APPROVED
NAME:
DATE: 2/10/2016

Well Operator's Report of Well Work

EQT
Where energy meets innovation.

Well Number: 513154

API: 47 - 170 - 6502

Submission: ☐ Initial ☑ Amended 2nd Qtr

Notes: Add'l Inj test 1.02, 1.03

Correction to Production Cement Top (MD)

RECEIVED
Office of Oil and Gas

DEC 21 2015

WV Department of
Environmental Protection

04/01/2016
AX 04/01/16

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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- 017 - 06502 County DODDRIDGE District Southwest
Quad OXFORD 7.5' Pad Name OXFORD 159 Field/Pool Name
Farm name JUSTIN L. HENDERSON ET AL Well Number 513154
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 4,339,878 Easting 520,537
Landing Point of Curve Northing 4,339,291 Easting 519,818
Bottom Hole Northing 4,340,406 Easting 519,276

Elevation (ft) 1,252 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 7/30/2014 Date drilling commenced 11/21/2014 Date drilling ceased 5/3/2015
Date completion activities began 6/19/2015 Date completion activities ceased 6/27/2015
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 264, 325, 401 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1312, 1379 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 246, 313, 474, 616,732,735 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

04/01/2016

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API 47- 017 - 06502 Farm name JUSTIN L. HENDERSON ET AL Well number 513154

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 40LB/FT	NONE	Y
Surface	17.5"	13.375"	1,110'	NEW	J-55 54.5LB/FT	None	Y
Coal							
Intermediate 1	12.375"	9.625"	5,253'	NEW	P-110 40LB/FT	1,564', 3,190'	Y
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	13304	NEW	P-110 20LB/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 ^{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	835	15.6	1.20	1,002	0	8
Coal							
Intermediate 1	CLASS A / A / A	447 / 380 / 1,205	14.2 / 15.6 /15.6	1.24 / 1.18 / 1.18	2,424.58	0	8
Intermediate 2							
Intermediate 3							
Production	Class A 50/50 POZ / H	970/560	14.2 /15.2	1.26 / 1.97	2,325.40	3,467'	8
Tubing							

Drillers TD (ft) 13310' Loggers TD (ft) 13310'

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

Plug back procedure N/A

Kick off depth (ft) 5317'

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: 1,12,23

INTERMEDIATE- RAN AT LEAST EVERY 500' FEET JOINTS: 1, 12, 23, 35, 48, 59, 71, 83, 95, 107, 119

PRODUCTION- 190 centralizers ran every joint from 13302' to 5158'

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 - 6502 Farm name JUSTIN L. HENDERSON ET AL Well number 513154

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

Please insert additional pages as applicable.

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API 47- 017 - 06502 Farm name JUSTIN L. HENDERSON ET AL Well number 513154

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6,668'	TVD	9,141' MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY ☐ 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 Vaughn Energy Services
Address P.O. Box 261021 City Corpus Christi State TX Zip 78246-1021

Cementing Company Allied Services
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company FTSI
Address 301 E 18th Street City Cisco State TX Zip 76437
Please insert additional pages as applicable.

Completed by Brad Maddox Telephone 412-395-7053
Signature _____ Title Director of Drilling Date 12/9/2015

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

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API 47- 017 - 6502 Farm name JUSTIN L. HENDERSON ET AL Well number 513154

Drilling Contractor Patterson UTI
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

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

Logging Company Gyro Data Inc.
Address 601 Mayer St. City Bridgeville State PA Zip 15017

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

Well #513154 Final Formations				
Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	1	1	411	411
SAND/SHALE	1	1	256	256
WASHINGTON COAL	256	256	258	258
SAND/SHALE	258	258	323	323
WAYNESBURG A COAL	323	323	325	325
SAND/SHALE	325	325	484	484
UNIONTOWN COAL	484	484	486	486
SAND/SHALE	486	486	626	626
SEWICKLEY	626	626	628	628
SAND/SHALE	628	628	742	742
REDSTONE COAL	742	742	743	743
SAND/SHALE	743	743	745	745
PITTSBURGH COAL	745	745	749	749
SAND/SHALE	749	749	2,030.00	2,029.70
BIG LIME	2,030.00	2,029.70	2,174.00	2,173.60
SAND/SHALE	2,174.00	2,173.60	2,323.00	2,322.60
WEIR	2,323.00	2,322.60	2,437.00	2,436.50
SAND/SHALE	2,437.00	2,436.50	2,531.00	2,530.50
GANTZ	2,531.00	2,530.50	2,608.00	2,607.40
50F	2,608.00	2,607.40	2,684.00	2,683.40
SAND/SHALE	2,684.00	2,683.40	2,730.00	2,729.30
30F	2,730.00	2,729.30	2,765.00	2,764.30
SAND/SHALE	2,765.00	2,764.30	2,779.00	2,778.30
GORDON	2,779.00	2,778.30	2,870.00	2,869.20
4TH SAND	2,870.00	2,869.20	3,051.00	3,050.00
BAYARD	3,051.00	3,050.00	3,151.00	3,149.90
SAND/SHALE	3,151.00	3,149.90	3,388.00	3,386.70
WARREN	3,388.00	3,386.70	3,447.00	3,445.60
SAND/SHALE	3,447.00	3,445.60	3,459.00	3,457.60
SPEECHLEY	3,459.00	3,457.60	3,703.00	3,701.20
SAND/SHALE	3,703.00	3,701.20	4,139.00	4,135.50
BALLTOWN A	4,139.00	4,135.50	4,253.00	4,248.70
SAND/SHALE	4,253.00	4,248.70	4,338.00	4,333.10
RILEY	4,338.00	4,333.10	4,484.00	4,478.00
SAND/SHALE	4,484.00	4,478.00	5,009.00	4,998.80
BENSON	5,009.00	4,998.80	5,049.00	5,038.50
SAND/SHALE	5,049.00	5,038.50	5,180.00	5,168.50
ALEXANDER	5,180.00	5,168.50	6,211.00	5,916.40
RHINESTREET UPPER	6,211.00	5,916.40	6,362.00	5,954.70
RHINESTREET	6,362.00	5,954.70	7,920.00	6,352.10
SONYEA	7,920.00	6,352.10	8,378.00	6,472.90
MIDDLESEX	8,378.00	6,472.90	8,550.00	6,525.30
GENESSEE	8,550.00	6,525.30	8,766.00	6,585.70
GENESEO	8,766.00	6,585.70	8,930.00	6,627.80
TULLY	8,930.00	6,627.80	9,015.00	6,645.80
HAMILTON	9,015.00	6,645.80	9,141.00	6,667.70
MARCELLUS	9,141.00	6,667.70		

04/01/2016

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Marcellus

Doddridge County, WV Grid
Doddridge County 513154
Well #513154

Main Wellbore

Design: 513154 AS Drilled Surveys

Standard Survey Report

11 May, 2015

EQT
Where energy meets innovation.

