Well Operator's Report of Well Work

EQT

Where energy meets innovation.

Well Number: 515747

API: 47 - 091 - 01320

Submission: ☐ Initial ☑ Amended

Notes: -Revised Plat
-Revised "As Drilled" Coordinates

Received
Office of Oil and Gas
AUG 25 2016
WV Department of
Environmental Protection

APPROVED
NAME: Laura Supra
DATE: 9-20-16

10/28/2016

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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 - 091 - 1320 County Taylor District FLEMINGTON
Quad ROSEMONT 7.5' Pad Name RSM118 Field/Pool Name
Farm name JAMES M. TAYLOR ET AL Well Number 515747
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 4,349,727.5 Easting 569,611.8
Landing Point of Curve Northing 4,350,040.61 Easting 570,191.06
Bottom Hole Northing 4,351,086.5 Easting 569,782.6

Elevation (ft) 1465 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 13.5 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 01/30/2015 Date drilling commenced 06/03/2015 Date drilling ceased 09/12/2015
Date completion activities began 10/30/2015 Date completion activities ceased 11/4/2015
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

AUG 25 2016

Freshwater depth(s) ft 282,606,827 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1357 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 22,600,646,697,757,797,813,847,889,938,1071 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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API 47- 091 - 1320 Farm name JAMES M. TAYLOR ET AL Well number 515747

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 94LB/FT	NONE	Y
Surface	17.5"	13.375"	921'	NEW	J-55 54.5LB/FT	291'	Y
Coal							
Intermediate 1	12.375"	9.625"	2502'	NEW	A-500 40LB/FT	1503'	Y
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	12,470'	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	784	15.6	1.18	925.12	0	8
Coal							
Intermediate 1	CLASS A / CLASS H	436 / 472	15.2 / 16.0	1.25 / 1.25	1135	0	8
Intermediate 2							
Intermediate 3							
Production	Class A / Class H	875 / 580	15.2 / 15.6	1.07 / 1.84	2003.45	3,740'	24
Tubing							

Drillers TD (ft) 12,481' 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) 4,676' MD

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- NONE
SURFACE- JOINTS: 1,11,21
INTERMEDIATE- 6 CENTRALIZERS RAN AT LEAST EVERY 500' FEET
PRODUCTION- Composite solid body spiral centralizers installed every joint from bottom to 3,937'

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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- 091 - 1320 Farm name JAMES M. TAYLOR ET AL Well number 515747

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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API 47- 091 - 1320 Farm name JAMES M. TAYLOR ET AL Well number 515747

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	7,489'	TVD	8,351' MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 1,221 psi Bottom Hole N/A psi DURATION OF TEST 87.00 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	7,118 mcfpd	N/A bpd	0.0 bpd	955.2 bpd	☐ Estimated ■ Orifice ☐ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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.

Drilling Contractor ALPHA HUNTER DRILLING (RIG 5)
Address P.O. BOX 430 City RENO State OH Zip 45773

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company BAKER HUGHES OILFIELD OPERATIONS, INC.
Address 837 Philippi Pike City CLARKSBURG State WV Zip 26301

Stimulating Company Keane Group
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 8/22/2016

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

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API 47- 091 - 1320 Farm name JAMES M. TAYLOR ET AL Well number 515747

Drilling Contractor Savanna Drilling (Rig 803)
Address 125 Industry Road City Waynesburg State PA Zip 15370

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

Logging Company Hoss Co. Services LLC
Address 614 Trotters Lane City Charleston State WV Zip 25312

Cementing Company C&J Energy Services
Address 2504 Smith Creek Road City Waynesburg State PA Zip 15370

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Environmental Protection

10/28/2016

PHOENIX
TECHNOLOGY SERVICES

EQT PRODUCTION

Taylor County, WV
RSM118
Well #515747 - Marcellus - Slot 515747
API # 47-910-01320
Main Wellbore

Design: 515747 AS Drilled Surveys

Standard Survey Report

14 September, 2015

EQT
Where energy meets innovation.

Database:		Local Co-ordinate Reference:	
Company:		TVD Reference:	
Project:		MD Reference:	
Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

Project

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site

Site Position:		**Northing:**	289,938.90 usft	**Latitude:**	39.29
From:	Map	**Easting:**	1,803,864.30 usft	**Longitude:**	-80.19
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.44 °

Well

Well Position	**+N/-S**	0.0 usft	**Northing:**	289,960.30 usft	**Latitude:**	39° 17' 38.530 N
	+E/-W	0.0 usft	**Easting:**	1,603,885.20 usft	**Longitude:**	80° 11' 34.577 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	1,465.0 usft

Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/26/2015	-8.52	66.47	52,267

Design

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	6.33

Survey Program Date 9/14/2015

From ()	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	4,823.0	515747 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	12,481.0	515747 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	-1,488.0	0.0	0.0	0.0	0.00	0.00	0.00
110.0	0.14	297.15	110.0	-1,378.0	0.1	-0.1	0.0	0.13	0.13	0.00
210.0	0.18	319.44	210.0	-1,278.0	0.2	-0.3	0.2	0.07	0.04	22.29
310.0	0.20	306.39	310.0	-1,178.0	0.5	-0.6	0.4	0.05	0.02	-13.05
410.0	0.17	303.58	410.0	-1,078.0	0.6	-0.8	0.5	0.03	-0.03	-2.81
510.0	0.16	304.18	510.0	-978.0	0.8	-1.1	0.6	0.01	-0.01	0.60
610.0	0.14	306.66	610.0	-878.0	1.0	-1.3	0.8	0.02	-0.02	2.48

10/28/2016

Database:		Local Co-ordinate Reference:	
Company:		TVD Reference:	
Project:		MD Reference:	
Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

