

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

Well Operator's Report of Well Work

Farm name: John Tatterson Operator Well No.: HR 458

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

District: Reedy County: Roane  
Latitude: 12907 Feet South of 38 Deg. 55 Min. 00 Sec.  
Longitude 8718' Feet West of 81 Deg. 25 Min. 00 Sec.

Company: Hard Rock Exploration

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
<b>Address: 1244 Martins Branch Road</b>				
<b>Charleston WV, 25312</b>				
Agent: <b>Marc Scholl</b>	13 3/8"	40	40	NA
Inspector: <b>Ed Gainer</b>	9 5/8"	890	890	432 ft3 CTS
Date Permit Issued: <b>11/30/11</b>	7"	2582	2582	791 ft3 CTS
Date Well Work Commenced: <b>1/24/12</b>	4.5"	7623	7623	130 ft3
Date Well Work Completed: <b>3/7/12</b>				
Verbal Plugging:	Ran Gamma Log from KOP(3777' - 4440'TVD)			
Date Permission granted on:	Ran Gyro from 3777' to surface			
Rotary x Cable Rig				
Total Depth (feet): <b>7676'TMD, 4458'TVD</b>				
Fresh Water Depth (ft.): <b>595'</b>				
Salt Water Depth (ft.): <b>1895', 2095'</b>				
Is coal being mined in area (N/Y)? <b>N</b>				
Coal Depths (ft.): <u>N/A</u>				

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OPEN FLOW DATA

WV Department of  
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Producing formation Lower Huron Shale Pay zone depth (ft) 4489'MD- 7676 'MD  
4370'TVD - 4458' TVD

Gas: Initial open flow 200 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 \_\_\_\_\_ 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: \_\_\_\_\_  
By: James J. [Signature]  
Date: 5/21/2012

<u>Formation:</u>	<u>Top:</u>	<u>Bottom:</u>
Soil, Sand, Shale	0	1789
Salt Sand	1789	2049
Lime	2049	2089
Injun	2089	2109
Shale	2109	2494
Coffee Shale	2544	2559
Devonian Shale	2559	4458
Lower Huron Section	4360	4458

**All depths shown As TVD**

02/06/12 Run total of 177 jts of R-3 4.5" 11.6ppf N-80 casing to depth of 7623'. Run 15 stg Packers Plus mechanical system. Pump N2 to set packers and hold for 20 min at 3000psi. Continue to increase pressure and open stage 1. RU to perform annular squeeze and pump 100sk at 15ppg. Follow cmt with 3bbl water.

	<b>Sleeve</b>	<b>Sleeve Size</b>	<b>Packers</b>
<b>Stage 1</b>	7621.0	P/O Shoe	7448.79
<b>Stage 2</b>	7350	1.500	7261.89
<b>Stage 3</b>	7127	1.375	7038.99
<b>Stage 4</b>	6946	1.625	6857.89
<b>Stage 5</b>	6723	1.750	6634.98
<b>Stage 6</b>	6500	1.875	6412.03
<b>Stage 7</b>	6319	2.000	6230.91
<b>Stage 8</b>	6096	2.125	6007.96
<b>Stage 9</b>	5873	2.375	5785.08
<b>Stage 10</b>	5650	2.500	5562.09
<b>Stage 11</b>	5469	2.750	5380.95
<b>Stage 12</b>	5246	2.875	5158.01
<b>Stage 13</b>	5023	3.125	4935.13
<b>Stage 14</b>	4801	3.250	4712.18
<b>Stage 15</b>	4619.0	3.500	4489.27
<b>Anchor</b>			2892.53

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03/07/12 . MIRU Baker Stim crew. Bring trucks in at half rate and work up to 94k scf. Pump total of 1MM scf N2. Shut down and load ball for Stg 2. Start pumping at 18k scf/min to land ball and open sleeve at 4310psi. Up rate and pump total of 1MM scf N2. Drop ball for Stg 3 and wait for product. Start pumping at 17k scf, land ball and open sleeve at 4419psi. Up rate and pump total 1MMscf N2. Drop ball for Stg 4 and repeat procedure for stages 4 - 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>	5963	5995	5930	5743	5596	5689	5505	4949
<b>Avg P</b>	5742	5783	5008	5557	5530	5602	5475	4909
<b>Max R</b>	94.2	90.8	96.9	104.4	104.5	104.2	105.0	106.0
<b>Avg R</b>	84.9	89.0	91.1	101.8	103.2	102.7	103.0	104.6
<b>5 min</b>	2457	2345	2129	2155	2100	2191	2147	1990
	<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>	5059	4854	4439	4508	4376	4495	4351	
<b>Avg P</b>	5008	4820	4420	4443	4362	4405	4306	
<b>Max R</b>	105.0	106.0	105.0	107.0	105.0	103.0	105.0	
<b>Avg R</b>	102.4	103.0	104	105.0	104.0	102.0	104.0	
<b>5 min</b>	N/A	1936	1851	1954	1912	2012	2107 (2 min)	