

APPROVED

WR-35
Rev. 8/23/13

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NAME: [Signature]

DATE: 5/25/16

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



API 47-017-06714 County DODDRIDGE District SOUTHWEST
Quad OXFORD 7.5' Pad Name OXF153 Field/Pool Name _____
Farm name I.L. MORRIS Well Number 515969
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 4,337,884.3 Easting 515,755.8
Landing Point of Curve Northing 4,338,304.3 Easting 515,664.9
Bottom Hole Northing 4,339,140.0 Easting 514,329.6

Elevation (ft) 1141 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 04/24/2015 Date drilling commenced 05/05/2015 Date drilling ceased 10/26/2015
Date completion activities began 11/17/2015 Date completion activities ceased 11/24/2015
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 49,442 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1365,1407,1457 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 68 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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WV Department of Environmental Protection
AX 07/22/2016

API 47-017 - 06714 Farm name I.L. MORRIS Well number 515969

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"	603'	NEW	J-55 54.5LB/FT	302'	Y
Coal							
Intermediate 1	12.375"	9.625"	2988'	NEW	A-500 40LB/FT	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	12455'	NEW	P-110 20LB/FT	N?A	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	545	15.6	1.20	654	0	8
Coal							
Intermediate 1	CLASS A	1123	15.6	1.18	1325.14	0	8
Intermediate 2							
Intermediate 3							
Production	Class H / Class H	580 / 765	15.2 / 15.6	1.07 / 1.84	2028.2	3763	24
Tubing							

Drillers TD (ft) 12,458' 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) 5,053' 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, 8
 INTERMEDIATE- 7 CENTRALIZERS RAN AT LEAST EVERY 500' FEET
 PRODUCTION- Composite body spiral centralizers run every joint from bottom to 3,500'

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 - 06714 Farm name I.L. MORRIS Well number 515969

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
						RECEIVED Office of Oil and Gas		
						FEB 22 2016		

Please insert additional pages as applicable.

API 47- 017 - 06714 Farm name I.L. MORRIS Well number 515969

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>6,548.00</u> TVD	<u>7,057.00</u> 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	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		

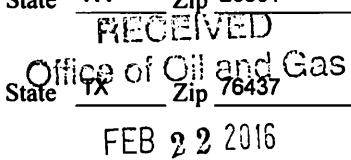
Please insert additional pages as applicable.

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

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

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

Stimulating Company FTS International
Address 301 E. 18th Street City Cisco State TX Zip 76437



Please insert additional pages as applicable.

Completed by Jim Helmick Telephone 412-395-5518
Signature [Signature] Title VP Completions Date 2/18/2016

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

API 47- 017 - 06714 Farm name I.L. MORRIS Well number 515969

Drilling Contractor Savanna Drilling (Rig 655)
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 _____
Address _____ City _____ State _____ Zip _____

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

515969 Final Formations API #47-17006714

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	1		445	
SAND/SHALE	1		71	
WASHINGTON COAL	71		72	
SAND/SHALE	72		1,689.00	
MAXTON	1,689.00		1,868.00	
BIG LIME	1,868.00		1,929.00	
KEENER	1,929.00		2,098.00	
WEIR	2,098.00		2,343.00	
GANTZ	2,343.00		2,439.00	
50F	2,439.00		2,627.00	
GORDON	2,627.00		2,864.00	
5TH	2,864.00		2,906.00	
BAYARD	2,906.00		3,219.00	
WARREN	3,219.00		3,294.00	
SPEECHLEY	3,294.00		3,827.00	
BALLTOWN A	3,827.00		3,969.00	
BALLTOWN B	3,969.00		4,164.00	
BRADFORD	4,164.00		4,746.00	
RILEY	4,746.00		4,829.00	
BENSON	4,829.00		5,071.00	5,063.60
ALEXANDER	5,071.00	5,063.60	5,776.00	5,684.70
RHINESTREET	5,776.00	5,684.70	6,447.00	6,222.30
SONYEA	6,447.00	6,222.30	6,627.00	6,350.90
MIDDLESEX	6,627.00	6,350.90	6,707.00	6,400.50
GENESEEE	6,707.00	6,400.50	6,902.00	6,498.20
GENESEEO	6,902.00	6,498.20	6,960.00	6,519.90
TULLY	6,960.00	6,519.90	7,027.00	6,540.60
HAMILTON	7,027.00	6,540.60	7,057.00	6,548.00
MARCELLUS	7,057.00	6,548.00		



EQT PRODUCTION

Doddridge County, WV

OXF 153

Well #515969 - Marcellus - Slot 515969

API #47-17006714

Main Wellbore

Design: 515969 As Drilled Surveys

Standard Survey Report

20 October, 2015



Where energy meets innovation.

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Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Well #515969 - Marcellus - Slot 515969
Company:	EQT PRODUCTION	TVD Reference:	KB 16 @ 1157.0usft
Project:	Doddridge County, WV	MD Reference:	KB 16 @ 1157.0usft
Site:	OXF 153	North Reference:	Grid
Well:	Well #515969 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515969 As Drilled Surveys		

Project Doddridge County, WV

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

Site OXF 153

Site Position:		Northing:	254,054.20 usft	Latitude:	39.19
From:	Map	Easting:	1,626,467.50 usft	Longitude:	-80.82
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.84 °

Well Well #515969 - Marcellus - Slot 515969

Well Position	+N/-S	0.0 usft	Northing:	254,043.50 usft	Latitude:	39° 11' 23.922 N
	+E/-W	0.0 usft	Easting:	1,626,511.20 usft	Longitude:	80° 49' 3.824 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,141.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/7/2015	-7.72	66.60	52,141

Design 515969 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	312.32	

Survey Program Date 10/20/2015

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,018.0	515969 Gyrodata gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	12,458.0	515969 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	-1,157.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.29	352.85	103.0	-1,054.0	0.3	0.0	0.2	0.28	0.28	0.00
203.0	0.35	135.57	203.0	-954.0	0.3	0.1	0.1	0.61	0.06	142.72
303.0	0.38	145.70	303.0	-854.0	-0.2	0.6	-0.5	0.07	0.03	10.13
403.0	0.22	148.52	403.0	-754.0	-0.6	0.8	-1.0	0.16	-0.16	2.82
503.0	0.10	145.49	503.0	-654.0	-0.9	1.0	-1.3	0.12	-0.12	3.03
603.0	0.04	229.54	603.0	-554.0	-1.0	1.0	-1.4	0.10	-0.06	84.05
703.0	0.04	152.23	703.0	-454.0	-1.0	1.0	-1.4	0.05	0.00	-77.31

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Phoenix Technology Services
Survey Report