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)
710.0	0.13	43.55	710.0	-778.0	1.1	-1.3	0.9	0.20	-0.01	96.89
810.0	0.14	61.17	810.0	-678.0	1.3	-1.1	1.1	0.04	0.01	17.62
910.0	0.08	70.30	910.0	-578.0	1.3	-1.0	1.2	0.06	-0.06	9.13
1,010.0	0.08	311.57	1,010.0	-478.0	1.4	-0.9	1.3	0.14	0.00	-118.73
1,110.0	0.23	305.16	1,110.0	-378.0	1.6	-1.2	1.4	0.15	0.15	-6.41
1,210.0	0.66	325.80	1,210.0	-278.0	2.2	-1.6	1.9	0.45	0.43	20.64
1,310.0	0.89	346.21	1,310.0	-178.0	3.4	-2.2	3.0	0.36	0.23	20.41
1,410.0	0.94	348.80	1,410.0	-78.0	4.9	-2.5	4.5	0.06	0.05	2.59
1,510.0	0.89	351.19	1,510.0	22.0	6.5	-2.8	6.1	0.06	-0.05	2.39
1,610.0	0.89	353.21	1,609.9	121.9	8.1	-3.0	7.5	0.03	0.00	2.02
1,710.0	0.93	351.20	1,709.9	221.9	9.6	-3.2	9.1	0.05	0.04	-2.01
1,810.0	0.98	349.11	1,809.9	321.9	11.3	-3.5	10.7	0.06	0.05	-2.09
1,910.0	1.04	348.03	1,909.9	421.9	13.0	-3.8	12.3	0.06	0.06	-1.08
2,010.0	0.94	348.23	2,009.9	521.9	14.7	-4.2	13.9	0.10	-0.10	0.20
2,110.0	0.83	351.10	2,109.9	621.9	16.2	-4.5	15.4	0.12	-0.11	2.87
2,210.0	0.86	356.16	2,209.9	721.9	17.7	-4.6	16.8	0.08	0.03	5.06
2,310.0	0.84	3.13	2,309.9	821.9	19.2	-4.6	18.3	0.11	-0.02	6.97
2,410.0	0.80	5.65	2,409.8	921.8	20.6	-4.5	19.7	0.05	-0.04	2.52
2,510.0	0.65	0.27	2,509.8	1,021.8	21.8	-4.5	21.0	0.16	-0.15	-5.38
2,610.0	0.51	344.01	2,609.8	1,121.8	22.8	-4.6	21.9	0.21	-0.14	-16.26
2,710.0	0.42	343.67	2,709.8	1,221.8	23.6	-4.8	22.7	0.09	-0.09	-0.34
2,810.0	0.44	341.57	2,809.8	1,321.8	24.3	-5.0	23.3	0.03	0.02	-2.10
2,910.0	0.37	338.67	2,909.8	1,421.8	25.0	-5.3	24.0	0.07	-0.07	-2.90
3,010.0	0.38	339.13	3,009.8	1,521.8	25.6	-5.5	24.5	0.01	0.01	0.46
3,110.0	0.45	330.30	3,109.8	1,621.8	26.3	-5.8	25.1	0.09	0.07	-8.83
3,210.0	0.48	326.48	3,209.8	1,721.8	27.0	-6.2	25.8	0.04	0.03	-3.82
3,310.0	0.47	325.10	3,309.8	1,821.8	27.6	-6.7	26.4	0.02	-0.01	-1.38
3,410.0	0.47	316.04	3,409.8	1,921.8	28.3	-7.2	26.9	0.07	0.00	-9.06
3,510.0	0.49	316.40	3,509.8	2,021.8	28.9	-7.8	27.4	0.02	0.02	0.36
3,610.0	0.39	312.51	3,609.8	2,121.8	29.4	-8.4	27.9	0.10	-0.10	-3.89
3,710.0	0.40	308.69	3,709.8	2,221.8	29.9	-8.9	28.3	0.03	0.01	-3.82
3,810.0	0.52	307.87	3,809.8	2,321.8	30.4	-9.5	28.7	0.12	0.12	-0.82
3,910.0	0.50	307.50	3,909.8	2,421.8	30.9	-10.2	29.1	0.02	-0.02	-0.37
4,010.0	0.55	310.29	4,009.8	2,521.8	31.5	-10.9	29.6	0.06	0.05	2.79
4,110.0	0.60	315.02	4,109.8	2,621.8	32.2	-11.7	30.1	0.07	0.05	4.73
4,210.0	0.51	325.83	4,209.8	2,721.8	32.9	-12.3	30.8	0.14	-0.09	10.81
4,310.0	0.37	341.04	4,309.8	2,821.8	33.6	-12.6	31.4	0.18	-0.14	15.21
4,410.0	0.42	340.40	4,409.8	2,921.8	34.2	-12.9	32.0	0.05	0.05	-0.64
4,510.0	0.22	320.87	4,509.8	3,021.8	34.7	-13.1	32.5	0.23	-0.20	-19.53
4,610.0	0.10	271.87	4,609.8	3,121.8	34.9	-13.3	32.6	0.17	-0.12	-49.00
4,623.0	0.07	291.03	4,622.8	3,134.8	34.9	-13.3	32.6	0.31	-0.23	147.38
4,647.0	0.10	290.00	4,646.8	3,158.8	34.9	-13.4	32.6	0.13	0.13	-4.29

