

APPROVED

NAME: *Chad A. Fisher*

DATE: *1/27/16*

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: 513155

API: 47 - 017 - 06504

Submission: Initial Amended

Notes: Add'l Injection Tests - 21.01, 21.02
Reperfs - 2.1, 20.1

Original Mylar Plat sent with Initial Report

Correction to Production Cement Top (MD)

Includes Flowback information

Received
Office of Oil & Gas
JAN 07 2016

W&
AK
02/05/2016
ca/01/16

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

API 47 - 017 - 06504 County DODDRIDGE District Southwest
Quad OXFORD 7.5' Pad Name OXFORD 159 Field/Pool Name _____
Farm name JUSTIN L. HENDERSON ET AL Well Number 513155
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 520,542
Landing Point of Curve Northing 4,339,162 Easting 520,220
Bottom Hole Northing 4,340,625 Easting 519,507

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 W/O Flowback
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 phosphates, 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 4/24/2015
Date completion activities began 6/12/2015 Date completion activities ceased 6/19/2015
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

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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:
AX 02/05/16 WS.
02/05/2016

API 47-017 - 06504 Farm name JUSTIN L. HENDERSON ET AL Well number 513155

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"	1,091'	NEW	J-55 54.5LB/FT	None	Y
Coal							
Intermediate 1	12.375"	9.625"	5,279'	NEW	P-110 40LB/FT	None	Y
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	12881	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	866	15.6	1.20	1,021.88	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	870 / 565	14.2 / 15.2	1.26 / 1.97	2,209.25	3,476'	8
Tubing							

Drillers TD (ft) 12,885' Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,413'

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- (3) Centralizers placed every 500' from 1089' to 165'
 INTERMEDIATE- (11) Centralizers placed at least every 500' FEET from 5277' to 64'
 PRODUCTION- (181) Centralizers on every joint from 12881' to 5281'

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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 _____

API 47- 017 - 6504 Farm name JUSTIN L. HENDERSON ET AL Well number 513155

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.

API 47- 017 - 06504

Farm name JUSTIN L. HENDERSON ET AL

Well number 513155

PRODUCING FORMATION(S)

DEPTH(S)

Marcellus 6,694' TVD 8,530' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2,102 psi Bottom Hole N/A psi DURATION OF TEST 82.50 hrs

OPEN FLOW Gas 10,390 mcfpd Oil N/A bpd NGL 67 bpd Water 651.8 bpd GAS MEASURED BY 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 ₂ S, ETC)
	0		0		

Please insert additional pages as applicable.

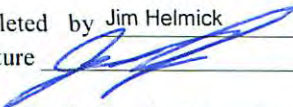
Drilling Contractor ALPHA HUNTER DRILLING (RIG 5)
Address P.O. BOX 430 City RENO State OH Zip 45773

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 Jim Helmick
Signature  Title VP Completions Telephone 412-395-5518 Date 12/22/2015

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

02/05/2016

API 47-017 - 6504 Farm name JUSTIN L. HENDERSON ET AL Well number 513155

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
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

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WELL #513155 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	2,029.80
BIG LIME	2,030.00	2,029.80	2,174.00	2,173.70
SAND/SHALE	2,174.00	2,173.70	2,323.00	2,322.70
WEIR	2,323.00	2,322.70	2,437.00	2,436.60
SAND/SHALE	2,437.00	2,436.60	2,531.00	2,530.60
GANTZ	2,531.00	2,530.60	2,608.00	2,607.60
50F	2,608.00	2,607.60	2,684.00	2,683.50
SAND/SHALE	2,684.00	2,683.50	2,730.00	2,729.50
30F	2,730.00	2,729.50	2,765.00	2,764.50
SAND/SHALE	2,765.00	2,764.50	2,779.00	2,778.50
GORDON	2,779.00	2,778.50	2,870.00	2,869.50
4TH SAND	2,870.00	2,869.50	3,051.00	3,050.40
BAYARD	3,051.00	3,050.40	3,151.00	3,150.30
SAND/SHALE	3,151.00	3,150.30	3,388.00	3,387.20
WARREN	3,388.00	3,387.20	3,447.00	3,446.10
SAND/SHALE	3,447.00	3,446.10	3,459.00	3,458.10
SPEECHLEY	3,459.00	3,458.10	3,703.00	3,702.00
SAND/SHALE	3,703.00	3,702.00	4,139.00	4,137.10
BALLTOWN A	4,139.00	4,137.10	4,253.00	4,250.60
SAND/SHALE	4,253.00	4,250.60	4,338.00	4,335.20
RILEY	4,338.00	4,335.20	4,484.00	4,480.40
SAND/SHALE	4,484.00	4,480.40	5,009.00	5,001.80
BENSON	5,009.00	5,001.80	5,049.00	5,041.50
SAND/SHALE	5,049.00	5,041.50	5,180.00	5,171.60
ALEXANDER	5,180.00	5,171.60	6,211.00	5,995.80
RHINESTREET UPPER	6,211.00	5,995.80	6,362.00	6,038.50
RHINESTREET	6,362.00	6,038.50	7,448.00	6,354.60
SONYEA	7,448.00	6,354.60	7,842.00	6,492.70
MIDDLESEX	7,842.00	6,492.70	8,000.00	6,546.10
GENESSEE	8,000.00	6,546.10	8,196.00	6,608.90
GENESE0	8,196.00	6,608.90	8,338.00	6,654.60
TULLY	8,338.00	6,654.60	8,414.00	6,672.20
HAMILTON	8,414.00	6,672.20	8,530.00	6,693.60
MARCELLUS	8,530.00	6,693.60		

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EQT Production - Marcellus

Doddridge County, WV Grid

Doddridge County 513155

Well #513155

Main Wellbore

Design: 513155 AS Drilled

Standard Survey Report

28 April, 2015





PHX
Survey Report



Database:	EDM 5000.1 Single User Dir	Local Co-ordinate Reference:	Site Doddridge County 513155
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Drilled		

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 513155

Site Position:		Northing:	260,322.00 usft	Latitude:	39.21
From:	Map	Easting:	1,642,326.60 usft	Longitude:	-80.76
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	-0.81"

Well: Well #513155

Well Position	+N/-S	0.0 usft	Northing:	260,322.00 usft	Latitude:	39° 12' 28.219 N
	+E/-W	0.0 usft	Easting:	1,642,326.60 usft	Longitude:	80° 45' 44.094 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	4/6/2015	-7.78	66.68	52,241