04/01/2016

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513154
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513154	North Reference:	Grid
Well:	Well #513154	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513154 AS Drilled Surveys		

Project Doddridge County, WV Grid

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

Site Doddridge County 513154

Site Position:		Northing:	260,322.60 usft	Latitude:	39.21
From:	Map	Easting:	1,642,311.70 usft	Longitude:	-80.76
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.81

Well Well #513154

Well Position	+N/-S	0.0 usft	Northing:	260,322.60 usft	Latitude:	39° 12' 28.222 N
	+E/-W	0.0 usft	Easting:	1,642,311.70 usft	Longitude:	80° 45' 44.284 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,252.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/20/2015	-7.78	66.68	52,236

Design 513154 AS Drilled Surveys

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	293.68

Survey Program Date 5/11/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,262.0	513154 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	13,310.0	513154 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

Survey

Measured Depth	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	-1,275.0	0.0	0.0	0.0	0.00	0.00	0.00
23.0	0.00	0.00	23.0	-1,252.0	0.0	0.0	0.0	0.00	0.00	0.00
123.0	0.51	282.49	123.0	-1,152.0	0.1	-0.4	0.4	0.51	0.51	0.00
223.0	0.40	304.11	223.0	-1,052.0	0.4	-1.2	1.2	0.20	-0.11	21.62
323.0	0.34	292.64	323.0	-952.0	0.7	-1.7	1.9	0.10	-0.06	-11.47
423.0	0.17	301.03	423.0	-852.0	0.9	-2.1	2.3	0.17	-0.17	8.39
523.0	0.23	293.93	523.0	-752.0	1.0	-2.4	2.6	0.06	0.06	-7.10

04/01/2016

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513154
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513154	North Reference:	Grid
Well:	Well #513154	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513154 AS Drilled Surveys		

Survey

Measured Depth	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
623 0	0.24	288 60	623 0	-652 0	1 2	-2.8	3.1	0.02	0.01	-5.33
723 0	0 25	272 87	723 0	-552.0	1 3	-3.2	3.5	0.07	0.01	-15.73
823 0	0 36	293 41	823.0	-452.0	1.4	-3.7	4.0	0.15	0.11	20.54
923 0	0 50	290 42	923.0	-352.0	1.7	-4.4	4.7	0.14	0.14	-2.99
1,023 0	0 79	272.50	1,023.0	-252 0	1 9	-5.5	5.8	0.35	0.29	-17.92
1,123 0	0 74	276 07	1,123.0	-152.0	2.0	-6 9	7 1	0.07	-0 05	3 57
1,223 0	0 91	282 23	1,223 0	-52 0	2.2	-8.3	8.5	0 19	0.17	6 16
1 323 0	1 41	282 83	1,322 9	47 9	2.6	-10 3	10 5	0 50	0 50	0 60
1 423 0	1 58	285 66	1,422 9	147 9	3 3	-12 8	13 0	0 19	0 17	2 83
1 523 0	1 57	283 08	1,522 9	247 9	4 0	-15 4	15 7	0 07	-0 01	-2 58
1,623 0	1 52	280 26	1,622 8	347 8	4.5	-18 1	18 4	0 09	-0 05	-2 82
1,723.0	1.43	272.63	1,722.8	447.8	4.8	-20.6	20.8	0.22	-0 09	-7.63
1,823.0	1.58	275.72	1,822.8	547.8	5.0	-23.3	23.3	0.17	0.15	3.09
1,923.0	1.47	273.70	1,922 7	647 7	5.2	-25.9	25.8	0.12	-0.11	-2.02
2,023.0	1.49	276.86	2,022.7	747.7	5.5	-28.5	28.3	0.08	0.02	3.16
2,123.0	1.64	279.70	2,122 7	847 7	5 9	-31.2	30.9	0.17	0.15	2.84
2,223.0	1.72	282.05	2,222.6	947.6	6.4	-34.1	33.8	0 11	0.08	2.35
2,323.0	1.80	283.75	2,322 6	1,047.6	7.1	-37 1	36 8	0 10	0 08	1 70
2,423 0	1 80	286 34	2,422.5	1,147.5	7.9	-40 1	39 9	0 08	0 00	2 59
2,523 0	2 02	285 52	2,522 5	1,247 5	8 8	-43 3	43 2	0 22	0 22	-0 82
2,623 0	2 10	284 24	2,622 4	1,347 4	9 8	-46 8	46 7	0 09	0 08	-1 28
2,723 0	2 33	283 30	2,722 3	1,447 3	10 7	-50 5	50 5	0 23	0 23	-0 94
2,823 0	2 31	286 09	2,822 2	1,547 2	11 7	-54 4	54 5	0 11	-0 02	2 79
2,923 0	2 39	288 16	2,922 2	1,647 2	12 9	-58 3	58 6	0 12	0 08	2 07
3,023 0	2 50	288.08	3,022.1	1,747.1	14.2	-62.4	62.9	0.11	0 11	-0.08
3,123 0	2 65	285.08	3,122.0	1,847.0	15.5	-66.7	67.3	0.20	0.15	-3.00
3,223 0	2 67	283.98	3,221.9	1,946.9	16.7	-71.2	71.9	0.05	0.02	-1.10
3,323 0	2 84	285.47	3,321.7	2,046.7	17.9	-75.8	76.7	0.18	0.17	1.49
3,423 0	2.86	285.80	3,421.6	2,146.6	19.2	-80.6	81.6	0.03	0.02	0.33
3,523 0	2 97	284.36	3,521.5	2,246.5	20.6	-85.5	86.6	0.13	0.11	-1.44
3,623 0	3 06	287.22	3,621.4	2,346.4	22.0	-90.6	91.8	0.18	0.09	2.86
3,723 0	3 16	288.55	3,721.2	2,446.2	23.7	-95.8	97.2	0.12	0.10	1.33
3,823 0	3 57	289.60	3,821.0	2,546.0	25.6	-101.3	103.1	0.41	0.41	1.05
3,923 0	5 20	293.51	3,920.7	2,645.7	28.4	-108.4	110.7	1.66	1.63	3.91
4,023 0	6 13	297.59	4,020.2	2,745.2	32.7	-117.3	120.6	1.01	0.93	4.08
4,123 0	6 62	298.47	4,119.6	2,844.6	37.9	-127.1	131.6	0.50	0.49	0.88
4,223 0	6 80	300 54	4,218 9	2,943 9	43 7	-137 3	143 2	0 30	0 18	2.07
4,323.0	7.06	303.58	4,318.2	3,043.2	50.1	-147 5	155 2	0 45	0 26	3 04
4,423.0	7.14	304.51	4,417.4	3,142.4	57.0	-157 7	167 3	0 14	0 08	0 93
4,523 0	7 21	309 08	4,516 7	3,241.7	64 5	-167 7	179 5	0 57	0 07	4 57

04/01/2016

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Site:	Doddridge County 513154	North Reference:	Grid
Well:	Well #513154	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513154 AS Drilled Surveys		