10/28/2016

Database:		Local Co-ordinate Reference:	
Company:		TVD Reference:	
Project:		MD Reference:	
Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,679.0	1.50	74.50	4,678.8	3,190.8	35.0	-13.0	32.8	4.95	4.38	451.56
4,710.0	5.60	87.20	4,709.7	3,221.7	35.2	-11.1	33.2	13.39	13.23	40.97
4,741.0	9.20	84.50	4,740.4	3,252.4	35.5	-7.1	34.1	11.66	11.61	-8.71
4,773.0	11.60	86.20	4,771.9	3,283.9	36.0	-1.4	35.4	7.56	7.50	5.31
4,804.0	13.50	89.90	4,802.2	3,314.2	36.2	5.4	36.6	6.65	6.13	11.94
4,836.0	15.70	90.80	4,833.1	3,345.1	36.1	13.4	37.7	6.91	6.88	2.81
4,867.0	16.70	89.60	4,862.9	3,374.9	36.1	22.1	38.9	3.40	3.23	-3.87
4,898.0	18.70	86.80	4,892.4	3,404.4	36.4	31.5	40.6	7.01	6.45	-9.03
4,930.0	21.30	86.00	4,922.5	3,434.5	37.1	42.4	42.8	8.17	8.13	-2.50
4,961.0	23.10	85.80	4,951.2	3,463.2	37.9	54.1	45.4	5.81	5.81	-0.65
4,992.0	24.50	86.40	4,979.6	3,491.6	38.8	66.6	48.0	4.58	4.52	1.94
5,024.0	27.10	86.20	5,008.4	3,520.4	39.7	80.5	50.9	8.13	8.13	-0.63
5,055.0	29.60	86.50	5,035.7	3,547.7	40.6	95.2	54.0	8.08	8.06	0.97
5,087.0	32.70	87.00	5,063.0	3,575.0	41.5	111.7	57.3	9.72	9.69	1.56
5,118.0	34.80	88.50	5,088.8	3,600.8	42.2	128.9	60.5	7.29	6.77	4.84
5,150.0	37.20	89.30	5,114.7	3,626.7	42.6	147.7	63.5	7.64	7.50	2.50
5,181.0	39.30	89.50	5,139.0	3,651.0	42.8	166.9	66.5	6.79	6.77	0.65
5,213.0	40.60	88.88	5,163.6	3,675.6	43.1	187.4	69.8	4.25	4.06	-1.94
5,275.0	40.70	87.40	5,210.6	3,722.6	44.4	227.8	76.9	1.56	0.16	-2.39
5,370.0	39.20	85.50	5,283.4	3,795.4	46.1	288.7	89.5	2.04	-1.58	-2.00
5,464.0	41.00	88.70	5,355.3	3,867.3	51.2	349.1	101.2	2.91	1.91	3.40
5,558.0	39.70	87.10	5,427.0	3,939.0	53.4	410.0	112.2	1.77	-1.38	-1.70
5,652.0	40.20	85.70	5,499.0	4,011.0	57.2	470.2	124.7	1.09	0.53	-1.49
5,746.0	39.10	86.10	5,571.4	4,083.4	61.5	530.0	137.6	1.20	-1.17	0.43
5,841.0	39.80	88.60	5,644.6	4,156.6	64.3	590.3	149.1	1.83	0.74	2.63
5,935.0	39.40	87.90	5,717.2	4,229.2	66.1	650.2	159.6	0.64	-0.43	-0.74
6,029.0	41.30	89.60	5,788.9	4,300.9	67.4	711.0	169.7	2.34	2.02	1.81
6,124.0	42.20	89.40	5,859.7	4,371.7	67.9	774.3	179.4	0.96	0.95	-0.21
6,218.0	40.60	89.20	5,930.2	4,442.2	68.7	836.4	189.2	1.71	-1.70	-0.21
6,313.0	42.00	84.60	6,001.6	4,513.6	72.1	899.0	201.6	3.52	1.47	-4.84
6,407.0	41.60	84.10	6,071.7	4,583.7	78.3	961.4	216.8	0.55	-0.43	-0.53
6,501.0	41.00	89.80	6,142.3	4,654.3	81.6	1,023.3	229.0	4.05	-0.64	4.06
6,596.0	39.30	88.80	6,214.9	4,726.9	82.3	1,084.5	238.6	1.91	-1.79	-1.05
6,690.0	41.10	89.00	6,286.7	4,798.7	83.5	1,145.2	248.6	1.92	1.91	0.21
6,782.0	40.80	89.10	6,356.2	4,868.2	84.5	1,205.5	258.3	0.33	-0.33	0.11
6,876.0	41.50	85.90	6,427.0	4,939.0	87.2	1,267.2	269.9	2.36	0.74	-3.40
6,971.0	40.90	85.00	6,498.5	5,010.5	92.2	1,329.6	283.9	0.89	-0.63	-0.95
7,065.0	40.60	84.30	6,569.7	5,081.7	97.9	1,390.7	298.4	0.58	-0.32	-0.74
7,159.0	40.10	84.90	6,641.3	5,153.3	103.6	1,451.3	312.8	0.67	-0.53	0.64
7,253.0	39.60	84.60	6,713.5	5,225.5	109.1	1,511.3	327.0	0.57	-0.53	-0.32
7,348.0	39.50	86.70	6,786.8	5,298.8	113.7	1,571.6	340.3	1.41	-0.11	2.21
7,442.0	38.40	85.80	6,859.9	5,371.9	117.6	1,630.5	352.6	1.32	-1.17	-0.96

Database:		Local Co-ordinate Reference:	
Company:		TVD Reference:	
Project:		MD Reference:	
Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,505.0	37.50	84.60	6,909.5	5,421.5	120.8	1,669.2	361.4	1.85	-1.43	-1.90
7,536.0	37.70	80.10	6,934.1	5,446.1	123.3	1,687.9	366.6	8.88	0.65	-14.52
7,568.0	38.50	75.70	6,959.3	5,471.3	127.5	1,707.2	373.5	8.84	2.50	-13.75
7,599.0	39.10	72.30	6,983.5	5,495.5	132.8	1,725.8	381.5	7.14	1.94	-10.97
7,631.0	39.40	68.00	7,008.2	5,520.2	139.7	1,744.9	391.1	8.55	0.94	-13.44
7,662.0	40.30	64.10	7,032.1	5,544.1	147.8	1,763.0	401.7	8.57	2.90	-12.58
7,694.0	40.50	60.40	7,056.4	5,568.4	157.4	1,781.4	413.9	7.52	0.63	-11.56
7,725.0	41.00	56.80	7,079.9	5,591.9	168.0	1,798.6	426.8	7.75	1.61	-11.61
7,756.0	40.90	52.60	7,103.3	5,615.3	179.7	1,815.2	440.9	8.88	-0.32	-13.55
7,788.0	40.30	49.10	7,127.6	5,639.6	192.9	1,831.4	456.2	7.36	-1.88	-10.94
7,820.0	39.60	45.40	7,152.2	5,664.2	206.8	1,846.4	472.2	7.74	-2.19	-11.56
7,851.0	39.80	42.50	7,176.0	5,688.0	221.0	1,860.2	488.3	6.01	0.65	-9.35
7,882.0	40.50	39.40	7,199.7	5,711.7	236.1	1,873.3	505.1	6.83	2.26	-10.00
7,914.0	41.80	36.40	7,223.8	5,735.8	252.8	1,886.2	523.4	7.39	4.06	-9.38
7,945.0	43.30	33.70	7,246.7	5,758.7	269.9	1,898.2	542.1	7.62	4.84	-8.71
7,977.0	44.30	31.30	7,269.7	5,781.7	288.6	1,910.1	562.3	6.06	3.13	-7.50
8,008.0	45.60	28.10	7,291.7	5,803.7	307.6	1,921.0	582.7	8.41	4.19	-10.32
8,040.0	47.80	25.10	7,313.6	5,825.6	328.4	1,931.4	604.9	9.68	6.88	-9.38
8,071.0	49.00	22.60	7,334.2	5,846.2	349.6	1,940.8	627.2	7.17	3.87	-8.06
8,102.0	50.30	19.70	7,354.3	5,866.3	371.7	1,949.3	650.2	8.27	4.19	-9.35
8,134.0	52.20	17.70	7,374.3	5,886.3	395.3	1,957.3	674.8	7.68	5.94	-6.25
8,165.0	53.90	15.80	7,393.0	5,905.0	419.0	1,964.4	699.3	7.35	5.48	-6.13
8,196.0	56.00	13.00	7,410.8	5,922.8	443.6	1,970.7	724.5	10.03	6.77	-9.03
8,228.0	58.10	10.10	7,428.2	5,940.2	469.9	1,976.1	751.3	10.04	6.56	-9.06
8,259.0	59.90	7.60	7,444.1	5,956.1	496.2	1,980.1	777.9	9.03	5.81	-8.06
8,291.0	61.20	5.50	7,459.9	5,971.9	523.9	1,983.3	805.7	7.01	4.06	-6.56
8,306.5	61.89	4.19	7,467.2	5,979.2	537.4	1,984.5	819.3	8.67	4.48	-8.44
8,322.0	62.60	2.90	7,474.5	5,986.5	551.1	1,985.3	833.0	8.67	4.56	-8.33
8,353.0	64.20	1.50	7,488.4	6,000.4	578.8	1,986.4	860.6	6.55	5.16	-4.52
8,385.0	66.20	359.70	7,501.8	6,013.8	607.9	1,986.7	889.3	8.07	6.25	-5.63
8,416.0	68.10	358.10	7,513.8	6,025.8	636.4	1,986.1	917.5	7.76	6.13	-5.16
8,448.0	69.70	356.60	7,525.3	6,037.3	666.2	1,984.8	946.8	6.64	5.00	-4.69
8,479.0	71.60	355.10	7,535.6	6,047.6	695.4	1,982.6	975.4	7.64	6.13	-4.84
8,510.0	73.20	353.10	7,545.0	6,057.0	724.8	1,979.6	1,004.0	8.03	5.16	-6.45
8,542.0	74.20	352.70	7,554.0	6,066.0	755.3	1,975.8	1,033.6	3.35	3.13	-1.25
8,573.0	76.30	351.50	7,561.9	6,073.9	785.0	1,971.7	1,062.4	7.74	6.77	-3.87
8,605.0	78.50	349.70	7,568.8	6,080.8	815.8	1,966.6	1,092.1	8.80	6.88	-5.63
8,636.0	80.70	348.50	7,574.4	6,086.4	845.7	1,960.8	1,120.9	8.05	7.10	-3.87
8,668.0	82.10	347.00	7,579.2	6,091.2	876.6	1,954.1	1,150.5	6.37	4.38	-4.69
8,699.0	83.60	345.70	7,583.1	6,095.1	906.5	1,946.8	1,179.1	6.38	4.84	-4.19
8,730.0	84.90	342.70	7,586.2	6,098.2	936.2	1,938.4	1,207.2	10.50	4.19	-9.68