Database:	EDM 5000 T Simile User DB	Local Co-ordinate Reference:	Well Well #515898 - Microilling - Str 515898
Company:	EQT PRODUCTION	TVD Reference:	KB 18 @ 1187.0usft
Project:	Codrridge County WV	MD Reference:	KB 18 @ 1187.0usft
Site:	DXF 153	North Reference:	Grid
Well:	Well #515898 - Microilling	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515898 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
803.0	0.06	192.29	803.0	-354.0	-1.1	1.0	-1.5	0.04	0.02	40.06
903.0	0.13	149.25	903.0	-254.0	-1.3	1.1	-1.6	0.10	0.07	-43.04
1,003.0	0.35	134.09	1,003.0	-154.0	-1.6	1.3	-2.0	0.23	0.22	-15.16
1,103.0	0.53	131.65	1,103.0	-54.0	-2.1	1.9	-2.8	0.18	0.18	-2.44
1,203.0	0.57	130.30	1,203.0	46.0	-2.7	2.6	-3.8	0.04	0.04	-1.35
1,303.0	0.69	135.51	1,303.0	146.0	-3.5	3.4	-4.9	0.13	0.12	5.21
1,403.0	0.96	138.10	1,403.0	246.0	-4.5	4.4	-6.3	0.27	0.27	2.59
1,503.0	1.22	135.05	1,503.0	346.0	-5.9	5.7	-8.2	0.27	0.26	-3.05
1,603.0	1.52	130.09	1,602.9	445.9	-7.5	7.5	-10.6	0.32	0.30	-4.96
1,703.0	1.53	130.82	1,702.9	545.9	-9.2	9.5	-13.2	0.02	0.01	0.73
1,803.0	1.05	111.09	1,802.9	645.9	-10.4	11.4	-15.4	0.65	-0.48	-19.73
1,903.0	5.78	14.51	1,902.7	745.7	-5.9	13.5	-13.9	5.99	4.73	-96.58
2,003.0	7.93	6.09	2,002.0	845.0	5.9	15.5	-7.5	2.37	2.15	-8.42
2,103.0	8.39	355.61	2,101.0	944.0	20.0	15.7	1.9	1.55	0.46	-10.48
2,203.0	8.07	356.42	2,199.9	1,042.9	34.3	14.7	12.2	0.34	-0.32	0.81
2,303.0	8.00	1.03	2,299.0	1,142.0	48.2	14.3	21.9	0.65	-0.07	4.61
2,403.0	7.88	1.74	2,398.0	1,241.0	62.0	14.7	30.9	0.15	-0.12	0.71
2,503.0	5.17	358.74	2,497.3	1,340.3	73.4	14.8	38.5	2.73	-2.71	-3.00
2,603.0	4.54	359.10	2,597.0	1,440.0	81.9	14.6	44.3	0.63	-0.63	0.36
2,703.0	4.39	359.16	2,696.7	1,539.7	89.6	14.5	49.6	0.15	-0.15	0.06
2,803.0	4.09	356.79	2,796.4	1,639.4	97.0	14.3	54.8	0.35	-0.30	-2.37
2,903.0	3.78	355.64	2,896.2	1,739.2	103.9	13.8	59.7	0.32	-0.31	-1.15
3,003.0	3.44	355.30	2,996.0	1,839.0	110.2	13.3	64.3	0.34	-0.34	-0.34
3,103.0	2.38	356.48	3,095.8	1,938.8	115.2	12.9	68.0	1.06	-1.06	1.18
3,203.0	1.40	358.97	3,195.8	2,038.8	118.5	12.8	70.3	0.98	-0.98	2.49
3,303.0	0.92	354.84	3,295.8	2,138.8	120.5	12.7	71.8	0.49	-0.48	-4.13
3,403.0	0.60	351.16	3,395.8	2,238.8	121.9	12.5	72.8	0.32	-0.32	-3.68
3,503.0	0.48	354.66	3,495.7	2,338.7	122.8	12.4	73.5	0.12	-0.12	3.50
3,603.0	0.38	348.26	3,595.7	2,438.7	123.5	12.3	74.1	0.11	-0.10	-6.40
3,703.0	0.38	349.09	3,695.7	2,538.7	124.2	12.2	74.6	0.01	0.00	0.83
3,803.0	0.26	325.51	3,795.7	2,638.7	124.7	12.0	75.1	0.18	-0.12	-23.58
3,903.0	0.31	305.99	3,895.7	2,738.7	125.0	11.6	75.6	0.11	0.05	-19.52
4,003.0	0.33	293.29	3,995.7	2,838.7	125.3	11.2	76.1	0.07	0.02	-12.70
4,103.0	0.43	277.81	4,095.7	2,938.7	125.5	10.5	76.7	0.14	0.10	-15.48
4,203.0	0.57	266.19	4,195.7	3,038.7	125.5	9.7	77.4	0.17	0.14	-11.62
4,303.0	0.71	259.58	4,295.7	3,138.7	125.3	8.5	78.1	0.16	0.14	-6.61
4,403.0	0.77	260.13	4,395.7	3,238.7	125.1	7.3	78.9	0.06	0.06	0.55
4,503.0	0.83	258.61	4,495.7	3,338.7	124.9	5.9	79.7	0.06	0.06	-1.52
4,603.0	0.90	259.87	4,595.7	3,438.7	124.6	4.4	80.6	0.07	0.07	1.26
4,703.0	0.99	259.69	4,695.7	3,538.7	124.3	2.8	81.6	0.09	0.09	-0.18
4,803.0	1.07	262.55	4,795.7	3,638.7	124.0	1.0	82.7	0.10	0.08	2.86
4,903.0	0.93	265.43	4,895.7	3,738.7	123.8	-0.7	83.9	0.15	-0.14	2.88

