15017

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company C&J Energy Services
Address 1650 Hackers Creek Rd City Jane Lew State WV Zip 26378

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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	520	520
SAND/SHALE	520	520	1,774	1,774
MAXTON	1,774	1,774	1,955	1,955
BIG LIME	1,955	1,955	2,244	2,244
WEIR	2,244	2,244	2,472	2,472
GANTZ	2,472	2,472	2,567	2,567
50F	2,567	2,567	2,653	2,653
30F	2,653	2,653	2,715	2,715
GORDON	2,715	2,715	2,803	2,803
4TH	2,803	2,803	2,959	2,959
BAYARD	2,959	2,959	3,299	3,299
WARREN	3,299	3,299	3,352	3,352
SPEECHLEY	3,352	3,352	3,846	3,846
BALLTOWN A	3,846	3,846	4,430	4,430
RILEY	4,430	4,430	4,767	4,767
BENSON	4,767	4,767	5,100	5,084
ALEXANDER	5,100	5,084	6,536	6,216
SONYEA	6,536	6,216	6,710	6,351
MIDDLESEX	6,710	6,351	6,785	6,403
GENESSEE	6,785	6,403	6,902	6,471
GENESEO	6,902	6,471	6,991	6,511
TULLY	6,991	6,511	7,026	6,524
HAMILTON	7,026	6,524	7,056	6,534
MARCELLUS	7,056	6,534	15,371	6,575

API 47-085-10137

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Marcellus

Ritchie County, WV
Ritchie County 513761
Well #513761

Main Wellbore

Design: 513761 As Drilled Surveys

Standard Survey Report

16 July, 2015

EQT
Where energy meets innovation.

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Ritchie County 513761
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1175.0usft
Project:	Ritchie County, WV	**MD Reference:**	KB@16 @ 1175.0usft
Site:	Ritchie County 513761	**North Reference:**	Grid
Well:	Well #513761	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513761 As Drilled Surveys		

Project Ritchie 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		Using geodetic scale factor

Site Ritchie County 513761

Site Position:		**Northing:**	234,445.30 usft	**Latitude:**	39.14
From:	Map	**Easting:**	1,619,075.40 usft	**Longitude:**	-80.84
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.86 °

Well Well #513761

Well Position	**+N/-S**	0.0 usft	**Northing:**	234,445.30 usft	**Latitude:**	39° 8' 9.142 N
	+E/-W	0.0 usft	**Easting:**	1,619,075.40 usft	**Longitude:**	80° 50' 34.534 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	1,159.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/13/2015	-7.70	66.58	52,085

Design 513761 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 (°)
	6,560.0	0.0	0.0	154.41

Survey Program **Date** 7/16/2015

From ()	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	4,580.0	513761 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	15,371.0	513761 MWD (drilled as 513760) (Main W	GYD_DP_MS	Gyrodata gyro-compassing and drop

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	-1,175.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.20	42.77	103.0	-1,072.0	0.1	0.1	-0.1	0.19	0.19	0.00
203.0	0.15	74.70	203.0	-972.0	0.3	0.4	-0.1	0.11	-0.05	31.93
303.0	0.18	47.29	303.0	-872.0	0.4	0.6	-0.1	0.08	0.03	-27.41
403.0	0.09	127.33	403.0	-772.0	0.5	0.8	-0.1	0.19	-0.09	80.04
503.0	0.11	141.20	503.0	-672.0	0.4	0.9	0.1	0.03	0.02	13.87
603.0	0.07	141.27	603.0	-572.0	0.2	1.0	0.2	0.04	-0.04	0.07
703.0	0.06	97.73	703.0	-472.0	0.2	1.1	0.3	0.05	-0.01	-43.54

03/25/2016

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Ritchie County 513761
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1175.0usft
Project:	Ritchie County, WV	**MD Reference:**	KB@16 @ 1175.0usft
Site:	Ritchie County 513761	**North Reference:**	Grid
Well:	Well #513761	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513761 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)
803.0	0.09	95.96	803.0	-372.0	0.2	1.2	0.4	0.03	0.03	-1.77
903.0	0.16	76.10	903.0	-272.0	0.2	1.4	0.4	0.08	0.07	-19.86
1,003.0	0.26	42.95	1,003.0	-172.0	0.4	1.7	0.4	0.15	0.10	-33.15
1,103.0	0.29	64.87	1,103.0	-72.0	0.7	2.1	0.3	0.11	0.03	21.92
1,203.0	0.31	74.30	1,203.0	28.0	0.9	2.6	0.4	0.05	0.02	9.43
1,303.0	0.37	87.49	1,303.0	128.0	0.9	3.2	0.5	0.10	0.06	13.19
1,403.0	0.42	93.55	1,403.0	228.0	0.9	3.9	0.8	0.07	0.05	6.06
1,503.0	0.49	87.55	1,503.0	328.0	0.9	4.7	1.2	0.08	0.07	-6.00
1,603.0	0.63	86.65	1,603.0	428.0	1.0	5.6	1.6	0.14	0.14	-0.90
1,703.0	0.95	101.51	1,703.0	528.0	0.9	7.0	2.3	0.38	0.32	14.86
1,803.0	0.97	100.53	1,803.0	628.0	0.5	8.7	3.3	0.03	0.02	-0.98
1,903.0	0.98	103.76	1,902.9	727.9	0.2	10.3	4.3	0.06	0.01	3.23
2,003.0	0.95	104.78	2,002.9	827.9	-0.2	11.9	5.4	0.03	-0.03	1.02
2,103.0	0.83	110.85	2,102.9	927.9	-0.7	13.4	6.4	0.15	-0.12	6.07
2,203.0	0.75	109.39	2,202.9	1,027.9	-1.2	14.7	7.4	0.08	-0.08	-1.46
2,303.0	0.60	125.62	2,302.9	1,127.9	-1.7	15.8	8.3	0.24	-0.15	16.23
2,403.0	0.56	135.44	2,402.9	1,227.9	-2.4	16.5	9.3	0.11	-0.04	9.82
2,503.0	0.59	137.30	2,502.9	1,327.9	-3.1	17.2	10.2	0.04	0.03	1.86
2,603.0	0.57	143.32	2,602.9	1,427.9	-3.9	17.9	11.2	0.06	-0.02	6.02
2,703.0	0.66	142.31	2,702.9	1,527.9	-4.7	18.5	12.3	0.09	0.09	-1.01
2,803.0	0.56	145.51	2,802.9	1,627.9	-5.6	19.1	13.3	0.11	-0.10	3.20
2,903.0	0.52	141.82	2,902.9	1,727.9	-6.3	19.7	14.2	0.05	-0.04	-3.69
3,003.0	0.50	140.27	3,002.9	1,827.9	-7.0	20.3	15.1	0.02	-0.02	-1.55
3,103.0	0.47	126.81	3,102.9	1,927.9	-7.6	20.9	15.9	0.12	-0.03	-13.46
3,203.0	0.48	129.21	3,202.9	2,027.9	-8.1	21.5	16.6	0.02	0.01	2.40
3,303.0	0.35	128.31	3,302.9	2,127.9	-8.6	22.1	17.3	0.13	-0.13	-0.90
3,403.0	0.28	132.93	3,402.9	2,227.9	-8.9	22.5	17.8	0.07	-0.07	4.62
3,503.0	0.31	145.27	3,502.9	2,327.9	-9.3	22.8	18.3	0.07	0.03	12.34
3,603.0	0.33	154.14	3,602.9	2,427.9	-9.8	23.1	18.8	0.05	0.02	8.87
3,703.0	0.31	166.01	3,702.9	2,527.9	-10.3	23.3	19.4	0.07	-0.02	11.87
3,803.0	0.21	182.52	3,802.9	2,627.9	-10.8	23.4	19.8	0.12	-0.10	16.51
3,903.0	0.17	282.06	3,902.9	2,727.9	-10.9	23.2	19.9	0.29	0.04	99.54
4,003.0	0.07	316.75	4,002.8	2,827.8	-10.8	23.0	19.7	0.12	0.10	34.69
4,103.0	0.28	328.90	4,102.8	2,927.8	-10.6	22.9	19.4	0.21	0.21	12.15
4,203.0	0.46	341.41	4,202.8	3,027.8	-10.0	22.6	18.8	0.20	0.18	12.51
4,303.0	0.52	331.97	4,302.8	3,127.8	-9.2	22.3	17.9	0.10	0.06	-9.44
4,403.0	0.59	335.26	4,402.8	3,227.8	-8.4	21.8	17.0	0.08	0.07	3.29
4,503.0	0.95	314.57	4,502.8	3,327.8	-7.3	21.0	15.7	0.45	0.36	-20.69
513761 Gyro Tie In=4580' MD										
4,580.0	1.31	316.49	4,579.8	3,404.8	-6.2	20.0	14.2	0.47	0.47	2.49
First MWD Survey (Drilled As 513760)=4623' MD										
4,623.0	1.10	318.80	4,622.8	3,447.8	-5.6	19.4	13.4	0.50	-0.49	5.37
4,686.0	1.10	316.00	4,685.8	3,510.8	-4.7	18.5	12.2	0.09	0.00	-4.44