Design: 513155 AS Drilled

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	306.82

Survey Program Date: 4/28/2015

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,288.0	513155 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	12,885.0	PHX MWD Surveys (Main Wellbor	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	-1.275.0	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	0.29	243.85	123.0	-1.152.0	-0.1	-0.2	0.1	0.29	0.29	0.00
223.0	0.21	253.74	223.0	-1.052.0	-0.3	-0.6	0.3	0.09	-0.08	0.00
323.0	0.24	267.49	323.0	-952.0	-0.3	-1.0	0.6	0.13	0.03	33.75
423.0	0.18	275.94	423.0	-852.0	-0.2	-1.4	1.0	0.07	-0.06	-11.55
523.0	0.23	277.22	523.0	-752.0	-0.1	-1.7	1.3	0.05	0.05	1.28
623.0	0.20	277.01	623.0	-652.0	-0.1	-2.1	1.6	0.03	-0.03	-0.21

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02/05/2016



PHX
Survey Report



Database:	EOM 5006.1 Single User: Db	Local Co-ordinate Reference:	Site Doddridge County 513155
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AG Drilled		

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)	
723.0	0.25	279.63	723.0	-552.0	0.0	-2.5	2.0	0.05	0.05	2.62	
823.0	0.28	285.69	823.0	-452.0	0.1	-2.9	2.4	0.04	0.03	6.06	
923.0	0.37	294.38	923.0	-352.0	0.3	-3.5	2.9	0.10	0.09	8.69	
1,023.0	0.54	282.92	1,023.0	-252.0	0.5	-4.2	3.7	0.19	0.17	-11.46	
1,123.0	0.67	291.20	1,123.0	-152.0	0.8	-5.2	4.7	0.16	0.13	8.28	
1,223.0	0.97	308.13	1,223.0	-52.0	1.6	-6.4	6.1	0.38	0.30	16.93	
1,323.0	1.19	302.11	1,323.0	48.0	2.6	-8.0	8.0	0.25	0.22	-6.02	
1,423.0	1.27	300.62	1,422.9	147.9	3.7	-9.8	10.1	0.09	0.08	-1.49	
1,523.0	1.17	299.60	1,522.9	247.9	4.8	-11.6	12.2	0.10	-0.10	-1.02	
1,623.0	1.02	296.15	1,622.9	347.9	5.7	-13.3	14.1	0.16	-0.15	-3.45	
1,723.0	1.18	293.23	1,722.9	447.9	6.5	-15.1	16.0	0.17	0.16	-2.92	
1,823.0	1.49	287.93	1,822.8	547.8	7.3	-17.3	18.2	0.33	0.31	-5.30	
1,923.0	1.43	291.42	1,922.6	647.8	8.2	-19.7	20.6	0.11	-0.06	3.49	
2,023.0	1.50	294.67	2,022.8	747.8	9.2	-22.0	23.1	0.11	0.07	3.25	
2,123.0	1.51	294.72	2,122.7	847.7	10.3	-24.4	25.7	0.01	0.01	0.05	
2,223.0	1.49	296.67	2,222.7	947.7	11.4	-26.8	28.3	0.05	-0.02	1.95	
2,323.0	1.49	300.15	2,322.7	1,047.7	12.6	-29.0	30.8	0.09	0.00	3.48	
2,423.0	1.66	302.63	2,422.6	1,147.6	14.1	-31.4	33.6	0.18	0.17	2.48	
2,523.0	1.54	304.77	2,522.6	1,247.6	15.6	-33.7	36.3	0.13	-0.12	2.14	
2,623.0	1.66	305.48	2,622.6	1,347.6	17.2	-36.0	39.1	0.12	0.12	0.71	
2,723.0	1.70	309.02	2,722.5	1,447.5	19.0	-38.3	42.1	0.11	0.04	3.54	
2,823.0	1.71	304.43	2,822.5	1,547.5	20.8	-40.7	45.0	0.14	0.01	-4.59	
2,923.0	1.76	310.12	2,922.4	1,647.4	22.6	-43.1	48.1	0.18	0.05	5.69	
3,023.0	1.87	308.62	3,022.4	1,747.4	24.6	-45.6	51.2	0.12	0.11	-1.50	
3,123.0	1.93	308.41	3,122.3	1,847.3	26.7	-48.2	54.5	0.06	0.06	-0.21	
3,223.0	1.96	307.52	3,222.3	1,947.3	28.8	-50.8	57.9	0.04	0.03	-0.89	
3,323.0	2.13	307.03	3,322.2	2,047.2	30.9	-53.7	61.5	0.17	0.17	-0.49	
3,423.0	1.97	307.41	3,422.1	2,147.1	33.1	-56.5	65.1	0.16	-0.16	0.38	
3,523.0	2.05	309.81	3,522.1	2,247.1	35.3	-59.3	68.6	0.12	0.08	2.40	
3,623.0	2.03	313.95	3,622.0	2,347.0	37.7	-61.9	72.1	0.15	-0.02	4.14	
3,723.0	1.97	314.53	3,722.0	2,447.0	40.1	-64.4	75.6	0.06	-0.06	0.58	
3,823.0	2.41	312.00	3,821.9	2,546.9	42.7	-67.2	79.4	0.45	0.44	-2.53	
3,923.0	3.50	304.70	3,921.7	2,646.7	45.9	-71.3	84.5	1.15	1.09	-7.30	
4,023.0	4.52	300.66	4,021.5	2,746.5	49.6	-77.2	91.5	1.06	1.02	-4.04	
4,123.0	5.06	302.06	4,121.2	2,846.2	54.0	-84.3	99.8	0.55	0.54	1.40	
4,223.0	5.40	301.56	4,220.7	2,945.7	58.8	-92.0	108.9	0.34	0.34	-0.50	
4,323.0	5.56	302.91	4,320.3	3,045.3	63.8	-100.1	118.4	0.21	0.16	1.35	
4,423.0	6.01	304.20	4,419.8	3,144.8	69.4	-108.5	128.5	0.47	0.45	1.29	
4,523.0	6.44	306.80	4,519.2	3,244.2	75.7	-117.3	139.3	0.51	0.43	2.60	
4,623.0	6.70	311.16	4,618.5	3,343.5	82.9	-126.2	150.7	0.56	0.26	4.36	
4,723.0	6.93	313.55	4,717.8	3,442.8	90.9	-135.0	162.5	0.37	0.23	2.38	
4,823.0	6.92	317.49	4,817.1	3,542.1	99.5	-143.4	174.5	0.48	-0.01	3.94	

Database:	EDM_5000_1_Single_User_Db	Local Co-ordinate Reference:	Site Doddridge County 513155
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Drilled		