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Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single Use: OK	Local Co-ordinate Reference:	Well Well #515989 - Marcellus - Slot 515989
Company:	EQT PRODUCTION	TVD Reference:	KB 1B @ 1187.0usft
Project:	Oddridge County, WV	MD Reference:	KB 1B @ 1137.0usft
Site:	OXF 153	North Reference:	Grid
Well:	Well #515989 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515989 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,003.0	0.91	261.17	4,995.6	3,838.6	123.6	-2.3	85.0	0.07	-0.02	-4.26
Gyro Tie On=5018' MD										
5,018.0	0.96	265.53	5,010.6	3,853.6	123.6	-2.5	85.1	0.58	0.33	29.07
5,026.0	1.00	264.20	5,018.6	3,861.6	123.6	-2.7	85.2	0.58	0.50	-16.63
KOP=5057' MD@6050' TVD										
5,057.0	1.60	343.40	5,049.6	3,892.6	124.0	-3.1	85.8	5.55	1.94	255.48
5,089.0	5.00	3.00	5,081.6	3,924.6	125.8	-3.1	87.0	11.04	10.63	61.25
5,120.0	7.80	4.70	5,112.4	3,955.4	129.3	-2.9	89.2	9.05	9.03	5.48
5,152.0	10.80	6.70	5,144.0	3,987.0	134.4	-2.4	92.2	9.43	9.38	6.25
5,183.0	13.10	9.70	5,174.3	4,017.3	140.7	-1.4	95.8	7.68	7.42	9.68
5,215.0	15.00	11.80	5,205.3	4,048.3	148.4	0.0	99.9	6.15	5.94	6.56
5,246.0	17.10	11.10	5,235.1	4,078.1	156.8	1.7	104.3	6.80	6.77	-2.26
5,278.0	19.30	11.30	5,265.5	4,108.5	166.6	3.7	109.4	6.88	6.88	0.63
5,310.0	21.20	11.80	5,295.5	4,138.5	177.4	5.9	115.1	5.96	5.94	1.56
5,341.0	23.00	12.20	5,324.2	4,167.2	188.8	8.3	121.0	5.83	5.81	1.29
5,373.0	25.10	11.50	5,353.5	4,196.5	201.6	11.0	127.6	6.62	6.56	-2.19
5,404.0	27.60	10.90	5,381.2	4,224.2	215.1	13.7	134.7	8.11	8.06	-1.94
5,436.0	30.10	11.10	5,409.3	4,252.3	230.3	16.6	142.8	7.82	7.81	0.63
5,467.0	32.50	12.10	5,435.8	4,278.8	246.0	19.8	151.0	7.92	7.74	3.23
5,499.0	34.60	12.80	5,462.4	4,305.4	263.3	23.7	159.8	6.67	6.56	2.19
5,562.0	36.00	13.80	5,513.8	4,356.8	298.7	32.0	177.4	2.40	2.22	1.59
5,625.0	36.10	13.90	5,564.8	4,407.8	334.7	40.9	195.1	0.18	0.16	0.16
5,688.0	37.40	13.80	5,615.3	4,458.3	371.3	49.9	213.1	2.07	2.06	-0.16
5,751.0	38.10	14.30	5,665.1	4,508.1	408.7	59.3	231.3	1.21	1.11	0.79
5,814.0	38.10	13.30	5,714.6	4,557.6	446.5	68.6	249.9	0.98	0.00	-1.59
5,877.0	36.80	15.10	5,764.7	4,607.7	483.6	78.0	268.0	2.70	-2.06	2.86
5,940.0	36.20	15.60	5,815.3	4,658.3	519.8	87.9	285.0	1.06	-0.95	0.79
6,003.0	36.00	14.80	5,866.2	4,709.2	555.6	97.6	301.9	0.81	-0.32	-1.27
6,066.0	35.60	14.90	5,917.3	4,760.3	591.2	107.1	318.9	0.64	-0.63	0.16
6,129.0	36.80	13.10	5,968.1	4,811.1	627.3	116.1	336.5	2.54	1.90	-2.86
6,192.0	36.80	12.10	6,018.6	4,861.6	664.1	124.3	355.3	0.95	0.00	-1.59
6,255.0	36.50	12.70	6,069.1	4,912.1	700.9	132.4	374.0	0.74	-0.48	0.95
6,286.0	36.20	13.20	6,094.1	4,937.1	718.8	136.5	383.0	1.36	-0.97	1.61
6,318.0	36.00	10.30	6,120.0	4,963.0	737.2	140.3	392.6	5.38	-0.63	-9.06
6,349.0	36.50	4.10	6,145.0	4,988.0	755.4	142.6	403.2	11.93	1.61	-20.00
6,381.0	37.00	358.70	6,170.6	5,013.6	774.5	143.1	415.7	10.21	1.56	-16.88
6,412.0	38.30	354.90	6,195.2	5,038.2	793.4	142.0	429.2	8.58	4.19	-12.26
6,444.0	39.80	353.10	6,220.0	5,063.0	813.4	139.9	444.3	5.88	4.69	-5.63
6,475.0	41.30	351.10	6,243.6	5,086.6	833.4	137.1	459.7	6.40	4.84	-6.45
6,507.0	42.60	347.90	6,267.4	5,110.4	854.4	133.2	476.8	7.82	4.06	-10.00
6,538.0	44.00	344.40	6,289.9	5,132.9	875.1	128.1	494.5	8.96	4.52	-11.29
6,570.0	46.00	342.50	6,312.6	5,155.6	896.7	121.7	513.8	7.53	6.25	-5.94
6,601.0	47.80	341.20	6,333.7	5,176.7	918.3	114.6	533.5	6.56	5.81	-4.19

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Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Well #515989 - Marcellus - Slot 515989
Company:	EQT PRODUCTION	TVD Reference:	KB 1E @ 1157.0usft
Project:	Doddridge County, WV	MD Reference:	KB 1E @ 1157.0usft
Site:	OXP 163	North Reference:	Grid
Well:	Well #515989 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515989 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,632.0	49.70	338.90	6,354.2	5,197.2	940.2	106.7	554.1	8.29	6.13	-7.42
6,664.0	51.40	336.60	6,374.5	5,217.5	963.0	97.3	576.5	7.68	5.31	-7.19
6,695.0	53.30	334.00	6,393.5	5,236.5	985.3	87.0	599.1	9.04	6.13	-8.39
6,727.0	54.90	331.50	6,412.2	5,255.2	1,008.4	75.2	623.3	8.06	5.00	-7.81
6,758.0	57.20	329.40	6,429.5	5,272.5	1,030.7	62.5	647.8	9.31	7.42	-6.77
6,790.0	59.30	327.70	6,446.4	5,289.4	1,053.9	48.3	673.9	7.97	6.56	-5.31
6,821.0	61.00	326.10	6,461.8	5,304.8	1,076.4	33.6	699.9	7.08	5.48	-5.16
6,853.0	62.70	324.40	6,476.9	5,319.9	1,099.6	17.5	727.4	7.08	5.31	-5.31
6,884.0	64.50	322.80	6,490.7	5,333.7	1,122.0	1.0	754.7	7.42	5.81	-5.16
6,916.0	66.90	321.00	6,503.9	5,346.9	1,144.9	-17.0	783.4	9.08	7.50	-5.63
-Tully										
6,929.4	67.94	320.48	6,509.0	5,352.0	1,154.5	-24.8	795.7	8.53	7.73	-3.91
6,947.0	69.30	319.80	6,515.4	5,358.4	1,167.1	-35.3	811.9	8.53	7.75	-3.84
6,979.0	70.90	318.50	6,526.3	5,369.3	1,189.8	-55.0	841.8	6.29	5.00	-4.06
-Hamilton										
6,987.4	71.49	318.06	6,529.0	5,372.0	1,195.7	-60.2	849.6	8.63	7.08	-5.21
7,010.0	73.10	316.90	6,535.9	5,378.9	1,211.6	-74.8	871.1	8.63	7.10	-5.14
-Marcellus										
7,013.9	73.41	316.64	6,537.0	5,380.0	1,214.3	-77.4	874.8	10.29	8.10	-6.64
7,042.0	75.70	314.80	6,544.5	5,387.5	1,233.7	-96.3	901.9	10.29	8.13	-6.55
7,073.0	77.90	313.40	6,551.6	5,394.6	1,254.7	-118.0	932.0	8.35	7.10	-4.52
7,105.0	79.00	312.10	6,558.0	5,401.0	1,276.0	-141.0	963.4	5.26	3.44	-4.06
7,136.0	81.10	310.80	6,563.3	5,406.3	1,296.2	-163.9	993.9	7.93	6.77	-4.19
7,168.0	83.50	309.60	6,567.6	5,410.6	1,316.7	-188.1	1,025.6	8.37	7.50	-3.75
7,199.0	83.80	307.90	6,571.0	5,414.0	1,336.0	-212.1	1,056.3	5.54	0.97	-5.48
7,231.0	84.90	306.10	6,574.2	5,417.2	1,355.1	-237.6	1,088.1	6.57	3.44	-5.63
7,262.0	86.30	304.10	6,576.6	5,419.6	1,372.9	-262.8	1,118.7	7.86	4.52	-6.45
515989 Plat LP										
7,277.5	86.87	303.66	6,577.5	5,420.5	1,381.5	-275.7	1,134.0	4.63	3.65	-2.86
515989 Plat LP p8										
7,278.4	86.90	303.63	6,577.6	5,420.6	1,382.1	-276.5	1,134.9	4.63	3.65	-2.86
7,325.0	88.60	302.30	6,579.4	5,422.4	1,407.4	-315.5	1,180.8	4.63	3.65	-2.86
LP=7388' MD/5581' TVD										
7,388.0	88.70	301.70	6,580.9	5,423.9	1,440.7	-368.9	1,242.8	0.97	0.16	-0.95
7,451.0	88.40	303.40	6,582.5	5,425.5	1,474.6	-422.0	1,304.9	2.74	-0.48	2.70
7,514.0	87.80	302.90	6,584.5	5,427.5	1,509.1	-474.7	1,367.0	1.24	-0.95	-0.79
7,577.0	88.80	303.20	6,586.4	5,429.4	1,543.4	-527.5	1,429.2	1.66	1.59	0.48
7,640.0	88.80	303.20	6,587.7	5,430.7	1,577.9	-580.2	1,491.4	0.00	0.00	0.00
7,703.0	91.40	303.60	6,587.6	5,430.6	1,612.6	-632.8	1,553.6	4.18	4.13	0.63
7,765.0	92.20	307.20	6,585.7	5,428.7	1,648.5	-683.3	1,615.1	5.95	1.29	5.81
7,828.0	89.50	305.70	6,584.7	5,427.7	1,685.9	-734.0	1,677.8	4.90	-4.29	-2.38
7,891.0	87.40	303.80	6,586.4	5,429.4	1,721.8	-785.7	1,740.2	4.49	-5.33	-3.02
7,954.0	87.10	303.50	6,589.5	5,432.5	1,756.6	-838.1	1,802.4	0.67	-0.48	-0.48
8,017.0	87.50	302.50	6,592.4	5,435.4	1,790.9	-890.9	1,864.5	1.71	0.63	-1.59

