

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

DATE: 10/10/2013  
API #: 47-103-02824

Farm name: Richard Dallison et al Operator Well No.: 513537

LOCATION: Elevation: 1,452' Quadrangle: Big Run

District: Grant County: Wetzel, WV  
Latitude: 5,131 Feet South of 39 Deg. 32 Min. 30 Sec.  
Longitude 11,573 Feet West of 80 Deg. 32 Min. 30 Sec.

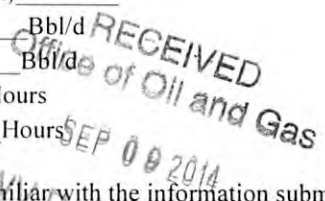
Company: EQT Production Company

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
EQT Plaza, Suite 1700				
625 Liberty Avenue, Pittsburgh, PA 15222	20	40	40	44
Agent: Cecil Ray	13 3/8	949	949	968
Inspector: Bill Hatfield	9 5/8	2,772	2,772	1,107
Date Permit Issued: 10/26/2012	5 1/2	12,737	12,737	1,916
Date Well Work Commenced: 2/25/13				
Date Well Work Completed: 8/18/13				
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): 7,710'				
Total Measured Depth (ft): 12,737'				
Fresh Water Depth (ft.): 552', 783'				
Salt Water Depth (ft.): 2,260'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 737', 807', 922', 1,012', 1,244'				
Void(s) encountered (N/Y) Depth(s) No				

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

Producing formation Marcellus Pay zone depth (ft) 7,634  
Gas: Initial open flow 1,070 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 7,302 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 84 Hours  
Static rock Pressure 2,823 psig (surface pressure) after 85.5 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



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

9/8/2014  
Date

01/23/2015

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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, & CBL logs

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:

See Attachment

Amended Report with Flow Back Data

Plug Back Details Including Plug Type and Depth(s): Pumped solid cement plug from \_\_\_\_\_ to \_\_\_\_\_

(P/u fiber glass tubing & drill pipe to 1,348'. 588 sxs, 0.97 yld)

