

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

DATE: 11/10/2016  
API #: 47-103-02719

Farm name: John W. & Florence E. Kilcoyne Operator Well No.: 513827

LOCATION: Elevation: 859 Quadrangle: Big Run

District: Grant County: Wetzel  
Latitude: 8,350 Feet South of 39 Deg. 35 Min. 00 Sec.  
Longitude 5,220 Feet West of 80 Deg. 32 Min. 30 Sec.

Company: EQT Production Company

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
EQT Plaza, Suite 1700				
625 Liberty Avenue, Pittsburgh, PA 15222	26	80	80	116
Agent: Cecil Ray	20	265	265	590
Inspector: David Scranage	13 3/8	825	825	904
Date Permit Issued: 3/13/2012	9 5/8	3,093	3,093	1,944
Date Well Work Commenced: 9/8/2012	5 1/2	11,395	11,395	1303
Date Well Work Completed: 10/18/2012				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft): 7,058				
Total Measured Depth (ft): 11,395				
Fresh Water Depth (ft.): 137', 211'				
Salt Water Depth (ft.): No show reported				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 411', 594', 612'				
Void(s) encountered (N/Y) Depth(s) No				

**APPROVED**  
NAME: *Scott M. Howard*  
DATE: 12-15-16

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 7,012  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

Second producing formation No second formation. Pay zone depth (ft) \_\_\_\_\_  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

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I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

*[Signature]*  
Signature

*10 Nov 2016*  
Date

Were core samples taken? Yes \_\_\_\_\_ No

Were cuttings caught during drilling? Yes  No \_\_\_\_\_

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list MWD Gamma, Gyro, and CBL

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Plug Back Details Including Plug Type and Depth(s): N/A

Formations Encountered: \_\_\_\_\_ Top Depth \_\_\_\_\_ / \_\_\_\_\_ Bottom Depth  
Surface:

Mapletown Coal / 411 / 417 / 6 -- Pittsburgh Coal / 597 / 604 / 7 --

Coal / 615 / 621 / 6 -- Maxton / 1,641 / 1,696 / 55 --

Big Lime / 1,767 / 1,867 / 100 -- Big Injun / 1,899 / 2,145 / 246 --

Weir / 2,145 / 2,197 / 52 -- -Gantz / 2,356 / 2,402 / 46 --

Fifty foot / 2,465 / 2,504 / 39 -- Top Devonian / 2,535 --

-Thirty foot / 2,548 / 2,603 / 55 -- -Gordon / 2,593 / 2,641 / 48 --

Forth Sand / 2,670 / 2,694 / 24 -- -Bayard / 2,794 / 2,843 / 49 --

-Warren / 3,310 / 3,466 / 156 -- B-5 / 3,358 / 3,463 / 104 --

-Speechley / 3,463 / 3,874 / 411 -- -Balltown A / 3,874 / 4,340 / 467 --

Riley / 4,340 / 4,986 / 646 -- -Benson / 4,986 / 5,326 / 340 --

Alexander / 5,326 / 6,554 / 1,228 -- -Sonyea / 6,554 / 6,724 / 170 --

-Middlesex / 6,724 / 6,776 / 52 -- -Genesee / 6,776 / 6,860 / 84 --

-Geneseo / 6,860 / 6,893 / 33 -- -Tully / 6,893 / 6,923 / 30 --

-Hamilton / 6,923 / 7,012 / 89 -- -Marcellus / 7,012 / 7,058 / 46 --

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**513827- 47-103-02719-0000 - Perforations**

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	3/4/2013	11,404	11,395	10	MARCELLUS
1	3/10/2013	11,297	11,112	38	MARCELLUS
2	3/11/2013	10,810	11,052	40	MARCELLUS
3	3/11/2013	10,510	10,752	40	MARCELLUS
4	3/11/2013	10,210	10,452	40	MARCELLUS

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**513827-47-103-02719-0000 - 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	3/9/2013					0	423	0
1	3/10/2013	94.1	8,462	8,764	4,399	402,552.00	11,935	0
2	3/11/2013	99.8	8,348	8,627	4,487	399,596.00	11,150	0
3	3/11/2013	94.5	8,371	8,638	4,497	399,183.90	10,710	0

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date	3/9/2013
Job End Date	3/12/2013
State	West Virginia
County	Wetzel
API Number	47-103-02719-00-00
Operator Name	EQT Production
Well Name and Number	513827
Latitude	39.56038700
Longitude	-80.56016800
Datum	NAD83
Federal Well	NO
Indian Well	NO
True Vertical Depth	7,058
Total Base Water Volume (gal)	1,437,154
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	Halliburton	Carrier/Base Fluid	Water	7732-18-5	100.00000	90.58186	None
Sand (Proppant)	Halliburton	Proppant		Listed Below			