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Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single Pass Dr	Local Co-ordinate Reference:	Well Well #515969 - Marcellus - Stoc 515969
Company:	EQT PRODUCTION	TVD Reference:	KB 15 05 1157 00411
Project:	Bradridge County, WV	MD Reference:	KB 15 05 1157 00411
Site:	LXF 163	North Reference:	Gen
Well:	Well #515969 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515969 A4 Drilled Surveys		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,081.0	89.20	301.70	6,594.3	5,437.3	1,824.9	-945.0	1,927.4	2.94	2.66	-1.25
8,144.0	89.70	301.40	6,594.9	5,437.9	1,857.9	-998.7	1,989.3	0.93	0.79	-0.48
Onondaga										
8,162.0	89.58	301.28	6,595.0	5,438.0	1,867.3	-1,014.1	2,007.0	0.91	-0.65	-0.65
8,206.0	89.30	301.00	6,595.4	5,438.4	1,890.0	-1,051.8	2,050.2	0.91	-0.65	-0.65
8,269.0	89.20	300.90	6,596.3	5,439.3	1,922.4	-1,105.8	2,111.9	0.22	-0.16	-0.16
8,332.0	88.30	300.90	6,597.6	5,440.6	1,954.7	-1,159.8	2,173.7	1.43	-1.43	0.00
8,391.0	85.50	299.50	6,600.8	5,443.8	1,984.4	-1,210.7	2,231.3	5.30	-4.75	-2.37
8,454.0	86.80	299.20	6,605.0	5,448.0	2,015.2	-1,265.5	2,292.5	2.12	2.06	-0.48
8,517.0	87.40	301.50	6,608.2	5,451.2	2,047.0	-1,319.8	2,354.1	3.77	0.95	3.65
8,580.0	86.40	297.80	6,611.6	5,454.6	2,078.1	-1,374.5	2,415.4	6.08	-1.59	-5.87
8,642.0	86.60	298.10	6,615.4	5,458.4	2,107.1	-1,429.1	2,475.4	0.58	0.32	0.48
8,706.0	88.60	301.80	6,618.1	5,461.1	2,139.0	-1,484.5	2,537.8	6.57	3.13	5.78
8,768.0	89.50	303.70	6,619.1	5,462.1	2,172.5	-1,536.7	2,598.9	3.39	1.45	3.06
8,831.0	88.60	305.10	6,620.2	5,463.2	2,208.1	-1,588.6	2,661.3	2.64	-1.43	2.22
8,895.0	88.50	305.10	6,621.8	5,464.8	2,244.9	-1,641.0	2,724.8	0.16	-0.16	0.00
8,957.0	87.60	304.30	6,623.9	5,466.9	2,280.2	-1,691.9	2,786.2	1.94	-1.45	-1.29
9,021.0	87.50	304.10	6,626.6	5,469.6	2,316.1	-1,744.8	2,849.5	0.35	-0.16	-0.31
9,084.0	89.00	305.70	6,628.6	5,471.6	2,352.2	-1,796.5	2,912.0	3.48	2.38	2.54
Deepest Point=3147' MD=6629' TVD										
9,147.0	89.80	304.40	6,629.2	5,472.2	2,388.3	-1,848.0	2,974.4	2.42	1.27	-2.06
9,211.0	92.40	305.00	6,628.0	5,471.0	2,424.8	-1,900.6	3,037.9	4.17	4.06	0.94
9,274.0	95.10	306.80	6,623.9	5,466.9	2,461.6	-1,951.6	3,100.3	5.15	4.29	2.86
9,337.0	95.30	305.90	6,618.2	5,461.2	2,498.8	-2,002.1	3,162.7	1.46	0.32	-1.43
9,400.0	95.20	305.10	6,612.4	5,455.4	2,535.2	-2,053.2	3,225.0	1.27	-0.16	-1.27
9,463.0	94.30	305.80	6,607.2	5,450.2	2,571.6	-2,104.3	3,287.3	1.81	-1.43	1.11
9,526.0	93.80	304.30	6,602.7	5,445.7	2,607.7	-2,155.7	3,349.7	2.50	-0.79	-2.38
9,589.0	92.60	303.50	6,599.2	5,442.2	2,642.8	-2,208.0	3,411.9	2.29	-1.90	-1.27
9,653.0	92.20	303.30	6,596.5	5,439.5	2,678.0	-2,261.3	3,475.1	0.70	-0.63	-0.31
9,716.0	92.00	303.00	6,594.2	5,437.2	2,712.4	-2,314.0	3,537.2	0.57	-0.32	-0.48
9,779.0	94.70	303.60	6,590.6	5,433.6	2,747.0	-2,366.6	3,599.3	4.39	4.29	0.95
9,842.0	96.00	305.40	6,584.7	5,427.7	2,782.5	-2,418.3	3,661.5	3.51	2.06	2.86
9,906.0	95.60	304.20	6,578.2	5,421.2	2,818.8	-2,470.6	3,724.6	1.97	-0.63	-1.88
9,969.0	94.80	304.40	6,572.5	5,415.5	2,854.2	-2,522.4	3,786.7	1.31	-1.27	0.32
10,032.0	93.10	303.20	6,568.2	5,411.2	2,889.1	-2,574.6	3,848.9	3.30	-2.70	-1.90
10,095.0	93.10	302.60	6,564.8	5,407.8	2,923.3	-2,627.5	3,910.9	0.95	0.00	-0.95
10,158.0	93.70	300.80	6,561.0	5,404.0	2,956.4	-2,681.0	3,972.7	3.01	0.95	-2.86
10,221.0	93.90	300.60	6,556.8	5,399.8	2,988.5	-2,735.0	4,034.3	0.45	0.32	-0.32
10,284.0	95.50	300.40	6,551.7	5,394.7	3,020.3	-2,789.1	4,095.8	2.56	2.54	-0.32
10,347.0	94.80	300.20	6,546.0	5,389.0	3,052.0	-2,843.3	4,157.1	1.16	-1.11	-0.32
10,410.0	93.60	300.40	6,541.4	5,384.4	3,083.7	-2,897.5	4,218.6	1.93	-1.90	0.32
10,473.0	93.90	301.30	6,537.3	5,380.3	3,115.9	-2,951.5	4,280.2	1.50	0.48	1.43
10,536.0	91.60	299.20	6,534.3	5,377.3	3,147.6	-3,005.9	4,341.7	4.94	-3.65	-3.33