Survey

Measured Depth	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
4,623.0	7.36	315.06	4,615.9	3,340.9	73.0	-177.1	191.5	0.77	0.15	5.98
4,723.0	7.33	318.51	4,715.0	3,440.0	82.3	-185.9	203.3	0.44	-0.03	3.45
4,823.0	7.15	322.34	4,814.2	3,539.2	92.0	-193.9	214.5	0.52	-0.18	3.83
4,923.0	7.20	323.76	4,913.5	3,638.5	102.0	-201.4	225.4	0.18	0.05	1.42
5,023.0	7.03	327.79	5,012.7	3,737.7	112.2	-208.4	235.9	0.53	-0.17	4.03
5,123.0	6.92	331.70	5,111.9	3,836.9	122.7	-214.5	245.7	0.49	-0.11	3.91
5,223.0	6.73	335.69	5,211.2	3,936.2	133.3	-219.7	254.8	0.51	-0.19	3.99
Gyro Tie In=5262' MD										
5,262.0	6.97	336.32	5,250.0	3,975.0	137.6	-221.6	258.2	0.64	0.62	1.62
5,319.0	6.00	323.80	5,306.6	4,031.6	143.2	-224.8	263.4	3.00	-1.70	-21.96
5,350.0	6.60	290.30	5,337.4	4,062.4	145.1	-227.4	266.5	11.84	1.94	-108.06
5,382.0	8.30	266.60	5,369.2	4,094.2	145.6	-231.4	270.4	10.86	5.31	-74.06
5,413.0	10.90	251.30	5,399.7	4,124.7	144.5	-236.5	274.6	11.68	8.39	-49.35
5,445.0	13.70	241.90	5,431.0	4,156.0	141.8	-242.7	279.2	10.73	8.75	-29.38
5,477.0	16.00	234.90	5,461.9	4,186.9	137.4	-249.6	283.8	9.10	7.19	-21.88
5,508.0	17.60	228.40	5,491.6	4,216.6	131.9	-256.6	288.0	7.95	5.16	-20.97
5,540.0	19.30	222.30	5,522.0	4,247.0	124.7	-263.8	291.7	8.03	5.31	-19.06
5,571.0	21.50	219.10	5,551.0	4,276.0	116.5	-270.8	294.8	7.95	7.10	-10.32
5,602.0	24.70	216.50	5,579.5	4,304.5	106.9	-278.3	297.8	10.83	10.32	-8.39
5,634.0	28.00	214.40	5,608.2	4,333.2	95.4	-286.5	300.7	10.71	10.31	-6.56
5,666.0	30.80	213.30	5,636.1	4,361.1	82.3	-295.2	303.4	8.91	8.75	-3.44
5,697.0	34.10	213.70	5,662.2	4,387.2	68.4	-304.4	306.3	10.67	10.65	1.29
5,728.0	37.40	214.20	5,687.4	4,412.4	53.4	-314.5	309.5	10.69	10.65	1.61
5,760.0	40.70	214.80	5,712.2	4,437.2	36.8	-326.0	313.3	10.38	10.31	1.88
5,791.0	44.10	215.10	5,735.1	4,460.1	19.7	-337.9	317.4	10.99	10.97	0.97
5,823.0	47.70	215.30	5,757.4	4,482.4	0.9	-351.2	322.0	11.26	11.25	0.63
5,854.0	51.10	214.50	5,777.6	4,502.6	-18.4	-364.6	326.5	11.14	10.97	-2.58
5,886.0	54.50	213.10	5,796.9	4,521.9	-39.6	-378.8	331.0	11.18	10.63	-4.38
5,917.0	57.60	212.10	5,814.2	4,539.2	-61.2	-392.7	335.0	10.35	10.00	-3.23
5,949.0	60.60	211.40	5,830.6	4,555.6	-84.6	-407.1	338.9	9.56	9.38	-2.19
5,980.0	64.00	210.70	5,845.1	4,570.1	-108.1	-421.2	342.4	11.15	10.97	-2.26
6,012.0	67.40	210.30	5,858.2	4,583.2	-133.2	-436.0	345.8	10.69	10.63	-1.25
6,043.0	70.00	209.90	5,869.5	4,594.5	-158.2	-450.5	349.1	8.47	8.39	-1.29
6,075.0	73.30	210.40	5,879.6	4,604.6	-184.5	-465.8	352.5	10.42	10.31	1.56
6,138.0	74.40	210.50	5,897.1	4,622.1	-236.6	-496.5	359.6	1.75	1.75	0.16
6,232.0	75.00	209.90	5,921.9	4,646.9	-315.0	-542.1	369.9	0.89	0.64	-0.64
6,326.0	75.70	209.50	5,945.7	4,670.7	-394.0	-587.1	379.5	0.85	0.74	-0.43
6,420.0	74.30	209.40	5,970.0	4,695.0	-473.1	-631.8	388.6	1.49	-1.49	-0.11
6,514.0	74.90	208.70	5,994.9	4,719.9	-552.3	-675.8	397.1	0.96	0.64	-0.74
6,609.0	75.90	208.10	6,018.9	4,743.9	-633.2	-719.5	404.7	1.22	1.05	-0.63

04/01/2016

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513154
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513154	North Reference:	Grid
Well:	Well #513154	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513154 AS Drilled Surveys		

Survey

Measured Depth	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
6,703.0	75.20	211.80	6,042.4	4,767.4	-712.0	-764.9	414.6	3.88	-0.74	3.94
6,798.0	76.10	211.50	6,065.9	4,790.9	-790.4	-813.2	427.4	1.00	0.95	-0.32
6,892.0	74.20	211.40	6,090.0	4,815.0	-867.9	-860.6	439.7	2.02	-2.02	-0.11
6,987.0	75.10	211.20	6,115.1	4,840.1	-946.1	-908.2	451.8	0.97	0.95	-0.21
7,081.0	75.60	210.80	6,138.9	4,863.9	-1,024.1	-955.0	463.4	0.67	0.53	-0.43
7,176.0	74.20	210.70	6,163.7	4,888.7	-1,102.9	-1,001.9	474.7	1.48	-1.47	-0.11
7,270.0	74.60	210.30	6,188.9	4,913.9	-1,180.9	-1,047.9	485.4	0.59	0.43	-0.43
7,364.0	74.80	210.50	6,213.7	4,938.7	-1,259.1	-1,093.8	496.1	0.30	0.21	0.21
7,458.0	75.20	210.90	6,238.1	4,963.1	-1,337.2	-1,140.1	507.2	0.59	0.43	0.43
7,553.0	74.80	208.60	6,262.7	4,987.7	-1,416.9	-1,185.7	516.9	2.38	-0.42	-2.42
7,647.0	75.50	208.60	6,286.8	5,011.8	-1,496.6	-1,229.2	524.7	0.74	0.74	0.00
7,741.0	76.50	208.30	6,309.5	5,034.5	-1,576.8	-1,272.6	532.3	1.11	1.06	-0.32
7,836.0	76.00	210.60	6,332.1	5,057.1	-1,657.2	-1,318.0	541.5	2.41	-0.53	2.42
7,930.0	76.40	210.00	6,354.5	5,079.5	-1,736.0	-1,364.0	552.1	0.75	0.43	-0.64
8,025.0	74.60	210.30	6,378.3	5,103.3	-1,815.5	-1,410.2	562.4	1.92	-1.89	0.32
8,057.0	74.90	210.30	6,386.7	5,111.7	-1,842.2	-1,425.8	566.0	0.94	0.94	0.00
8,088.0	75.30	210.30	6,394.7	5,119.7	-1,868.0	-1,440.9	569.4	1.29	1.29	0.00
8,119.0	75.70	212.10	6,402.4	5,127.4	-1,893.7	-1,456.5	573.4	5.77	1.29	5.81
8,151.0	75.40	215.20	6,410.4	5,135.4	-1,919.5	-1,473.6	578.7	9.43	-0.94	9.69
8,182.0	75.10	218.70	6,418.3	5,143.3	-1,943.5	-1,491.6	585.6	10.96	-0.97	11.29
8,214.0	74.40	221.60	6,426.7	5,151.7	-1,967.1	-1,511.5	594.4	9.01	-2.19	9.06
8,246.0	73.70	224.70	6,435.5	5,160.5	-1,989.5	-1,532.6	604.6	9.57	-2.19	9.69
8,277.0	73.30	228.30	6,444.3	5,169.3	-2,010.0	-1,554.1	616.2	11.21	-1.29	11.61
8,309.0	73.50	231.70	6,453.5	5,178.5	-2,029.7	-1,577.6	629.8	10.20	0.63	10.63
8,341.0	73.80	234.50	6,462.5	5,187.5	-2,048.1	-1,602.2	644.8	8.45	0.94	8.75
8,372.0	73.50	237.50	6,471.2	5,196.2	-2,064.7	-1,626.8	660.7	9.34	-0.97	9.68
8,403.0	73.50	240.10	6,480.0	5,205.0	-2,080.1	-1,652.3	677.8	8.04	0.00	8.39
8,435.0	73.50	243.10	6,489.1	5,214.1	-2,094.7	-1,679.2	696.7	8.99	0.00	9.38
8,466.0	72.70	246.00	6,498.1	5,223.1	-2,107.5	-1,706.0	716.1	9.32	-2.58	9.35
8,498.0	71.20	248.50	6,508.0	5,233.0	-2,119.2	-1,734.1	737.1	8.78	-4.69	7.81
8,529.0	70.30	252.10	6,518.3	5,243.3	-2,129.1	-1,761.6	758.3	11.34	-2.90	11.61
8,560.0	70.40	255.80	6,528.7	5,253.7	-2,137.2	-1,789.7	780.8	11.24	0.32	11.94
8,592.0	71.30	258.30	6,539.2	5,264.2	-2,143.9	-1,819.1	805.0	7.90	2.81	7.81
8,623.0	72.90	260.70	6,548.7	5,273.7	-2,149.3	-1,848.1	829.4	8.99	5.16	7.74
8,654.0	75.00	263.20	6,557.3	5,282.3	-2,153.5	-1,877.6	854.8	10.29	6.77	8.06
8,686.0	75.90	265.90	6,565.3	5,290.3	-2,156.4	-1,908.5	881.8	8.64	2.81	8.44
8,717.0	75.70	269.50	6,572.9	5,297.9	-2,157.6	-1,938.5	908.8	11.28	-0.65	11.61
8,748.0	74.60	272.90	6,580.9	5,305.9	-2,157.0	-1,968.4	936.5	11.18	-3.55	10.97
8,780.0	74.10	276.00	6,589.5	5,314.5	-2,154.6	-1,999.1	965.6	9.46	-1.56	9.69
8,811.0	74.20	280.60	6,598.0	5,323.0	-2,150.3	-2,028.6	994.4	14.28	0.32	14.84