10/28/2016

Database:		Local Co-ordinate Reference:	
Company:		TVD Reference:	
Project:		MD Reference:	
Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

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)
8,750.7	86.06	341.21	7,587.8	6,099.8	955.8	1,932.0	1,225.7	9.11	5.62	-7.19
8,757.7	86.46	340.71	7,588.3	6,100.3	962.4	1,929.6	1,231.9	9.11	5.63	-7.18
8,762.0	86.70	340.40	7,588.5	6,100.5	966.5	1,928.3	1,235.7	9.11	5.63	-7.17
8,793.0	88.70	340.50	7,589.8	6,101.8	995.7	1,918.0	1,263.1	6.46	6.45	0.32
8,856.0	92.40	340.40	7,589.2	6,101.2	1,055.0	1,896.9	1,318.7	5.88	5.87	-0.16
8,950.0	92.70	340.50	7,585.0	6,097.0	1,143.5	1,865.5	1,401.8	0.34	0.32	0.11
9,045.0	92.40	339.50	7,580.8	6,092.8	1,232.7	1,833.0	1,485.3	1.10	-0.32	-1.05
9,139.0	93.00	339.60	7,576.3	6,088.3	1,320.7	1,800.2	1,567.6	0.65	0.64	0.11
9,233.0	91.30	339.70	7,572.8	6,084.8	1,408.7	1,767.5	1,650.0	1.81	-1.81	0.11
9,327.0	90.20	339.90	7,571.6	6,083.6	1,496.9	1,735.1	1,732.6	1.19	-1.17	0.21
9,422.0	89.10	339.80	7,572.2	6,084.2	1,586.1	1,702.4	1,816.1	1.16	-1.16	-0.11
9,516.0	90.10	340.20	7,572.8	6,084.8	1,674.4	1,670.2	1,898.8	1.15	1.06	0.43
9,611.0	91.20	339.80	7,571.7	6,083.7	1,763.7	1,637.7	1,982.4	1.23	1.16	-0.42
9,705.0	89.50	340.10	7,571.2	6,083.2	1,852.0	1,605.5	2,065.1	1.84	-1.81	0.32
9,799.0	90.40	340.10	7,571.2	6,083.2	1,940.4	1,573.5	2,147.9	0.96	0.96	0.00
9,893.0	90.10	339.60	7,570.8	6,082.8	2,028.6	1,541.1	2,230.5	0.62	-0.32	-0.53
9,988.0	93.00	339.10	7,568.3	6,080.3	2,117.5	1,507.6	2,313.6	3.10	3.05	-0.53
10,082.0	92.40	338.40	7,563.8	6,075.8	2,205.0	1,473.6	2,395.3	0.98	-0.64	-0.74
10,176.0	93.10	339.00	7,559.3	6,071.3	2,292.5	1,439.5	2,476.9	0.98	0.74	0.64
10,270.0	94.40	339.10	7,553.2	6,065.2	2,380.1	1,406.0	2,558.7	1.39	1.38	0.11
10,365.0	93.60	340.50	7,546.5	6,058.5	2,469.0	1,373.2	2,641.9	1.69	-0.84	1.47
10,459.0	93.30	339.80	7,540.9	6,052.9	2,557.3	1,341.4	2,724.7	0.81	-0.32	-0.74
10,554.0	92.50	339.20	7,536.1	6,048.1	2,646.1	1,308.2	2,807.8	1.05	-0.84	-0.63
10,648.0	91.70	340.50	7,532.6	6,044.6	2,734.3	1,275.8	2,890.3	1.62	-0.85	1.38
10,742.0	91.00	340.50	7,530.4	6,042.4	2,822.9	1,244.4	2,973.4	0.74	-0.74	0.00
10,836.0	89.70	341.00	7,529.9	6,041.9	2,911.6	1,213.4	3,056.7	1.48	-1.38	0.53
10,931.0	90.00	340.50	7,530.1	6,042.1	3,001.3	1,182.1	3,141.0	0.61	0.32	-0.53
11,025.0	92.30	340.50	7,528.2	6,040.2	3,089.9	1,150.7	3,224.1	2.45	2.45	0.00
11,119.0	92.20	340.00	7,524.5	6,036.5	3,178.3	1,119.0	3,306.9	0.54	-0.11	-0.53
11,213.0	92.50	341.20	7,520.7	6,032.7	3,266.9	1,087.8	3,390.1	1.31	0.32	1.28
11,308.0	92.00	339.70	7,516.9	6,028.9	3,356.4	1,056.0	3,474.0	1.66	-0.53	-1.58
11,402.0	92.50	339.50	7,513.2	6,025.2	3,444.4	1,023.3	3,556.3	0.57	0.53	-0.21
11,496.0	91.90	340.10	7,509.6	6,021.6	3,532.5	990.9	3,638.8	0.90	-0.64	0.64
11,590.0	90.90	337.90	7,507.3	6,019.3	3,620.3	957.2	3,720.8	2.57	-1.06	-2.34
11,685.0	92.90	339.40	7,504.2	6,016.2	3,708.7	922.6	3,803.2	2.63	2.11	1.58
11,779.0	92.40	338.10	7,499.8	6,011.8	3,796.2	888.6	3,884.9	1.48	-0.53	-1.38
11,874.0	92.30	338.40	7,496.0	6,008.0	3,884.4	853.4	3,967.0	0.33	-0.11	0.32
11,968.0	91.80	339.60	7,492.6	6,004.6	3,972.1	819.8	4,048.9	1.38	-0.53	1.28
12,063.0	92.40	339.80	7,489.1	6,001.1	4,061.1	786.8	4,132.3	0.67	0.63	0.21
12,157.0	93.40	339.20	7,484.4	5,996.4	4,149.0	753.9	4,214.5	1.24	1.06	-0.64
12,251.0	92.00	338.10	7,479.9	5,991.9	4,236.5	719.8	4,296.1	1.89	-1.49	-1.17

