

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

DATE: 1-30-2013  
API #: 47-039-06330 H

Farm name: Penn Virginia - Carbon Fuel Operator Well No.: CF-4H

LOCATION: Elevation: 654' Quadrangle: Cedar Grove 7.5

District: Cabin Creek County: Kanawha  
Latitude: 9,310 Feet South of 38 Deg. 12 Min. 30 Sec.  
Longitude 9,870 Feet West of 81 Deg. 27 Min. 30 Sec.

Company: Northstar Energy Corp

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
<u>900 Lee St E, Ste 940 Charleston, WV 25301</u>	<u>13 3/8"</u>	<u>10'</u>	<u>10'</u>	
Agent: <u>Nancy M. Abcouwer</u>	<u>9 5/8"</u>	<u>592'</u>	<u>592'</u>	<u>480 cu ft.</u>
Inspector: <u>T. Urban</u>	<u>7 3/8"</u>	<u>1,080'</u>	<u>1,080'</u>	<u>182 cu ft.</u>
Date Permit Issued:	<u>4.5"</u>	<u>5,132'</u>	<u>5,132'</u>	<u>83 cu ft.</u>
Date Well Work Commenced: <u>3/30/2012</u>				
Date Well Work Completed: <u>6/4/2012</u>				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft): <u>1,896</u>				
Total Measured Depth (ft): <u>5,160</u>				
Fresh Water Depth (ft.): <u>342</u>				
Salt Water Depth (ft.): <u>800</u>				
Is coal being mined in area (N/Y)? <u>strip only</u>				
Coal Depths (ft.): <u>above well elev.</u>				
Void(s) encountered (N/Y) Depth(s)				

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

Producing formation Weir Pay zone depth (ft) 1710-1896

Gas: Initial open flow 450 MCF/d Oil: Initial open flow 0 Bbl/d

Final open flow 350 MCF/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests 48 Hours

Static rock Pressure 360 psig (surface pressure) after 48 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

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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

1-30-2013  
Date

03/15/2013

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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 GR - Cement Bond Log

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.

8-stage frac in Weir from 5,128' measured depth to 2,034' total  
Perforated Intervals, Fracturing, or Stimulating:  
depth with 250' to 300' stage separation, 75-Q foam.

Stage 1:	562,562 scf N,	498 sks 20/40 sand,	244 bbl slurry @ 33.3 bpm
Stage 2:	487,000 scf N,	489 sks 20/40	248 bbl slurry @ 35.8
Stage 3:	499,606 scf N,	493 sks 20/40	249 bbl slurry @ 34.3
Stage 4:	474,000 scf N,	493 sks 20/40	229 bbl slurry @ 35.6
Stage 5:	455,000 scf N,	494 sks 20/40	235 bbl slurry @ 35.5
Stage 6:	424,918 scf N,	399 sks 20/40	197 bbl slurry @ 36.0
Plug Back Details Including Plug Type and Depth(s):			
Stage 7:	444,000 scf N,	392 sks 20/40	207 bbl slurry @ 34.8
Stage 8:	403,883 scf N,	360 sks 20/40	184 bbl slurry @ 36.0

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

Surface:	Top Depth	Bottom Depth	
Sub base	0	10	
Shale	10	85	
Sand	85	145	
Sand + shale	145	205	RECEIVED
Sand	205	240	Office of Oil & Gas
Shale	240	712	MAR 14 2013
Sand	212	597	
Salt sand	597	712	WV Department of
Maxton	712	962	Environmental Protection
Sand + shale	962	1067	
Little Lime	1067	1097	
Big Lime	1154	1292	
Big Injun	1292	1315	
Sandy Shale	1315	1395	
Silt and shale	1395	1710	
Weir	1710	1896	