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)
4,923.0	6.87	319.81	4,916.4	3,641.4	108.5	-151.4	186.2	0.28	-0.05	2.32
5,023.0	6.73	322.25	5,015.7	3,740.7	117.7	-158.8	197.7	0.32	-0.14	2.44
5,123.0	6.51	325.49	5,115.0	3,840.0	127.0	-165.6	208.7	0.43	-0.22	3.24
5,223.0	6.52	327.14	5,214.3	3,939.3	136.5	-171.9	219.4	0.19	0.01	1.65
Crown 513155-5588P MD										
5,288.0	6.57	331.05	5,278.9	4,003.9	142.8	-175.7	226.2	0.69	0.08	6.02
KOP 513155 MD										
5,318.0	6.40	330.70	5,308.7	4,033.7	145.8	-177.3	229.3	0.58	-0.57	-1.17
5,350.0	4.50	331.50	5,340.6	4,065.6	148.4	-178.8	232.1	5.94	-5.94	2.50
5,381.0	1.30	324.00	5,371.5	4,096.5	149.8	-179.6	233.6	10.37	-10.32	-24.19
5,413.0	1.80	165.40	5,403.5	4,128.5	149.6	-179.7	233.5	9.52	1.56	-495.63
5,444.0	5.20	160.60	5,434.5	4,159.5	147.8	-179.1	232.0	11.00	10.97	-15.48
5,476.0	8.00	157.00	5,466.3	4,191.3	144.4	-177.8	228.8	8.84	8.75	-11.25
5,507.0	10.20	163.60	5,496.9	4,221.9	139.8	-176.1	224.8	7.84	7.10	21.29
5,539.0	12.60	169.60	5,528.2	4,253.2	133.6	-174.7	219.9	8.36	7.50	18.75
5,570.0	15.10	173.60	5,558.3	4,283.3	126.3	-173.6	214.7	8.63	8.06	12.90
5,601.0	17.70	177.10	5,588.1	4,313.1	117.6	-173.0	208.9	8.97	8.39	11.29
5,633.0	20.30	179.70	5,618.3	4,343.3	107.2	-172.7	202.4	8.54	8.13	8.13
5,664.0	22.20	182.00	5,647.2	4,372.2	95.9	-172.9	195.9	6.69	6.13	7.42
5,696.0	24.40	185.10	5,676.6	4,401.6	83.3	-173.7	188.9	7.87	6.88	9.69
5,727.0	27.00	187.40	5,704.5	4,429.5	69.9	-175.1	182.1	8.98	8.39	7.42
5,759.0	29.40	188.80	5,732.7	4,457.7	55.0	-177.3	174.8	7.78	7.50	4.38
5,790.0	32.20	190.30	5,759.4	4,484.4	39.3	-179.9	167.6	9.37	9.03	4.84
5,821.0	35.10	191.70	5,785.2	4,510.2	22.5	-183.2	160.1	9.68	9.35	4.52
5,853.0	37.80	192.50	5,810.9	4,535.9	3.9	-187.2	152.2	8.57	8.44	2.50
5,884.0	41.10	193.70	5,834.8	4,559.8	-15.3	-191.7	144.2	10.93	10.65	3.87
5,915.0	44.50	194.70	5,857.6	4,582.6	-35.7	-196.8	136.1	11.18	10.97	3.23
5,947.0	47.70	195.30	5,879.8	4,604.8	-58.0	-202.8	127.6	10.09	10.00	1.88
5,978.0	52.10	195.20	5,899.7	4,624.7	-80.9	-209.0	118.9	14.20	14.19	-0.32
6,010.0	56.40	194.50	5,918.4	4,643.4	-106.0	-215.7	109.1	13.55	13.44	-2.19
6,041.0	60.60	194.00	5,934.6	4,659.6	-131.6	-222.2	99.0	13.62	13.55	-1.61
6,073.0	64.50	194.10	5,949.4	4,674.4	-159.1	-229.1	88.0	12.19	12.19	0.31
6,105.0	67.90	194.60	5,962.3	4,687.3	-187.5	-236.3	76.8	10.72	10.63	1.56
6,136.0	70.70	195.50	5,973.2	4,698.2	-215.5	-243.9	66.1	9.43	9.03	2.90
6,167.0	72.80	197.70	5,982.9	4,707.9	-243.7	-252.3	55.9	9.56	6.77	7.10
6,230.0	73.40	198.90	6,001.3	4,726.3	-300.9	-271.2	36.7	2.06	0.95	1.90
6,324.0	73.70	199.50	6,027.9	4,752.9	-386.1	-300.9	9.5	0.69	0.32	0.64
6,419.0	74.10	197.80	6,054.2	4,779.2	-472.5	-330.0	-19.0	1.77	0.42	-1.79
6,514.0	75.00	194.30	6,079.5	4,804.5	-560.5	-355.3	-51.5	3.68	0.95	-3.68
6,609.0	75.90	194.00	6,103.4	4,828.4	-649.7	-377.8	-86.9	1.00	0.95	-0.32
6,703.0	73.10	195.20	6,128.5	4,853.5	-737.3	-400.6	-121.2	3.22	-2.98	1.28
6,798.0	70.90	195.80	6,157.9	4,882.9	-824.4	-424.8	-154.0	2.39	-2.32	0.63
6,893.0	70.80	197.20	6,189.0	4,914.0	-910.4	-450.3	-185.2	1.40	-0.11	1.47

Database:	EOM 5000 1 Single Use: Db	Local Co-ordinate Reference:	Site Doddridge County 313155
Company:	EQT Production - Mercafin	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 313155	North Reference:	Grid
Well:	Well #313155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	313155 A3 Drilled		