04/01/2016

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513154
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513154	North Reference:	Grid
Well:	Well #513154	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513154 AS Drilled Surveys		

Survey

Measured Depth	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
8,842.0	75.50	284.40	6,606.1	5,331.1	-2,143.8	-2,057 9	1,023 7	12 55	4 19	12 26
8,874.0	75.30	287.90	6,614.2	5,339.2	-2,135.2	-2,087.6	1,054 4	10 60	-0 63	10 94
8,905.0	76.00	291.70	6,621.9	5,346.9	-2,125.0	-2,115.8	1,084.4	12.09	2 26	12.26
8,936.0	76.80	295.10	6,629 1	5,354 1	-2,113.1	-2,143 5	1,114 5	10 97	2 58	10 97
8,968.0	77 80	297 80	6,636.2	5,361.2	-2,099.2	-2,171 4	1 145 7	8 80	3 13	8 44
9,000.0	78.30	301.00	6,642.8	5,367.8	-2,083.8	-2,198 7	1 176 8	9 91	1 56	10 00
9,031.0	78 90	304.80	6,648.9	5,373.9	-2,067.3	-2,224 2	1 206 8	12 17	1 94	12 26
9,063 0	79 70	308 60	6,654 9	5,379 9	-2,048.5	-2,249 4	1,237 4	11 93	2 50	11 88
9,094 0	80 00	312.10	6,660 3	5,385.3	-2,028.8	-2,272 7	1 266 7	11 16	0 97	11 29
9 125 0	81 40	314 90	6,665.4	5,390.4	-2,007 7	-2,294 9	1 295 4	9 99	4 52	9 03
9 157 0	82 60	317 70	6,669.8	5,394 8	-1,984 8	-2,316 8	1,324 7	9 44	3 75	8 75
9,188 0	83.40	319.80	6,673.6	5,398.6	-1,961 7	-2,337.0	1,352.5	7.20	2.58	6 77
9,220.0	85.20	322.40	6,676 8	5,401.8	-1,936.9	-2,357.0	1,380.8	9.85	5.63	8.13
9,252 0	86 70	325.10	6,679.0	5,404.0	-1,911.1	-2,375.9	1,408.4	9.63	4.69	8.44
9 283 0	88 60	328 80	6,680.3	5,405.3	-1,885.2	-2,392.8	1,434.3	13.41	6.13	11 94
9 315 0	89 80	330 70	6,680.7	5,405 7	-1,857.6	-2,408 9	1 460 2	7 02	3 75	5 94
LP=9346' MD/ 6681' TVD										
9,346 0	90 60	333 90	6,680.6	5,405.6	-1,830.1	-2,423.3	1,484.4	10 64	2 58	10 32
9,441 0	91 70	334 70	6,678 7	5,403.7	-1,744.5	-2,464.5	1,556.5	1.43	1.16	0 84
9,535 0	92 00	333 60	6,675.7	5,400.7	-1,660 0	-2,505.5	1,628.0	1.21	0.32	-1.17
9,630 0	89 90	334 70	6,674.1	5,399.1	-1,574.5	-2,546.9	1,700.2	2.50	-2.21	1 16
9,724 0	90 90	333 60	6,673.5	5,398.5	-1,489.9	-2,587.9	1,771.7	1.58	1.06	-1.17
9,818 0	88 30	335 50	6,674 1	5,399 1	-1,405 0	-2,628.3	1,842.8	3.43	-2.77	2.02
9,912 0	89 10	335 20	6,676 3	5,401 3	-1,319 6	-2,667.4	1,913.0	0.91	0.85	-0.32
10,006 0	89 80	334 00	6,677.2	5,402.2	-1,234.7	-2,707 8	1 984 0	1 48	0 74	-1 28
10,101 0	90 80	333 20	6,676 7	5,401 7	-1,149 6	-2,750 0	2,056 8	1 35	1 05	-0 84
10,196 0	90 40	336 40	6,675 7	5,400 7	-1,063 7	-2,790.4	2,128 4	3 39	-0 42	3 37
10,290 0	91 10	334 80	6,674 4	5,399 4	-978 1	-2,829 3	2,198 3	1 86	0 74	-1 70
10,384 0	91 80	333 60	6,672 1	5,397 1	-893 5	-2,870 2	2,269 8	1 48	0 74	-1 28
10,479 0	91 50	333 90	6,669 3	5,394 3	-808 3	-2,912 2	2,342.4	0 45	-0 32	0 32
10,574 0	89 80	336 70	6,668 2	5,393 2	-722 0	-2,951 9	2,413 4	3 45	-1 79	2 95
10,669 0	89 40	334 80	6,668 9	5,393 9	-635 4	-2,990 9	2 483 9	2 04	-0 42	-2 00
10,764 0	90 40	333 60	6,669 1	5,394 1	-549 9	-3 032 2	2,556 1	1 64	1 05	-1 26
10,858 0	90 30	333.20	6,668 5	5,393 5	-465 9	-3,074 3	2,628 4	0 44	-0 11	-0 43
10,952 0	91 30	332 40	6,667 2	5,392 2	-382 3	-3,117.3	2,701 4	1 36	1 06	-0 85
11,046 0	90 80	334 80	6,665 5	5,390 5	-298 1	-3,159 1	2,773 4	2 61	-0 53	2 55
11,141 0	91 10	333 30	6,663 9	5,388 9	-212 7	-3,200 6	2,845 8	1 61	0 32	-1 58
11,235 0	91 20	334 90	6,662.0	5,387.0	-128.1	-3,241.7	2,917.3	1.71	0.11	1.70
11,330 0	91 00	338 30	6,660.2	5,385.2	-41.0	-3,279.4	2,986.9	3.58	-0.21	3.58
11,424 0	91 50	337 50	6,658 1	5,383 1	46 1	-3,314 7	3,054.2	1 00	0 53	-0 85

