

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: January 23, 2013  
API #: 47-103-2646

Farm name: LS Hoyt Operator Well No.: 4026H

LOCATION: Elevation: 1,428' Quadrangle: Pine Grove 7.5'

District: Grant County: Wetzel  
Latitude: \_\_\_\_\_ Feet South of \_\_\_\_\_ Deg. \_\_\_\_\_ Min. \_\_\_\_\_ Sec.  
Longitude: \_\_\_\_\_ Feet West of \_\_\_\_\_ Deg. \_\_\_\_\_ Min. \_\_\_\_\_ Sec.

Company: HG Energy, LLC

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
5260 Dupont Road Parkersburg, WV 26101	20" Casing	40'	40'	N/A -
Agent: Mike Kirsoh	94#, H-40			Drilled in
Inspector: Derek Haught				
Date Permit Issued: 5/26/2011	13 3/8" Casing	1,383'	1,383'	Cement to Surface
Date Well Work Commenced: 9/02/2011	54.5#, J-55			1,172 sacks
Date Well Work Completed: 12/05/2011				
Verbal Plugging:	9 5/8" Casing	3,410'	3,410'	Cement to Surface
Date Permission granted on:	40#, J-55			1,123 sacks
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft): <u>7,499' 750'</u>	5 1/2" Casing	11,384'	11,384'	Cement to Surface
Total Measured Depth (ft): 11,521'	20#, P-110			1,590 sacks
Fresh Water Depth (ft.): 160', 440'				
Salt Water Depth (ft.): 1,940'	2 3/8" Tubing	N/A	7,661'	N/A
Is coal being mined in area (N/Y)? N	4.7#, L-80			
Coal Depths (ft.): 936', 1,033', 1,172'				
Void(s) encountered (N/Y) Depth(s) N, N/A				

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

Producing formation Marcellus Pay zone depth (ft) 7,499'  
Gas: Initial open flow 5,700 MCF/d Oil: Initial open flow 72 Bbl/d  
Final open flow 5,700 MCF/d Final open flow 72 Bbl/d  
Time of open flow between initial and final tests 24 Hours  
Static rock Pressure 3800 psig (surface pressure) after 24 Hours

Second producing formation N/A 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

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.

Diane C White  
Signature

2-27-13  
Date

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**APPROVED**

NAME: Jacquelin Thornton  
DATE: 3/28/2016

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Were core samples taken? Yes \_\_\_\_\_ No X

Were cuttings caught during drilling? Yes X No \_\_\_\_\_

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list \_\_\_\_\_  
Real time Gamma Ray logs while drilling via the MWD tool. Also, mud logs.

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: \_\_\_\_\_ Top Depth \_\_\_\_\_ / \_\_\_\_\_ Bottom Depth \_\_\_\_\_  
Surface:

	TVD Tops	Bottom
Big Lime -	2420	2490
Big Injun -	2490	2712
Gordon Stray -	3276	3307
Gordon -	3307	3328
Tully -	7427	7451
Hamilton -	7451	7522
Marcellus -	7522	7574 ?

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LS Hoyt 402 86H Frac Summary

