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

API 47 - 170 - 6186 County Doddridge District New Milton
Quad Smithburg 7.5 Pad Name Smithburgh 28 Field/Pool Name _____
Farm name SUE ANN SPIKER Well Number 514654
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 85431.9 Easting 492845.2
Landing Point of Curve Northing 85356.510 Easting 493368.212
Bottom Hole Northing 84052.790 Easting 493971.913

Elevation (ft) 1254 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 See Attached
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Water base Mud 12.4 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 3/13/2013 Date drilling commenced 5/10/2013 Date drilling ceased 11/19/2013
Date completion activities began _____ Date completion activities ceased _____
Verbal plugging (Y/N) N Date permission granted N/A Granted by MAY 21 2014 N/A

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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug.
Freshwater depth(s) ft 106', 576' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,000' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 48', 281', 557', 628', 1,207', 1,376' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____
06/13/2014

API 47-170 - 6186 Farm name SUE ANN SPIKER Well number 514654

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'	72'	New	94#		Y
Surface	17-1/2"	13-3/8"	675'	New	54.5#	236, 276	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	5,344	New	40#	147',3019',3208'	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	12,055'	New	20#		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	69	15.6	1.18	81.42	0	8
Surface	Class A	550	15.6	1.18	649	0	8
Coal							
Intermediate 1	Class A	330/1460	14.2/15.6	1.48/1.18	2211.2	0	8
Intermediate 2							
Intermediate 3							
Production	Class A/Class H	340/660	14.20/15.2	1.31/1.94	1726	5078	8
Tubing							

Drillers TD (ft) 12,055' Loggers TD (ft) N/A
 Deepest formation penetrated Geneseo Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,532'

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
 Surface-bow spring centralizer on the shoe, and 197'
 Intermediate-bow spring centralizers ran at the shoe, 4637, 4348, 3760, 3337,2892,2385,1879,1372,908,360
 Production- plastic centralizer on every joint from the shoe up to 5,344'

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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 Chemical

API 47- 170 - 6186

Farm name SUE ANN SPIKER

Well number 514654

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					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)
								See Attached

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Geneseo</u>	<u>6,650</u>	<u>TVD</u>	<u>7,076</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

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

OPEN FLOW Gas Oil NGL. Water GAS MEASURED BY
 NA mcfpd NA bpd NA bpd NA bpd 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 Pioneer Drilling Services, Ltd Appalachian Division
Address 1083 N. 88 Rd City Rices Landing State PA Zip 15357

Logging Company Hoss Co. Services LLC
Address 614 Trotters Lane City Charleston State WV Zip 25312

Cementing Company Halliburton Energy Services
Address 121 Champion Way City Canonsburg State PA Zip 15317

Stimulating Company Halliburton Energy Services
Address 121 Champion Way City Canonsburg State PA Zip 15317

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Please insert additional pages as applicable.

Completed by James E. Helmick Jr. Telephone 412-395-5518
Signature _____ Title Vice President - Completions Operations Date 5-20-2014

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

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Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
SAND / SHALE	0	0	55	55
FRESH WATER ZONE	1	1	570	570
COAL	55	55	60	60
SAND / SHALE	60	60	281	281
COAL	281	281	285	285
SAND / SHALE	285	285	577	577
COAL	577	577	650	650
COAL	628	628	633	633
SAND / SHALE	633	633	1,207.00	1,207.00
COAL	1,207.00	1,207.00	1,210.00	1,210.00
SAND / SHALE	1,210.00	1,210.00	1,376.00	1,376.00
COAL	1,376.00	1,376.00	1,381.00	1,381.00
SAND / SHALE	1,381.00	1,381.00	1,753.00	1,753.00
MAXTON	1,753.00	1,753.00	1,954.00	1,954.00
BIG LIME	1,954.00	1,954.00	2,048.00	2,048.00
BIG INJUN	2,048.00	2,048.00	2,251.00	2,251.00
WEIR	2,251.00	2,251.00	2,351.00	2,351.00
SAND / SHALE	2,351.00	2,351.00	2,458.00	2,458.00
GANTZ	2,458.00	2,458.00	2,580.00	2,580.00
FIFTY FOOT	2,580.00	2,580.00	2,664.00	2,664.00
GORDON	2,664.00	2,664.00	3,264.00	3,263.90
WARREN	3,264.00	3,263.90	3,343.00	3,342.90
SPEECHLEY	3,343.00	3,342.90	4,006.00	4,005.90
BALLTOWN B	4,006.00	4,005.90	4,216.00	4,215.90
BRADFORD	4,216.00	4,215.90	4,516.00	4,515.90
RILEY	4,516.00	4,515.90	4,931.00	4,930.80
BENSON	4,931.00	4,930.80	5,190.00	5,189.70
ALEXANDER	5,190.00	5,189.70	6,363.00	6,252.50
RHINESTREET	6,363.00	6,252.50	6,509.00	6,375.00
Sonyea	6,509.00	6,375.00	6,718.00	6,522.70
Middlesex	6,718.00	6,522.70	6,834.00	6,578.70
Genesee	6,834.00	6,578.70	7,076.00	6,650.70
Geneseo	7,076.00	6,650.70	6,698.26	12,055.00