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Ritchie County 513761
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1175.0usft
Project:	Ritchie County, WV	**MD Reference:**	KB@16 @ 1175.0usft
Site:	Ritchie County 513761	**North Reference:**	Grid
Well:	Well #513761	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513761 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)
KOP=4748' MD										
4,749.0	1.80	359.00	4,748.8	3,573.8	-3.2	18.1	10.7	1.98	1.11	68.25
4,780.0	3.50	10.90	4,779.7	3,604.7	-1.8	18.3	9.5	5.73	5.48	38.39
4,812.0	5.90	12.40	4,811.6	3,636.6	0.7	18.8	7.5	7.51	7.50	4.69
4,843.0	9.00	10.80	4,842.4	3,667.4	4.7	19.6	4.2	10.02	10.00	-5.16
4,875.0	11.60	8.70	4,873.8	3,698.8	10.3	20.6	-0.4	8.21	8.13	-6.56
4,906.0	14.00	11.40	4,904.1	3,729.1	17.1	21.8	-6.0	7.98	7.74	8.71
4,938.0	16.70	17.60	4,934.9	3,759.9	25.3	23.9	-12.4	9.86	8.44	19.38
4,969.0	19.40	21.20	4,964.4	3,789.4	34.3	27.1	-19.2	9.42	8.71	11.61
5,001.0	21.50	22.70	4,994.4	3,819.4	44.7	31.3	-26.8	6.76	6.56	4.69
5,033.0	23.80	23.60	5,023.9	3,848.9	56.0	36.2	-34.9	7.27	7.19	2.81
5,064.0	26.50	26.00	5,052.0	3,877.0	68.0	41.7	-43.3	9.31	8.71	7.74
5,127.0	33.30	26.40	5,106.6	3,931.6	96.1	55.6	-62.7	10.80	10.79	0.63
5,190.0	39.70	24.70	5,157.2	3,982.2	129.9	71.7	-86.2	10.28	10.16	-2.70
513761 LP 2										
5,203.4	40.08	24.11	5,167.5	3,992.5	137.7	75.2	-91.7	3.99	2.82	-4.41
5,253.0	41.50	22.00	5,205.0	4,030.0	167.6	87.9	-113.1	3.99	2.87	-4.25
5,316.0	40.00	18.90	5,252.7	4,077.7	206.1	102.3	-141.7	4.00	-2.38	-4.92
5,379.0	40.40	17.90	5,300.9	4,125.9	244.7	115.1	-170.9	1.21	0.63	-1.59
5,442.0	41.20	19.30	5,348.6	4,173.6	283.7	128.3	-200.4	1.93	1.27	2.22
5,505.0	42.10	22.00	5,395.6	4,220.6	322.8	143.0	-229.4	3.19	1.43	4.29
5,568.0	41.60	22.20	5,442.6	4,267.6	361.8	158.9	-257.7	0.82	-0.79	0.32
5,631.0	42.20	21.90	5,489.5	4,314.5	400.8	174.6	-286.0	1.00	0.95	-0.48
5,693.0	42.10	25.30	5,535.4	4,360.4	438.9	191.3	-313.2	3.68	-0.16	5.48
5,756.0	41.40	26.00	5,582.4	4,407.4	476.7	209.5	-339.5	1.33	-1.11	1.11
5,820.0	40.80	26.10	5,630.7	4,455.7	514.5	227.9	-365.6	0.94	-0.94	0.16
5,883.0	40.10	26.80	5,678.6	4,503.6	551.1	246.1	-390.7	1.32	-1.11	1.11
5,946.0	40.70	26.30	5,726.6	4,551.6	587.6	264.4	-415.8	1.08	0.95	-0.79
6,009.0	41.20	24.40	5,774.2	4,599.2	624.9	282.1	-441.8	2.13	0.79	-3.02
6,040.0	40.20	25.70	5,797.7	4,622.7	643.2	290.6	-454.6	4.23	-3.23	4.19
6,072.0	36.80	30.00	5,822.7	4,647.7	660.9	299.9	-466.5	13.52	-10.63	13.44
6,103.0	33.20	34.40	5,848.1	4,673.1	675.9	309.3	-476.0	14.18	-11.61	14.19
6,135.0	32.00	40.40	5,875.1	4,700.1	689.6	319.8	-483.8	10.77	-3.75	18.75
6,167.0	33.50	44.50	5,902.0	4,727.0	702.4	331.5	-490.3	8.37	4.69	12.81
6,198.0	32.80	50.20	5,927.9	4,752.9	713.8	343.9	-495.3	10.30	-2.26	18.39
6,230.0	32.20	53.50	5,954.9	4,779.9	724.5	357.4	-499.0	5.85	-1.88	10.31
6,261.0	31.90	55.70	5,981.2	4,806.2	734.0	370.8	-501.8	3.89	-0.97	7.10
6,293.0	31.20	60.70	6,008.5	4,833.5	742.8	385.1	-503.6	8.46	-2.19	15.63
6,324.0	30.10	67.30	6,035.2	4,860.2	749.7	399.2	-503.8	11.41	-3.55	21.29
6,356.0	30.20	73.10	6,062.8	4,887.8	755.2	414.3	-502.1	9.11	0.31	18.13
6,387.0	30.30	79.90	6,089.6	4,914.6	758.8	429.5	-498.9	11.05	0.32	21.94
6,419.0	30.20	85.40	6,117.3	4,942.3	760.9	445.5	-493.8	8.66	-0.31	17.19
6,450.0	31.30	91.40	6,143.9	4,968.9	761.3	461.3	-487.4	10.51	3.55	19.35