04/01/2016

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513154
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513154	North Reference:	Grid
Well:	Well #513154	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513154 AS Drilled Surveys		

Survey

Measured Depth	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
11,519.0	92.70	336.00	6,654.6	5,379.6	133.3	-3,352.2	3,123.6	2.02	1.26	-1.58
11,613.0	89.80	338.20	6,652.6	5,377.6	219.9	-3,388.8	3,191.8	3.87	-3.09	2.34
11,708.0	90.40	337.40	6,652.4	5,377.4	307.8	-3,424.7	3,260.0	1.05	0.63	-0.84
11,802.0	89.60	337.80	6,652.4	5,377.4	394.7	-3,460.5	3,327.7	0.95	-0.85	0.43
11,897.0	90.10	337.20	6,652.7	5,377.7	482.5	-3,496.8	3,396.3	0.82	0.53	-0.63
11,991.0	90.40	334.70	6,652.3	5,377.3	568.3	-3,535.1	3,465.8	2.68	0.32	-2.66
12,086.0	91.00	332.20	6,651.1	5,376.1	653.3	-3,577.6	3,538.8	2.71	0.63	-2.63
12,180.0	90.60	336.10	6,649.8	5,374.8	737.9	-3,618.6	3,610.3	4.17	-0.43	4.15
12,275.0	91.80	335.30	6,647.8	5,372.8	824.4	-3,657.7	3,680.8	1.52	1.26	-0.84
12,369.0	90.00	337.90	6,646.3	5,371.3	910.7	-3,695.0	3,749.7	3.36	-1.91	2.77
12,464.0	89.10	339.10	6,647.1	5,372.1	999.1	-3,729.8	3,817.0	1.58	-0.95	1.26
12,558.0	90.40	339.10	6,647.5	5,372.5	1,086.9	-3,763.3	3,883.0	1.38	1.38	0.00
12,653.0	91.10	338.60	6,646.2	5,371.2	1,175.5	-3,797.6	3,950.0	0.91	0.74	-0.53
12,747.0	88.00	338.60	6,647.0	5,372.0	1,263.0	-3,831.9	4,016.5	3.30	-3.30	0.00
12,841.0	89.00	338.90	6,649.4	5,374.4	1,350.6	-3,866.0	4,082.9	1.11	1.06	0.32
12,936.0	88.80	333.60	6,651.3	5,376.3	1,437.5	-3,904.2	4,152.8	5.58	-0.21	-5.58
13,030.0	89.10	333.30	6,653.0	5,378.0	1,521.5	-3,946.2	4,225.0	0.45	0.32	-0.32
13,125.0	89.10	332.60	6,654.5	5,379.5	1,606.1	-3,989.4	4,298.6	0.74	0.00	-0.74
13,178.0	89.10	332.20	6,655.3	5,380.3	1,653.1	-4,014.0	4,339.9	0.75	0.00	-0.75
13,219.0	88.90	332.30	6,656.0	5,381.0	1,689.4	-4,033.0	4,372.0	0.55	-0.49	0.24
Final Survey=13257' MD/ 6657' TVD										
13,257.0	88.80	332.20	6,656.8	5,381.8	1,723.0	-4,050.7	4,401.7	0.37	-0.26	-0.26
Projection to TD=13310' MD/ 6658' TVD										
13,310.0	88.80	332.20	6,657.9	5,382.9	1,769.9	-4,075.4	4,443.1	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
5,262.0	5,250.0	137.6	-221.6	Gyro Tie In=5262' MD
9,346.0	6,680.6	-1,830.1	-2,423.3	LP=9346' MD/ 6681' TVD
13,257.0	6,656.8	1,723.0	-4,050.7	Final Survey=13257' MD/ 6657' TVD
13,310.0	6,657.9	1,769.9	-4,075.4	Projection to TD=13310' MD/ 6658' TVD

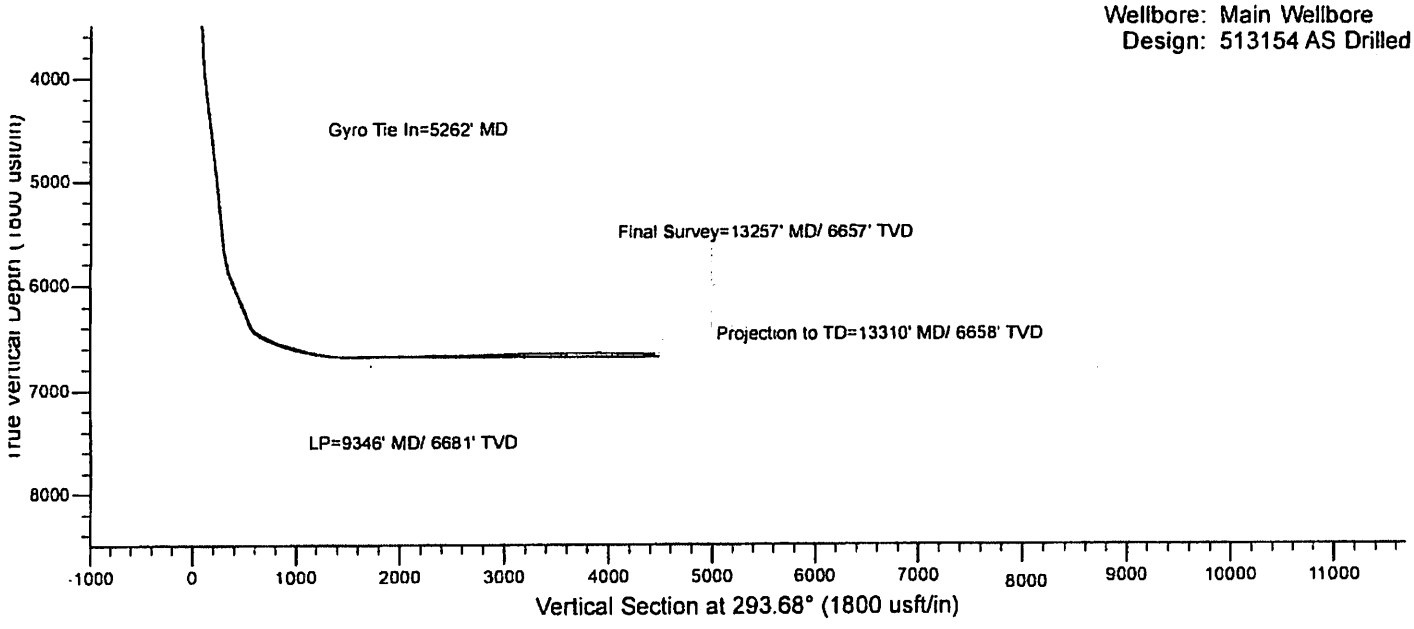
Checked By: _____ Approved By: _____ Date: _____