Stage	# of Perfs	Total Acid (gal)	Total Water (bbl)	Total Sand (lbs)	Total Slurry (bbl)	Pad Vol (bbl)	100 Mesh (lbs)	40/70 Mesh (lbs)	40/70 Rich Mesh (lbs)	BDP (psi)	ISIP (psi)	5 Min SIP (psi)	10 Min SIP (psi)	15 Min SIP (psi)	ATP (psi)	Avg Rate (bbl/min)	PUMP DOWN (bbl)
1	RDV	3,000	8,215	420,000	6,898	954	70,000	330,000	20,000	N/A	8,477	2,878	2,815	2,783	6,495	82	-
2	60	3,000	8,535	430,559	8,769	914	70,000	330,000	20,000	N/A	4,854	3,565	3,259	3,127	6,821	75	840
3	60	1,500	8,079	420,000	8,512	1,196	70,000	330,000	20,000	5,937	4,598	3,778	3,465	5,937	7,301	68	838
4	60	1,000	8,030	385,000	8,463	1,182	70,000	315,000	-	5,625	4,766	4,047	3,879	5,738	6,950	73	359
6	60	1,000	7,418	387,200	7,887	1,265	70,000	297,200	-	5,434	4,800	3,502	3,233	5,150	6,743	66	302
6	60	1,000	7,913	387,200	7,758	1,184	70,000	297,200	20,000	5,364	4,821	3,808	3,673	5,309	6,721	72	549
7	60	1,000	7,300	387,200	7,785	1,183	70,000	297,200	20,000	5,512	4,881	3,559	3,312	5,220	6,578	64	270
8	60	5,000	7,817	387,200	7,798	1,200	70,000	297,200	20,000	N/A	4,784	3,639	3,297	3,271	6,897	72	472
9	60	1,000	7,845	359,500	7,419	1,161	70,000	258,500	-	5,450	4,630	3,467	3,243	5,180	6,500	71	219
10	60	1,000	7,782	351,400	8,181	1,585	44,800	297,400	20,000	5,400	5,389	4,102	3,745	5,564	7,046	67	228
11	60	1,000	7,888	350,600	8,352	1,591	73,400	297,200	20,000	5,527	5,079	3,619	3,556	5,221	6,901	75	259
12	60	1,000	7,768	350,600	8,239	1,588	73,400	297,200	20,000	5,788	4,938	3,604	3,448	5,285	6,919	64	196
13	60	1,000	7,720	350,600	8,190	1,576	73,400	297,200	20,000	5,956	5,075	3,499	3,592	5,484	6,801	77	186
14	60	1,000	7,879	350,600	8,040	1,578	73,400	297,200	-	5,417	4,940	3,784	3,390	5,237	6,845	69	175
15	60	1,000	7,712	350,600	8,154	1,024	73,400	297,200	20,000	5,340	4,656	3,823	3,598	5,400	6,612	76	154
16	60	1,000	7,729	350,600	8,182	958	73,400	297,200	20,000	5,595	5,007	3,820	3,505	5,395	6,711	77	245
17	60	1,000	7,642	350,600	8,077	942	73,400	297,200	20,000	5,500	5,327	3,954	3,529	5,330	6,643	77	99
18	60	1,000	7,556	322,500	7,857	826	73,400	249,100	-	5,817	4,712	4,235	4,017	5,697	6,780	74	108
19	60	1,000	7,725	350,600	8,282	823	73,400	297,200	20,000	5,392	4,557	4,224	4,102	5,821	6,592	75	85
20	60	1,000	7,455	350,600	7,924	809	73,400	297,200	20,000	5,025	4,417	4,009	3,807	5,499	7,078	65	76
21	60	1,000	7,602	350,600	8,048	807	73,400	297,200	20,000	5,223	4,403	4,043	3,854	5,585	6,536	80	N/A
TOTAL / AVG	1,200	25,500	160,849	7,983,659	370,339	24,231	1,481,700	6,182,900	840,000	5,467	4,782	3,801	3,519	5,247	6,820	72	4,664

Perforating Details

Stage	Perf Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
Stage 1	N/A	11294	N/A	N/A	N/A	N/A	RDV
Stage 2	11219	11189-01	11164-66	11144-45	11119-21	11094-01	PD
Stage 3	12059	11039-41	11014-04	10994-89	10969-71	10944-51	PD
Stage 4	10919	10893-93	10864-66	10842-44	10819-21	10799-01	PD
Stage 5	10769	10739-41	10714-16	10694-96	10669-71	10644-51	PD
Stage 6	10619	10589-91	10564-66	10544-46	10519-21	10499-01	PD
Stage 7	10480	10439-41	10414-16	10394-96	10369-71	10349-51	PD
Stage 8	10319	10289-91	10264-66	10244-46	10219-21	10199-01	PD
Stage 9	10169	10139-41	10114-16	10094-96	10069-71	10054-56	PD
Stage 10	10019	9989-91	9964-66	9944-46	9919-29	9899-00	PD
Stage 11	9869	9842-44	9816-16	9794-96	9769-71	9749-51	PD
Stage 12	9723	9699-91	9664-66	9644-46	9619-21	9599-01	PD
Stage 13	9569	9539-41	9514-16	9494-96	9469-71	9449-51	PD
Stage 14	9434	9389-91	9364-66	9344-46	9319-21	9299-00	PD
Stage 15	9289	9239-41	9214-16	9194-96	9174-75	9149-51	PD

Stage	Perf Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
Stage 16	9119	9090-01	9064-66	9045-43	9019-21	8994-96	PD
Stage 17	8969	8939-41	8914-16	8894-86	8869-71	8849-51	PD
Stage 18	8819	8784-86	8764-66	8744-46	8719-21	8699-01	PD
Stage 19	8672	8639-41	8614-16	8594-96	8569-71	8549-51	PD
Stage 20	8529	8489-91	8464-66	8444-46	8419-21	8399-01	PD
Stage 21	8360	8324-96	8299-01	8264-66	8229-91	8189-91	PD

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