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Ritchie County 513761
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@15 @ 1175.0usft
Project:	Ritchie County, WV	**MD Reference:**	KB@15 @ 1175.0usft
Site:	Ritchie County 513761	**North Reference:**	Grid
Well:	Well #513761	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513761 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)
6,482.0	32.20	95.70	6,171.1	4,996.1	760.3	478.1	-479.2	7.61	2.81	13.44
6,514.0	34.30	100.30	6,197.9	5,022.9	757.8	495.5	-469.5	10.25	6.56	14.38
6,545.0	35.40	101.80	6,223.3	5,048.3	754.4	512.8	-458.9	4.50	3.55	4.84
6,577.0	37.40	105.90	6,249.1	5,074.1	749.8	531.3	-446.8	9.84	6.25	12.81
6,608.0	37.90	110.20	6,273.6	5,098.6	744.0	549.3	-433.7	8.62	1.61	13.87
6,639.0	39.30	114.10	6,297.9	5,122.9	736.7	567.2	-419.4	9.05	4.52	12.58
6,671.0	41.10	118.10	6,322.3	5,147.3	727.6	585.7	-403.2	9.83	5.63	12.50
6,702.0	42.30	121.90	6,345.5	5,170.5	717.3	603.5	-386.2	9.03	3.87	12.26
6,734.0	44.90	126.30	6,368.6	5,193.6	704.9	621.8	-367.2	12.48	8.13	13.75
6,765.0	47.30	129.70	6,390.1	5,215.1	691.1	639.4	-347.2	11.06	7.74	10.97
6,797.0	50.70	132.90	6,411.1	5,236.1	675.2	657.5	-324.9	13.03	10.63	10.00
6,828.0	53.50	134.80	6,430.2	5,255.2	658.2	675.1	-302.0	10.24	9.03	6.13
6,860.0	55.80	137.10	6,448.7	5,273.7	639.5	693.3	-277.3	9.27	7.19	7.19
6,891.0	58.80	140.00	6,465.4	5,290.4	619.9	710.5	-252.2	12.47	9.68	9.35
6,923.0	61.40	142.70	6,481.4	5,306.4	598.3	727.8	-225.2	10.93	8.13	8.44
6,954.0	63.60	145.60	6,495.7	5,320.7	576.0	743.9	-198.1	10.92	7.10	9.35
6,986.0	67.20	147.10	6,509.0	5,334.0	551.8	760.1	-169.3	12.03	11.25	4.69
7,017.0	68.00	148.40	6,520.8	5,345.8	527.5	775.3	-140.9	4.66	2.58	4.19
7,080.0	73.10	150.00	6,541.8	5,366.8	476.5	805.7	-81.7	8.44	8.10	2.54
7,111.0	77.50	150.30	6,549.7	5,374.7	450.5	820.7	-51.8	14.22	14.19	0.97
7,143.0	81.80	150.70	6,555.4	5,380.4	423.1	836.2	-20.4	13.49	13.44	1.25
7,174.0	84.70	153.80	6,559.1	5,384.1	395.9	850.5	10.3	13.64	9.35	10.00
7,206.0	85.00	155.80	6,561.9	5,386.9	367.0	864.1	42.2	6.29	0.94	6.25
7,237.0	87.00	159.40	6,564.1	5,389.1	338.4	875.8	73.1	13.26	6.45	11.61
7,269.0	88.80	161.90	6,565.3	5,390.3	308.3	886.4	104.9	9.62	5.63	7.81
LP=7333' MD/ 6566' TVD										
7,333.0	89.60	161.90	6,566.2	5,391.2	247.4	906.3	168.3	1.25	1.25	0.00
7,396.0	89.10	161.70	6,566.9	5,391.9	187.6	926.0	230.8	0.85	-0.79	-0.32
7,459.0	87.80	162.30	6,568.6	5,393.6	127.7	945.4	293.2	2.27	-2.06	0.95
7,522.0	87.70	164.50	6,571.1	5,396.1	67.4	963.4	355.4	3.49	-0.16	3.49
7,585.0	87.60	165.20	6,573.6	5,398.6	6.6	979.9	417.3	1.12	-0.16	1.11
Deepest Point of Well=7648' MD/ 6575' TVD										
7,648.0	90.20	166.00	6,574.9	5,399.9	-54.4	995.5	479.1	4.32	4.13	1.27
7,710.0	90.70	167.30	6,574.4	5,399.4	-114.7	1,009.9	539.6	2.25	0.81	2.10
7,773.0	94.80	169.20	6,571.3	5,396.3	-176.3	1,022.7	600.7	7.17	6.51	3.02
7,836.0	97.90	169.30	6,564.4	5,389.4	-237.8	1,034.4	661.3	4.92	4.92	0.16
7,899.0	99.50	168.00	6,554.8	5,379.8	-298.9	1,046.6	721.6	3.26	2.54	-2.06
7,962.0	95.30	165.20	6,546.7	5,371.7	-359.6	1,061.1	782.7	7.99	-6.67	-4.44
8,025.0	93.30	164.10	6,542.0	5,367.0	-420.2	1,077.7	844.5	3.62	-3.17	-1.75
8,088.0	90.70	162.30	6,539.8	5,364.8	-480.4	1,095.9	906.7	5.02	-4.13	-2.86
8,151.0	88.60	160.70	6,540.2	5,365.2	-540.2	1,115.9	969.2	4.19	-3.33	-2.54
8,214.0	88.10	160.50	6,542.0	5,367.0	-599.6	1,136.8	1,031.8	0.85	-0.79	-0.32

03/25/2016

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Ritchie County 513761
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1175.0usft
Project:	Ritchie County, WV	**MD Reference:**	KB@16 @ 1175.0usft
Site:	Ritchie County 513761	**North Reference:**	Grid
Well:	Well #513761	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513761 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)
8,277.0	87.20	159.80	6,544.6	5,369.6	-658.8	1,158.2	1,094.4	1.81	-1.43	-1.11
8,340.0	87.20	159.80	6,547.7	5,372.7	-717.8	1,179.9	1,157.1	0.00	0.00	0.00
8,403.0	88.30	159.40	6,550.1	5,375.1	-776.8	1,201.9	1,219.8	1.86	1.75	-0.63
8,466.0	90.20	159.40	6,551.0	5,376.0	-835.8	1,224.0	1,282.5	3.02	3.02	0.00
8,529.0	91.60	158.00	6,550.0	5,375.0	-894.5	1,246.9	1,345.3	3.14	2.22	-2.22
8,592.0	91.00	155.10	6,548.6	5,373.6	-952.3	1,272.0	1,408.3	4.70	-0.95	-4.60
8,655.0	90.50	155.00	6,547.7	5,372.7	-1,009.4	1,298.5	1,471.3	0.81	-0.79	-0.16
8,718.0	89.90	155.00	6,547.5	5,372.5	-1,066.5	1,325.2	1,534.3	0.95	-0.95	0.00
8,781.0	90.30	154.30	6,547.4	5,372.4	-1,123.4	1,352.1	1,597.3	1.28	0.63	-1.11
8,845.0	91.10	157.10	6,546.6	5,371.6	-1,181.7	1,378.5	1,661.2	4.55	1.25	4.38
8,908.0	91.70	161.70	6,545.1	5,370.1	-1,240.7	1,400.6	1,724.0	7.36	0.95	7.30
8,971.0	91.80	161.40	6,543.2	5,368.2	-1,300.4	1,420.6	1,786.4	0.50	0.16	-0.48
9,034.0	91.50	160.90	6,541.3	5,366.3	-1,360.0	1,440.9	1,849.0	0.93	-0.48	-0.79
9,097.0	90.50	160.60	6,540.2	5,365.2	-1,419.5	1,461.7	1,911.6	1.66	-1.59	-0.48
9,160.0	90.40	159.90	6,539.7	5,364.7	-1,478.8	1,483.0	1,974.3	1.12	-0.16	-1.11
9,223.0	89.10	160.90	6,540.0	5,365.0	-1,538.1	1,504.1	2,036.9	2.60	-2.06	1.59
9,286.0	88.70	160.90	6,541.2	5,366.2	-1,597.6	1,524.7	2,099.5	0.63	-0.63	0.00
9,349.0	88.50	161.10	6,542.8	5,367.8	-1,657.2	1,545.2	2,162.1	0.45	-0.32	0.32
9,412.0	88.30	160.20	6,544.5	5,369.5	-1,716.6	1,566.1	2,224.7	1.46	-0.32	-1.43
9,475.0	89.40	160.20	6,545.8	5,370.8	-1,775.9	1,587.4	2,287.3	1.75	1.75	0.00
9,538.0	89.30	159.90	6,546.5	5,371.5	-1,835.1	1,608.9	2,350.0	0.50	-0.16	-0.48
9,601.0	91.10	160.90	6,546.3	5,371.3	-1,894.4	1,630.0	2,412.7	3.27	2.86	1.59
9,664.0	90.90	160.80	6,545.2	5,370.2	-1,953.9	1,650.7	2,475.3	0.35	-0.32	-0.16
9,727.0	91.50	160.10	6,543.9	5,368.9	-2,013.3	1,671.8	2,537.9	1.46	0.95	-1.11
9,789.0	90.80	158.90	6,542.6	5,367.6	-2,071.3	1,693.5	2,599.6	2.24	-1.13	-1.94
9,852.0	89.10	154.60	6,542.7	5,367.7	-2,129.2	1,718.3	2,662.6	7.34	-2.70	-6.83
9,915.0	89.00	155.40	6,543.7	5,368.7	-2,186.3	1,745.0	2,725.6	1.28	-0.16	1.27
9,978.0	90.20	158.80	6,544.2	5,369.2	-2,244.3	1,769.5	2,788.5	5.72	1.90	5.40
10,041.0	90.90	161.80	6,543.6	5,368.6	-2,303.6	1,790.7	2,851.1	4.89	1.11	4.76
10,104.0	90.00	164.20	6,543.1	5,368.1	-2,363.9	1,809.1	2,913.4	4.07	-1.43	3.81
10,166.0	89.10	162.60	6,543.5	5,368.5	-2,423.3	1,826.8	2,974.6	2.96	-1.45	-2.58
10,229.0	89.50	163.90	6,544.3	5,369.3	-2,483.6	1,845.0	3,036.9	2.16	0.63	2.06
10,291.0	89.70	164.50	6,544.8	5,369.8	-2,543.3	1,861.9	3,098.0	1.02	0.32	0.97
10,354.0	89.40	163.90	6,545.2	5,370.2	-2,603.9	1,879.0	3,160.1	1.05	-0.48	-0.95
10,417.0	89.40	163.60	6,545.9	5,370.9	-2,664.4	1,896.7	3,222.2	0.48	0.00	-0.48
10,479.0	89.00	163.10	6,546.8	5,371.8	-2,723.7	1,914.4	3,283.5	1.03	-0.65	-0.81
10,510.0	89.80	162.60	6,547.1	5,372.1	-2,753.4	1,923.6	3,314.1	3.04	2.58	-1.61
10,605.0	89.40	161.90	6,547.8	5,372.8	-2,843.8	1,952.5	3,408.2	0.85	-0.42	-0.74
10,668.0	90.20	162.00	6,548.0	5,373.0	-2,903.7	1,972.0	3,470.7	1.28	1.27	0.16
10,731.0	90.40	162.60	6,547.6	5,372.6	-2,963.8	1,991.2	3,533.1	1.00	0.32	0.95
10,794.0	91.00	163.00	6,546.9	5,371.9	-3,023.9	2,009.8	3,595.4	1.14	0.95	0.63
10,857.0	90.70	162.20	6,545.9	5,370.9	-3,084.0	2,028.7	3,657.8	1.36	-0.48	-1.27
10,921.0	90.50	162.00	6,545.3	5,370.3	-3,144.9	2,048.3	3,721.2	0.44	-0.31	-0.31