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)
6,987.0	72.00	198.80	6,219.0	4,944.0	-995.2	-477.8	-213.9	2.06	1.28	1.70
7,081.0	72.40	197.40	6,247.8	4,972.8	-1,080.2	-505.6	-242.7	1.48	0.43	-1.49
7,175.0	73.70	198.90	6,275.2	5,000.2	-1,165.7	-533.6	-271.5	2.06	1.38	1.60
7,269.0	74.50	197.60	6,300.9	5,025.9	-1,251.5	-561.9	-300.3	1.58	0.85	-1.38
7,301.0	75.00	195.90	6,309.3	5,034.3	-1,281.0	-571.1	-310.6	2.63	1.56	-2.19
7,332.0	73.50	198.60	6,317.8	5,042.8	-1,309.4	-580.2	-320.3	7.16	-4.84	5.48
7,363.0	72.20	201.80	6,326.9	5,051.9	-1,337.2	-590.4	-328.8	10.72	-4.19	10.32
7,394.0	71.20	205.60	6,336.6	5,061.6	-1,364.1	-602.2	-335.5	12.08	-3.23	12.26
7,426.0	70.50	208.90	6,347.1	5,072.1	-1,391.0	-616.1	-340.5	9.98	-2.19	10.31
7,458.0	69.80	211.70	6,358.0	5,083.0	-1,417.0	-631.2	-343.9	8.52	-2.19	8.75
7,489.0	68.80	215.00	6,369.0	5,094.0	-1,441.2	-647.2	-345.7	10.47	-3.23	10.65
7,521.0	68.00	217.90	6,380.7	5,105.7	-1,465.2	-664.9	-345.9	8.79	-2.50	9.06
7,552.0	67.70	220.80	6,392.4	5,117.4	-1,487.4	-683.1	-344.6	8.72	-0.97	9.35
7,583.0	67.70	223.90	6,404.2	5,129.2	-1,508.5	-702.4	-341.9	9.25	0.00	10.00
7,613.0	68.20	227.80	6,415.5	5,140.5	-1,527.9	-722.3	-337.5	12.16	1.67	13.00
7,645.0	69.20	231.00	6,427.1	5,152.1	-1,547.3	-745.0	-331.0	9.83	3.13	10.00
7,676.0	70.60	236.00	6,437.8	5,162.8	-1,564.6	-768.4	-322.7	15.80	4.52	16.13
7,708.0	71.10	240.30	6,448.3	5,173.3	-1,580.6	-794.0	-311.7	12.79	1.56	13.44
7,739.0	70.60	244.10	6,458.4	5,183.4	-1,594.2	-819.9	-299.1	11.69	-1.61	12.26
7,771.0	71.00	247.50	6,469.0	5,194.0	-1,606.6	-847.5	-284.5	10.11	1.25	10.63
7,802.0	70.60	250.90	6,479.1	5,204.1	-1,617.0	-874.8	-268.8	10.44	-1.29	10.97
7,834.0	70.00	254.20	6,489.9	5,214.9	-1,626.0	-903.6	-251.2	9.89	-1.88	10.31
7,865.0	70.50	257.20	6,500.4	5,225.4	-1,633.2	-931.8	-232.9	9.25	1.61	9.68
7,896.0	70.80	261.50	6,510.7	5,235.7	-1,638.6	-960.6	-213.1	13.12	0.97	13.87
7,928.0	70.10	262.90	6,521.4	5,246.4	-1,642.7	-990.5	-191.7	4.67	-2.19	4.38
7,960.0	69.80	266.20	6,532.4	5,257.4	-1,645.6	-1,020.4	-169.4	9.73	-0.94	10.31
7,991.0	70.10	269.60	6,543.0	5,268.0	-1,646.7	-1,049.5	-146.8	10.35	0.97	10.97
8,023.0	70.50	272.80	6,553.8	5,278.8	-1,646.0	-1,079.6	-122.3	9.50	1.25	10.00
8,055.0	70.90	276.00	6,564.4	5,289.4	-1,643.7	-1,109.7	-96.8	9.52	1.25	10.00
8,086.0	71.40	278.90	6,574.4	5,299.4	-1,639.9	-1,138.8	-71.3	9.00	1.61	9.35
8,118.0	71.80	281.90	6,584.5	5,309.5	-1,634.4	-1,168.6	-44.1	8.98	1.25	9.38
8,149.0	71.70	284.50	6,594.2	5,319.2	-1,627.7	-1,197.3	-17.1	7.97	-0.32	8.39
8,181.0	71.80	287.60	6,604.2	5,329.2	-1,619.3	-1,226.5	11.3	9.21	0.31	9.69
8,212.0	71.70	290.50	6,613.9	5,338.9	-1,609.7	-1,254.3	39.4	8.89	-0.32	9.35
8,244.0	70.70	293.80	6,624.3	5,349.3	-1,598.3	-1,282.4	68.6	10.25	-3.13	10.31
8,275.0	70.30	297.20	6,634.6	5,359.6	-1,585.7	-1,308.8	97.3	10.42	-1.29	10.97
8,307.0	71.00	300.60	6,645.2	5,370.2	-1,571.1	-1,335.2	127.2	10.26	2.19	10.00
8,338.0	73.70	303.70	6,654.6	5,379.6	-1,555.4	-1,360.2	156.6	12.91	8.71	10.00
8,369.0	76.60	306.30	6,662.6	5,387.6	-1,538.2	-1,384.7	186.6	12.38	9.35	8.39
8,401.0	78.10	309.00	6,669.6	5,394.6	-1,519.1	-1,409.4	217.8	9.47	4.69	8.44
8,432.0	78.90	312.90	6,675.7	5,400.7	-1,499.2	-1,432.4	248.1	12.60	2.58	12.58
8,464.0	79.70	316.30	6,681.7	5,406.7	-1,477.1	-1,454.8	279.2	10.74	2.50	10.63
8,495.0	79.80	319.30	6,687.2	5,412.2	-1,454.5	-1,475.2	309.2	9.53	0.32	9.68

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PHX
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513155
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Drilled		