Phoenix Technology Services

Survey Report



Database:	EDM 6000 1 Single User Db	Local Co-ordinate Reference:	Well Well #515989 - Marcellus - 3pr 515989
Company:	EQT PRODUCTION	TVD Reference:	KB 15 @ 1157' Dush
Project:	Doddrige County, WV	MD Reference:	KB 10 @ 1167' Dush
Site:	OXF 163	North Reference:	Got
Well:	Well #515989 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515989 As Drilled Surveys		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,599.0	92.30	301.00	6,532.1	5,375.1	3,179.2	-3,060.3	4,403.3	3.06	1.11	2.86
10,662.0	93.40	303.50	6,529.0	5,372.0	3,212.8	-3,113.5	4,465.2	4.33	1.75	3.97
10,725.0	93.70	303.10	6,525.1	5,368.1	3,247.3	-3,166.1	4,527.3	0.79	0.48	-0.63
10,788.0	93.20	303.90	6,521.3	5,364.3	3,282.0	-3,218.5	4,589.4	1.50	-0.79	1.27
10,851.0	92.00	305.30	6,518.4	5,361.4	3,317.7	-3,270.3	4,651.8	2.93	-1.90	2.22
10,914.0	89.90	305.20	6,517.4	5,360.4	3,354.1	-3,321.8	4,714.3	3.34	-3.33	-0.16
10,977.0	90.00	305.00	6,517.5	5,360.5	3,390.3	-3,373.3	4,776.8	0.35	0.16	-0.32
11,040.0	91.20	306.10	6,516.8	5,359.8	3,426.9	-3,424.6	4,839.4	2.58	1.90	1.75
11,103.0	91.40	307.40	6,515.4	5,358.4	3,464.6	-3,475.0	4,902.1	2.09	0.32	2.06
11,167.0	90.90	307.30	6,514.1	5,357.1	3,503.4	-3,525.9	4,965.8	0.80	-0.78	-0.16
11,229.0	91.20	306.90	6,512.9	5,355.9	3,540.8	-3,575.3	5,027.5	0.81	0.48	-0.65
11,293.0	91.60	305.20	6,511.4	5,354.4	3,578.5	-3,627.1	5,091.1	2.73	0.63	-2.66
11,356.0	91.50	302.10	6,509.7	5,352.7	3,613.4	-3,679.5	5,153.4	4.92	-0.16	-4.92
11,420.0	92.00	301.30	6,507.7	5,350.7	3,647.0	-3,733.9	5,216.3	1.47	0.78	-1.25
11,482.0	92.10	301.10	6,505.5	5,348.5	3,679.1	-3,786.9	5,277.0	0.36	0.16	-0.32
11,545.0	90.80	302.10	6,503.9	5,346.9	3,712.1	-3,840.5	5,338.9	2.60	-2.06	1.59
11,608.0	90.10	302.30	6,503.4	5,346.4	3,745.6	-3,893.9	5,400.9	1.16	-1.11	0.32
11,671.0	90.20	302.10	6,503.2	5,346.2	3,779.2	-3,947.2	5,463.0	0.35	0.16	-0.32
11,735.0	90.80	302.50	6,502.7	5,345.7	3,813.4	-4,001.3	5,526.0	1.13	0.94	0.63
11,798.0	90.60	302.40	6,501.9	5,344.9	3,847.2	-4,054.4	5,588.0	0.35	-0.32	-0.16
11,861.0	91.10	302.10	6,501.0	5,344.0	3,880.8	-4,107.7	5,650.1	0.93	0.79	-0.48
11,924.0	91.30	302.20	6,499.7	5,342.7	3,914.3	-4,161.0	5,712.1	0.35	0.32	0.16
11,987.0	91.30	301.80	6,498.2	5,341.2	3,947.7	-4,214.4	5,774.0	0.63	0.00	-0.63
12,051.0	91.40	302.20	6,496.7	5,339.7	3,981.6	-4,268.7	5,837.0	0.64	0.16	0.63
12,114.0	91.40	302.40	6,495.2	5,338.2	4,015.3	-4,321.9	5,899.0	0.32	0.00	0.32
12,176.0	91.40	302.70	6,493.7	5,336.7	4,048.6	-4,374.2	5,960.1	0.48	0.00	0.48
12,239.0	91.20	300.50	6,492.2	5,335.2	4,081.6	-4,427.8	6,022.0	3.51	-0.32	-3.49
12,303.0	89.20	300.20	6,492.0	5,335.0	4,114.0	-4,483.0	6,084.6	3.16	-3.13	-0.47
12,366.0	89.30	300.30	6,492.8	5,335.8	4,145.7	-4,537.5	6,146.2	0.22	0.16	0.16
Final Survey=12398' MD/6493' TVD										
12,396.0	89.30	300.20	6,493.2	5,336.2	4,160.8	-4,563.4	6,175.5	0.33	0.00	-0.33
515989 Plat TD - 515989 Plat TD p8										
12,457.4	89.30	300.20	6,494.0	5,337.0	4,191.7	-4,616.5	6,235.6	0.00	0.00	0.00
PROJ to Bit=12458' MD/6494' TVD										
12,458.0	89.30	300.20	6,494.0	5,337.0	4,192.0	-4,617.0	6,236.1	0.00	0.00	0.00



Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Well #515969 - Marcellus - Slot 515969
Company:	EQT PRODUCTION	TVD Reference:	KB 16' @ 1157.0usft
Project:	Doddridge County, WV	MD Reference:	KB 16' @ 1157.0usft
Site:	OXF 153	North Reference:	Grid
Well:	Well #515969 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515969 As Drilled Surveys		

