

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

Well Operator's Report of Well Work

Farm name: William P. Rogers Operator Well No.: HR 323

LOCATION: Elevation: 970' Quadrangle: Kentuck WV 7.5'

District: Harper County: Roane  
Latitude: 4428 Feet South of 38 Deg. 45 Min. 00 Sec.  
Longitude 7635 Feet West of 81 Deg. 30 Min. 00 Sec.

Company: Hard Rock Exploration

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: <u>1244 Martins Branch Road</u> <u>Charleston WV, 25312</u>				
Agent: <u>Marc Scholl</u>	<u>13 3/8"</u>	<u>33</u>	<u>33</u>	<u>N/A</u>
Inspector: <u>Ed Gainer</u>	<u>9 5/8"</u>	<u>890</u>	<u>890</u>	<u>420 ft3 CTS</u>
Date Permit Issued: <u>9/21/11</u>	<u>7"</u>	<u>2326</u>	<u>2326</u>	<u>530 ft3 CTS</u>
Date Well Work Commenced: <u>11/6/11</u>	<u>4.5"</u>	<u>7620</u>	<u>7620</u>	<u>130 CuFt</u>
Date Well Work Completed: <u>12/4/11</u>				
Verbal Plugging:	<u>Ran Gamma Log from KOP(3784' - 4881'MD)</u>			
Date Permission granted on:				
Rotary x Cable Rig				
Total Depth (feet): <u>7666'TMD, 4400'TVD</u>				
Fresh Water Depth (ft.): <u>575', 650'</u>				
Salt Water Depth (ft.): <u>1936'</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>N/A</u>				

OPEN FLOW DATA

Producing formation Lower Huron Shale Pay zone depth (ft) 4405'MD- 7666 'MD  
4320'TVD - 4400' TVD

Gas: Initial open flow odor MCF/d Oil: Initial open flow          Bbl/d  
Final open flow 1500+ MCF/d Final open flow          Bbl/d  
Time of open flow between initial and final tests 72 Hours  
Static rock Pressure          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

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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: 3/1/12

09/14/2012

<u>Formation:</u>	<u>Top:</u>	<u>Bottom:</u>
Soil, Sand, Shale	0	510
Sand	510	595
Sand	650	710
Sand/Shale	710	1780
Salt Sand	1780	2000
Lime	2000	2090
Injun/Squaw	2090	2290
Coffee Shale	2550	2565
Devonian Shale	2565	4400
<b>Lower Huron Section</b>	<b>4320</b>	<b>4400</b>

All formation depths shown As TVD

11/14/11 Run 177 joints of R-3 4.5" 11.6ppf casing with 15 stg Packers Plus Mechanical packer/sleeve completion system. Run total of 7620' KB. RU DSA and 10k frac valve. Start pumping 2 bbl water, drop (2) 1.25" balls for circ shoe and follow with 2 bbl water and N2 at 5k scf/min. Land balls and pressure up to 3000psi. Shut down hold pressure 20min. Continue pumping to open Stg 1, pressure up to 3800 psi to open shoe. Pump total of 100sx mixed at 15ppg followed with 4bbl water on annular squeeze. SWI.

	<b>Sleeves</b>	<b>Packers</b>	<b>Size</b>	<b>Ball</b>
<b>Stage 1</b>	7620	7484	N/A	N/A
<b>Stage 2</b>	7350	7261	1.25	1.5
<b>Stage 3</b>	7169	7038	1.5	1.625
<b>Stage 4</b>	6946	6815	1.625	1.75
<b>Stage 5</b>	6723	6592	1.75	1.875
<b>Stage 6</b>	6501	6370	1.875	2
<b>Stage 7</b>	6275	6147	2	2.125
<b>Stage 8</b>	6055	5924	2.125	2.375
<b>Stage 9</b>	5832	5701	2.375	2.5
<b>Stage 10</b>	5609	5479	2.5	2.75
<b>Stage 11</b>	5386	5256	2.75	2.875
<b>Stage 12</b>	5163	5033	2.875	3.125
<b>Stage 13</b>	4940	4810	3.125	3.25
<b>Stage 14</b>	4717	4586	3.25	3.5
<b>Stage 15</b>	4494	4405	3.5	3.75
		2642		

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12/3/12 – 12/4/12 MIRU Baker Stim crew. Start pumping on Stg 1 at half rate and work up to design rate of 100kscf/min. Pump total of 1MMscf. Shut down and drop ball for stage 2. Pump ball to sleeve with low rate N2 and open sleeve. Up rate and pump total of 1MMscf N. Drop ball for Stage 3 and repeat process for Stgs 3 – 15.

	<b>Stg 1</b>	<b>Stg 2</b>	<b>Stg 3</b>	<b>Stg 4</b>	<b>Stg 5</b>	<b>Stg 6</b>	<b>Stg 7</b>	<b>Stg 8</b>
<b>Max P</b>	5975	5979	5990	5980	5968	5697	5460	5583
<b>Avg P</b>	5650	5914	5838	5840	5704	5620	5402	5530
<b>Max R</b>	98.2	100.0	106.8	102.0	105.0	109.0	103.4	104.0
<b>Avg R</b>	95.1	98.0	94.2	100.0	102.0	104.0	102.4	103.0
<b>5 min</b>	1984	2020	2238	2313	2085	2171	2318	N/A
	<b>Stg 9</b>	<b>Stg 10</b>	<b>Stg 11</b>	<b>Stg 12</b>	<b>Stg 13</b>	<b>Stg 14</b>	<b>Stg 15</b>	
<b>Max P</b>	5873	5603	5624	4661	5137	5159	4960	
<b>Avg P</b>	5789	5562	5534	4530	5072	4979	4882	
<b>Max R</b>	109.0	103.0	107.0	104.0	105.0	103.5	107.0	
<b>Avg R</b>	107.0	102.0	105.0	103.0	104.0	102.0	104.0	
<b>5 min</b>	2453	N/A	2356	1955	2236	2100	2179	

09/14/2012