Database:	EDM 5000.1 Single User DB	**Local Co-ordinate Reference:**	Site Ritchie County 513761
Company:	EQT Production - Marcellus	**TVD Reference:**	[illegible]
Project:	Ritchie County, WV	**MD Reference:**	[illegible]
Site:	Ritchie County 513761	**North Reference:**	[illegible]
Well:	Well #513761	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513761 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)
10,984.0	90.20	160.90	6,544.9	5,369.9	-3,204.7	2,068.4	3,783.7	1.81	-0.48	-1.75
11,109.0	89.50	160.20	6,545.2	5,370.2	-3,322.5	2,110.0	3,908.0	0.79	-0.56	-0.56
11,172.0	90.20	163.10	6,545.4	5,370.4	-3,382.3	2,129.8	3,970.5	4.74	1.11	4.60
11,235.0	90.00	162.90	6,545.3	5,370.3	-3,442.6	2,148.2	4,032.8	0.45	-0.32	-0.32
11,298.0	91.30	162.70	6,544.6	5,369.6	-3,502.7	2,166.9	4,095.1	2.09	2.06	-0.32
11,361.0	91.50	162.00	6,543.0	5,368.0	-3,562.8	2,186.0	4,157.5	1.16	0.32	-1.11
11,424.0	91.10	161.70	6,541.6	5,366.6	-3,622.6	2,205.6	4,219.9	0.79	-0.63	-0.48
11,487.0	90.80	161.90	6,540.5	5,365.5	-3,682.5	2,225.3	4,282.4	0.57	-0.48	0.32
11,551.0	90.50	160.90	6,539.8	5,364.8	-3,743.1	2,245.7	4,345.9	1.63	-0.47	-1.56
11,613.0	90.20	160.20	6,539.4	5,364.4	-3,801.6	2,266.3	4,407.6	1.23	-0.48	-1.13
11,676.0	89.90	160.30	6,539.4	5,364.4	-3,860.9	2,287.6	4,470.2	0.50	-0.48	0.16
11,739.0	90.30	160.90	6,539.3	5,364.3	-3,920.3	2,308.5	4,532.9	1.14	0.63	0.95
11,802.0	89.80	160.10	6,539.2	5,364.2	-3,979.7	2,329.6	4,595.5	1.50	-0.79	-1.27
11,865.0	89.70	161.10	6,539.5	5,364.5	-4,039.1	2,350.5	4,658.1	1.60	-0.16	1.59
11,926.0	89.80	163.40	6,539.8	5,364.8	-4,097.2	2,369.1	4,718.6	3.77	0.16	3.77
11,989.0	89.70	163.10	6,540.0	5,365.0	-4,157.5	2,387.2	4,780.8	0.50	-0.16	-0.48
12,052.0	89.60	162.70	6,540.4	5,365.4	-4,217.7	2,405.8	4,843.1	0.65	-0.16	-0.63
12,115.0	89.90	162.60	6,540.7	5,365.7	-4,277.9	2,424.5	4,905.5	0.50	0.48	-0.16
12,178.0	89.60	162.50	6,541.0	5,366.0	-4,338.0	2,443.4	4,967.8	0.50	-0.48	-0.16
12,241.0	89.50	161.90	6,541.5	5,366.5	-4,397.9	2,462.7	5,030.2	0.97	-0.16	-0.95
12,304.0	89.50	161.50	6,542.0	5,367.0	-4,457.7	2,482.5	5,092.7	0.63	0.00	-0.63
12,367.0	89.40	161.00	6,542.6	5,367.6	-4,517.4	2,502.7	5,155.3	0.81	-0.16	-0.79
12,430.0	90.90	160.90	6,542.5	5,367.5	-4,576.9	2,523.3	5,217.9	2.39	2.38	-0.16
12,493.0	91.00	160.50	6,541.4	5,366.4	-4,636.4	2,544.1	5,280.5	0.65	0.16	-0.63
12,556.0	90.80	160.30	6,540.4	5,365.4	-4,695.7	2,565.2	5,343.1	0.45	-0.32	-0.32
12,619.0	90.60	160.20	6,539.7	5,364.7	-4,755.0	2,586.5	5,405.8	0.35	-0.32	-0.16
12,682.0	90.60	161.80	6,539.0	5,364.0	-4,814.6	2,607.0	5,468.4	2.54	0.00	2.54
12,745.0	90.90	162.90	6,538.2	5,363.2	-4,874.6	2,626.1	5,530.8	1.81	0.48	1.75
12,808.0	90.50	161.60	6,537.4	5,362.4	-4,934.6	2,645.3	5,593.2	2.16	-0.63	-2.06
12,871.0	89.40	160.20	6,537.5	5,362.5	-4,994.1	2,666.0	5,655.8	2.83	-1.75	-2.22
12,934.0	89.10	160.20	6,538.3	5,363.3	-5,053.4	2,687.3	5,718.4	0.48	-0.48	0.00
12,997.0	88.90	159.70	6,539.4	5,364.4	-5,112.6	2,708.9	5,781.1	0.85	-0.32	-0.79
13,060.0	89.10	159.20	6,540.5	5,365.5	-5,171.6	2,731.0	5,843.9	0.85	0.32	-0.79
13,123.0	89.30	159.40	6,541.4	5,366.4	-5,230.5	2,753.3	5,906.6	0.45	0.32	0.32
13,185.0	89.20	159.20	6,542.2	5,367.2	-5,288.5	2,775.2	5,968.4	0.36	-0.16	-0.32
13,248.0	90.20	159.10	6,542.5	5,367.5	-5,347.4	2,797.6	6,031.2	1.60	1.59	-0.16
13,311.0	90.50	159.20	6,542.1	5,367.1	-5,406.2	2,820.0	6,094.0	0.50	0.48	0.16
13,374.0	90.30	159.20	6,541.7	5,366.7	-5,465.1	2,842.4	6,156.8	0.32	-0.32	0.00
13,437.0	90.50	158.80	6,541.2	5,366.2	-5,523.9	2,865.0	6,219.6	0.71	0.32	-0.63
13,501.0	90.60	158.40	6,540.6	5,365.6	-5,583.5	2,888.3	6,283.4	0.64	0.16	-0.63
13,564.0	90.50	158.10	6,540.0	5,365.0	-5,642.0	2,911.7	6,346.2	0.50	-0.16	-0.48
13,627.0	91.00	159.60	6,539.2	5,364.2	-5,700.8	2,934.4	6,409.0	2.51	0.79	2.38

