

WR-35
Rev (9-11)

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

DATE: 5/22/13
API #: 49-103-02741

Farm name: John Rush Operator Well No.: 404 - 4H
LOCATION: Elevation: 1450' Quadrangle: PINE GROVE 7.5'

District: CENTER County: WETZEL
Latitude: 4932 Feet South of 39 Deg. 37 Min. 30 Sec.
Longitude 3631 Feet West of 80 Deg. 37 Min. 30 Sec.

Company: HG ENERGY, LLC

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
<u>5260 DUPONT ROAD PARKERS BURG, WV 26101</u>	<u>20" CASING</u>	<u>40'</u>	<u>40'</u>	<u>N/A</u>
Agent: <u>MIKE KIRSCH</u>	<u>94", H-40</u>			<u>DRILLED IN</u>
Inspector: <u>DEREK HAUGHT</u>				
Date Permit Issued: <u>01/31/2012</u>	<u>13 3/8" CASING</u>	<u>1431.38</u>	<u>1431.38</u>	<u>1136 SKS</u>
Date Well Work Commenced: <u>04/30/2012</u>	<u>54.5", J-55</u>			<u>Cement to SURFACE</u>
Date Well Work Completed: <u>02/28/2013</u>				
Verbal Plugging:	<u>95 1/8" CASING</u>	<u>3490</u>	<u>3490</u>	<u>1163 SKS</u>
Date Permission granted on:	<u>40", J-55</u>			<u>Cement to SURFACE</u>
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft): <u>7544.86'</u>	<u>5 1/2" CASING</u>	<u>11,824'</u>	<u>11,824'</u>	<u>1667 SKS</u>
Total Measured Depth (ft): <u>11,848'</u>	<u>20", P-110</u>			<u>Cement to SURFACE</u>
Fresh Water Depth (ft.): <u>190', 490'</u>				
Salt Water Depth (ft.): <u>1990'</u>	<u>2 3/8" TUBING</u>	<u>7593.78</u>	<u>7593.78</u>	<u>N/A</u>
Is coal being mined in area (N/Y)? <u>N</u>	<u>4 1/2", L-80</u>			
Coal Depths (ft.): <u>985', 1080', 1219'</u>				
Void(s) encountered (N/Y) Depth(s) <u>N</u>				

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

Producing formation Marcellus Pay zone depth (ft) 7,511
Gas: Initial open flow 9.1 M MCF/d Oil: Initial open flow 75 Bbl/d
Final open flow 8.0 M MCF/d Final open flow 75 Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 2,800 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

Received

16 2013

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WV Dept. of Environmental Protection

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.

DCW for Josh Hinton
Signature

7-12-13
Date

08/16/2013

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 _____

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.

Perforated Intervals, Fracturing, or Stimulating:

Plug Back Details Including Plug Type and Depth(s):

Formations Encountered: Surface:	Top Depth	/	Bottom Depth
BIG LIME	2432'	—	2503'
BIG INJUN	2503'	—	2724'
GORDON STRAY	3288'	—	3319'
GORDON	3319'	—	3340'
TULLY	7800'	—	7852'
HAMILTON	7852	—	8169
MARCELLUS	8169	—	

Received

JUL 16 2013

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103-02741

John Bush 4045 4H 47-439-02741

Stage	# of Peris	Total Acid (lb)	Total Water (bbl)	Total Sand (bbl)	Total Slurry (bbl)	Prod Vol (cuft)	100 Mesh (gal)	40/70 Mesh (bbl)	80/100 Mesh (bbl)	ROP (gal)	ISIP (psi)	1 Min SIP (psi)	2 Min SIP (psi)	3 Min SIP (psi)	ATP (psi)	Avg Rate (bbl/min)	Filter Power (bbl)
1	N/A	1,000	7,500	283,000	7,774	1,241	72,000	193,000	-	5,687	4,575	4,038	3,793	3,466	7,411	74	-
2	50	1,000	6,048	174,600	6,438	1,283	72,000	102,600	131,000	5,827	4,435	4,149	3,964	3,688	8,099	74	415
3	50	1,000	7,180	218,200	7,289	1,280	75,200	-	280,000	5,824	4,317	3,439	3,202	3,036	7,366	75	265
4	50	1,000	7,862	312,100	8,868	1,305	82,100	-	102,700	5,634	N/A	N/A	N/A	N/A	7,161	71	211
5	50	1,000	9,497	373,600	10,277	1,367	-	102,700	270,900	5,406	3,665	3,364	3,201	3,129	6,653	72	233
6	50	1,000	9,870	373,600	10,673	1,312	-	102,700	270,900	5,406	4,036	3,692	3,544	3,427	7,276	69	170
7	50	1,000	9,446	373,600	10,073	1,310	-	102,700	270,900	5,940	4,308	3,542	3,407	3,270	6,509	69	176
8	50	1,000	9,027	375,500	9,450	1,310	-	102,700	270,900	5,940	4,308	4,047	3,782	3,659	7,578	69	199
9	50	1,000	8,665	375,500	8,976	1,305	-	102,700	270,900	5,940	4,308	4,047	3,782	3,659	7,578	70	193
10	50	1,000	8,347	375,500	8,658	1,298	-	102,700	270,900	5,940	4,308	4,047	3,782	3,659	7,578	71	189
11	50	1,000	8,137	394,600	8,410	1,288	-	102,700	291,800	N/A	4,129	N/A	N/A	N/A	7,856	63	127
12	50	1,000	8,137	394,600	8,410	1,288	-	102,700	291,800	N/A	4,129	3,739	3,562	3,448	7,429	72	164
13	50	1,000	8,239	394,600	8,478	1,285	-	102,700	291,800	N/A	4,097	3,693	3,543	3,439	6,991	71	90
14	50	1,000	9,202	399,500	9,837	1,373	-	102,700	297,200	4,390	4,168	3,908	3,740	3,477	6,802	71	70
15	50	1,000	10,174	418,800	10,832	1,222	-	100,200	297,200	4,240	4,050	3,580	3,464	3,356	6,535	75	55
TOTAL / AVG	700	17,000	120,927	4,048,900	124,637	20,433	282,000	2,583,600	2,509,300	5,667	4,324	3,896	3,728	3,501	7,251	71	2,665

Performing Detail

Stage	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
Stage 1	11728	N/A	N/A	N/A	N/A	N/A
Stage 2	11645	11625-26	11585-46	11545-46	11515-16	11485-86
Stage 3	11385	11365-66	11325-26	11285-86	11245-86	11225-26
Stage 4	11135	11105-06	11065-46	11025-26	10985-86	10955-86
Stage 5	10975	10945-46	10905-06	10865-46	10825-86	10785-06
Stage 6	10690	10659-70	10619-38	10579-06	10539-70	10499-43
Stage 7	10505	10475-26	10435-86	10395-46	10355-06	10315-16
Stage 8	10095	10065-46	10025-26	9985-06	9945-06	9905-06
Stage 9	9850	9805-46	9765-46	9725-26	9685-86	9645-66
Stage 10	9575	9545-46	9505-06	9465-46	9425-86	9385-06
Stage 11	9310	9285-46	9245-46	9205-06	9175-76	9145-46
Stage 12	9055	9025-26	8985-86	8945-46	8915-16	8885-86
Stage 13	8795	8765-46	8725-26	8685-86	8645-46	8605-06
Stage 14	8540	8504-06	8465-66	8425-26	8385-86	8345-46
Stage 15	8275	8245-46	8205-06	8165-66	8125-26	8085-86

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08/16/2013