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

Sand/Shale / 0 / 737 / 737 --

COAL / 737 / 738 / 1 -- SAND / SHALE / 738 / 807 / 69 --

COAL / 807 / 817 / 10 -- SAND / SHALE / 817 / 922 / 105 --

COAL / 922 / 927 / 5 -- SAND / SHALE / 927 / 1,012 / 85 --

COAL / 1,012 / 1,022 / 10 -- SAND / SHALE / 1,022 / 1,244 / 222 --

COAL / 1,244 / 1,246 / 2 -- SAND / SHALE / 1,246 / 2,481 / 1,235 --

BIG LIME / 2,481 / 3,963 / 1,482 -- WARREN / 3,963 / 4,114 / 151 --

SPEECHLEY / 4,114 / 5,003 / 889 -- RILEY / 5,003 / 5,638 / 635 --

BENSON / 5,638 / 5,965 / 327 -- ALEXANDER / 5,965 / 7,166 / 1,218 --

RHINESTREET / 7,166 / 7,206 / 40 -- Sonyea / 7,206 / 7,372 / 166 --

Middlesex / 7,372 / 7,415 / 43 -- Genesee / 7,415 / 7,505 / 90 --

Geneseo / 7,505 / 7,531 / 26 -- Tully / 7,531 / 7,561 / 30 --

Hamilton / 7,561 / 7,634 / 73 -- Marcellus / 7,634 / 7,710 / 76 --

**513537 - Perforations**

<b>Zone/Stage</b>	<b>Date</b>	<b>Top Plug Depth (ftKB)</b>	<b>Bottom Plug Depth (ftKB)</b>	<b>Top Perf Depth (ftKB)</b>	<b>Bottom Perf Depth (ftKB)</b>	<b>Shots/ft</b>
Toe Pop	3/19/14 21:15	12,575.00	NA	12,710.00	12,712.00	NA
1	3/19/14 23:00	12,575.00	NA	12,589.00	12,681.00	4
2	3/20/14 6:28	12,425.00	12,575.00	12,439.00	12,561.00	4
3	3/20/14 11:11	12,275.00	12,425.00	12,289.00	12,411.00	4
4	3/20/14 15:36	12,125.00	12,275.00	12,139.00	12,261.00	4
5	3/20/14 20:02	11,975.00	12,125.00	11,989.00	12,111.00	4
6	3/21/14 0:24	11,825.00	11,975.00	11,839.00	11,961.00	4
7	3/21/14 5:33	11,675.00	11,825.00	11,689.00	11,811.00	4
8	3/21/14 9:50	11,525.00	11,675.00	11,539.00	11,661.00	4
9	3/21/14 14:52	11,375.00	11,525.00	11,389.00	11,511.00	4
10	3/21/14 19:11	11,225.00	11,375.00	11,239.00	11,361.00	4
11	3/21/14 22:52	11,075.00	11,225.00	11,089.00	11,211.00	4
12	3/22/14 3:40	10,925.00	11,075.00	10,939.00	11,061.00	4
13	3/22/14 9:27	10,775.00	10,925.00	10,789.00	10,911.00	4
14	3/22/14 13:36	10,625.00	10,775.00	10,639.00	10,761.00	4
15	3/22/14 18:02	10,475.00	10,625.00	10,489.00	10,611.00	4
16	3/22/14 21:18	10,325.00	10,475.00	10,339.00	10,461.00	4
17	3/23/14 1:33	10,175.00	10,325.00	10,189.00	10,311.00	4
18	3/23/14 6:43	10,025.00	10,175.00	10,039.00	10,161.00	4
19	3/23/14 10:41	9,875.00	10,025.00	9,889.00	10,011.00	4
20	3/23/14 14:35	9,725.00	9,875.00	9,739.00	9,861.00	4
21	3/23/14 18:27	9,575.00	9,725.00	9,589.00	9,711.00	4
22	3/23/14 22:00	9,425.00	9,575.00	9,439.00	9,561.00	4
23	3/24/14 1:58	9,275.00	9,425.00	9,289.00	9,411.00	4
24	3/24/14 6:29	9,125.00	9,275.00	9,139.00	9,261.00	4
25	3/24/14 14:00	8,975.00	9,125.00	8,989.00	9,111.00	4
26	3/24/14 16:33	8,825.00	8,975.00	8,839.00	8,961.00	4
27	3/24/14 21:58	8,675.00	8,825.00	8,689.00	8,811.00	4
28	3/25/14 2:07	8,525.00	8,675.00	8,539.00	8,661.00	4
29	3/25/14 6:39	8,375.00	8,525.00	8,389.00	8,511.00	4
30	3/25/14 12:01	8,225.00	8,375.00	8,239.00	8,361.00	4
31	3/25/14 15:49	8,075.00	8,225.00	8,089.00	8,211.00	4
32	3/25/14 19:52	NA	8,075.00	7,939.00	8,061.00	4