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)
8 526 0	79 30	322.90	6,692.8	5,417.8	-1,430.8	-1,494.4	338.7	11.53	-1.61	11.61
8 558 0	79 80	326.10	6,698.6	5,423.6	-1,405.2	-1,512.7	368.7	9.96	1.56	10.00
8 589 0	82 00	328.10	6,703.5	5,428.5	-1,379.5	-1,529.3	397.4	9.54	7.10	6.45
8 621 0	85 10	330.40	6,707.1	5,432.1	-1,352.2	-1,545.5	426.8	12.04	9.69	7.19
8 652 0	88 50	332.30	6,708.9	5,433.9	-1,325.0	-1,560.4	454.9	12.56	10.97	6.13
LP/Depth Point of Well=634 MD: 6799 TVD:										
8 684 0	89 70	333.60	6,709.4	5,434.4	-1,296.5	-1,574.9	483.7	5.53	3.75	4.06
8 778 0	91 30	334.10	6,708.5	5,433.5	-1,212.2	-1,616.3	567.4	1.78	1.70	0.53
8 872 0	90 50	334.50	6,707.1	5,432.1	-1,127.5	-1,657.1	650.8	0.95	-0.85	0.43
8 967 0	92 00	334.90	6,705.0	5,430.0	-1,041.6	-1,697.7	734.7	1.63	1.58	0.42
9 062 0	90 70	334.00	6,702.8	5,427.8	-955.9	-1,738.7	818.9	1.66	-1.37	-0.95
9 156 0	92 00	333.30	6,700.5	5,425.5	-871.7	-1,780.4	902.7	1.57	1.38	-0.74
9 251 0	89 90	334.10	6,699.0	5,424.0	-786.6	-1,822.4	987.5	2.37	-2.21	0.84
9 346 0	90 50	334.80	6,698.6	5,423.6	-700.9	-1,863.4	1,071.6	0.97	0.63	0.74
9 440 0	92.00	335.50	6,696.6	5,421.6	-615.6	-1,902.9	1,154.3	1.76	1.60	0.74
9 534 0	90 00	334.90	6,694.9	5,419.9	-530.3	-1,942.3	1,237.0	2.22	-2.13	-0.64
9 629 0	92 60	337.50	6,692.8	5,417.8	-443.4	-1,980.7	1,319.8	3.87	2.74	2.74
9 724 0	91 00	335.80	6,689.8	5,414.8	-356.2	-2,018.3	1,402.1	2.46	-1.68	-1.79
9 818 0	92 00	336.70	6,687.3	5,412.3	-270.2	-2,056.1	1,484.0	1.43	1.06	0.96
9 913 0	89 20	335.50	6,686.4	5,411.4	-183.4	-2,094.6	1,566.8	3.21	-2.95	-1.26
10 007 0	89 00	334.90	6,687.8	5,412.8	-98.0	-2,134.0	1,649.5	0.67	-0.21	-0.64
10 102 0	90 20	334.50	6,688.5	5,413.5	-12.2	-2,174.6	1,733.5	1.33	1.26	-0.42
10 196 0	91 00	333.90	6,687.5	5,412.5	72.5	-2,215.5	1,817.0	1.06	0.85	-0.64
10 291 0	91 70	334.70	6,685.3	5,410.3	158.0	-2,256.7	1,901.2	1.12	0.74	0.84
10 385 0	92 70	333.30	6,681.7	5,406.7	242.5	-2,297.9	1,984.8	1.83	1.06	-1.49
10 480 0	89 00	334.10	6,680.3	5,405.3	327.6	-2,340.0	2,069.5	3.98	-3.89	0.84
10 574 0	89 00	333.50	6,681.9	5,406.9	411.9	-2,381.5	2,153.3	0.64	0.00	-0.64
10 669 0	91 40	335.50	6,681.6	5,406.6	497.7	-2,422.4	2,237.4	3.29	2.53	2.11
10 763 0	92 60	336.20	6,678.3	5,403.3	583.4	-2,460.8	2,319.5	1.48	1.28	0.74
10 857 0	92 80	336.30	6,673.9	5,398.9	669.3	-2,498.6	2,401.3	0.24	0.21	0.11
10 952 0	92 40	335.50	6,669.5	5,394.5	756.0	-2,537.4	2,484.2	0.94	-0.42	-0.84
11 046 0	90 80	334.70	6,666.9	5,391.9	841.2	-2,576.9	2,567.0	1.90	-1.70	-0.85
11 140 0	90 40	333.60	6,665.9	5,390.9	925.8	-2,617.9	2,650.5	1.25	-0.43	-1.17
11 235 0	89 40	332.90	6,666.1	5,391.1	1,010.6	-2,660.7	2,735.6	1.28	-1.05	0.74
11 329 0	91 70	333.30	6,665.2	5,390.2	1,094.4	-2,703.2	2,819.8	2.48	2.45	0.45
11 424 0	90 80	333.30	6,663.1	5,388.1	1,179.3	-2,745.9	2,904.8	0.95	-0.95	0.00
11 518 0	92 40	336.20	6,660.5	5,385.5	1,264.2	-2,786.0	2,987.9	3.52	1.70	3.09
11 612 0	92 30	335.40	6,656.6	5,381.6	1,349.9	-2,824.5	3,070.0	0.86	-0.11	-0.85
11 707 0	91 80	333.70	6,653.2	5,378.2	1,435.6	-2,865.2	3,154.0	1.86	-0.53	-1.79
11 801 0	90 30	327.70	6,651.5	5,376.5	1,517.6	-2,911.2	3,239.9	6.58	-1.60	-6.38
11 895 0	91 70	329.70	6,649.9	5,374.9	1,597.9	-2,960.0	3,327.2	2.60	1.49	2.13
11 990 0	93 00	332.50	6,646.0	5,371.0	1,680.9	-3,005.9	3,413.7	3.25	1.37	2.95

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Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513155
Company:	EQT Production - Marcellus	TVD Reference:	KB@23 @ 1275.0usft
Project:	Doddridge County, WV GFA	MD Reference:	KB@23 @ 1275.0usft
Site:	Doddridge County 513155	North Reference:	Grid
Well:	Well #513155	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513155 AS Drilled		

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)
12,084.0	91.90	337.80	6,642.0	5,367.0	1,766.1	-3,045.4	3,496.3	5.75	-1.17	5.64
12,178.0	91.70	336.80	6,639.0	5,364.0	1,852.8	-3,081.5	3,577.3	1.08	-0.21	-1.06
12,273.0	89.90	337.70	6,637.7	5,362.7	1,940.4	-3,118.4	3,659.2	2.12	-1.89	0.95
12,367.0	89.50	337.00	6,638.2	5,363.2	2,027.1	-3,154.6	3,740.2	0.86	-0.43	-0.74
12,461.0	89.70	336.00	6,638.8	5,363.8	2,113.3	-3,192.0	3,821.8	1.08	0.21	-1.06
12,555.0	90.50	336.40	6,638.7	5,363.7	2,199.4	-3,230.0	3,903.7	0.95	0.85	0.43
12,650.0	87.70	337.70	6,640.2	5,365.2	2,285.8	-3,267.0	3,985.8	3.25	-2.95	1.37
12,745.0	88.40	336.80	6,643.4	5,368.4	2,374.4	-3,303.7	4,067.7	1.20	0.74	-0.95
Final Survey=12832' MD/ 6645' TVD										
12,832.0	89.20	336.80	6,645.2	5,370.2	2,454.3	-3,338.0	4,143.0	0.92	0.92	0.00
Projection to TD=12885' MD/ 6646' TVD										
12,885.0	89.20	336.80	6,646.0	5,371.0	2,503.0	-3,358.9	4,188.9	0.00	0.00	0.00

