

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

API 47- \_\_\_\_\_ - \_\_\_\_\_ County \_\_\_\_\_ District \_\_\_\_\_  
Quad \_\_\_\_\_ Pad Name \_\_\_\_\_ Field/Pool Name \_\_\_\_\_  
Farm name \_\_\_\_\_ Well Number \_\_\_\_\_  
Operator (as registered with the OOG) \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing \_\_\_\_\_ Easting \_\_\_\_\_

Elevation (ft) \_\_\_\_\_ 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 \_\_\_\_\_  
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)  
\_\_\_\_\_  
\_\_\_\_\_

Date permit issued \_\_\_\_\_ Date drilling commenced \_\_\_\_\_ Date drilling ceased \_\_\_\_\_  
Date completion activities began \_\_\_\_\_ Date completion activities ceased \_\_\_\_\_  
Verbal plugging (Y/N) \_\_\_\_\_ Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft \_\_\_\_\_ Open mine(s) (Y/N) depths \_\_\_\_\_  
Salt water depth(s) ft \_\_\_\_\_ Void(s) encountered (Y/N) depths \_\_\_\_\_  
Coal depth(s) ft \_\_\_\_\_ Cavern(s) encountered (Y/N) depths \_\_\_\_\_  
Is coal being mined in area (Y/N) \_\_\_\_\_

Reviewed by:  
\_\_\_\_\_

API 47- \_\_\_\_\_ - \_\_\_\_\_ Farm name \_\_\_\_\_ Well number \_\_\_\_\_

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							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_  
\_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) \_\_\_\_\_ Loggers TD (ft) \_\_\_\_\_  
 Deepest formation penetrated \_\_\_\_\_ Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) \_\_\_\_\_

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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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- \_\_\_\_\_ - \_\_\_\_\_ Farm name \_\_\_\_\_ Well number \_\_\_\_\_

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
_____	_____	TVD _____ 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 <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

**\*PLEASE SEE ATTACHED EXHIBIT 3**


Please insert additional pages as applicable.

Drilling Contractor \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Logging Company \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Cementing Company \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Stimulating Company \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Please insert additional pages as applicable.

Completed by \_\_\_\_\_ Telephone \_\_\_\_\_  
 Signature \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

API 47-095-02352 Farm Name Terry L. Snider Well Number Dillon Unit 2H

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/4/2018	16130	16300	60	Marcellus
2	1/6/2018	15929	16099	60	Marcellus
3	1/6/2018	15728	15898	60	Marcellus
4	1/8/2018	15527	15697	60	Marcellus
5	1/9/2018	15326	15495	60	Marcellus
6	1/9/2018	15125	15294	60	Marcellus
7	1/12/2018	14924	15093	60	Marcellus
8	1/15/2018	14722	14892	60	Marcellus
9	1/15/2018	14521	14691	60	Marcellus
10	1/16/2018	14320	14490	60	Marcellus
11	1/16/2018	14119	14289	60	Marcellus
12	1/17/2018	13918	14088	60	Marcellus
13	1/18/2018	13717	13886	60	Marcellus
14	1/20/2018	13516	13685	60	Marcellus
15	1/20/2018	13315	13484	60	Marcellus
16	1/20/2018	13113	13283	60	Marcellus
17	1/21/2018	12912	13082	60	Marcellus
18	1/21/2018	12711	12881	60	Marcellus
19	1/22/2018	12510	12680	60	Marcellus
20	1/22/2018	12309	12478	60	Marcellus
21	1/23/2018	12108	12277	60	Marcellus
22	1/23/2018	11907	12076	60	Marcellus
23	1/23/2018	11705	11875	60	Marcellus
24	1/24/2018	11504	11674	60	Marcellus
25	1/24/2018	11303	11473	60	Marcellus
26	1/24/2018	11102	11272	60	Marcellus
27	1/25/2018	10901	11071	60	Marcellus
28	1/25/2018	10700	10869	60	Marcellus
29	1/26/2018	10499	10668	60	Marcellus
30	1/26/2018	10298	10467	60	Marcellus
31	1/26/2018	10096	10266	60	Marcellus
32	1/27/2018	9895	10065	60	Marcellus
33	1/27/2018	9694	9864	60	Marcellus
34	1/28/2018	9493	9663	60	Marcellus
35	1/28/2018	9292	9462	60	Marcellus
36	1/28/2018	9091	9260	60	Marcellus
37	1/29/2018	8890	9059	60	Marcellus
38	1/29/2018	8689	8858	60	Marcellus
39	1/29/2018	8487	8657	60	Marcellus
40	1/30/2018	8286	8456	60	Marcellus
41	1/30/2018	8085	8255	60	Marcellus
42	1/31/2018	7884	8054	60	Marcellus
43	1/31/2018	7683	7852	60	Marcellus
44	1/31/2018	7482	7651	60	Marcellus
45	2/1/2018	7281	7450	60	Marcellus
46	2/1/2018	7079	7249	60	Marcellus
47	2/1/2018	6878	7048	60	Marcellus