03/25/2016

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Ritchie County 513761
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1175.0usft
Project:	Ritchie County, WV	**MD Reference:**	KB@16 @ 1175.0usft
Site:	Ritchie County 513761	**North Reference:**	Grid
Well:	Well #513761	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513761 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)
13,690.0	91.40	162.90	6,537.9	5,362.9	-5,760.4	2,954.6	6,471.6	5.28	0.63	5.24
13,753.0	90.70	163.10	6,536.7	5,361.7	-5,820.7	2,973.1	6,533.9	1.16	-1.11	0.32
13,816.0	89.20	163.20	6,536.8	5,361.8	-5,881.0	2,991.3	6,596.1	2.39	-2.38	0.16
13,879.0	89.10	162.80	6,537.7	5,362.7	-5,941.2	3,009.7	6,658.4	0.65	-0.16	-0.63
13,942.0	89.00	162.30	6,538.7	5,363.7	-6,001.3	3,028.6	6,720.8	0.81	-0.16	-0.79
14,005.0	89.00	162.40	6,539.8	5,364.8	-6,061.3	3,047.7	6,783.1	0.16	0.00	0.16
14,068.0	89.00	161.40	6,540.9	5,365.9	-6,121.2	3,067.3	6,845.6	1.59	0.00	-1.59
14,131.0	88.50	160.30	6,542.3	5,367.3	-6,180.7	3,088.0	6,908.2	1.92	-0.79	-1.75
14,194.0	88.70	160.40	6,543.9	5,368.9	-6,240.0	3,109.1	6,970.8	0.35	0.32	0.16
14,257.0	89.10	161.10	6,545.1	5,370.1	-6,299.5	3,129.9	7,033.4	1.28	0.63	1.11
14,320.0	89.50	161.00	6,545.8	5,370.8	-6,359.0	3,150.4	7,096.0	0.65	0.63	-0.16
14,383.0	90.60	161.10	6,545.8	5,370.8	-6,418.6	3,170.8	7,158.6	1.75	1.75	0.16
14,446.0	90.50	160.90	6,545.2	5,370.2	-6,478.2	3,191.3	7,221.2	0.35	-0.16	-0.32
14,510.0	90.60	160.70	6,544.6	5,369.6	-6,538.6	3,212.4	7,284.8	0.35	0.16	-0.31
14,573.0	90.10	158.60	6,544.2	5,369.2	-6,597.7	3,234.3	7,347.5	3.43	-0.79	-3.33
14,636.0	88.80	155.80	6,544.8	5,369.8	-6,655.8	3,258.7	7,410.4	4.90	-2.06	-4.44
14,699.0	88.90	157.70	6,546.0	5,371.0	-6,713.6	3,283.5	7,473.3	3.02	0.16	3.02
14,762.0	90.20	158.80	6,546.5	5,371.5	-6,772.1	3,306.9	7,536.2	2.70	2.06	1.75
14,824.0	90.90	158.70	6,545.9	5,370.9	-6,829.9	3,329.4	7,598.0	1.14	1.13	-0.16
14,887.0	90.90	157.70	6,545.0	5,370.0	-6,888.4	3,352.8	7,660.9	1.59	0.00	-1.59
14,950.0	90.60	156.80	6,544.1	5,369.1	-6,946.5	3,377.1	7,723.8	1.51	-0.48	-1.43
15,013.0	90.50	154.40	6,543.5	5,368.5	-7,003.9	3,403.1	7,786.8	3.81	-0.16	-3.81
Final Survey=15073' MD/ 6543' TVD - 513760 Plat TD 4"										
15,073.0	90.50	154.40	6,543.0	5,368.0	-7,058.0	3,429.1	7,846.8	0.00	0.00	0.00
Projection to TD=15371' MD/ 6540' TVD										
15,371.0	90.50	149.00	6,540.4	5,365.4	-7,320.3	3,570.3	8,144.3	1.81	0.00	-1.81

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
4,580.0	4,579.8	-6.2	20.0	513761 Gyro Tie In=4580' MD
4,623.0	4,622.8	-5.6	19.4	First MWD Survey (Drilled As 513760)=4623' MD
4,749.0	4,748.8	-3.2	18.1	KOP=4749' MD
7,333.0	6,566.2	247.4	906.3	LP=7333' MD/ 6566' TVD
7,648.0	6,574.9	-54.4	995.5	Deepest Point of Well=7648' MD/ 6575' TVD
15,073.0	6,543.0	-7,058.0	3,429.1	Final Survey=15073' MD/ 6543' TVD
15,371.0	6,540.4	-7,320.3	3,570.3	Projection to TD=15371' MD/ 6540' TVD

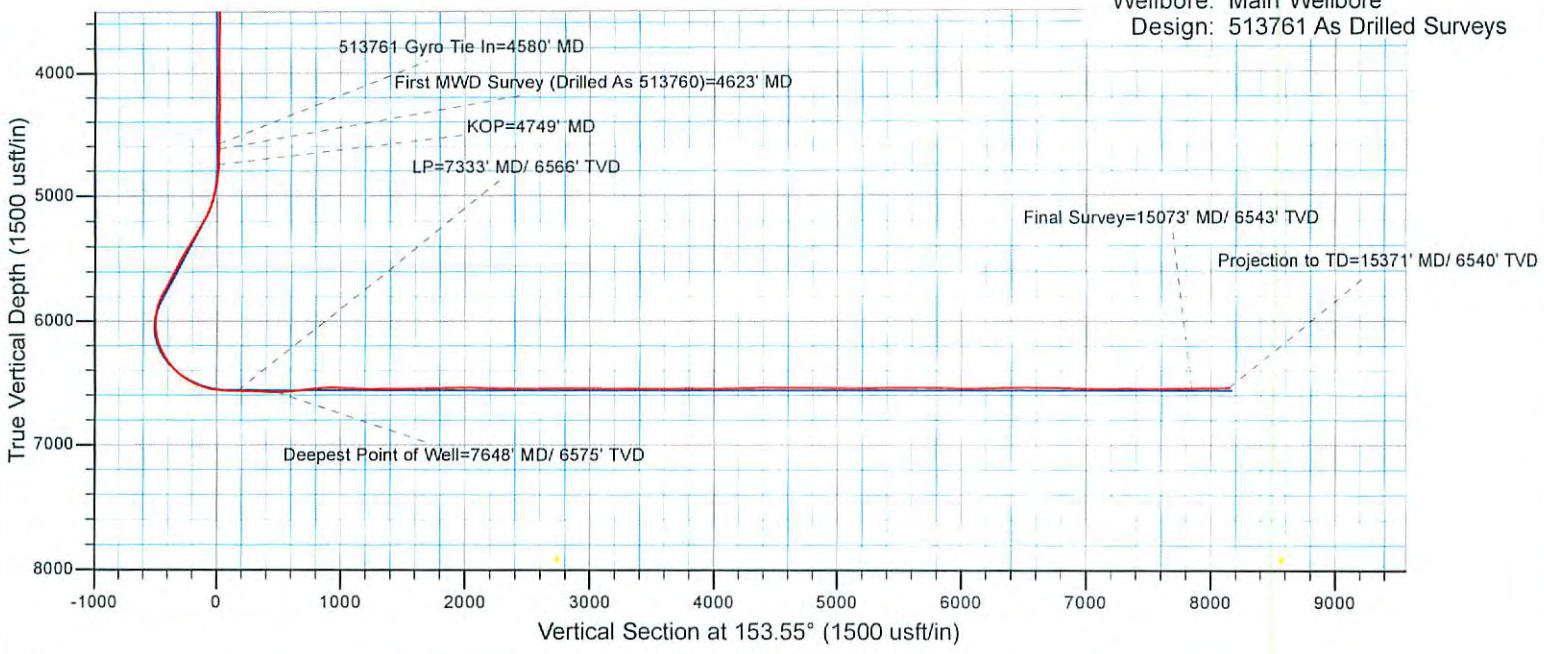
Checked By: _____ Approved By: _____ Date: _____