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Report being sent prior to FB and testing

Will send amended report once well is flowed back

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514654 - Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Toe Pop	2/14/2014 4:08	12,029.00	12,031.00	10	Marcellus
1	2/14/2014 9:39	11,907.00	11,999.00	32	Marcellus
2	2/14/2014 14:22	11,757.00	11,879.00	40	Marcellus
3	2/14/2014 21:48	11,607.00	11,729.00	40	Marcellus
4	2/15/2014 2:35	11,457.00	11,579.00	40	Marcellus
5	2/15/2014 10:36	11,307.00	11,429.00	40	Marcellus
6	2/15/2014 15:35	11,157.00	11,279.00	40	Marcellus
7	2/15/2014 21:23	11,007.00	11,129.00	40	Marcellus
8	2/16/2014 19:46	10,857.00	10,979.00	40	Marcellus
9	2/17/2014 1:30	10,707.00	10,829.00	40	Marcellus
10	2/17/2014 11:10	10,557.00	10,679.00	40	Marcellus
11	2/17/2014 16:59	10,407.00	10,531.00	40	Marcellus
12	2/17/2014 22:53	10,257.00	10,379.00	40	Marcellus
13	2/18/2014 3:43	10,107.00	10,229.00	40	Marcellus
14	2/18/2014 8:00	9,957.00	10,079.00	40	Marcellus
15	2/18/2014 10:10	9,807.00	9,927.00	40	Marcellus
16	2/18/2014 22:42	9,657.00	9,779.00	40	Marcellus
17	2/19/2014 2:40	9,507.00	9,629.00	40	Marcellus
18	2/19/2014 9:43	9,357.00	9,479.00	40	Marcellus
19	2/19/2014 14:08	9,207.00	9,329.00	40	Marcellus
20	2/20/2014 3:37	9,057.00	9,179.00	40	Marcellus
21	2/20/2014 7:50	8,907.00	9,029.00	40	Marcellus
22	2/20/2014 15:39	8,757.00	8,879.00	40	Marcellus
23	2/20/2014 20:54	8,607.00	8,729.00	40	Marcellus
24	2/21/2014 5:32	8,457.00	8,579.00	40	Marcellus
25	2/21/2014 13:26	8,307.00	8,427.00	40	Marcellus
26	2/21/2014 20:47	8,157.00	8,279.00	40	Marcellus
27	2/22/2014 2:55	8,007.00	8,129.00	40	Marcellus
28	2/22/2014 7:13	7,857.00	7,979.00	40	Marcellus
28 (Re-Perf)	2/22/2014 15:35	7,782.00	7,845.00	32	Marcellus
29	2/22/2014 21:30	7,632.00	7,754.00	40	Marcellus
30	2/23/2014 3:33	7,482.00	7,604.00	40	Marcellus
31	2/23/2014 9:00	7,332.00	7,454.00	40	Marcellus
32	2/23/2014 13:32	7,182.00	7,304.00	40	Marcellus
33	2/23/2014 17:10	7,032.00	7,154.00	40	Marcellus