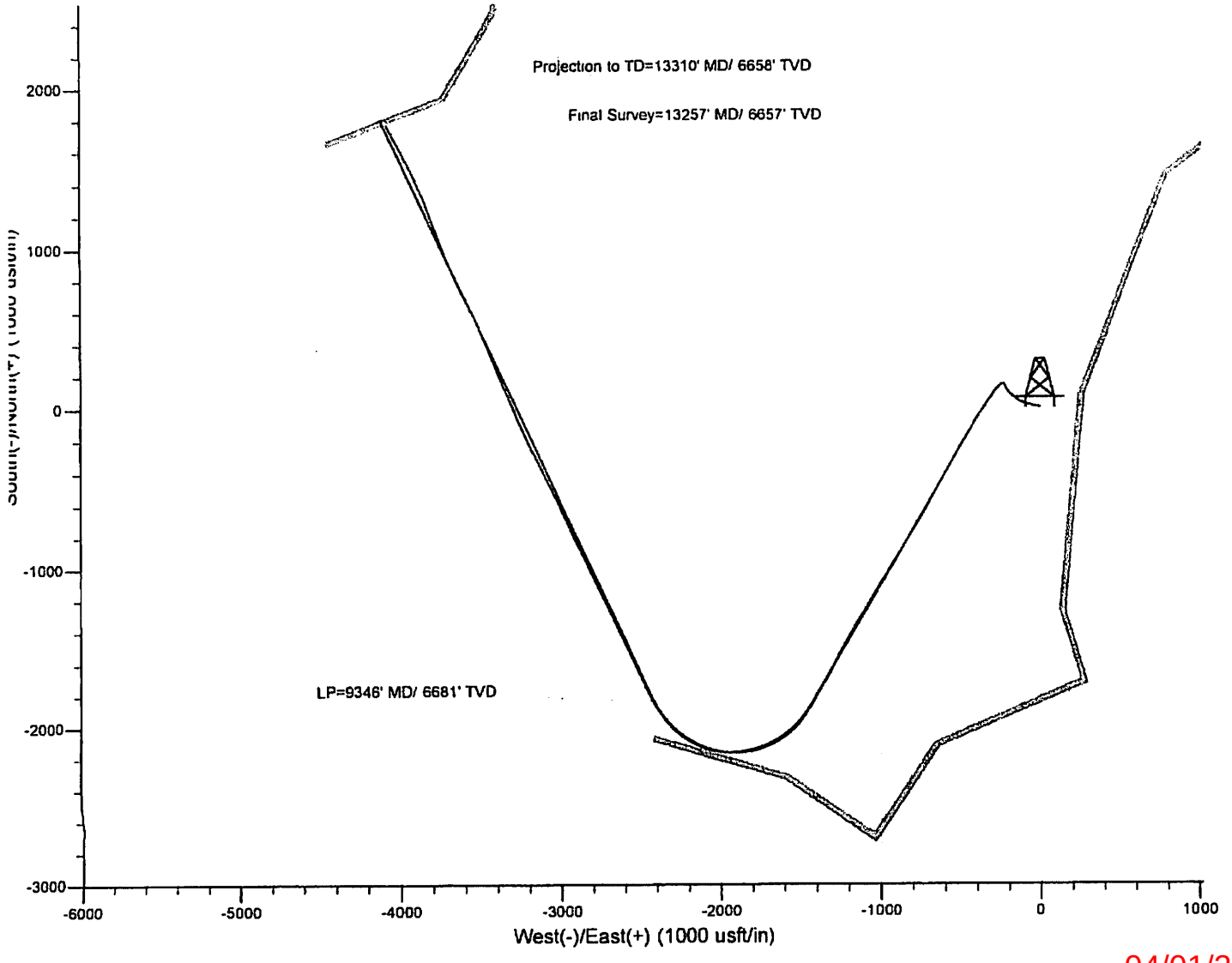
04/01/2016

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Marcellus

Project: Doddridge County, WV Grid
Site: Doddridge County 513154
Well: Well #513154
Wellbore: Main Wellbore
Design: 513154 AS Drilled Surveys





04/01/2016

513154 - 47-017-06502-0000- Perforations					
Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	6/20/2015	13,302.00	13,304.00	10	MARCELLUS
1	6/20/2015	13,151.00	13,277.00	42	MARCELLUS
2	6/22/2015	12,971.00	13,093.00	42	MARCELLUS
3	6/23/2015	12,791.00	12,913.00	42	MARCELLUS
4	6/23/2015	12,611.00	12,733.00	42	MARCELLUS
5	6/23/2015	12,431.00	12,553.00	42	MARCELLUS
6	6/23/2015	12,251.00	12,373.00	42	MARCELLUS
7	6/23/2015	12,071.00	12,193.00	42	MARCELLUS
8	6/24/2015	11,891.00	12,011.00	42	MARCELLUS
9	6/24/2015	11,711.00	11,833.00	42	MARCELLUS
10	6/24/2015	11,530.00	11,653.00	42	MARCELLUS
11	6/24/2015	11,351.00	11,473.00	42	MARCELLUS
12	6/24/2015	11,171.00	11,293.00	42	MARCELLUS
13	6/25/2015	10,991.00	11,113.00	42	MARCELLUS
14	6/25/2015	10,811.00	10,930.00	42	MARCELLUS
15	6/25/2015	10,633.00	10,753.00	42	MARCELLUS
16	6/25/2015	10,451.00	10,573.00	42	MARCELLUS
17	6/25/2015	10,271.00	10,378.00	42	MARCELLUS
18	6/26/2015	10,091.00	10,211.00	42	MARCELLUS
19	6/26/2015	9,911.00	10,033.00	42	MARCELLUS
20	6/26/2015	9,731.00	9,853.00	42	MARCELLUS
21	6/26/2015	9,551.00	9,668.00	42	MARCELLUS
22	6/27/2015	9,371.00	9,493.00	42	MARCELLUS
23	6/27/2015	9,193.00	9,313.00	42	MARCELLUS
24	6/27/2015	9,011.00	9,133.00	42	MARCELLUS
25	6/27/2015	8,831.00	8,953.00	42	MARCELLUS

513154 - 47-017-06502-0000- 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	6/19/2015	15.5	7,491.00	8,605.00	4,852.00	0	609	0
1	6/20/2015	86.9	7,939.00	9,941.00	5,024.00	299,634	7254	0
1.02	6/20/2015	1.9	4,768.00	8,619.00	5,257.00	0	935	0
1.03	6/21/2015	10	5,893.00	8,871.00	4,533.00	0	14310	0
2	6/22/2015	90	7,566.00	7,905.00	3,685.00	301,879	7763	0
3	6/23/2015	85.8	7,668.00	8,544.00	4,936.00	294,053	7583	0
4	6/23/2015	98.9	7,768.00	8,042.00	5,102.00	299,986	7717	0
5	6/23/2015	97.2	7,828.00	8,147.00	5,002.00	298,695	7480	0
6	6/23/2015	97	7,875.00	9,332.00	5,228.00	329,001	7704	0
7	6/23/2015	99.7	7,946.00	8,353.00	4,513.00	365,897	8979	0
8	6/24/2015	96.1	7,792.00	8,596.00	5,037.00	364,254	8015	0
9	6/24/2015	94.1	7,798.00	8,354.00	5,138.00	356,630	8768	0
10	6/24/2015	95.9	7,721.00	8,395.00	4,765.00	356,241	8326	0
11	6/24/2015	94.3	7,695.00	8,097.00	5,030.00	365,861	8049	0
12	6/25/2015	96.1	7,847.00	8,672.00	5,316.00	363,448	8000	0
13	6/25/2015	90.7	7,525.00	8,779.00	5,330.00	342,001	8716	0
14	6/25/2015	99.5	7,797.00	8,643.00	4,936.00	356,186	8329	0
15	6/25/2015	91.8	7,684.00	9,088.00	5,164.00	357,896	8614	0
16	6/25/2015	98.3	7,453.00	8,176.00	5,271.00	356,232	7751	0
17	6/26/2015	100.1	7,566.00	8,004.00	5,351.00	364,144	7771	0
18	6/26/2015	100.5	7,620.00	8,103.00	4,985.00	357,043	8326	0
19	6/26/2015	97.1	7,736.00	8,941.00	5,349.00	359,140	9,354	0
20	6/26/2015	97.20	7,493.00	8,340.00	5,523	362,812	7,751	0
21	6/26/2015	100.70	7,325.00	7,654.00	5,277	365,290	7,481	0
22	6/27/2015	99.40	7,329.00	7,697.00	5,269	363,230	7,623	0
23	6/27/2015	100.80	7,523.00	8,436.00	4,948	358,374	7831	0
24	6/27/2015	98.50	7,415.00	7,711.00	5,033	358,245	7934	0
25	6/27/2015	100.2	6,807.00	7,881.00	3,580.00	357,860	7827	0