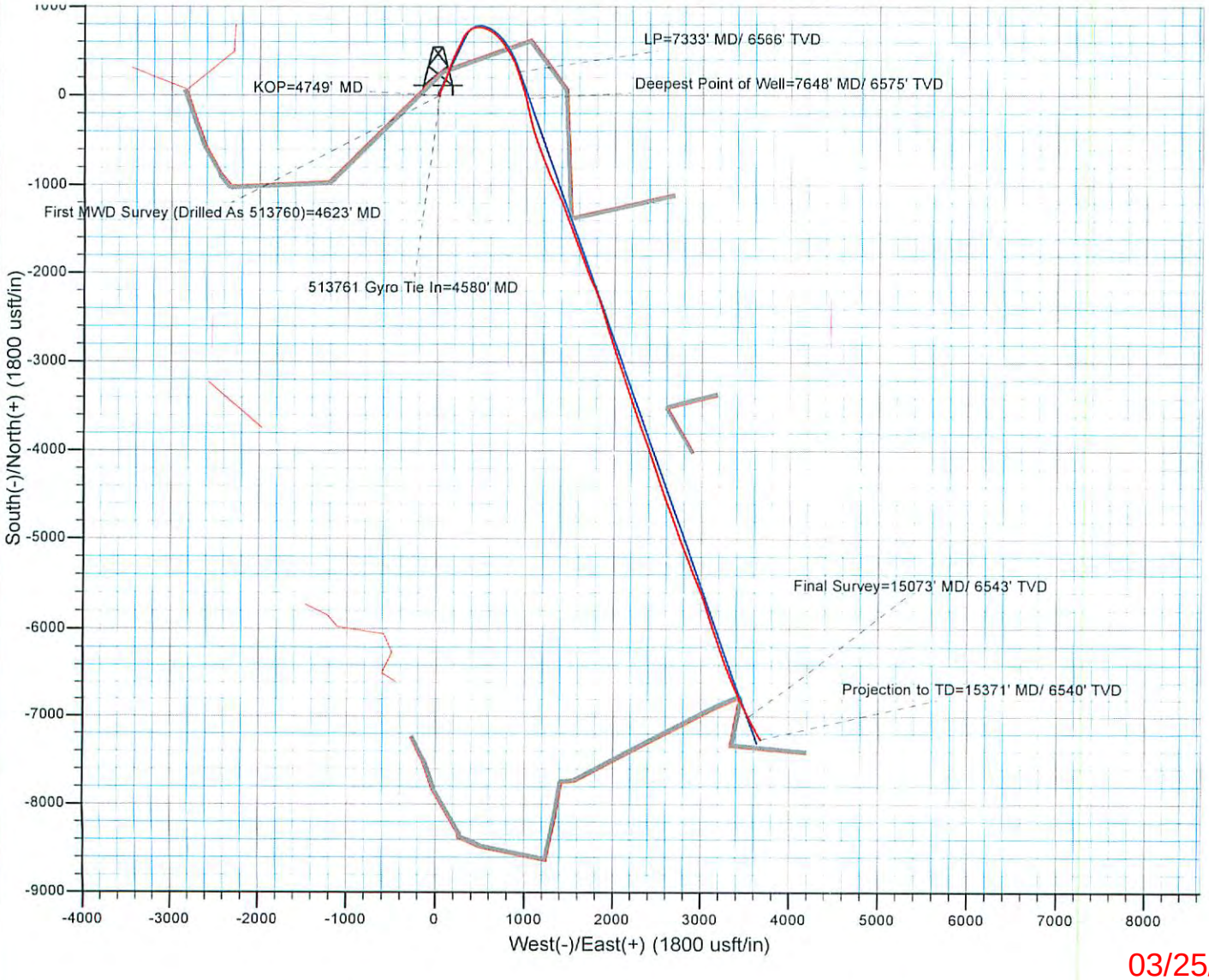
03/25/2016

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Marcellus

Project: Ritchie County, WV
Site: Ritchie County 513761
Well: Well #513761
Wellbore: Main Wellbore
Design: 513761 As Drilled Surveys





03/25/2016

513761- 47-085-10137-0000 - Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	9/21/2015	15,354	15,356	10	MARCELLUS
1	9/22/2015	15,209	15,302	32	MARCELLUS
2	9/22/2015	15,059	15,181	40	MARCELLUS
3	9/23/2015	14,910	15,001	40	MARCELLUS
4	9/23/2015	14,759	14,881	40	MARCELLUS
5	9/23/2015	14,606	14,731	40	MARCELLUS
6	9/23/2015	14,459	14,581	40	MARCELLUS
7	9/24/2015	14,309	14,431	40	MARCELLUS
8	9/24/2015	14,159	14,281	40	MARCELLUS
9	9/24/2015	14,009	14,131	40	MARCELLUS
10	9/24/2015	13,859	13,981	40	MARCELLUS
11	9/25/2015	13,710	13,831	40	MARCELLUS
12	9/25/2015	13,559	13,651	40	MARCELLUS
13	9/25/2015	13,409	13,531	40	MARCELLUS
14	9/26/2015	13,259	13,381	40	MARCELLUS
15	9/26/2015	13,109	13,231	40	MARCELLUS
16	9/26/2015	12,959	13,081	40	MARCELLUS
17	9/26/2015	12,809	12,931	40	MARCELLUS
18	9/27/2015	12,659	12,781	40	MARCELLUS
19	9/27/2015	12,508	12,631	40	MARCELLUS
20	9/27/2015	12,359	12,481	40	MARCELLUS
21	9/27/2015	12,209	12,331	40	MARCELLUS
22	9/27/2015	12,059	12,181	40	MARCELLUS
23	9/28/2015	11,909	12,031	40	MARCELLUS
24	9/28/2015	11,759	11,881	40	MARCELLUS
25	9/28/2015	11,609	11,731	40	MARCELLUS
26	9/28/2015	11,459	11,581	40	MARCELLUS
27	9/28/2015	11,309	11,431	40	MARCELLUS
28	9/29/2015	11,159	11,281	40	MARCELLUS
29	9/29/2015	11,009	11,128	40	MARCELLUS
30	9/29/2015	10,859	10,981	40	MARCELLUS
31	9/29/2015	10,709	10,827	40	MARCELLUS
32	9/30/2015	10,559	10,681	40	MARCELLUS
33	9/30/2015	10,409	10,531	40	MARCELLUS
34	9/30/2015	10,259	10,381	40	MARCELLUS
35	9/30/2015	10,109	10,231	40	MARCELLUS
36	9/30/2015	9,959	10,076	40	MARCELLUS
37	9/30/2015	9,809	9,931	40	MARCELLUS
38	10/1/2015	9,659	9,781	40	MARCELLUS
39	10/1/2015	9,509	9,631	40	MARCELLUS
40	10/1/2015	9,359	9,481	40	MARCELLUS
41	10/1/2015	9,209	9,331	40	MARCELLUS
42	10/2/2015	9,059	9,181	40	MARCELLUS
43	10/2/2015	8,909	9,031	40	MARCELLUS
44	10/2/2015	8,759	8,881	40	MARCELLUS
45	10/3/2015	8,609	8,731	40	MARCELLUS
46	10/3/2015	8,459	8,581	40	MARCELLUS
47	10/3/2015	8,309	8,431	40	MARCELLUS
48	10/3/2015	8,159	8,281	40	MARCELLUS
49	10/3/2015	8,009	8,129	40	MARCELLUS
50	10/4/2015	7,859	7,981	40	MARCELLUS
51	10/4/2015	7,709	7,831	40	MARCELLUS
52	10/4/2015	7,559	7,681	40	MARCELLUS
53	10/4/2015	7,409	7,528	40	MARCELLUS
54	10/4/2015	7,259	7,381	40	MARCELLUS
55	10/4/2015	7,109	7,231	40	MARCELLUS