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514654 - 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)
Toe Pop	2/14/14 6:29	10.90	7,475.00	NA	3,982	NA	904	0
1	2/14/14 11:39	93.90	8,370.00	6,995.00	3,522	200,700	5,115	0
2	2/14/14 15:54	96.10	8,282.00	7,111.00	3,778	202,800	5,371	0
3	2/14/14 23:31	91.60	8,560.00	7,846.00	3,464	202,400	5,206	0
4	2/15/14 7:05	92.20	8,450.00	7,326.00	4,099	197,900	6,165	0
5	2/15/14 12:32	91.00	8,608.00	6,410.00	3,987	202,800	5,370	0
6	2/15/14 15:07	90.00	8,217.00	6,685.00	3,627	207,200	5,547	0
7	2/16/14 6:30	94.40	8,505.00	6,229.00	4,017	202,300	5,154	0
8	2/16/14 23:15	96.80	8,293.00	6,118.00	3,499	198,100	5,241	0
9	2/17/14 8:04	87.40	8,494.00	7,239.00	4,020	201,400	5,213	0
10	2/17/14 14:21	91.30	8,498.00	6,073.00	3,921	200,900	4,935	0
11	2/17/14 19:53	96.20	8,165.00	6,725.00	4,102	197,900	4,732	0
12	2/18/14 1:58	96.30	8,019.00	6,606.00	4,012	204,000	4,969	0
13	2/18/14 6:11	96.30	8,308.00	6,768.00	4,043	201,300	4,859	0
14	2/18/14 10:00	94.30	8,274.00	6,511.00	3,938	202,200	4,825	0
15	2/18/14 19:56	95.70	8,040.00	7,410.00	3,876	201,800	5,364	0
16	2/18/14 23:51	98.60	8,160.00	7,804.00	4,096	202,600	5,178	0
17	2/19/14 5:00	97.30	8,094.00	7,620.00	4,010	202,400	5,065	0
18	2/19/14 12:41	73.83	8,566.00	6,618.00	3,726	202,200	5,828	0
19	2/20/14 0:51	94.30	8,131.00	7,405.00	3,820	200,500	5,249	0
20	2/20/14 4:38	90.20	8,331.00	6,859.00	3,790	201,700	5,372	0
21	2/20/14 10:00	96.20	7,750.00	7,547.00	3,740	201,900	4,884	0
22	2/20/14 18:15	97.60	7,768.00	7,433.00	3,991	200,700	5,037	0
23	2/21/14 2:05	90.10	8,067.00	6,588.00	3,643	199,800	5,342	0
24	2/21/14 6:00	91.10	7,920.00	6,442.00	3,863	200,900	5,933	0
25	2/21/14 17:29	94.60	7,611.00	6,746.00	3,889	201,100	4,900	0
26	2/22/14 0:17	97.70	7,641.00	6,260.00	3,927	201,100	4,920	0
27	2/22/14 4:16	81.00	8,011.00	6,574.00	3,692	198,300	5,692	0
28	2/22/14 10:00	15.40	8,407.00	7,065.00	6,537	2,600	3,067	0
28.1 (Re-Perf)	2/22/14 18:50	95.60	7,137.00	NA	3,567	204,100	4,396	0
29	2/23/14 1:03	93.00	7,449.00	7,490.00	3,676	203,100	4,698	0
30	2/23/14 6:31	93.00	7,185.00	6,623.00	3,628	202,500	4,789	0
31	2/23/14 11:14	98.40	7,398.00	5,969.00	3,712	201,000	4,720	0
32	2/23/14 14:53	96.80	7,797.00	6,706.00	3,646	200,400	4,613	0
33	2/23/14 18:20	99.90	7,676.00	6,972.00	3,691	196,300	4,715	0

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/14/2014
Job End Date:	2/23/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06186-00-00
Operator Name:	EQT Production
Well Name and Number:	SMI28 - 514654
Longitude:	-80.73831500
Latitude:	39.26282300
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,698
Total Base Water Volume (gal):	7,516,252
Total Base Non Water Volume:	307,912



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	90.05603	
Sand	Halliburton	Proppant	Crystalline Silica	14808-60-7	100.00000	9.56061	
Hydrochloric Acid 15%	Halliburton	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.16847	
MX-5	Halliburton	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.09401	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.07064	
LP-65	Halliburton	Scale Inhibitor	Ammonium Chloride	12125-02-9	10.00000	0.02452	
BA-40L	Halliburton	Buffer	Potassium carbonate	584-08-7	60.00000	0.01100	
MX-8	Halliburton	Biocide	Bacteria Culture	0000-00-0	100.00000	0.00952	
WG-36	Halliburton	Gelling Agent	Guar Gum	9000-30-0	100.00000	0.00490	
Methanol	Halliburton	Corrosion inhibitor					

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			Methanol	67-56-1	60.00000	0.00017
SP Breaker	Halliburton	Oxidizing Breaker				
			Sodium Persulfate	7775-27-1	100.00000	0.00010
Propargyl Alcohol	Halliburton	Corrosion inhibitor				
			Propargyl Alcohol	107-19-7	10.00000	0.00003

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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