

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

API 47 - 087 - 04767 County ROANE District SMITHFIELD  
Quad LOONEYVILLE 7.5' Pad Name LONG, JACKSON Field/Pool Name CLOVER  
Farm name KING, WILLIE Well Number 106  
Operator (as registered with the OOG) H.G. ENERGY LLC  
Address 5260 DuPONT ROAD City PARKERSBURG State WV Zip 26101

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,285,299 M Easting 476,138 M  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing 4,285,512 M Easting 476,167 M

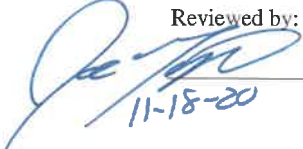
Elevation (ft) 1,038' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
N/A

Date permit issued 9/14/20 Date drilling commenced N/A Date drilling ceased N/A  
Date completion activities began 9/17/20 Date completion activities ceased 9/17/20  
Verbal plugging (Y/N) N Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug  
Freshwater depth(s) ft None Open mine(s) (Y/N) depths None  
Salt water depth(s) ft 1750' Void(s) encountered (Y/N) depths None  
Coal depth(s) ft None Cavern(s) encountered (Y/N) depths None  
Is coal being mined in area (Y/N) N

Reviewed by:  
  
11-18-20

API 47-087 - 04767 Farm name KING, WILLIE Well number 106

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	12 1/4"	11 5/8"	30'	Used	LS		Existing
Surface	8 3/4"	7"	507'	New	LS	64'	Existing
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2537'	New	J-55		Existing
Tubing		2 3/8"	2240'	New	J-55		
Packer type and depth set							

Comment Details Circulated Est. 50 sks to surface on 7" surface cement job. Circulated Est. 20 sks to surface on 4 1/2" cement job. \*Existing Casing/Cement program\*

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Reg Neat	130	15.6	1.18	153	Surface	Existing
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix	95/125	13.2/14.2	1.64/1.27	156/186	54'	Existing
Tubing							

Drillers TD (ft) 2555' Loggers TD (ft) 2555'

Deepest formation penetrated Big Injun Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 650'

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

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DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

20 Centralizers every 88 from bottom on 4 1/2", Centralizer placed mid string on 7" \*Existing\*

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WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_



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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Big Injun</u>	<u>2068'- 2093'</u> TVD	<u>2332'- 2368'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas \_\_\_\_\_ mcfpd Oil \_\_\_\_\_ bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ bpd  
GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
Sand/Shale	0	1400	0	1426	
Sand	1400	1420	1426	1450	
Shale	1420	1592	1450	1652	
Sand	1592	1742	1652	1848	
Shale	1742	1748	1848	1858	
Sand	1748	1762	1858	1878	
Shale	1762	1798	1878	1930	
Sand	1798	1948	1930	2152	
Big Lime	1948	2040	2152	2292	
Keener	2040	2068	2292	2332	
Big Injun	2068	2093	2332	2368	Drilled directional N 10.7° E a distance of 776'
Shale	2093	2233	2368	2555	
TD	2233		2555		

Please insert additional pages as applicable.

Drilling Contractor Decker Drilling  
Address 11565 State Route 676 City Vincent State OH Zip 45784

Logging Company Weatherford International  
Address 777 North River Avenue City Weston State WV Zip 26452

Cementing Company Universal Services  
Address Hall Rd City Buckhannon State WV Zip 26201

Stimulating Company Producers Service Corp.  
Address 109 South Graham Street City Zanesville State OH Zip 43701

Please insert additional pages as applicable.

Completed by Roger Heldman Telephone 304-420-1107  
Signature  Title Operations Manager Date 11/3/20

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry



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Producers Service Corporation  
109 South Graham Street  
Zanesville, OH 43701  
(740) 454-6253  
www.producersservicecorp.com

# Acid

## HG Energy

Company Rep: Dustin  
Treater: Daniel L Graham  
9/17/2020  
Well: Jackson Long #106  
Roane County, WV

### Casing

OD: 4.5"  
ID: N/A  
Weight: 10.5 lb.  
TD: 2555 ft.

### Tubing

Size: N/A  
Depth: N/A

### Packers

Upper Make: N/A  
Upper Depth: N/A  
Lower Make: N/A  
Lower Depth: N/A

### Pressures

PSI Test: N/A  
Breakdown: N/A  
Max: 1736 psi  
Average: 1665 psi  
Displacement: 1652 psi