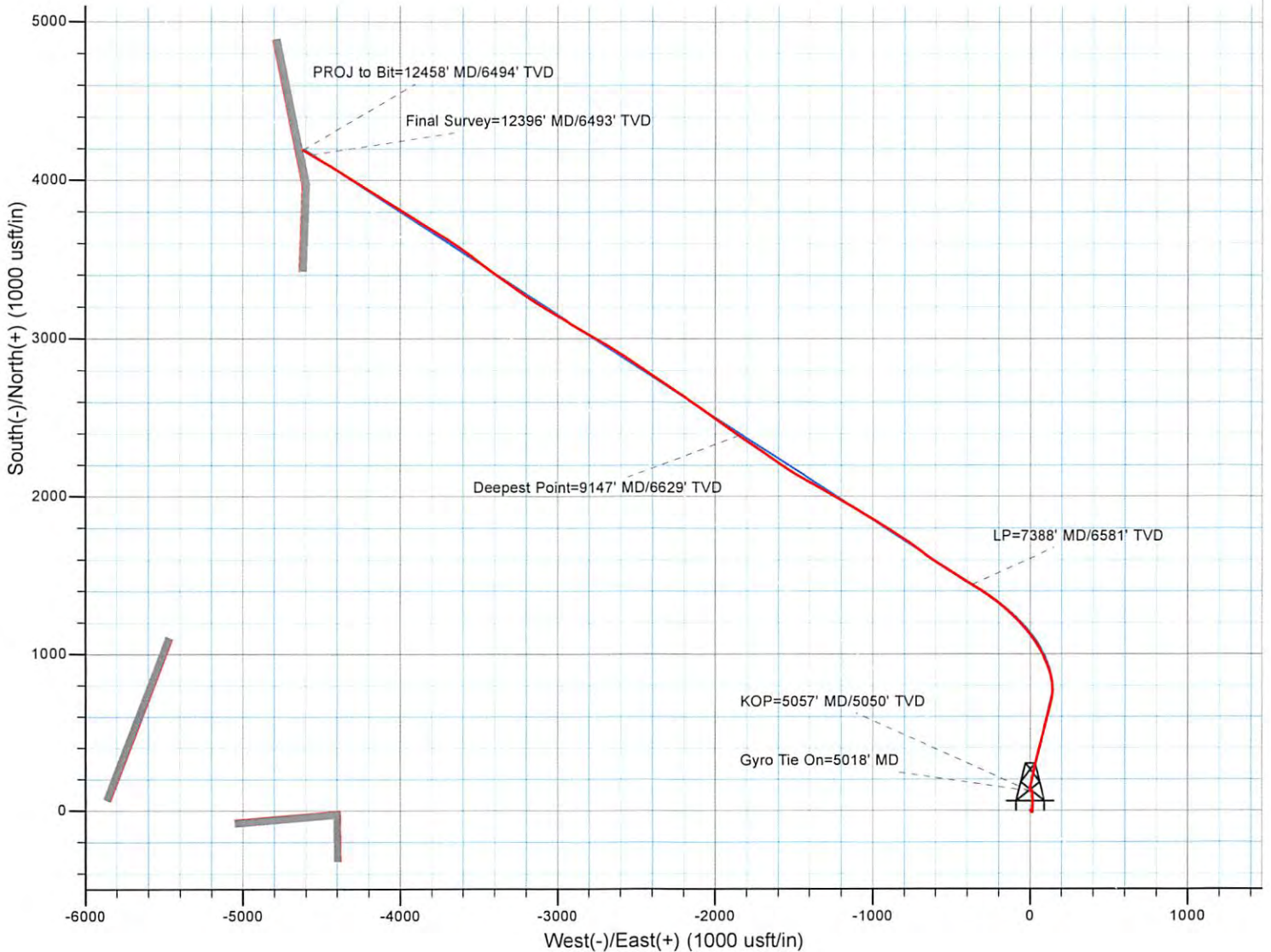
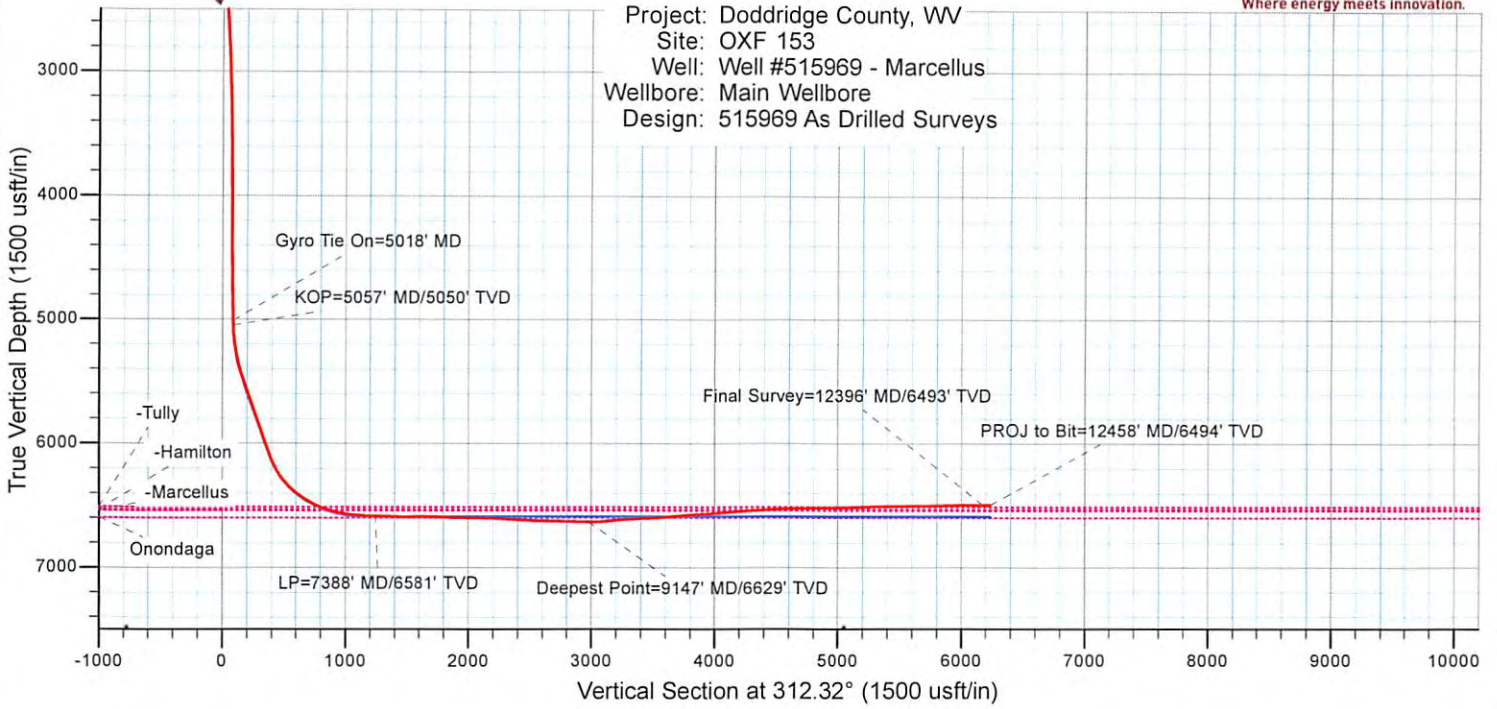
Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,929.4	6,509.0	-Tully				
6,987.4	6,529.0	-Hamilton				
7,013.9	6,537.0	-Marcellus				
8,162.0	6,595.0	Onondaga				

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
5,018.0	5,010.6	123.6	-2.5	Gyro Tie On=5018' MD	
5,057.0	5,049.6	124.0	-3.1	KOP=5057' MD/5050' TVD	
7,388.0	6,580.9	1,440.7	-368.9	LP=7388' MD/6581' TVD	
9,147.0	6,629.2	2,388.3	-1,848.0	Deepest Point=9147' MD/6629' TVD	
12,396.0	6,493.2	4,160.8	-4,563.4	Final Survey=12396' MD/6493' TVD	
12,458.0	6,494.0	4,192.0	-4,617.0	PROJ to Bit=12458' MD/6494' TVD	

Checked By: _____ Approved By: _____ Date: _____



Project: Doddridge County, WV
Site: OXF 153
Well: Well #515969 - Marcellus
Wellbore: Main Wellbore
Design: 515969 As Drilled Surveys