Database:		Local Co-ordinate Reference:	
Company:		TVD Reference:	
Project:		MD Reference:	
Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

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)
12,346.0	93.00	339.00	7,475.8	5,987.8	4,324.8	685.1	4,378.4	1.42	1.05	0.95
12,422.0	92.20	337.70	7,472.3	5,984.3	4,395.4	657.0	4,444.2	2.01	-1.05	-1.71
12,475.0	92.20	337.70	7,470.3	5,982.3	4,444.4	636.9	4,489.8	0.00	0.00	0.00
12,478.7	92.20	337.70	7,470.2	5,982.2	4,447.8	635.5	4,493.0	0.00	0.00	0.00
12,481.0	92.20	337.70	7,470.1	5,982.1	4,449.9	634.7	4,494.9	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
4,623.0	4,622.8	34.9	-13.3	Gyro Tie On=4623' MD/4623' TVD
8,793.0	7,589.8	995.7	1,918.0	LP/Deepest Point=8793' MD/7590' TVD
12,422.0	7,472.3	4,395.4	657.0	Final Survey=12422' MD/7472' TVD
12,481.0	7,470.1	4,449.9	634.7	PROJ to Bit=12481' MD/7470' TVD

Checked By: _____ Approved By: _____ Date: _____

10/28/2016

PHOENIX
TECHNOLOGY SERVICES

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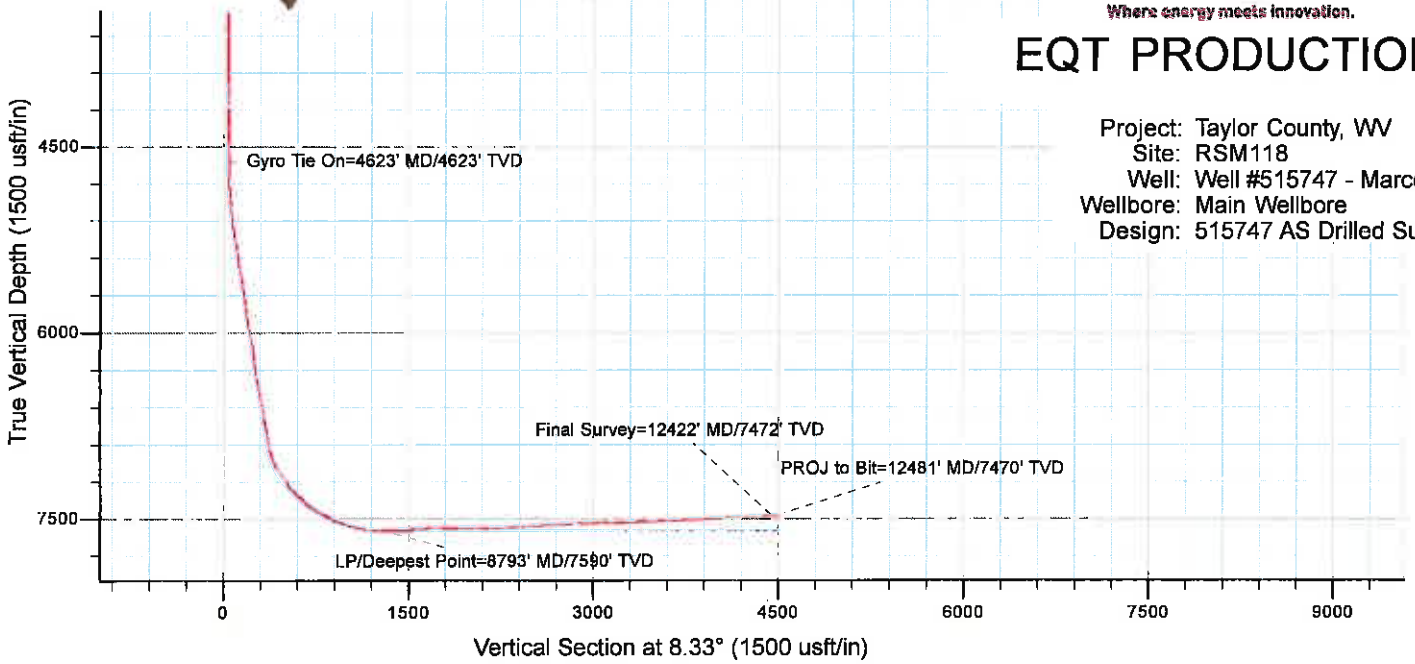
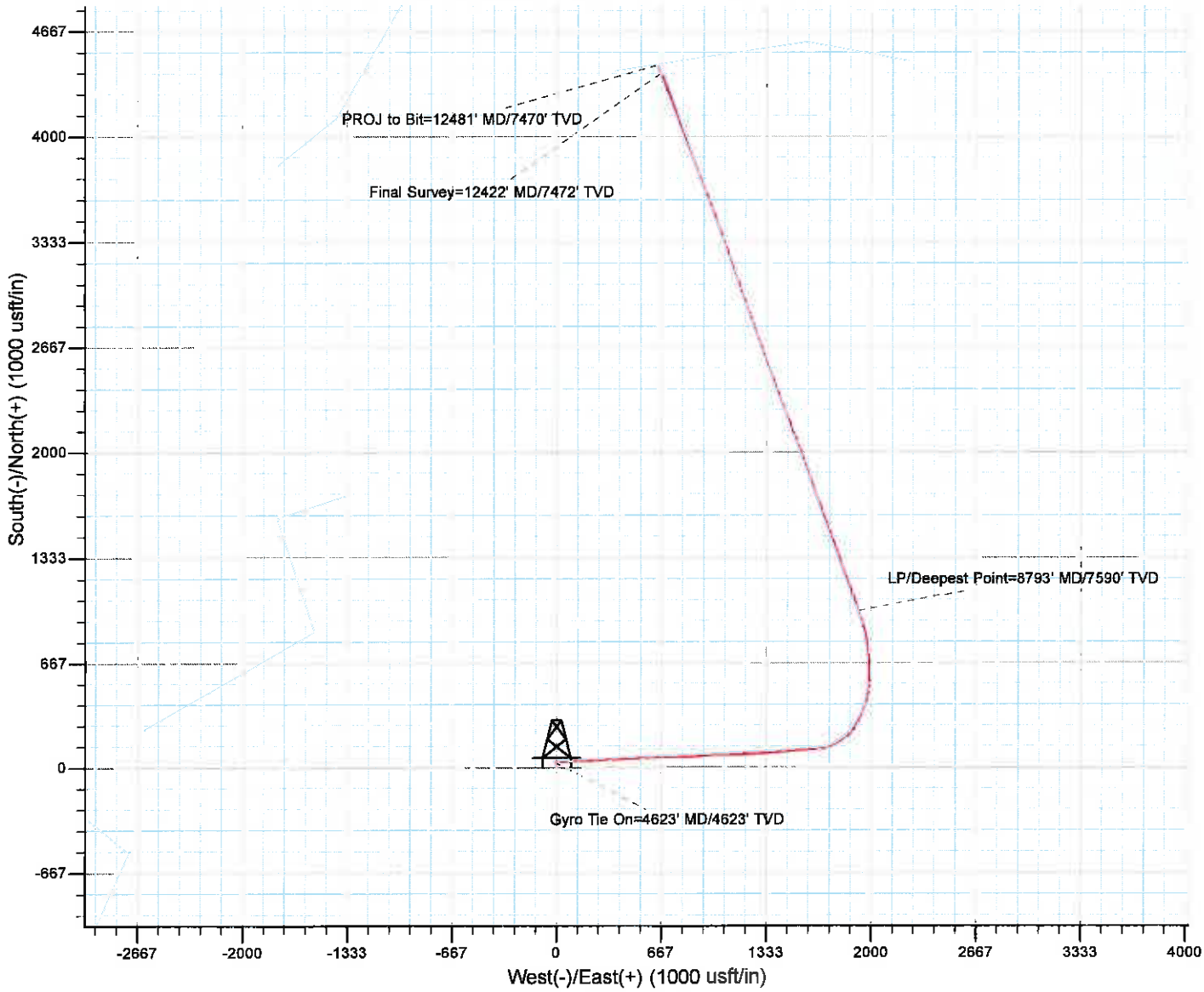
Where energy meets innovation.