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/19/2015
Job End Date:	6/27/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06502-00-00
Operator Name:	EQT Production
Well Name and Number:	513154
Longitude:	-80.76230100
Latitude:	39.20783900
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,668
Total Base Water Volume (gal):	9,105,600
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Interstate Oil & Gas Compact Commission

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	89.42805	None
Sand (Proppant)	FTS International	Proppant					
			Crystalline Silica	14808-60-7	100.00000	10.18491	None
MC MX 437-5	Multi-Chem	Calcium nitrate solution					
			Calcium nitrate	10124-37-5	60.00000	0.05741	None
FRW-900	FTS International	Friction reducer					
			Hydrotreated light distillate	64742-47-8	30.00000	0.02516	None
			Alkyl Alcohol	Proprietary	10.00000	0.00839	None
			Oxyalkylated alcohol A	Proprietary	5.00000	0.00419	None
Hydrochloric Acid (15%)	FTS International	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.02680	None
CS-500-SI	FTS International	Scale inhibitor					
			Ethylene glycol	107-21-1	10.00000	0.00253	None
HVG-1	FTS International	Gelling agent					
			Petroleum distillate	64742-47-8	55.00000	0.00095	None
			Guar gum	9000-30-0	50.00000	0.00087	None
			Surfactant	68439-51-0	2.00000	0.00003	None

			Clay	14808-60-7	2.00000	0.00003	None
FE-100L	FTS International	Iron control					
			Citric acid	77-92-9	55.00000	0.00060	None
CI-150	FTS International	Acid Corrosion Inhibitor					
			Ethylene glycol	107-21-1	30.00000	0.00010	None
			Organic amine resin salt	Proprietary	30.00000	0.00010	None
			Isopropanol	67-63-0	30.00000	0.00010	None
			Dimethylformamide	68-12-2	10.00000	0.00003	None
			Aromatic aldehyde	Proprietary	10.00000	0.00003	None
			Quaternary ammonium compound	Proprietary	10.00000	0.00003	None
NE-100	FTS International	Non-emulsifier					
			2-Butoxyethanol	111-76-2	10.00000	0.00003	None
			2-Propanol	67-63-0	10.00000	0.00003	None
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00001	None
B-10	FTS International	High pH buffer					
			Potassium carbonate	584-08-7	48.00000	0.00002	None
			Potassium hydroxide	1310-58-3	20.00000	0.00001	None
APB-1	FTS International	Breaker					
			Ammonium persulfate	7727-54-0	95.00000	0.00002	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)

Welcome Michelle N., Operator - OpNo. E1210363 [Log Out]

Hydraulic Fracturing DISCLOSURE

FracFocus Chemical Disclosure Registry

Please use the FracFocus XML submission process or create disclosures online.

FIND A WELL BY STATE | ABOUT PROJECT PARTNERS

(Note: Clicking the FracFocus, FIND A WELL links will open a new window.)

Prepare Disclosure for FracFocus Submission

Disclosure Lists | Dashboard

Disclosure has been submitted.

Note: This window expires with 10 minutes of inactivity. After that you will be taken back to the dashboard.

Preview Disclosure PDF | Validate Disclosure | Submit To FracFocus

Hydraulic Fracturing Data

Edit

Job Start Date	Job End Date	API Number	State & County
6/19/2015	6/27/2015	47-017-06502-00-00	West Virginia --- Doddridge

Well Name
513154

Longitude	Latitude	Datum	Federal/Tribal Well?
-80.762301	39.207839	NAD83	

True Vertical Depth (ft)	Total Water Vol (gal)	Total Non Water Vol	Total Mass (lbs)
6668	9105600	0	84969129

MSDS Chemical Ingredients

New Additive | Select Additive | Add Additive

	Trade Name	Supplier	Purpose	Ingredients	CAS #	% High Additive	% HF Job	Comments	Ingredient Mass
Edit	Water	FTS International	Carrier/Base Fluid						
				Water	7732-18-5	100%	89.4280466175%	None	75986232
Edit	Sand (Proppant)	FTS International	Proppant						
				Crystalline Silica	14808-60-7	100%	10.1849131975%	None	8654032
Edit	MC MX 437-5	Multi-Chem	Calcium nitrate solution						
				Calcium nitrate	10124-37-5	60%	.0574136392%	None	48783.869
Edit	FRW-900	FTS International	Friction reducer						
				Hydrotreated light distillate	64742-47-8	30%	.0251565468%	None	21375.299
				Alkyl Alcohol	Proprietary	10%	.0083855156%	None	7125.1
				Oxyalkylated alcohol A	Proprietary	5%	.0041927578%	None	3562.55
Edit	Hydrochloric Acid (15%)	FTS International	Acidizing						
				Hydrochloric Acid	7647-01-0	15%	.0267971825%	None	22769.333
Edit	CS-500-SI	FTS International	Scale inhibitor						
				Ethylene glycol	107-21-1	10%	.0025346884%	None	2153.703
Edit	HVG-1	FTS International	Gelling agent						
				Petroleum distillate	64742-47-8	55%	.000952314%	None	809.173
				Guar gum	9000-30-0	50%	.00086574%	None	735.612

04/01/2016

			Surfactant	68439-51-0	2%	.0000346296%	None	29.424
			Clay	14808-60-7	2%	.0000346296%	None	29.424
Edit FE-100L	FTS International	Iron control						
			Citric acid	77-92-9	55%	.00060234%	None	511.803
Edit CI-150	FTS International	Acid Corrosion Inhibitor						
			Ethylene glycol	107-21-1	30%	.0000991746%	None	84.268
			Organic amine resin salt	Proprietary	30%	.0000991746%	None	84.268
			Isopropanol	67-63-0	30%	.0000991746%	None	84.268
			Dimethylformamide	68-12-2	10%	.0000330582%	None	28.089
			Aromatic aldehyde	Proprietary	10%	.0000330582%	None	28.089
			Quaternary ammonium compound	Proprietary	10%	.0000330582%	None	28.089
Edit NE-100	FTS International	Non-emulsifier						
			2-Butoxyethanol	111-76-2	10%	.0000281967%	None	23.958
			2-Propanol	67-63-0	10%	.0000281967%	None	23.958
			Dodecylbenzenesulfonic acid	27176-87-0	5%	.0000140984%	None	11.979
Edit B-10	FTS International	High pH buffer						
			Potassium carbonate	584-08-7	48%	.0000205633%	None	17.472
			Potassium hydroxide	1310-58-3	20%	.000008568%	None	7.28
Edit APB-1	FTS International	Breaker						
			Ammonium persulfate	7727-54-0	95%	.0000178889%	None	15.2