515969-47-017-06714-0000-0000 - Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	10/27/2015	12,454	12,455	10	MARCELLUS
1	11/17/2015	12,309	12,399	32	MARCELLUS
2	11/18/2015	12,159	12,281	40	MARCELLUS
3	11/18/2015	12,009	12,129	40	MARCELLUS
4	11/18/2015	11,859	11,979	40	MARCELLUS
5	11/18/2015	11,709	11,829	40	MARCELLUS
6	11/18/2015	11,559	11,679	40	MARCELLUS
7	11/18/2015	11,409	11,529	40	MARCELLUS
8	11/19/2015	11,259	11,379	40	MARCELLUS
9	11/19/2015	11,108	11,229	40	MARCELLUS
10	11/19/2015	10,959	11,079	40	MARCELLUS
11	11/19/2015	10,809	10,929	40	MARCELLUS
12	11/20/2015	10,659	10,779	40	MARCELLUS
13	11/20/2015	10,509	10,627	40	MARCELLUS
14	11/20/2015	10,359	10,479	40	MARCELLUS
15	11/20/2015	10,209	10,329	40	MARCELLUS
16	11/20/2015	10,057	10,179	40	MARCELLUS
17	11/20/2015	9,940	10,029	32	MARCELLUS
18	11/21/2015	9,759	9,879	40	MARCELLUS
19	11/21/2015	9,609	9,729	40	MARCELLUS
20	11/21/2015	9,459	9,575	40	MARCELLUS
21	11/21/2015	9,309	9,429	40	MARCELLUS
22	11/21/2015	9,159	9,279	32	MARCELLUS
23	11/21/2015	9,007	9,129	40	MARCELLUS
24	11/22/2015	8,859	8,979	32	MARCELLUS
25	11/22/2015	8,709	8,831	40	MARCELLUS
26	11/22/2015	8,559	8,679	40	MARCELLUS
27	11/22/2015	8,409	8,530	40	MARCELLUS
28	11/22/2015	8,259	8,379	40	MARCELLUS
29:01	11/22/2015	8,109	8,229	0	MARCELLUS
30	11/23/2015	7,961	8,079	40	MARCELLUS
31	11/23/2015	7,809	7,929	40	MARCELLUS
32	11/23/2015	7,659	7,779	40	MARCELLUS
33	11/23/2015	7,509	7,629	40	MARCELLUS
34	11/23/2015	7,359	7,479	40	MARCELLUS
35	11/24/2015	7,209	7,326	40	MARCELLUS
36	11/24/2015	7,059	7,179	40	MARCELLUS

515969- 47-017-06714-0000 - 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	11/17/2015	14.2	5,669	9,244	3,705	0	1,000	0
1	11/17/2015	99.3	8,138	8,467	2,548	250,215.00	7,160	0
2	11/18/2015	99.2	8,440	8,990	2,547	250,663.00	7,070	0
3	11/18/2015	100.4	8,042	8,505	2,783	250,417.00	6,885	0
4	11/18/2015	99.3	8,135	8,747	2,773	250,714.00	6,995	0
5	11/18/2015	98.7	8,451	9,046	2,864	250,073.00	6,508	0
6	11/18/2015	99.7	8,251	8,611	3,120	251,135.00	6,248	0
7	11/19/2015	98.8	8,417	8,711	3,052	250,752.00	6,107	0
8	11/19/2015	99.2	8,379	8,708	3,125	250,700.00	5,960	0
9	11/19/2015	96.7	8,453	8,760	2,952	250,230.00	6,695	0
10	11/19/2015	100.5	8,433	8,739	2,936	250,345.00	6,618	0
11	11/19/2015	100.1	8,066	8,822	3,261	250,309.00	5,999	0
12	11/20/2015	100.3	7,860	8,252	3,115	251,095.00	5,948	0
13	11/20/2015	99.9	7,745	8,394	3,091	250,736.00	6,308	0
14	11/20/2015	100.6	7,893	8,581	3,146	250,045.00	6,569	0
15	11/20/2015	100.5	8,097	8,612	3,077	249,632.00	6,525	0
16	11/20/2015	99.9	7,882	8,560	3,323	250,691.00	5,966	0
17	11/20/2015	100.1	8,111	8,688	3,352	250,270.00	5,969	0
18	11/21/2015	100.6	7,907	8,650	3,228	250,574.00	5,945	0
19	11/21/2015	100.1	7,468	8,121	3,170	250,375.00	6,649	0
20	11/21/2015	100.5	7,389	7,908	3,260	250,112.00	6,519	0
21	11/21/2015	100.5	7,821	8,746	3,213	250,134.00	6,443	0
22	11/21/2015	100	7,800	9,141	2,375	250,679.00	5,814	0
23	11/21/2015	100.9	7,671	8,539	3,871	250,217.00	5,860	0
24	11/22/2015	99.3	8,497	9,098	4,901	250,953.00	5,836	0
25	11/22/2015	100.6	7,694	8,762	3,783	251,036.00	5,859	0
26	11/22/2015	100.7	7,522	8,208	3,640	251,341.00	6,344	0
27	11/22/2015	100.3	7,710	8,958	3,519	251,756.00	6,407	0
28	11/22/2015	98.5	7,782	9,150	3,776	250,626.00	6,494	0
29	11/22/2015	99.6	8,023	9,845	4,271	250,386.00	5,606	0
30	11/22/2015	13.3	5,956	6,488	5,373	0.00	1,892	0
31	11/23/2015	100.4	7,855	8,369	5,673	251,163.00	6,500	0
32	11/23/2015	97	8,389	9,159	5,938	250,927.00	6,544	0
33	11/23/2015	86.1	8,252	9,336	4,310	249,891.00	7,552	0
34	11/23/2015	98.1	7,441	8,212	4,170	250,358.00	5,876	0
35	11/23/2015	99.6	7,473	8,326	3,826	249,791.00	5,975	0
35	11/24/2015	99.9	7,411	8,957	2,992	250,199.00	5,863	0
36	11/24/2015	99.5	7,068	8,658	3,225	249,390.00	5,748	0

Environmental
 FEB 22 2016
 ON

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/17/2015
Job End Date:	11/24/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06714-00-00
Operator Name:	EQT Production
Well Name and Number:	515969
Longitude:	-80.81772900
Latitude:	39.18997800
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,548
Total Base Water Volume (gal):	9,670,752
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	89.59519	None
Sand (Proppant)	FTS International	Proppant	Silica Substrate	14808-60-7	100.00000	10.01163	None
MC MX 437-5	Multi-Chem Group LLC	Calcium nitrate solution	Calcium nitrate	10124-37-5	60.00000	0.05742	None
Hydrochloric Acid (15%)	FTS International	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.03271	None
FRW-900	FTS International	Friction reducer	Hydrotreated light distillate	64742-47-8	30.00000	0.01575	None
			Alkyl alcohol	Proprietary	10.00000	0.00525	None
			Oxyalkylated alcohol A	Proprietary	5.00000	0.00262	None
CS-500-SI	FTS International	Scale inhibitor	Ethylene glycol	107-21-1	10.00000	0.00248	None
FE-100L	FTS International	Iron control	Citric acid	77-92-9	55.00000	0.00073	None
CI-150	FTS International	Acid corrosion inhibitor	Organic amine resin salt	Proprietary	30.00000	0.00012	None