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513537 - Stimulated Stages

Zone/Stage	P Break (psi)	Avg Treat Pressure (psi)	Avg rate (bbl/min)	ISIP (psi)	Frac Gradient (psi/ft)	15 Min. SIP (psi)	Fluid Volume (bbl)	Start Date	End Date	Proppant (lb)
Toe Pop	NA	8,252.00	12.4	NA	NA	NA	594	3/19/2014 20:17	3/19/2014 22:47	NA
1	5,980.00	8,558.00	93.7	5,265.00	1.12	4,165.00	5,265	3/20/2014 3:18	3/20/2014 4:31	204,600
2	6,616.00	8,704.00	96.3	5,437.00	1.14	4,286.00	4,974	3/20/2014 7:57	3/20/2014 9:07	201,200
3	6,565.00	8,584.00	94.9	5,319.00	1.12	4,206.00	5,429	3/20/2014 12:35	3/20/2014 13:47	196,800
4	6,598.00	8,566.00	96.5	5,333.00	1.12	4,306.00	5,377	3/20/2014 17:09	3/20/2014 18:20	202,600
5	6,717.00	8,567.00	98.5	5,520.00	1.15	4,464.00	4,754	3/20/2014 22:26	3/20/2014 23:34	202,000
6	6,608.00	8,519.00	99.8	5,320.00	1.12	4,320.00	4,663	3/21/2014 2:50	3/21/2014 3:56	202,200
7	6,325.00	8,508.00	99.5	5,169.00	1.1	4,326.00	5,169	3/21/2014 6:56	3/21/2014 8:04	200,300
8	6,394.00	8,627.00	99.7	5,490.00	1.15	4,437.00	5,166	3/21/2014 12:53	3/21/2014 12:53	193,600
9	6,225.00	8,694.00	94.3	5,309.00	1.12	4,268.00	5,182	3/21/2014 16:09	3/21/2014 17:19	201,600
10	6,100.00	8,373.00	99.4	5,335.00	1.13	4,434.00	4,741	3/21/2014 20:45	3/21/2014 21:51	200,000
11	6,867.00	8,318.00	99.4	5,489.00	1.15	4,465.00	4,736	3/22/2014 1:47	3/22/2014 2:52	199,900
12	6,676.00	8,449.00	100.1	5,231.00	1.11	4,501.00	4,888	3/22/2014 6:35	3/22/2014 7:41	202,900
13	6,530.00	8,730.00	95.7	5,324.00	1.12	4,295.00	4,840	3/22/2014 10:48	3/22/2014 11:55	200,900
14	6,330.00	8,675.00	99.1	5,461.00	1.14	4,392.00	5,126	3/22/2014 15:10	3/22/2014 16:17	202,500
15	6,115.00	8,425.00	99.4	5,609.00	1.16	4,660.00	4,998	3/22/2014 19:26	3/22/2014 20:33	200,900
16	6,003.00	8,381.00	100.0	6,003.00	1.21	4,651.00	4,616	3/22/2014 23:44	3/23/2014 0:47	202,400
17	5,901.00	8,348.00	100.6	5,394.00	1.13	4,270.00	4,663	3/23/2014 4:07	3/23/2014 5:10	200,400
18	6,071.00	8,696.00	99.7	5,648.00	1.17	4,574.00	4,904	3/23/2014 7:46	3/23/2014 8:52	201,300
19	6,240.00	8,464.00	99.2	5,365.00	1.13	4,243.00	5,365	3/23/2014 11:56	3/23/2014 13:01	199,700
20	6,047.00	8,351.00	100.6	5,594.00	1.16	4,246.00	5,082	3/23/2014 15:54	3/23/2014 16:58	202,300
21	6,687.00	8,298.00	100.2	5,351.00	1.13	4,244.00	5,031	3/23/2014 20:03	3/23/2014 21:08	200,000
22	6,067.00	8,167.00	100.6	4,929.00	1.07	4,231.00	4,723	3/24/2014 0:06	3/24/2014 1:16	197,400
23	6,050.00	8,066.00	100.6	4,682.00	1.04	4,033.00	4,762	3/24/2014 3:47	3/24/2014 4:55	198,200
24	6,045.00	8,461.00	100.1	5,394.00	1.13	4,358.00	4,805	3/24/2014 10:25	3/24/2014 11:28	201,700
25	5,938.00	8,322.00	100.8	5,409.00	1.14	4,377.00	5,127	3/24/2014 14:37	3/24/2014 15:42	204,200
26	6,262.00	8,500.00	99.8	5,281.00	1.12	4,264.00	5,092	3/24/2014 19:50	3/24/2014 20:56	201,700
27	6,403.00	8,195.00	100.7	4,760.00	1.05	4,109.00	4,668	3/25/2014 0:16	3/25/2014 1:21	202,500
28	6,169.00	8,105.00	100.2	5,457.00	1.14	4,304.00	4,673	3/25/2014 4:02	3/25/2014 5:06	203,100
29	6,146.00	8,646.00	99.4	5,564.00	1.16	4,344.00	4,858	3/25/2014 10:14	3/25/2014 11:19	201,900
30	6,458.00	8,405.00	99.5	5,302.00	1.12	4,182.00	4,793	3/25/2014 13:56	3/25/2014 15:00	200,300
31	6,166.00	8,121.00	100.6	5,368.00	1.13	4,134.00	4,666	3/25/2014 18:06	3/25/2014 19:07	204,000
32	6,464.00	8,156.00	97.7	3,966.00	0.95	3,354.00	4,629	3/25/2014 22:20	3/25/2014 23:29	199,700

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/19/2014
Job End Date:	3/25/2014
State:	West Virginia
County:	Wetzel
API Number:	47-103-02824-00-00
Operator Name:	EQT Production
Well Name and Number:	BIG192 - 513537
Longitude:	-80.58269400
Latitude:	39.52757800
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,710
Total Base Water Volume (gal):	6,809,420
Total Base Non Water Volume:	323,641



## 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	Water	7732-18-5	100.00000	89.36784	
Sand	Halliburton	Proppant	Crystalline Silica	14808-60-7	100.00000	10.13474	
MX-5	Halliburton	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.05603	
Hydrochloric Acid 15%	Halliburton	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.04452	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02039	
MX-8	Halliburton	Biocide	Bacteria Culture	N/A	100.00000	0.00949	
LP-65	Halliburton	Scale Inhibitor	Ammonium Chloride	12125-02-9	10.00000	0.00248	
WG-36	Halliburton	Gelling Agent	Guar Gum	9000-30-0	100.00000	0.00239	
BA-40L	Halliburton	Buffer	Potassium carbonate	584-08-7	60.00000	0.00125	
HAI-OS	Halliburton	Protects casing					

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			Methanol	67-56-1	60.00000	0.00027
			Propargyl Alcohol	107-19-7	10.00000	0.00005
SP Breaker	Halliburton	Oxidizing Breaker				
			Sodium Persulfate	7775-27-1	100.00000	0.00006

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)