

WR-35
Rev (5-01)

DATE: 4/8/10
API #: 47-035-02974 **REVISED**

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

Well Operator's Report of Well Work

Farm name: Natural Steam Energy Operator Well No.: HR 344

LOCATION: Elevation: 783' Quadrangle: Gay, WV 7.5'

District: Washinton County: Jackson
Latitude: 8107' (Surface) Feet South of 38 Deg. 52 Min. 30 Sec.
Longitude 4105' (Surface) Feet West of 81 Deg. 32 Min. 30 Sec.

Company: Hard Rock Exploration

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 2034 Martins Branch Road Charleston WV, 25312				
Agent: Marc Scholl	13 3/8"	38'	38'	N/A
Inspector: Jamie Stevens	9 5/8"	754'	754'	360 cf
Date Permit Issued: 1/6/2010	7"	2188'	2188'	474 cf
Date Well Work Commenced: 1/13/10	4.5"	6417'	6417'	120 cf grout
Date Well Work Completed: 1/31/10				
Verbal Plugging:				
Date Permission granted on:				
Rotary x Cable Rig				
Total Depth (feet): 6460' MD, 4386' TVD				
Fresh Water Depth (ft.): 196'				
Salt Water Depth (ft.): 1210', 1860'				
Is coal being mined in area (N/Y)?				
Coal Depths (ft.): <u>N</u>				

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OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 4082' MD - 6460' MD
3995' VD - 4386' VD

Gas: Initial open flow 73 MCF/d Oil: Initial open flow Bbl/d
Final open flow 760 MCF/d Final open flow Bbl/d
Time of open flow between initial and final tests 72 Hours
Static rock Pressure 1100 psig (surface pressure) after 72 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

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: President
Date: 4/9/2010

Formation:	Top:	Bottom:
Soil/Sand/Shale	0	510
Sand	510	555
Shale	555	690
Sand	690	730
Sand/Shale	730	1755
SS/Shale	1755	1985
Lime	1985	2030
Injun/Squaw	2030	2120
Shale	2120	2445
Coffee Shale	2445	2458
Devonian Shale	2458	4386
Lower Huron Section	4226	4386

1/25/10

Run 146jts of R-3 10.5 ppf 8rd casing to depth of 6417' gl - 6425' KB. Run circulating shoe. Run 6 openhole inflatable packers: 6061', 5666', 5270', 4874', 4521', 4082'. Run hydroport sleeve at 6240', 2.53" sleeve at 5846', 2.78" sleeve at 5450', 3.03" sleeve at 5054', 3.28" sleeve at 4701', 3.53" sleeve at 4305'. Run 10' marker jt at 2273'. Drop ball for circ shoe. Start pumping treated water to load hole and set packers - packers set and shut off gas after 70bbbls. Caught pressure after 95bbbls and worked pressure up to 750 psi to open hydroport sleeve. RU to annulus and dump 100sx class A 3 %CaCl and follow with 5bbbls water.

1/29/10

Start pumping N2 on Stg 1 at 50K scf/min, and bring pressure up to 4600 psi and back rate off to 25K scf/min. Slowly increase rate as pressure dropped off. Pump total of 900Kscf N2. Max P - 4551 psi. Avg P - 4399psi. Avg Rate - 55041scf/min. 10min -1771psi. Stg 2 - Drop 2.75" ball and wait 10min for ball to drop. Start N2 at 10Kscf/min to land ball on sleeve. Land at 35kscf and up rate to 22Kscf/min to open. Open sleeve at 3900psi. Up rate as pressure allows. Pump total of 900Kscf N2. Max P - 4498psi. Avg P - 4462psi. Avg Rate - 44086scf/min. 10min -1892psi. Stg 3 - Drop 3" ball and wait 10min for ball to drop. Start N2 at 9Kscf/min to land ball on sleeve. Land at 45Kscf N2 and up rate to 22Kscf to open. Open at 4173psi. Up rate as pressure allows. Pump total of 1.2MMscf N2. Max P - 4504psi. Avg P - 4397psi. Avg Rate - 77820scf/min. 10 min 2043psi. Stg 4 - Drop 3.25" ball and wait 10min for ball to drop. Start N2 at 10Kscf/min and up to 20K to land ball. Open sleeve at 4191psi. Up rate as pressure allows and pump total of 900KscfN2. Max P - 4493psi. Avg P - 4317psi. Avg Rate 80810scf/min. 10 min - 1968psi. Stg 5 - Drop 3.5" ball and wait 20min to load N2 and let ball drop to sleeve. Start N2 at 13Kscf/min and land ball at 50Kscf N2. Up rate and open sleeve at 4046psi. Up rate as pressure allows and pump total of 1.21MMscf N2. Max P - 4492psi. Avg P - 4465psi. Avg Rate - 69611scf/min. 10 min - 2076psi. Stg 6 - Drop 3 3/4" ball and wait 10 min for ball to drop. Start pumping N2 at 15Kscf/min and land ball at 60Kscf N2. Hold rate and open sleeve at 4396psi. Up rate as pressure allows and pump total of 900Kscf N2. Max P - 4295psi. Avg P - 4026psi. Avg Rate - 97385scf/min. 5 min - 1945psi.

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05/18/2012