EQT PRODUCTION

Project: Taylor County, WV
Site: RSM118
Well: Well #515747 - Marcellus
Wellbore: Main Wellbore
Design: 515747 AS Drilled Surveys





10/28/2016

515747 Final Formations API #47-910-01320				
Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	1		837	
SAND/SHALE	1		32	
PITTSBURGH COAL	32		38	
SAND/SHALE	38		610	
COAL	610		615	
SAND/SHALE	615		656	
COAL	656		661	
SAND/SHALE	661		707	
UPPER FREEPORT	707		708	
SAND/SHALE	708		767	
LOWER FREEPORT	767		768	
SAND/SHALE	768		807	
UPPER KITTANNING	807		808	
SAND/SHALE	808		823	
MIDDLE KITTANNING	823		828	
SAND/SHALE	828		857	
LOWER KITTANNING	857		858	
SAND/SHALE	858		899	
COAL	899		905	
SAND/SHALE	905		948	
COAL	948		953	
SAND/SHALE	953		1,081.00	
MAXTON	981		1,058.00	
SAND/SHALE	1,058.00		1,360.00	
COAL	1,081.00		1,085.00	
BIG LIME	1,360.00		1,542.00	
SAND/SHALE	1,542.00		1,643.00	
WEIR	1,643.00		1,657.00	
SAND/SHALE	1,657.00		1,871.00	
GANTZ	1,871.00		1,937.00	
SAND/SHALE	1,937.00		1,945.00	
50F	1,945.00		1,995.00	
SAND/SHALE	1,995.00		2,052.00	
30F	2,052.00		2,092.00	
SAND/SHALE	2,092.00		2,130.00	
GORDON	2,130.00		2,180.00	
SAND/SHALE	2,180.00		2,276.00	
4TH SAND	2,276.00		2,371.00	
SAND/SHALE	2,371.00		2,419.00	
BAYARD	2,419.00		2,466.00	
SAND/SHALE	2,466.00		2,811.00	
WARREN	2,811.00		3,157.00	
SPEECHLEY	3,157.00		3,439.00	
BRADFORD	3,439.00		3,608.00	
BALLTOWN B	3,608.00		3,855.00	
RILEY	3,855.00		4,467.00	
BENSON	4,467.00		5,018.00	5,004.30
ELK	5,018.00	5,004.30	7,154.00	6,638.90
SONYEA	7,154.00	6,638.90	7,690.00	7,054.70
MIDDLESEX	7,690.00	7,054.70	7,827.00	7,158.90
GENESSEE	7,827.00	7,158.90	8,008.00	7,293.00
GENESEO	8,008.00	7,293.00	8,035.00	7,311.60
TULLY	8,035.00	7,311.60	8,115.00	7,363.90
HAMILTON	8,115.00	7,363.90	8,351.00	7,488.80
MARCELLUS	8,351.00	7,488.80		

10/28/2016

515747 - 47-091-01320-0000 - Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	10/23/2015	12,468.00	12,470.00	10	MARCELLUS
1	10/30/2015	12,324.00	12,416.00	32	MARCELLUS
2	10/31/2015	12,174.00	12,296.00	40	MARCELLUS
3	10/31/2015	12,024.00	12,146.00	40	MARCELLUS
4	10/31/2015	11,874.00	11,994.00	40	MARCELLUS
5	10/31/2015	11,724.00	11,846.00	40	MARCELLUS
6	10/31/2015	11,574.00	11,696.00	40	MARCELLUS
7	11/1/2015	11,424.00	11,546.00	40	MARCELLUS
8	11/1/2015	11,274.00	11,396.00	40	MARCELLUS
9	11/1/2015	11,124.00	11,246.00	40	MARCELLUS
10	11/1/2015	10,974.00	11,096.00	40	MARCELLUS
11	11/1/2015	10,827.00	10,946.00	40	MARCELLUS
12	11/1/2015	10,674.00	10,796.00	40	MARCELLUS
13	11/2/2015	10,524.00	10,646.00	40	MARCELLUS
14	11/2/2015	10,374.00	10,496.00	40	MARCELLUS
15	11/2/2015	10,224.00	10,342.00	40	MARCELLUS
16	11/2/2015	10,074.00	10,196.00	40	MARCELLUS
17	11/3/2015	9,924.00	10,046.00	40	MARCELLUS
18	11/3/2015	9,774.00	9,896.00	40	MARCELLUS
19	11/3/2015	9,624.00	9,746.00	40	MARCELLUS
20	11/3/2015	9,474.00	9,596.00	40	MARCELLUS
21	11/3/2015	9,324.00	9,446.00	40	MARCELLUS
22	11/4/2015	9,174.00	9,296.00	40	MARCELLUS
23	11/4/2015	9,024.00	9,146.00	40	MARCELLUS
24	11/4/2015	8,874.00	8,996.00	40	MARCELLUS
25	11/4/2015	8,724.00	8,846.00	40	MARCELLUS