513761 47-085-10137-0000 - 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	9/22/2015	12.3	7,774	8,877	4,268	0	821	0
1	9/22/2015	88.9	8,691	9,007	3,337	251,340.00	7,530	0
2	9/23/2015	97.7	8,726	8,877	4,477	252,120.00	6,951	0
3	9/23/2015	92.6	8,402	8,562	3,689	252,900.00	7,512	0
4	9/23/2015	96.9	8,396	8,676	3,479	249,180.00	6,764	0
5	9/23/2015	93.1	8,512	8,894	3,865	251,260.00	6,581	0
6	9/24/2015	97.3	8,625	8,976	3,964	251,120.00	6,674	0
7	9/24/2015	94.5	8,398	8,734	3,498	250,850.00	6,254	0
8	9/24/2015	95.8	8,483	8,837	3,659	248,260.00	6,196	0
9	9/24/2015	98	8,727	8,983	3,768	248,380.00	6,544	0
10	9/25/2015	99.2	8,635	8,867	3,979	250,160.00	6,632	0
11	9/25/2015	99.7	8,685	8,956	3,727	251,940.00	6,477	0
12	9/25/2015	99.6	8,585	8,825	3,684	249,520.00	6,534	0
13	9/25/2015	100	8,580	8,809	4,236	250,640.00	6,593	0
14	9/26/2015	101	8,435	8,611	4,023	253,920.00	7,159	0
15	9/26/2015	101.3	8,704	8,962	4,163	251,450.00	6,283	0
16	9/26/2015	99	8,634	8,936	4,472	253,160.00	6,245	0
17	9/27/2015	100.7	8,535	8,727	4,231	251,400.00	6,495	0
18	9/27/2015	100.3	8,578	8,807	3,777	255,100.00	6,224	0
19	9/27/2015	100.7	8,364	8,564	3,833	249,700.00	6,131	0
20	9/27/2015	100.3	8,145	8,566	3,737	250,955.00	6,041	0
21	9/27/2015	100.9	8,245	8,392	4,307	250,170.00	6,287	0
22	9/28/2015	100.9	8,218	8,378	4,856	253,540.00	6,421	0
23	9/28/2015	100.3	8,212	8,359	4,391	250,840.00	6,350	0
24	9/28/2015	97.8	8,405	8,877	3,835	250,920.00	6,034	0
25	9/28/2015	100.7	8,210	8,373	3,787	248,590.00	6,180	0
26	9/28/2015	100.9	8,001	8,305	3,711	251,136.00	6,122	0
27	9/28/2015	100.1	7,960	8,126	3,642	249,978.00	6,171	0
28	9/29/2015	100.1	7,922	8,128	3,679	250,793.00	6,090	0
29	9/29/2015	100.4	7,931	8,151	3,571	255,167.00	6,155	0
30	9/29/2015	100.6	8,094	8,336	3,941	250,480.00	6,512	0
31	9/29/2015	100.4	8,200	8,424	3,860	252,505.00	6,180	0
32	9/30/2015	100.2	7,919	8,038	4,114	249,595.00	5,914	0
33	9/30/2015	102.1	7,858	8,081	3,936	251,358.00	6,093	0
34	9/30/2015	101.3	7,661	8,067	3,337	255,235.00	6,020	0
35	9/30/2015	100.1	7,811	8,263	3,290	253,430.00	5,931	0
36	9/30/2015	100.1	7,729	7,899	3,573	251,851.00	6,494	0
37	10/1/2015	100.2	7,751	8,174	3,620	251,736.00	6,159	0
38	10/1/2015	102.2	7,799	8,135	3,583	253,067.00	5,893	0
39	10/1/2015	102	7,725	8,620	3,449	250,960.00	5,859	0
40	10/1/2015	102.2	7,657	7,962	3,546	248,884.00	5,893	0
41	10/1/2015	100.6	7,379	7,767	3,627	250,815.00	5,981	0
42	10/2/2015	100.4	7,808	8,356	3,504	250,197.00	5,961	0
43	10/2/2015	101	7,461	8,352	3,948	251,640.00	5,906	0
44	10/3/2015	100.3	7,502	8,169	4,887	244,253.00	7,175	0
45	10/3/2015	100.8	7,355	7,744	4,814	250,563.00	6,121	0
46	10/3/2015	100.9	7,524	7,837	4,858	250,930.00	6,084	0
47	10/3/2015	101.2	7,516	8,447	3,565	251,480.00	5,679	0
48	10/3/2015	101.4	7,492	8,012	3,543	250,870.00	5,604	0
49	10/3/2015	100.6	7,578	8,307	3,212	249,692.00	5,878	0
50	10/4/2015	101.2	7,353	7,732	3,702	251,540.00	5,630	0
51	10/4/2015	102.1	7,388	7,857	3,785	252,280.00	5,600	0
52	10/4/2015	101.5	7,223	7,898	4,030	249,060.00	5,851	0
53	10/4/2015	100.5	7,617	8,523	3,612	251,550.00	5,822	0
54	10/4/2015	101.3	7,031	7,754	3,273	252,370.00	5,750	0
55	10/4/2015	101.2	6,958	8,044	3,357	252,400.00	5,703	0

03/25/2016

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	9/22/2015
Job End Date:	10/4/2015
State:	West Virginia
County:	Ritchie
API Number:	47-085-10137-00-00
Operator Name:	EQT Production
Well Name and Number:	513761
Longitude:	-80.84292600
Latitude:	39.13587300
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,534
Total Base Water Volume (gal):	14,454,048
Total Base Non Water Volume:	0

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	Keane Group	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	89.37056	None
Sand (Proppant)	Keane Group	Proppant					
			Silica Substrate	14808-60-7	100.00000	10.23467	None
MC MX 437-5	Multi-Chem	Calcium nitrate solution					
			Calcium nitrate	10124-37-5	60.00000	0.05730	None
Hydrochloric Acid (15%)	Keane Group	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.03115	None
FFR760	Keane Group	Friction Reducer					
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.01982	None
			Alkyl Alcohol	Proprietary	10.00000	0.00661	None
			Oxyalkylated alcohol A	Proprietary	5.00000	0.00330	None
EC6330A	Keane Group	Scale Inhibitor					
			Ethylene Glycol	107-21-1	5.00000	0.00125	None
			Sodium Phosphate, Tribasic	7601-54-9	5.00000	0.00125	None
AI 600	Keane Group	Corrosion Inhibitor					
			Ethylene Glycol	107-21-1	40.00000	0.00020	None
			Dimethyiformamide	68-12-2	20.00000	0.00010	None

			Pyridine, alkyl derives, quaternized with benzyl chloride	68909-18-2	15.00000	0.00008	None
			Cinnamiaidehyde	104-55-2	15.00000	0.00008	None
			Nonyl Phenol Ethoxylate, Branched	127087-87-0	5.00000	0.00003	None
			1-Octanol	111-87-5	5.00000	0.00003	None
			1-Decanol	112-30-1	5.00000	0.00003	None
			2-Butoxyenthanol	111-76-2	5.00000	0.00003	None
			Triethyl Phosphate	78-40-0	2.50000	0.00001	None
			Methanol	67-56-1	2.50000	0.00001	None
			Alkyl Pyridine	68391-11-7	1.00000	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)