### Volumes:

Pad N/A  
Treatment: 60 BBL  
15% Acid: 2500 Gal  
Total: 70 BBL  
Flush: 10 BBL

### Open Hole

Size: N/A  
From: N/A  
To: N/A

### Perforations

# of Shots: N/A  
Top Perf: 2350 ft.  
Bottom Perf: 2360 ft.

### Rates

Average: 1 bbl/min  
Max: 1.6 bbl/min

### Notes:

Invoice #: 23830

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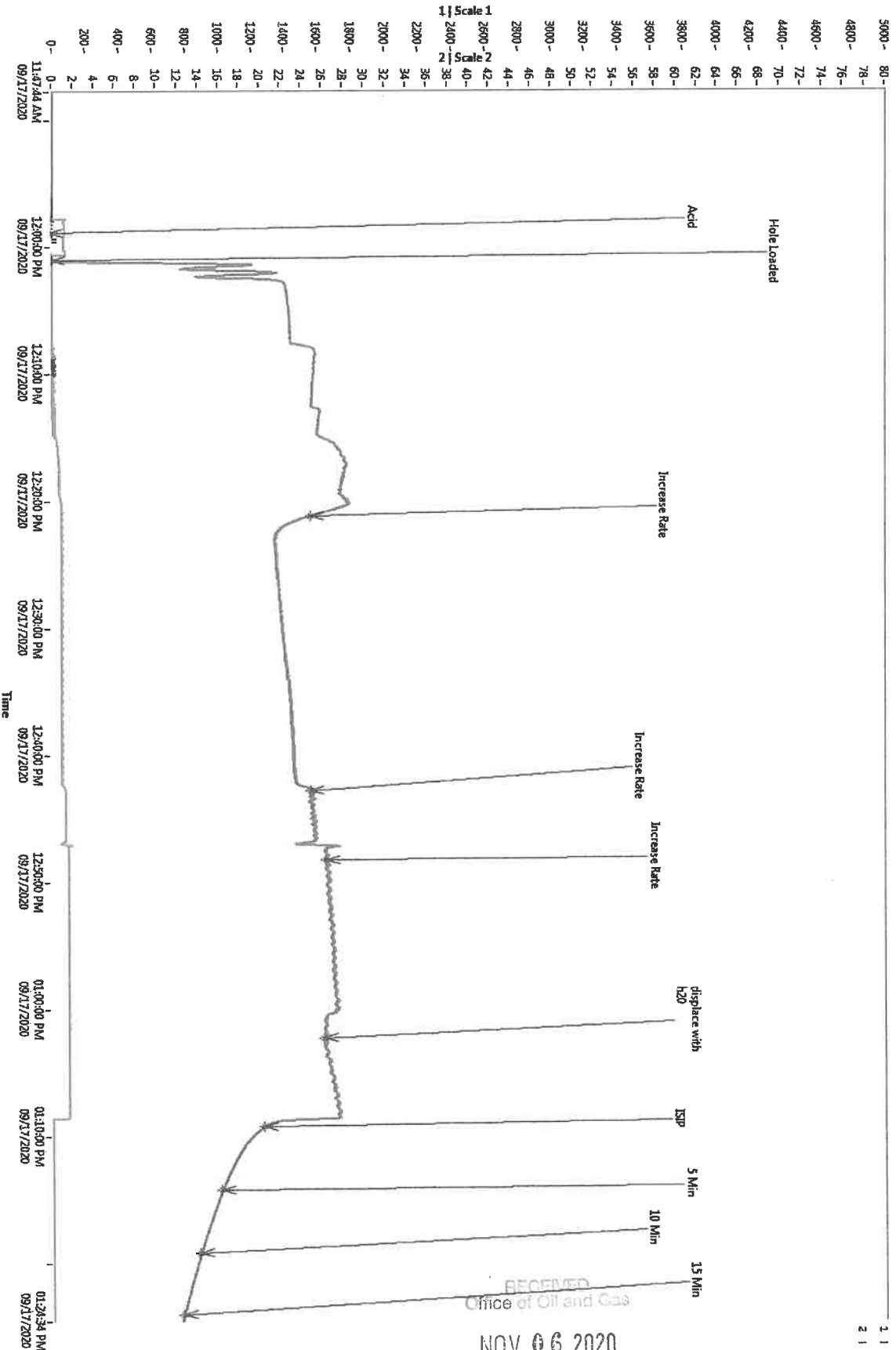
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Sep 17, 2020

HG Energy Jackson Long #106



1 | Pressure 1  
2 | Discharge Rate

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*[Handwritten signature]*





Timestamp	Annotation	Pressure 1	Discharge Rate	Stage Total (gal)	Grand Total (gal)	Stage Total (bbl)	Grand Total (bbl)
9/17/2020 11:57:54 AM	open well	-8.97	1.11	9.29	9.29	0.22	0.22
9/17/2020 11:58:49 AM	Acid	-9.87	1.15	52.80	52.80	1.26	1.26
9/17/2020 12:00:58 PM	Hole Loaded	2.80	0.00	141.19	141.19	3.36	3.36
9/17/2020 12:21:06 PM	Increase Rate	1566.06	0.97	372.26	372.26	8.86	8.86
9/17/2020 12:42:44 PM	Increase Rate	1566.36	1.25	1262.75	1262.75	30.07	30.07
9/17/2020 12:48:14 PM	Increase Rate	1654.94	1.59	1569.39	1569.39	37.37	37.37
9/17/2020 1:02:16 PM	displace with h2o	1638.95	1.59	2511.37	2511.37	59.79	59.79
9/17/2020 1:09:13 PM	ISIP	1275.97	0.00	414.16	2927.74	9.89	69.71
9/17/2020 1:09:53 PM	ISIP	1211.49	0.00	414.16	2927.74	9.89	69.71
9/17/2020 1:14:11 PM	5 Min	1020.78	0.00	414.16	2927.74	9.89	69.71
9/17/2020 1:19:11 PM	10 Min	887.04	0.00	414.16	2927.74	9.89	69.71
9/17/2020 1:24:04 PM	15 Min	783.72	0.00	414.16	2927.74	9.89	69.71

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