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515747 - 47-091-01320-0000 - 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	10/30/2015	4.30	8,861.00	9,526.00	5,940.00	0	837	0
1	10/30/2015	89.80	8,909.00	9,139.00	5,721.00	250,860	7030	0
2	10/31/2015	97.40	8,866.00	9,001.00	6,118.00	250,180	6598	0
3	10/31/2015	99.00	8,815.00	8,959.00	6,381.00	251,160	6291	0
4	10/31/2015	99.80	8,872.00	9,083.00	6,078.00	251,080	6283	0
5	10/31/2015	99.80	8,897.00	9,101.00	6,403.00	249,880	6537	0
6	10/31/2015	93.70	8,910.00	9,112.00	5,760.00	251,300	6488	0
7	11/1/2015	94.10	8,956.00	9,108.00	5,866.00	251,040	6560	0
8	11/1/2015	97.00	8,961.00	9,201.00	6,160.00	250,300	6062	0
9	11/1/2015	100.00	8,966.00	9,178.00	6,226.00	250,660	6151	0
10	11/1/2015	96.70	8,979.00	9,218.00	6,203.00	249,800	6124	0
11	11/1/2015	85.80	8,973.00	9,185.00	6,312.00	252,560	6257	0
12	11/1/2015	90.10	8,981.00	9,167.00	6,633.00	250,540	6098	0
13	11/2/2015	94.60	8,994.00	9,196.00	6,407.00	251,120	6517	0
14	11/2/2015	100.70	9,000.00	9,213.00	6,544.00	251,140	5994	0
15	11/2/2015	100.30	8,978.00	9,146.00	6,164.00	250,960	6010	0
16	11/2/2015	93.50	8,826.00	9,099.00	6,299.00	249,880	6839	0
17	11/3/2015	96.00	8,858.00	9,052.00	5,972.00	251,020	6378	0
18	11/3/2015	96.80	8,921.00	9,051.00	6,034.00	249,860	6,104	0
19	11/3/2015	100.20	8,980.00	9,207.00	6,052.00	252,880	5,922	0
20	11/3/2015	101.80	8,810.00	8,994.00	6,113.00	251,800	6,129	0
21	11/3/2015	100.70	8,935.00	9,074.00	5,521.00	249,990	6,174	0
22	11/4/2015	99.40	8,799.00	9,143.00	5,879.00	251,610	6,060	0
23	11/4/2015	99.50	8,775.00	8,955.00	5,597.00	251,400	6,055	0
24	11/4/2015	100.10	8,974.00	9,197.00	5,970.00	254,000	5887	0
25	11/4/2015	99.80	9,009.00	9,398.00	5,363.00	250,320	5919	0

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date	10/30/2015
Job End Date	11/4/2015
State	West Virginia
County	Taylor
API Number	47-091-01320-00-00
Operator Name	EQT Production
Well Name and Number	515747
Longitude	-80 19293800
Latitude	39 29403600
Datum	NAD83
Federal/Tribal Well	NO
True Vertical Depth	7,489
Total Base Water Volume (gal)	6,606,768
Total Base Non Water Volume	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Oil & Gas

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	89.54000	None
Sand (Proppant)	Keane Group	Proppant					
			Silica Substrate	14808-60-7	100.00000	10.19152	None
FFR760	Keane Group	Friction Reducer					
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.02016	None
			Alkyl Alcohol	Proprietary	10.00000	0.00672	None
			Oxyalkylated alcohol A	Proprietary	5.00000	0.00336	None
Hydrochloric Acid (15%)	Keane Group	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.02992	None
AI 600	Keane Group	Corrosion Inhibitor					
			Ethylene Glycol	107-21-1	40.00000	0.00020	None
			N, N-Dimethylformamide	68-12-2	20.00000	0.00010	None
			2-Butoxyenthanol	111-76-2	15.00000	0.00008	None
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00008	None
			Cinnamialdehyde	104-55-2	15.00000	0.00008	None
			Poly (oxy-1,2-ethanediyl), alpha.-(4-nonylphenyl)-.omega.-hydroxy-, branched	127087-87-0	5.00000	0.00003	None

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			1-Decanol	112-30-1	5.00000	0.00003	None
			Isopropyl alcohol	67-63-0	2.50000	0.00001	None
			1-Octanol	111-87-5	2.50000	0.00001	None
			Triethyl Phosphate	78-40-0	2.50000	0.00001	None
Bactron K-139	Keane Group	Biocide					
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	10.00000	0.00008	None
			Ethanol	64-17-5	5.00000	0.00004	None
			Glutaraldehyde	111-30-8	5.00000	0.00004	None
EC6330A	Keane Group	Scale Inhibitor					
			Sodium Phosphate, Tribasic	7601-54-9	5.00000	0.00003	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)

10/28/2016

June 8, 2016

Mr. Gene Smith
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Re: Modification of 47-091-01320

Dear Mr. Smith,

Please accept the attached updates for the above referenced permit. Upon inspection of our as-drilled plat, we noted the curve geometry crossed into 1 additional lease, #122266. Enclosed is an updated WW-6A1, WW-6B, mylar plat and rec plan reflecting corrections to update the permit file to be consistent with the as-drilled well bore.

If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

Vicki Roark
Permitting Supervisor-WV

Enc.