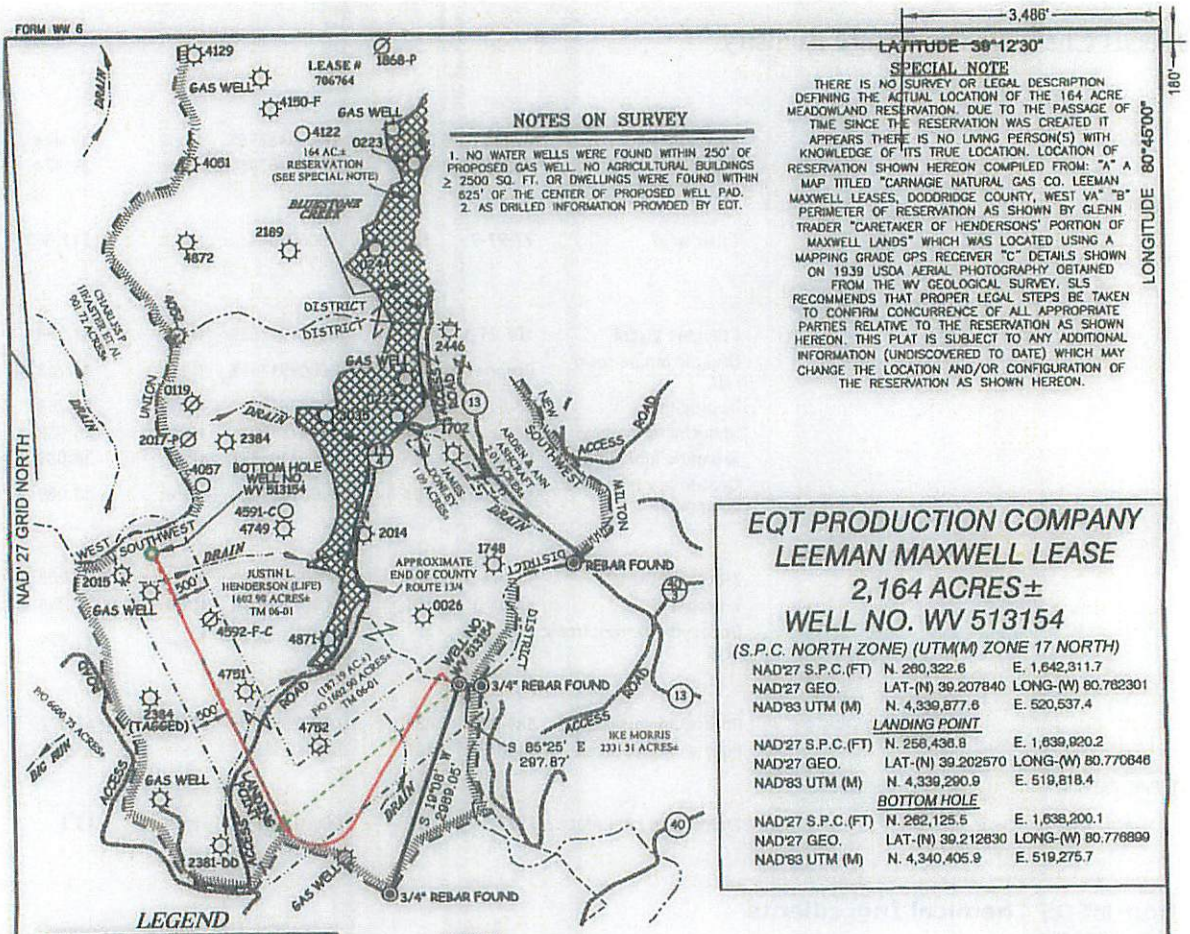
Non-MSDS Chemical Ingredients

New Ingredients

Trade Name	Supplier	Purpose	Ingredients	CAS #	% High Additive	% HF Job	Comments	Ingredient Mass

04/01/2016

FORM WW-6



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.

SPECIAL NOTE

THERE IS NO SURVEY OR LEGAL DESCRIPTION DEFINING THE ACTUAL LOCATION OF THE 164 ACRE MEADOWLAND RESERVATION. DUE TO THE PASSAGE OF TIME SINCE THE RESERVATION WAS CREATED IT APPEARS THERE IS NO LIVING PERSON(S) WITH KNOWLEDGE OF ITS TRUE LOCATION. LOCATION OF RESERVATION SHOWN HEREON COMPILED FROM: "A" A MAP TITLED "CARNAGIE NATURAL GAS CO. LEEMAN MAXWELL LEASES, DODDRIDGE COUNTY, WEST VA" "B" PERIMETER OF RESERVATION AS SHOWN BY GLENN TRADER "CARETAKER OF HENDERSONS' PORTION OF MAXWELL LANDS" WHICH WAS LOCATED USING A MAPPING GRADE GPS RECEIVER "C" DETAILS SHOWN ON 1939 USDA AERIAL PHOTOGRAPHY OBTAINED FROM THE WV GEOLOGICAL SURVEY. SLS RECOMMENDS THAT PROPER LEGAL STEPS BE TAKEN TO CONFIRM CONCURRENCE OF ALL APPROPRIATE PARTIES RELATIVE TO THE RESERVATION AS SHOWN HEREON. THIS PLAT IS SUBJECT TO ANY ADDITIONAL INFORMATION (UNDISCOVERED TO DATE) WHICH MAY CHANGE THE LOCATION AND/OR CONFIGURATION OF THE RESERVATION AS SHOWN HEREON.

EQT PRODUCTION COMPANY
LEEMAN MAXWELL LEASE
2,164 ACRES±
WELL NO. WV 513154

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

NAD'27 S.P.C.(FT)	N. 260,322.6	E. 1,642,311.7
NAD'27 GEO.	LAT-(N) 39.207840	LONG-(W) 80.762301
NAD'83 UTM (M)	N. 4,339,877.6	E. 520,537.4
LANDING POINT		
NAD'27 S.P.C.(FT)	N. 258,436.8	E. 1,639,920.2
NAD'27 GEO.	LAT-(N) 39.202570	LONG-(W) 80.770646
NAD'83 UTM (M)	N. 4,339,290.9	E. 519,818.4
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 262,125.5	E. 1,638,200.1
NAD'27 GEO.	LAT-(N) 39.212630	LONG-(W) 80.776899
NAD'83 UTM (M)	N. 4,340,405.9	E. 519,275.7

LEGEND

LEASE LINE	
SURFACE LINE	
PROPOSED PATH	
AS DRILLED PATH	
OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	◎
EXISTING WELL	☼
PERMITTED WELL	○
PLUGGED WELL	⌀
TAX MAP–PARCEL	00–00

AS DRILLED COORDINATES FOR WELL NO. WV 513154

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

NAD'27 S.P.C.(FT)	N. 260,322.6	E. 1,642,311.7
NAD'27 GEO.	LAT-(N) 39.207840	LONG-(W) 80.762301
NAD'83 UTM (M)	N. 4,339,877.6	E. 520,537.4
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 262,092.4	E. 1,638,236.4
NAD'27 GEO.	LAT-(N) 39.212540	LONG-(W) 80.776770
NAD'83 UTM (M)	N. 4,340,396.0	E. 519,286.9

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-8634 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 JANUARY 06 , 20 14

REVISED 3/24/14, 07/25/14 & 05/26/15

OPERATORS WELL NO. WV 513154

API WELL NO. 47 – 017 – 06502H
STATE – COUNTY – PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 7889AD513154

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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 1,272'(GROUND) 1,252'(PROPOSED) WATERSHED BLUESTONE CREEK
DISTRICT SOUTHWEST COUNTY DODDRIDGE QUADRANGLE OXFORD 7.5'
SURFACE OWNER JUSTIN L. HENDERSON (LIFE) ACREAGE 187.19 OF 1,602.90±
ROYALTY OWNER LEEMAN MAXWELL HRS ACREAGE 2,164±
PROPOSED WORK: LEASE NO. 706764
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 6,663'

COUNTY NAME

PERMIT

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

04/01/2016