## API 47-095-02352 Farm Name Terry L. Snider Well Number Dillon Unit 2H

## EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	1/4/2018	79.3	7799	5478	4513	17790	8990	N/A
2	1/6/2018	72.4	7541	5465	3498	16504	10227	N/A
3	1/6/2018	77.8	7931	7107	4031	19069	11651	N/A
4	1/8/2018	78	7596	5278	4381	17255	9698	N/A
5	1/9/2018	76.8	7658	5327	3866	16851	10321	N/A
6	1/9/2018	71.2	7400	5232	3832	16464	10207	N/A
7	1/12/2018	57.7	6911	5252	5254	17417	18756	N/A
8	1/15/2018	73.5	7093	5106	4814	17013	9927	N/A
9	1/15/2018	70.5	7224	5118	4456	16798	10313	N/A
10	1/16/2018	75.2	7205	5044	4113	16362	10267	N/A
11	1/16/2018	74.9	7120	5432	4257	16809	8896	N/A
12	1/17/2018	73	7071	5317	4899	17287	9216	N/A
13	1/18/2018	60.9	7374	5205	3855	16434	16897	N/A
14	1/20/2018	72.9	7174	5617	3963	16754	9766	N/A
15	1/20/2018	75.8	7271	5299	3805	16375	9272	N/A
16	1/20/2018	76.7	7136	5026	4341	16503	8975	N/A
17	1/21/2018	75.1	7180	5399	4773	17352	9044	N/A
18	1/21/2018	75.8	7053	5183	4008	16244	11551	N/A
19	1/22/2018	75.1	7418	5292	3240	15950	11055	N/A
20	1/22/2018	73.5	7376	5175	3911	16462	11865	N/A
21	1/23/2018	74.5	6758	4967	4733	16458	8942	N/A
22	1/23/2018	73.5	6812	5240	4822	16874	9581	N/A
23	1/23/2018	73.7	6787	5442	4178	16407	9359	N/A
24	1/24/2018	74	6810	5296	4496	16602	8898	N/A
25	1/24/2018	78.8	6954	4982	4761	16697	8992	N/A
26	1/24/2018	78.7	6812	5015	4180	16007	9030	N/A
27	1/25/2018	77.3	6888	5087	4222	16197	9042	N/A
28	1/25/2018	77.4	6940	4929	4585	16454	9186	N/A
29	1/26/2018	78.4	6856	5043	4358	16257	9040	N/A
30	1/26/2018	77.7	6843	4879	4313	16035	9558	N/A
31	1/26/2018	78.5	6935	5101	4592	16628	8901	N/A
32	1/27/2018	78.7	6845	5129	4900	16874	8677	N/A
33	1/27/2018	76.8	7062	5095	4480	16637	10821	N/A
34	1/28/2018	79.1	6734	5438	4890	17062	8540	N/A
35	1/28/2018	76	6763	5281	4872	16916	11794	N/A
36	1/28/2018	79	6856	5252	4236	16344	8783	N/A
37	1/29/2018	79.4	6790	5026	4468	16284	8671	N/A
38	1/29/2018	79.7	7024	5012	4569	16605	10267	N/A
39	1/29/2018	78.6	6754	5085	4996	16835	9588	N/A
40	1/30/2018	79.6	6670	5109	4472	16251	9418	N/A
41	1/30/2018	76.7	6751	5055	4837	16643	9084	N/A
42	1/31/2018	75.8	6463	5003	4907	16373	9374	N/A
43	1/31/2018	74.5	6533	5152	4801	16486	9895	N/A
44	1/31/2018	76.1	6922	5035	4003	15960	10310	N/A
45	2/1/2018	77.3	6467	5161	4294	15922	9155	N/A
46	2/1/2018	75.1	6435	5140	4491	16066	9208	N/A
47	2/1/2018	75.8	6327	5854	4315	16496	8954	N/A
	AVG=	75.5	7,007	5,237	4,395	782,063	469,962	TOTAL

## EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandstone	0	N/A	0	N/A
Silty Sandstone	260	N/A	260	N/A
Shale w/trace Coal	560	N/A	560	N/A
Silty Sandstone	740	N/A	740	N/A
Limey Shale	880	N/A	880	N/A
Silty Shale w/trace Coal	1,080	N/A	1,080	N/A
Silty Sandstone	1,240	N/A	1,240	N/A
Silty Shale w/trace Coal	1,380	N/A	1,380	N/A
Silty Sandstone	1,520	N/A	1,520	N/A
Sandstone w/trace Coal	1,600	N/A	1,600	N/A
Silty Sandstone	1,680	N/A	1,680	N/A
Shale w/trace Coal	1,740	N/A	1,740	N/A
Silty Sandstone	1,840	N/A	1,840	N/A
Big Lime	2,039	N/A	2,040	N/A
Big Injun	2,149	N/A	2,152	N/A
Gantz Sand	2,565	N/A	2,576	N/A
Fifty Foot Sandstone	2,855	N/A	2,875	N/A
Gordon	2,935	N/A	2,959	N/A
Fifth Sandstone	3,212	N/A	3,244	N/A
Bayard	3,277	N/A	3,310	N/A
Warren	3,668	N/A	3,713	N/A
Speechley	4,008	N/A	4,063	N/A
Balltown	4,306	N/A	4,370	N/A
Bradford	4,694	N/A	4,769	N/A
Benson	5,071	N/A	5,160	N/A
Alexander	5,289	N/A	5,385	N/A
Rhinestreet	5,854	N/A	5,964	N/A
Sycamore	6,190	N/A	6,351	N/A
Middlesex	6,284	N/A	6,495	N/A
Burkett	6,378	N/A	6,709	N/A
Tully	6,406	N/A	6,812	N/A
Marcellus	6,417	N/A	6,858	N/A

\*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.