FORM WW 6

7,435'

LATITUDE 39°20'00"

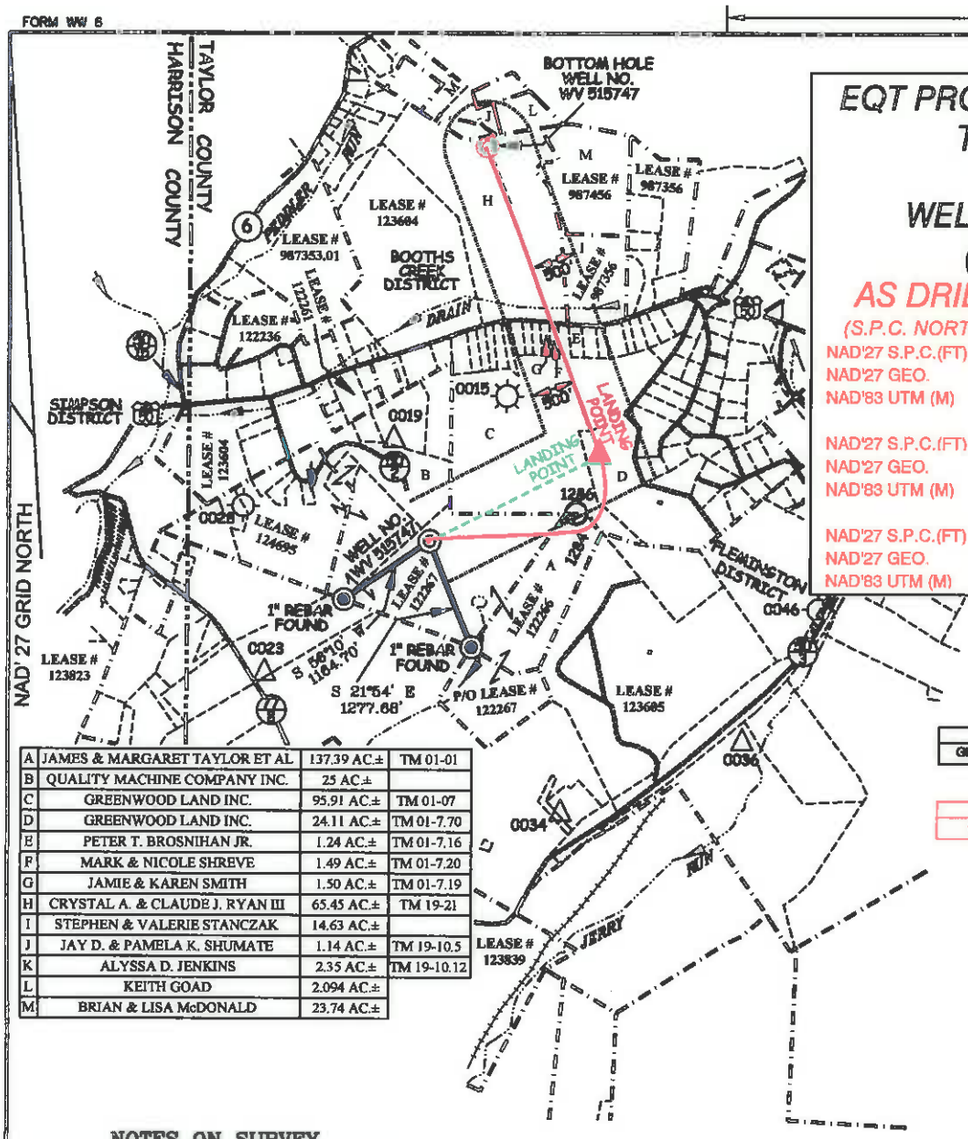
LONGITUDE 80°10'00"

14,313'

EQT PRODUCTION COMPANY
TAYLOR LEASE
123 ACRES±
WELL NO. WV 515747
(RSM118 H11)
AS DRILLED COORDINATES

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

NAD'27 S.P.C.(FT)	N. 289,960.3	E. 1,803,885.2
NAD'27 GEO.	LAT-(N) 39.294036	LONG-(W) 80.192938
NAD'83 UTM (M)	N. 4,349,727.5	E. 569,611.8
	LANDING POINT	
NAD'27 S.P.C.(FT)	N. 290,955.95	E. 1,805,803.17
NAD'27 GEO.	LAT-(N) 39.296810	LONG-(W) 80.186188
NAD'83 UTM (M)	N. 4,350,040.61	E. 570,191.06
	BOTTOM HOLE	
NAD'27 S.P.C.(FT)	N. 294,410.2	E. 1,804,519.9
NAD'27 GEO.	LAT-(N) 39.306267	LONG-(W) 80.190817
NAD'83 UTM (M)	N. 4,351,086.5	E. 569,782.6



A	JAMES & MARGARET TAYLOR ET AL	137.39 AC.±	TM 01-01
B	QUALITY MACHINE COMPANY INC.	25 AC.±	
C	GREENWOOD LAND INC.	95.91 AC.±	TM 01-07
D	GREENWOOD LAND INC.	24.11 AC.±	TM 01-7.70
E	PETER T. BROSNIHAN JR.	1.24 AC.±	TM 01-7.16
F	MARK & NICOLE SHREVE	1.49 AC.±	TM 01-7.20
G	JAMIE & KAREN SMITH	1.50 AC.±	TM 01-7.19
H	CRYSTAL A. & CLAUDE J. RYAN III	65.45 AC.±	TM 19-21
I	STEPHEN & VALERIE STANCZAK	14.63 AC.±	
J	JAY D. & PAMELA K. SHUMATE	1.14 AC.±	TM 19-10.5
K	ALYSSA D. JENKINS	2.35 AC.±	TM 19-10.12
L	KEITH GOAD	2.094 AC.±	
M	BRIAN & LISA McDONALD	23.74 AC.±	

ROYALTY OWNERS		
GREENWOOD LAND INC. ET AL.	409.85 AC.±	LEASE NO. 123604

ADDITIONAL ROYALTY OWNER		
CHARLES E. PRYOR ET AL.	30 AC.±	LEASE NO. 122286

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. U.S. RT. 50 IN THIS AREA IS PART OF THE OLD NORTHWESTERN TURNPIKE, A 60 FOOT STRIP OF GROUND CLAIMED IN FEE BY THE W.V.D.O.H. SLS RECOMENDS PROPER LEGAL & LEASING (IF NEEDED) PROCEDURES BE TAKEN BEFORE DRILLING COMMENCES.
3. AS DRILLED INFORMATION PROVIDED BY EQT.

LEGEND

LEASE LINE	
SURFACE LINE	
PROPOSED PATH	
AS DRILLED PATH	
OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
STATE ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
STORAGE HOLE	
TAX MAP–PARCEL	00–00

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, PLLC
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. 2288 Earl N. Thompson

EARL N. THOMPSON ☆ LICENSED No. 2288 STATE OF WEST VIRGINIA ☆ PROFESSIONAL SURVEYOR

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

DATE SEPTEMBER 03 , 20 14

REVISED 09/21/15, 04/12/16 & 06/03/16

OPERATORS WELL NO. WV 515747

API WELL NO. 47 — 091 — 01320H
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200

FILE NO. 7265AD515747R2

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 :

PAD ELEVATION 1,465' WATERSHED PEDDLER RUN

DISTRICT FLEMINGTON COUNTY TAYLOR QUADRANGLE ROSEMONT 7.5'

SURFACE OWNER JAMES M. TAYLOR ET AL ACREAGE 137.39±

ROYALTY OWNER JAMES TAYLOR (LIFE) ET AL ACREAGE 123± 10/28/2016

PROPOSED WORK : LEASE NO. 122267

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 7,632'

COUNTY NAME

PERMIT

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