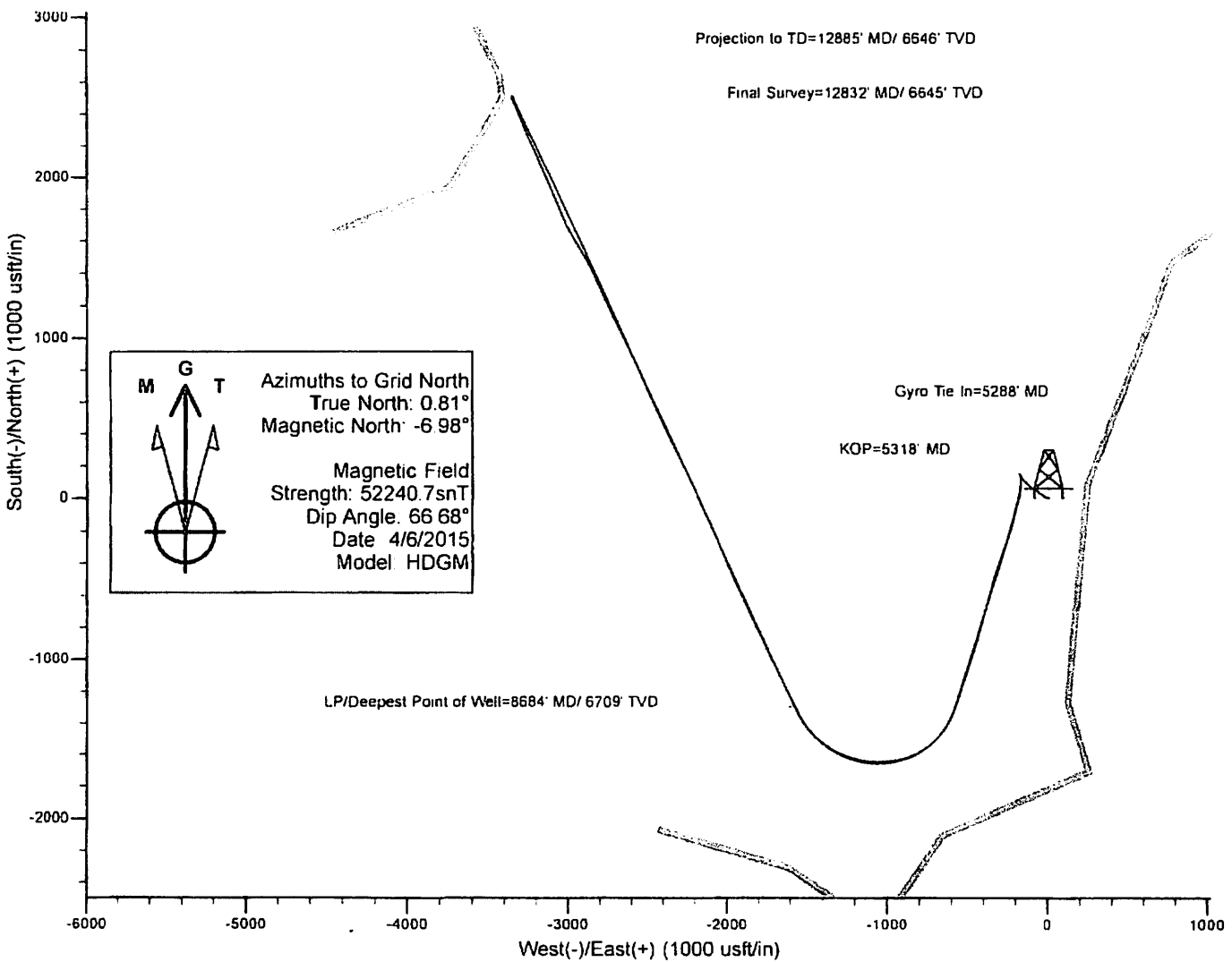
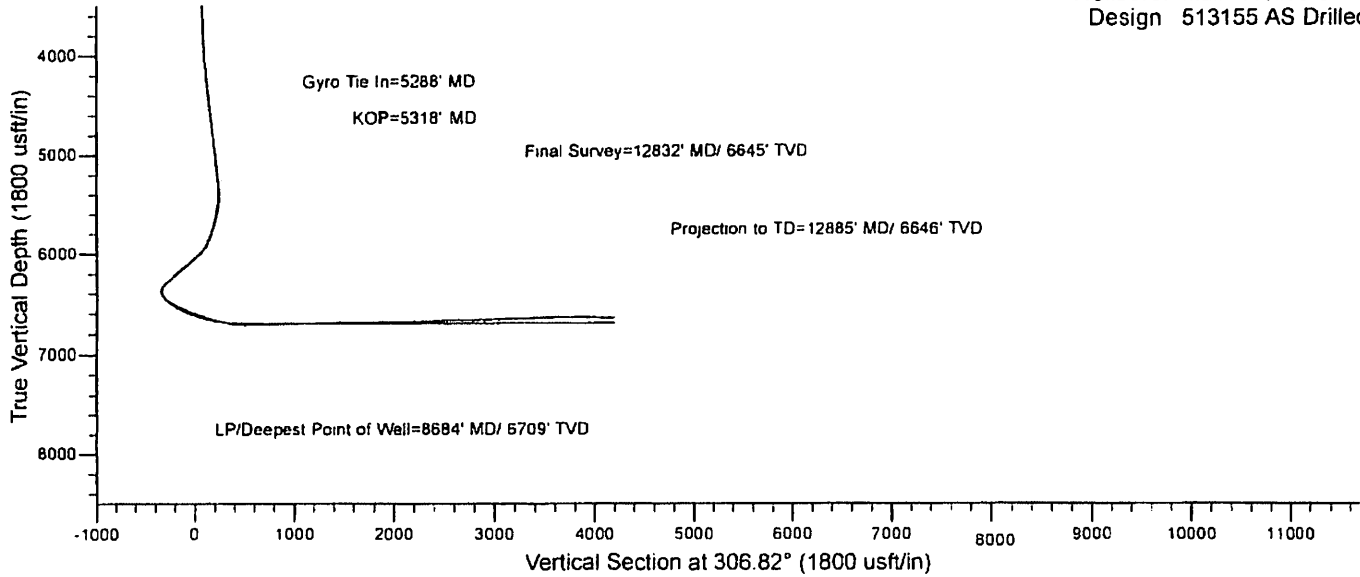
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,288.0	5,278.9	142.8	-175.7	Gyro Tie In=5288' MD
5,318.0	5,308.7	145.8	-177.3	KOP=5318' MD
8,684.0	6,709.4	-1,296.5	-1,574.9	LP/Deepest Point of Well=8684' MD/ 6709' TVD
12,832.0	6,645.2	2,454.3	-3,338.0	Final Survey=12832' MD/ 6645' TVD
12,885.0	6,646.0	2,503.0	-3,358.9	Projection to TD=12885' MD/ 6646' TVD