Hydrochloric Acid (15%)	Halliburton	Acidizing																			
							Listed Below														
FR-66	Halliburton	Friction Reducer																			
							Listed Below														
Other Chemical (s)	Listed Above	See Trade Name (s) List																			
							Listed Below														
LP-65	Halliburton	Scale Inhibitor																			
							Listed Below														
LGC-36 UC	Halliburton	Liquid Gel Concentrate																			
							Listed Below														
BE-9	Halliburton	Biocide																			
							Listed Below														
SP Breaker	Halliburton	Breaker																			
							Listed Below														
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.																					
			Silica Substrate				14808-60-7			100.00000				9 07350	None						
			Hydrochloric Acid				7647-01-0			15.00000				0 03541	None						
			Hydrotreated light petroleum distillate				64742-47-8			30.00000				0 02756	None						
			Ammonium chloride				12125-02-9			5.00000				0 00459	None						

			Fatty nitrogen derived amides	Proprietary	5.00000	0.00459	None
			Ethoxylated alcohol	Proprietary	5.00000	0.00459	None
			Naphtha, hydrotreated heavy	64742-48-9	60.00000	0.00332	
			Naphtha, hydrotreated heavy	64742-48-9	60.00000	0.00332	None
			Guar gum	9000-30-0	60.00000	0.00332	None
			Guar gum	9000-30-0	60.00000	0.00332	
			Sodium persulfate	7775-27-1	100.00000	0.00164	
			Sodium persulfate	7775-27-1	100.00000	0.00164	None
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00095	None
			Ammonium chloride	12125-02-9	10.00000	0.00000	None
			Ammonium chloride	12125-02-9	10.00000	0.00000	

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water  
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%  
\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)



**EQT Production Company**  
**WV 513827**  
**47-103-02719**

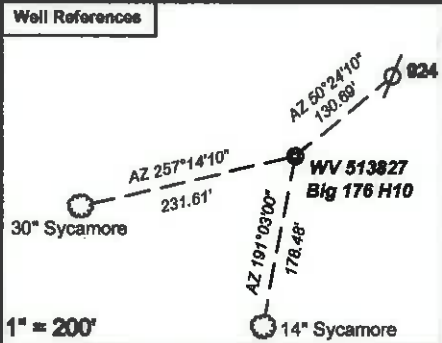
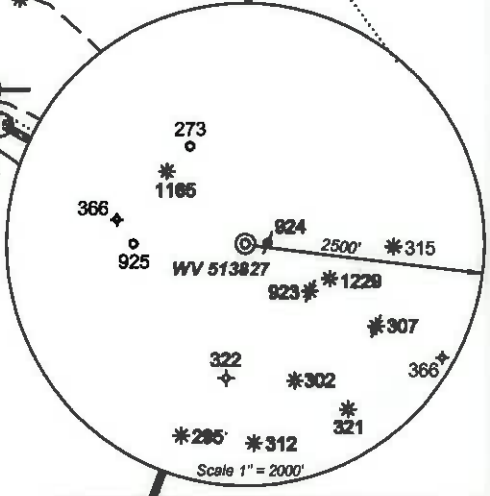
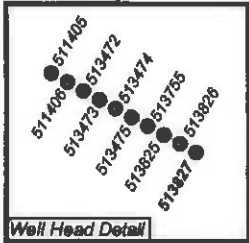
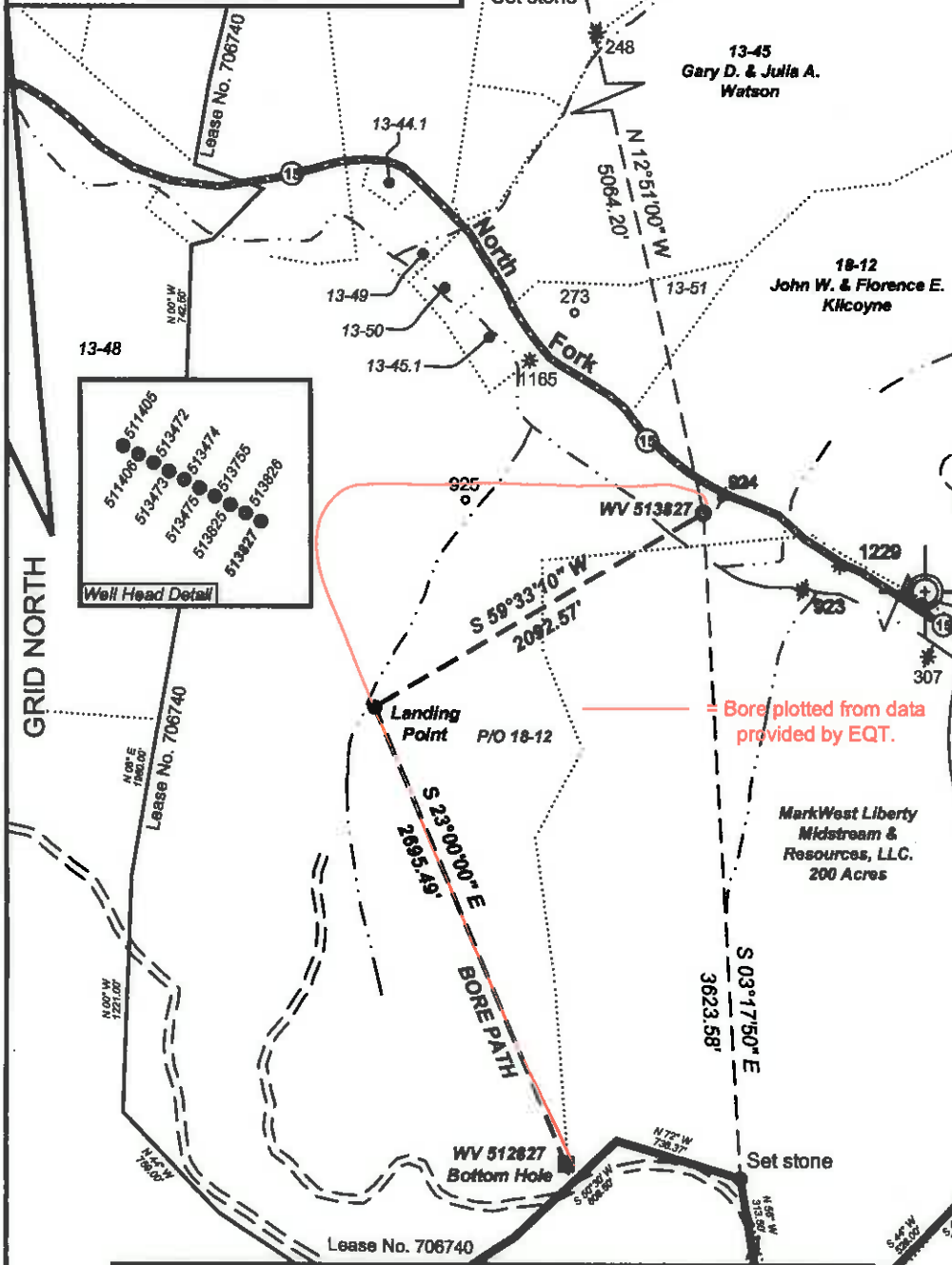
- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Lease Boundary