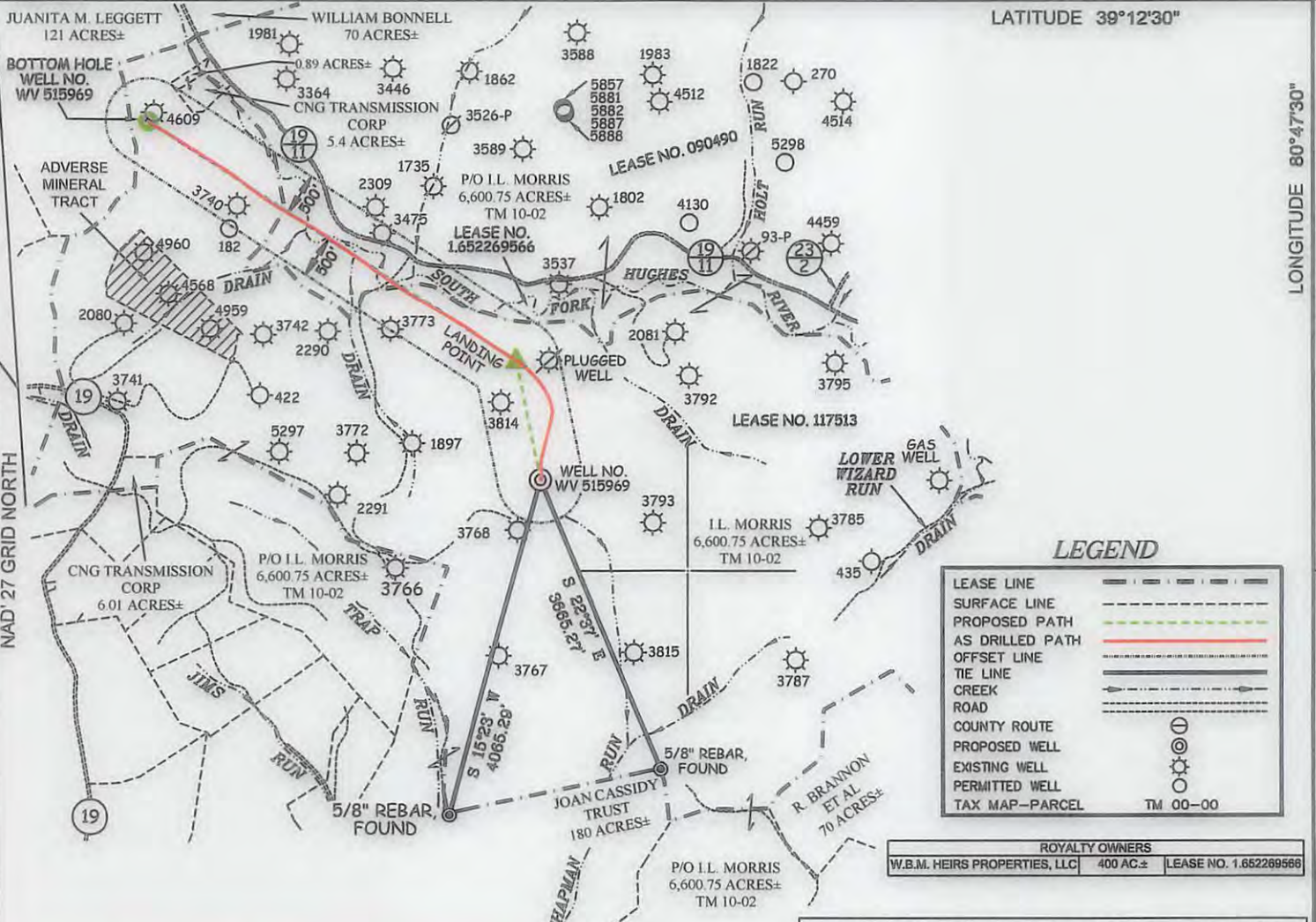
			Ethylene glycol	107-21-1	30.00000	0.00012	None
			Isopropanol	67-63-0	30.00000	0.00012	None
			Aromatic aldehyde	Proprietary	10.00000	0.00004	None
			Dimethylformamide	68-12-2	10.00000	0.00004	None
			Quaternary ammonium compound	Proprietary	10.00000	0.00004	None
NE-100	FTS International	Non-emulsifier					
			Methanol	67-56-1	15.00000	0.00005	None
			2-Butoxyethanol	111-76-2	10.00000	0.00004	None
			2-Propanol	67-63-0	10.00000	0.00004	None
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	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)



LEGEND

LEASE LINE	---
SURFACE LINE	- - - -
PROPOSED PATH	---
AS DRILLED PATH	---
OFFSET LINE	---
TIE LINE	---
CREEK	---
ROAD	---
COUNTY ROUTE	○
PROPOSED WELL	⊙
EXISTING WELL	⊙
PERMITTED WELL	⊙
TAX MAP-PARCEL	TM 00-00

ROYALTY OWNERS		
W.B.M. HEIRS PROPERTIES, LLC	400 AC±	LEASE NO. 1.652269566

AS DRILLED COORDINATES FOR WELL NO. WV 515969

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

NAD'27 S.P.C.(FT)	N. 254,043.5	E. 1,626,511.2
NAD'27 GEO.	LAT-(N) 39.189979	LONG-(W) 80.817729
NAD'83 UTM (M)	N. 4,337,884.3	E. 515,755.8
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 258,235.5	E. 1,621,894.2
NAD'27 GEO.	LAT-(N) 39.201300	LONG-(W) 80.834236
NAD'83 UTM (M)	N. 4,339,137.9	E. 514,327.9

EQT PRODUCTION COMPANY EAE/MAXWELL LEASE 1,891 ACRES± WELL NO. WV 515969 (OXF153 H6)

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

NAD'27 S.P.C.(FT)	N. 254,043.5	E. 1,626,511.2
NAD'27 GEO.	LAT-(N) 39.189979	LONG-(W) 80.817729
NAD'83 UTM (M)	N. 4,337,884.3	E. 515,755.8
LANDING POINT		
NAD'27 S.P.C.(FT)	N. 255,426.8	E. 1,626,235.9
NAD'27 GEO.	LAT-(N) 39.193765	LONG-(W) 80.818772
NAD'83 UTM (M)	N. 4,338,304.3	E. 515,664.9
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 258,242.6	E. 1,621,900.0
NAD'27 GEO.	LAT-(N) 39.201319	LONG-(W) 80.834216
NAD'83 UTM (M)	N. 4,339,140.0	E. 514,329.6

NOTES ON SURVEY

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

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.

SLS
SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.

(304) 462-5634 WWW.SLSURVEYS.COM

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

P.S. 2288 *Earl N. Thompson*



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

DATE DECEMBER 1, 20 14

REVISED 12/29/14 & 11/02/15

OPERATORS WELL NO. WV 515969

API WELL NO. 47 - 017 - 06714H
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 7310AD515969
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	1139'(GROUND)1141'(PROPOSED)	WATERSHED	CHAPMAN RUN OF SOUTH FORK HUGHES RIVER	DISTRICT	SOUTHWEST	COUNTY	DODDRIDGE	QUADRANGLE	OXFORD 7.5'
SURFACE OWNER	I.L. MORRIS		ACREAGE	6,600.75±		ROYALTY OWNER	W.B.M. HEIRS PROPERTIES, LLC		ACREAGE	1,891±
PROPOSED WORK:	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 6,532'				

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

07/22/2016