Checked By _____ Approved By _____ Date _____



EQT Production - Marcellus

Project: Doddridge County, WV Grid
 Site: Doddridge County 513155
 Well: Well #513155
 Wellbore: Main Wellbore
 Design: 513155 AS Drilled



513155 - 47-017-06504-0000- Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	5/20/2015	12,879.00	12,881.00	10	MARCELLUS
1	6/12/2015	12,727.00	12,849.00	42	MARCELLUS
2	6/12/2015	12,547.00	12,669.00	42	MARCELLUS
2.1	6/13/2015	12,512.00	12,534.00	28	MARCELLUS
3	6/13/2015	12,332.00	12,454.00	42	MARCELLUS
4	6/13/2015	12,152.00	12,274.00	42	MARCELLUS
5	6/14/2015	11,972.00	12,094.00	42	MARCELLUS
6	6/14/2015	11,792.00	11,912.00	42	MARCELLUS
7	6/14/2015	11,612.00	11,734.00	42	MARCELLUS
8	6/14/2015	11,432.00	11,554.00	42	MARCELLUS
9	6/14/2015	11,252.00	11,374.00	42	MARCELLUS
10	6/15/2015	11,072.00	11,194.00	42	MARCELLUS
11	6/15/2015	10,892.00	11,014.00	42	MARCELLUS
12	6/15/2015	10,712.00	10,834.00	42	MARCELLUS
13	6/15/2015	10,532.00	10,654.00	42	MARCELLUS
14	6/15/2015	10,352.00	10,474.00	42	MARCELLUS
15	6/16/2015	10,172.00	10,290.00	42	MARCELLUS
16	6/16/2015	9,992.00	10,114.00	42	MARCELLUS
17	6/16/2015	9,812.00	9,934.00	42	MARCELLUS
18	6/16/2015	9,632.00	9,754.00	42	MARCELLUS
19	6/16/2015	9,452.00	9,574.00	42	MARCELLUS
20	6/16/2015	9,272.00	9,392.00	42	MARCELLUS
20.1	6/17/2015	9,228.00	9,250.00	28	MARCELLUS
21	6/17/2015	9,046.00	9,168.00	42	MARCELLUS
21.02	6/17/2015	9,036.00	9,057.00	28	MARCELLUS
22	6/18/2015	8,866.00	8,988.00	42	MARCELLUS
23	6/18/2015	8,686.00	8,808.00	42	MARCELLUS
24	6/18/2015	8,506.00	8,611.00	42	MARCELLUS
25	6/18/2015	8,326.00	8,450.00	42	MARCELLUS

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513155 - 47-017-06504-0000- 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	6/12/2015	12.6	7,354.00	8,913.00	4,306.00	0	721	0
1	6/13/2015	92	7,729.00	8,606.00	4,374.00	301,089	7548	0
2	6/13/2015	92.9	8,077.00	9,080.00	4,277.00	300,999	10230	0
3	6/13/2015	97.7	7,639.00	8,871.00	4,373.00	299,710	7269	0
4	6/13/2015	98.2	7,687.00	7,984.00	5,176.00	301,020	7260	0
5	6/14/2015	98.9	7,708.00	8,470.00	4,989.00	360,688	8526	0
6	6/14/2015	100.1	7,814.00	9,093.00	5,001.00	362,073	8347	0
7	6/14/2015	99.3	8,083.00	8,964.00	5,195.00	360,599	8209	0
8	6/14/2015	98.7	7,826.00	8,974.00	4,812.00	361,874	8268	0
9	6/14/2015	100.3	7,761.00	8,753.00	5,026.00	362,290	8412	0
10	6/15/2015	99.6	7,735.00	8,029.00	4,725.00	359,418	8423	0
11	6/15/2015	100.2	7,839.00	8,746.00	5,130.00	360,381	7847	0
12	6/15/2015	100.4	7,724.00	8,472.00	5,008.00	360,399	7889	0
13	6/15/2015	100.7	7,929.00	8,260.00	4,385.00	359,138	8228	0
14	6/15/2015	100.3	7,802.00	8,442.00	4,631.00	359,908	8252	0
15	6/16/2015	100.1	7,790.00	8,628.00	5,029.00	359,823	8308	0
16	6/16/2015	100	7,987.00	8,846.00	5,118.00	356,499	7917	0
17	6/16/2015	99.2	7,922.00	8,890.00	5,321.00	358,332	7910	0
18	6/16/2015	98.9	7,650.00	7,905.00	5,289.00	358,768	7949	0
19	6/16/2015	99.3	7,546.00	8,069.00	5,352.00	360,770	8,215	0
20	6/17/2015	92.10	7,761.00	9,523.00	8,801	361,320	12,689	0
21	6/17/2015	83.60	7,921.00	9,586.00	5,127	3,557	3,218	0
21:01	6/17/2015	85.10	7,840.00	9,587.00	4,712	176,074	5,197	0
21:02	6/17/2015	0.00	0.00	6,695.00	5,109	0	2,212	0
22	6/18/2015	96.20	7,720.00	7,904.00	5,252	358,055	7,780	0
23	6/18/2015	99.40	7,717.00	8,799.00	5,205	358,036	8184	0
24	6/18/2015	98.00	7,838.00	8,340.00	4,253	361,623	7892	0
25	6/19/2015	99.6	7,686.00	8,410.00	3,831.00	360,145	8042	0

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/12/2015
Job End Date:	6/19/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06504-00-00
Operator Name:	EQT Production
Well Name and Number:	513155
Longitude:	-80.76224800
Latitude:	39.20783900
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,694
Total Base Water Volume (gal):	8,859,564
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	FTS International	Carrier/Base Fluid	Water	7732-18-5	100.00000	89.20986	None
Sand (Proppant)	FTS International	Proppant	Crystalline Silica	14808-60-7	100.00000	10.35601	None
MC MX 437-5	Multi-Chem	Calcium nitrate solution	Calcium nitrate	10124-37-5	60.00000	0.05825	None
FRW-900	FTS International	Friction reducer	Hydrotreated light distillate	64742-47-8	30.00000	0.02469	None
			Alkyl Alcohol	Proprietary	10.00000	0.00823	None
			Oxyalkylated alcohol A	Proprietary	5.00000	0.00411	None
Hydrochloric Acid (15%)	FTS International	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.03313	None
HVG-1	FTS International	Gelling agent	Petroleum distillate	64742-47-8	55.00000	0.00371	None
			Guar gum	9000-30-0	50.00000	0.00337	None
			Clay	14808-60-7	2.00000	0.00013	None
			Surfactant	68439-51-0	2.00000	0.00013	None
CS-500-SI	FTS International	Scale inhibitor					