LATITUDE 39 - 35 - 00

**Notes:**  
 WV 513827 coordinates are:  
 N: 387,979 Lat: 39.560470  
 E: 1,701,101 Long: 80.559980  
 UTM N: 4,379,068 E: 537,800  
 WV 513827 Landing Point coordinates are:  
 N: 386,919 Lat: 39.557500  
 E: 1,699,297 Long: 80.566333  
 UTM N: 4,379,650 E: 537,241  
 WV 513827 Bottom Hole coordinates are:  
 N: 384,437 Lat: 39.550723  
 E: 1,700,351 Long: 80.562494  
 UTM N: 4,377,985 E: 537,589

West Virginia Coordinate System of 1927 (North Zone) based upon Differential GPS Measurements.  
 Plat orientation, corner and well ties are based upon the grid north meridian.  
 Well location references are based upon the grid north meridian.  
 UTM coordinates are NAD83, Zone 17, Meters.

LONGITUDE 80 - 32 - 30

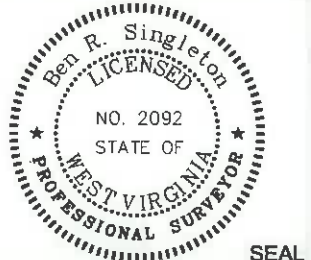


(●) Denotes Location of Well on United States Topographic Maps



*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 Department of Environmental Protection.*

*Ben R. Singleton*  
 P.S. 2092



FILE NO: 145-34-G-10  
 DRAWING NO: Big 176 H9  
 SCALE: 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: February 26 20 13  
 OPERATOR'S WELL NO. 513827  
 API WELL NO  
 47 - 103 - 02719  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: 657' WATERSHED North Fork of Fishing Creek QUADRANGLE: Big Run  
 DISTRICT: Grant COUNTY: Wetzel  
 SURFACE OWNER: John W. and Florence E. Kilcoyne ACREAGE: 604.56  
 ROYALTY OWNER: EQT Production Company, Inc. LEASE NO: 706740 ACREAGE: 1003.75  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: TVD=7100' MD=12,000'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
 ADDRESS: 1710 Pennsylvania Avenue ADDRESS: 1710 Pennsylvania Avenue  
 Charleston, WV 25302 Charleston, WV 25302