

WR-35  
Rev (5-01)

DATE:  
API #: 47-5101379

JR  
FM

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: HAZLETT, FREDERICK S. Operator Well No.: SHL-1C-HS

LOCATION: Elevation 1163.06' Quadrangle: MAJORSVILLE

District: SANDHILL County: MARSHALL  
Latitude:        Feet South of 39 Deg. 58 Min. 23.91 Sec.  
Longitude        Feet West of 80 Deg. 34 Min. 29.47 Sec.

Company:

CNX Gas Company LLC

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 200 Evergreene Drive Waynesburg, PA 15370				
Agent: Tim Rinehart				
Inspector: Bill Hendershot				
Date Permit Issued: 01/24/2011				
Date Well Work Commenced: 01/26/2011	30"	39'	39'	Grouted In
Date Well Work Completed: 09-18-11	20"	80'	80'	155 sks
Verbal Plugging N/A	13 3/8"	995'	995'	670 sks
Date Permission granted on: 01/26/2011				
Rotary Cable Rig X	9 5/8"	2915'	2915'	950 sks
Total Depth (feet): 11,635'	5 1/2"	11,556'	11,556'	1,905 sks
Fresh Water Depth (ft.): 200'				
Salt Water Depth (ft.):				
Is coal being mined in area (N/Y)? Yes				
Coal Depths (ft.) <u>652'-658'</u>				

OPEN FLOW DATA

Producing formation Marcellus Pay zone depth (ft) 6,458' TVD  
Gas: Initial open flow 2259 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 2284 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 24 Hours  
Static rock Pressure 2450 psig (surface pressure) after 24 Hours

Second producing 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

\*Commingled with previous formations

NOTE: ON BACK OF THIS FORM 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 ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: [Signature]

By: DESIGNATED AGENT, GENERAL MANAGER WVGAS O&G.

Date: 3/21/14

Louisa Atkins - Noble Energy

05/02/2014

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Were core samples taken?  Yes /  No  
Were cuttings caught during drilling?  Yes /  No  
Were Electrical  Yes /  No, Mechanical  Yes /  No, or Geophysical logs  Yes /  No recorded on this well?

NOTE: IN THE AREA BELOW PUT THE FOLLOWING:

1) DETAILS OF PERFORATED INTERVALS, FRACTURING OR PHYSICAL CHANGE, ETC.

2) THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

PERFORATED INTERVALS, FRACTURING, OR STIMULATING:

FORMATIONS ENCOUNTERED:

GAMMA RAY/FORMATION TOPS

TOP BASE

Depths Determined By Drillers Log

Depth	Formation
0'-15'	Fill
15'-150'	Shale
150'-652'	Shale/Sand
652'-658'	Coal
658'-762'	Shale/Sand
762'-1013'	Red Rock
1013'-1249'	Shale
1249'-1377'	Shale/Sand
1377'-1408'	Shale/Lime
1408'-1502'	Shale/Sand
1502'-1659'	Sand
1659'-1721'	Sand/Lime
1721'-1782'	Sand/Shale/Lime
1782'-1847'	Sand
1847'-2003'	Shale/Sand
2003'-2097'	Shale/Lime
2097'-2253'	Sand/Shale/Lime
2253'-2284'	Sand/Shale/Lime
2284'-2378'	Sand/Lime/Silt
2378'-2473'	Red Rock/Shale
2473'-2505'	Red Rock/Shale
2505'-2599'	Shale/Lime
2599'-2694'	Sand/Shale/Lime
2694'-2820'	Sand/Shale/Silt
2820'-2946'	Shale/Lime
2946'-3027'	Sand/Shale/Silt
3027'-3500'	Sand/Silt



Geological Top Estimations

Well (Pad) Name Datum (GR)	SHL01 pad 1163	TVD	S.L.	
Gas Sand Top		1262	-99	
Gas Sand Base		1326	-163	
1st Salt Sand Top		1358	-195	The salt sands could possibly be a fluid thief zone
1st Salt Sand Base		1366	-203	
2nd Salt Sand Top		1463	-300	
2nd Salt Sand Base		1518	-355	
3rd Salt Sand Top		1551	-388	
3rd Salt Sand Base		1592	-429	
Maxton Top		1613	-450	
Maxton Base		1693	-530	
Big Lime Top		1697	-534	
Big Injun Top		1730	-567	
Big Injun Base		1916	-753	
Berea Top		2212	-1049	
Berea Base		2229	-1066	
Gantz Top		2265	-1102	
Gantz Base		2313	-1150	
Gordon Top		2631	-1468	
Gordon Base		2649	-1486	
Fifth Top		2741	-1578	
Fifth Base		2772	-1609	
Burkett Shale		6302	-5139	
Tully Top		6310	-5147	
Hamilton Top		6343	-5180	
Marcellus		-6449	-5286	
Onondaga		-6508	-5345	
TVD:		-6530		

Bottom		BD Press		Avg Rate		Frac			Water
Perf	# of Perfs	(psi)	ATP (psi)	(bpm)	ISIP (psi)	Gradient	Sand (lbs)	Acid (gals)	(gals)
11530	60	8,673	8,269	72.4	5,740	1.22	316,320	2,000	372,876
11,367	40	7,635	8,202	85.7	4,925	1.11	355,640	2,000	301,434
11,067	40	6,376	7,914	86.0	4,751	1.08	121,520	2,000	196,350
10,767	40	5,555	7,433	89.7	4,681	1.07	353,620	2,000	314,874
10,467	40	6,225	7,345	90.4	5,010	1.12	353,120	2,000	286,944
10,167	40	6,523	7,211	90.7	4,861	1.10	353,740	2,000	276,780
9,867	40	6,528	7,215	90.0	4,664	1.07	348,440	2,000	266,490
9,567	40	7,289	7,313	90.5	4,635	1.07	345,540	2,000	278,418
9,267	40	7,243	7,383	90.7	5,139	1.14	350,920	2,000	276,066
8,967	40	5,956	7,039	90.9	6,026	1.26	353,500	2,000	266,826
8,667	40	6,179	6,678	90.3	4,727	1.08	353,400	2,000	277,830
8,367	40	6,444	7,089	90.7	4,868	1.10	320,660	2,000	257,544
8,067	40	6,666	6,863	90.0	4,862	1.10	352,000	2,000	277,326
7,767	40	6,441	6,727	90.0	4,501	1.05	350,560	2,000	268,254
7,467	40	6,407	7,148	83.7	3,676	0.94	353,000	2,000	285,432
7,167	36	6,572	6,786	90.0	4,228	1.01	354,660	2,000	275,436

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SHL 1C  
47-051-01379

Stage #	Plug Type	Plug Depth
1	Composite Frac Plug	11390
2	Composite Frac Plug	11390
3	Composite Frac Plug	11090
4	Composite Frac Plug	10790
5	Composite Frac Plug	10490
6	Composite Frac Plug	10190
7	Composite Frac Plug	9890
8	Composite Frac Plug	9590
9	Composite Frac Plug	9290
10	Composite Frac Plug	8990
11	Composite Frac Plug	8690
12	Composite Frac Plug	8390
13	Composite Frac Plug	8090
14	Composite Frac Plug	7790
15	Composite Frac Plug	7490
16	Composite Frac Plug	7190