FORM WW 6

2,721'

LATITUDE 39°10'00"

11,216'

LONGITUDE 80°50'00"

NAD' 27 GRID NORTH

AS DRILLED COORDINATES FOR WELL NO. WV 513761

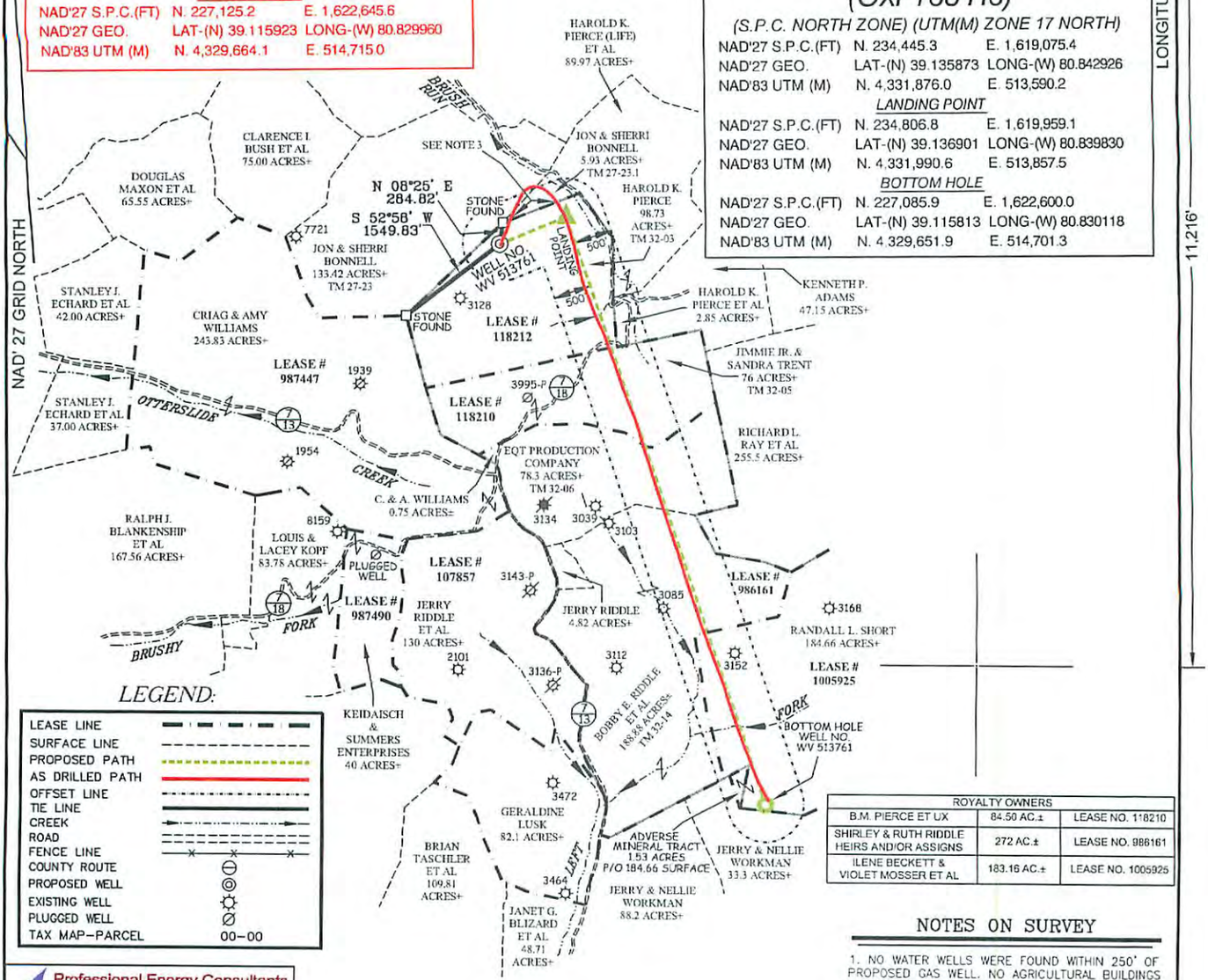
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 234,445.3	E. 1,619,075.4
NAD'27 GEO.	LAT-(N) 39.135873	LONG-(W) 80.842926
NAD'83 UTM (M)	N. 4,331,876.0	E. 513,590.2
	BOTTOM HOLE	
NAD'27 S.P.C.(FT)	N. 227,125.2	E. 1,622,645.6
NAD'27 GEO.	LAT-(N) 39.115923	LONG-(W) 80.829960
NAD'83 UTM (M)	N. 4,329,664.1	E. 514,715.0

EQT PRODUCTION COMPANY J.E. PIERCE ET AL LEASE 108 (98.73±) ACRES± WELL NO. WV 513761 (OXF163 H6)

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

NAD'27 S.P.C.(FT)	N. 234,445.3	E. 1,619,075.4
NAD'27 GEO.	LAT-(N) 39.135873	LONG-(W) 80.842926
NAD'83 UTM (M)	N. 4,331,876.0	E. 513,590.2
	LANDING POINT	
NAD'27 S.P.C.(FT)	N. 234,806.8	E. 1,619,959.1
NAD'27 GEO.	LAT-(N) 39.136901	LONG-(W) 80.839830
NAD'83 UTM (M)	N. 4,331,990.6	E. 513,857.5
	BOTTOM HOLE	
NAD'27 S.P.C.(FT)	N. 227,085.9	E. 1,622,600.0
NAD'27 GEO.	LAT-(N) 39.115813	LONG-(W) 80.830118
NAD'83 UTM (M)	N. 4,329,651.9	E. 514,701.3



LEGEND:

LEASE LINE	
SURFACE LINE	
PROPOSED PATH	
AS DRILLED PATH	
OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
FENCE LINE	
COUNTY ROUTE	⊖
PROPOSED WELL	◎
EXISTING WELL	☼
PLUGGED WELL	Ø
TAX MAP–PARCEL	00–00

ROYALTY OWNERS		
B.M. PIERCE ET UX	84.50 AC.±	LEASE NO. 118210
SHIRLEY & RUTH RIDDLE HEIRS AND/OR ASSIGNS	272 AC.±	LEASE NO. 986161
ILENE BECKETT & VIOLET MOSSER ET AL	183.16 AC.±	LEASE NO. 1005925

NOTES ON SURVEY

1. 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.
2. AS DRILLED INFORMATION PROVIDED BY EQT.
3. NONPRODUCTIVE SUBSURFACE RIGHT OF WAY.

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING INC.
SLS
SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-5634 WWW.SLSSURVEYS.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. 849

C. VICTOR MOYERS LICENSED No. 849 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE JUNE 3 , 20 14

REVISED 08/22/14,10/27/14,10/31/14,12/05/14, 04/14/15, 05/19/15, 06/08/15, 06/15/15 & 06/17/15

OPERATORS WELL NO. WV 513761

API WELL NO. 47 — 085 — 10137H
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500

FILE NO. 7698AD513761R

SCALE 1" = 2000'

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

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

LOCATION:

ELEVATION 1,158.4'(ACTUAL) WATERSHED BRUSH RUN OF MIDDLE FORK

DISTRICT UNION COUNTY RITCHIE QUADRANGLE OXFORD 7.5'

SURFACE OWNER HAROLD K. PIERCE ACREAGE 98.73±

ROYALTY OWNER J.E. PIERCE ET AL ACREAGE 108± (98.73±)

PROPOSED WORK:

LEASE NO. 118212

DRILL X CONVERT ____ DRILL DEEPER ____ REDRILL ____ FRACTURE OR STIMULATE X 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 TVD 6495'

WELL OPERATOR EQT PRODUCTION COMPANY
ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
BRIDGEPORT, WV 26330

DESIGNATED AGENT REX C. RAY
ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
BRIDGEPORT, WV 26330

COUNTY NAME

PERMIT

03/25/2016

SLS

124866