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			Ethylene glycol	107-21-1	10.00000	0.00249	None
FE-100L	FTS International	Iron control					
			Citric acid	77-92-9	55.00000	0.00074	None
CI-150	FTS International	Acid Corrosion Inhibitor					
			Organic amine resin salt	Proprietary	30.00000	0.00012	None
			Ethylene glycol	107-21-1	30.00000	0.00012	None
			Isopropanol	67-63-0	30.00000	0.00012	None
			Dimethylformamide	68-12-2	10.00000	0.00004	None
			Quaternary ammonium compound	Proprietary	10.00000	0.00004	None
			Aromatic aldehyde	Proprietary	10.00000	0.00004	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	0.00002	None
APB-1	FTS International	Breaker					
			Ammonium persulfate	7727-54-0	95.00000	0.00008	None
B-10	FTS International	High pH buffer					
			Potassium carbonate	584-08-7	48.00000	0.00003	None
			Potassium hydroxide	1310-58-3	20.00000	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)

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 JAN 07 2016

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 "CARNegie 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.

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.

**EQT PRODUCTION COMPANY
LEEMAN MAXWELL LEASE
2,164 ACRES±
WELL NO. WV 513155**

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

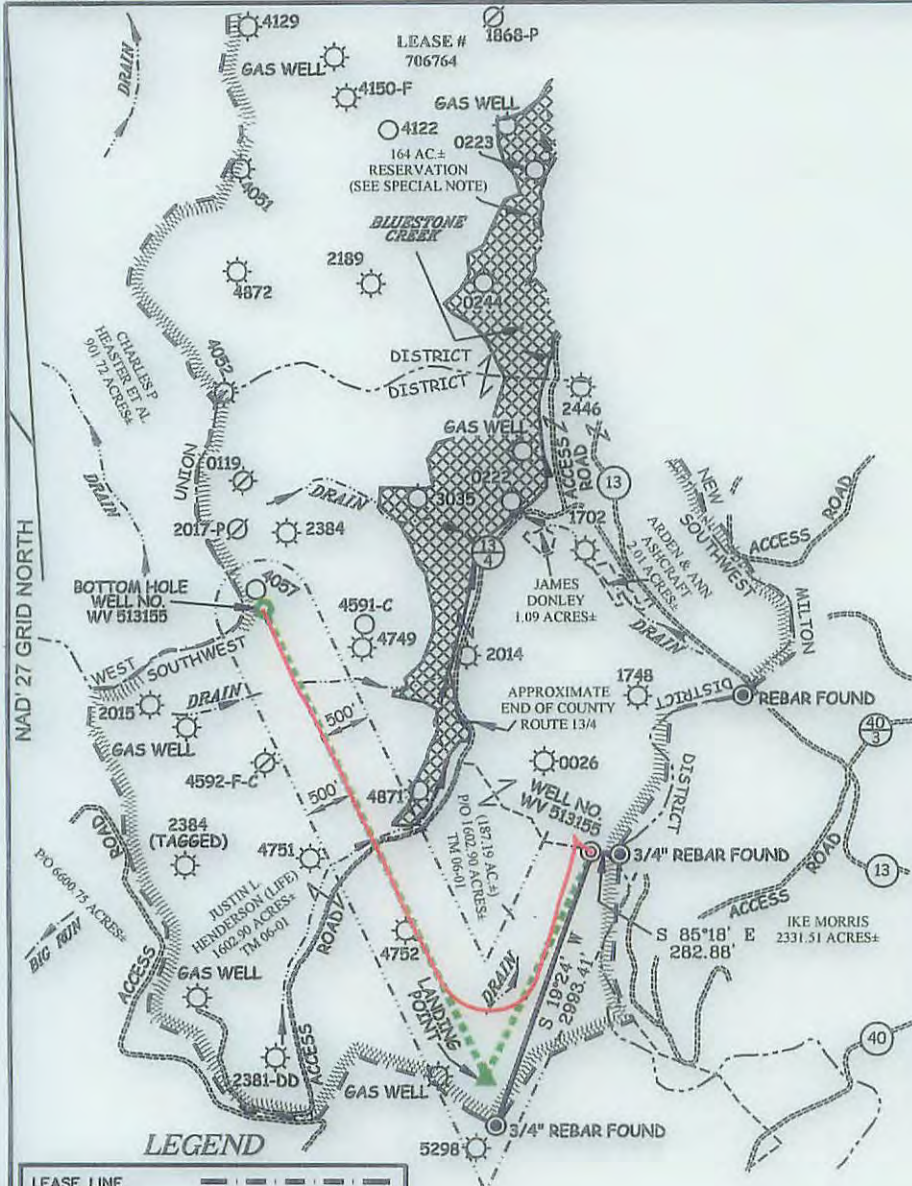
NAD'27 S.P.C.(FT)	N. 260,322.0	E. 1,642,326.6
NAD'27 GEO.	LAT-(N) 39.207839	LONG-(W) 80.762248
NAD'83 UTM (M)	N. 4,339,877.5	E. 520,542.0

LANDING POINT

NAD'27 S.P.C.(FT)	N. 257,992.4	E. 1,641,230.8
NAD'27 GEO.	LAT-(N) 39.201401	LONG-(W) 80.765999
NAD'83 UTM (M)	N. 4,339,162.2	E. 520,220.0

BOTTOM HOLE

NAD'27 S.P.C.(FT)	N. 262,832.1	E. 1,638,974.0
NAD'27 GEO.	LAT-(N) 39.214600	LONG-(W) 80.774204
NAD'83 UTM (M)	N. 4,340,625.1	E. 519,507.8



LEGEND

LEASE LINE	---
SURFACE LINE	---
PROPOSED LATERAL 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 513155**

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

NAD'27 S.P.C.(FT)	N. 260,322.0	E. 1,642,326.6
NAD'27 GEO.	LAT-(N) 39.207839	LONG-(W) 80.762248
NAD'83 UTM (M)	N. 4,339,877.5	E. 520,542.0

BOTTOM HOLE

NAD'27 S.P.C.(FT)	N. 262,824.9	E. 1,638,967.9
NAD'27 GEO.	LAT-(N) 39.214580	LONG-(W) 80.774225
NAD'83 UTM (M)	N. 4,340,622.9	E. 519,506.0

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-9634 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*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE JANUARY 06, 20 14
REVISED 3/17/14, 07/25/14 & 05/05/15
OPERATORS WELL NO. WV 513155
API WELL NO. 47-017-06504H
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 7889AD513155
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 LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1,274'(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± 02/05/2016

PROPOSED WORK: LEASE NO. 706764
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD 6,663'

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

COUNTY NAME PERMIT