

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

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Office of Oil and Gas  
FEB 20 2018  
WV Department of  
Environmental Protection

API 47-087-04792 County ROANE District SMITHFIELD  
Quad LOONEYVILLE 7.5' Pad Name JACKSON LONG Field/Pool Name CLOVER  
Farm name WEBB, PATTY C. Well Number 220  
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 4,285,672 M Easting 476,366 M  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing \_\_\_\_\_ Easting \_\_\_\_\_

Elevation (ft) 1,042' 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 5/6/16 Date drilling commenced 10/20/17 Date drilling ceased 10/26/17  
Date completion activities began 11/17/17 Date completion activities ceased 12/5/17  
Verbal plugging (Y/N) N Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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 1615', 1670' 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

Reviewed by:   
4-30-19

WR-35  
Rev. 8/23/13

API 47-087 - 04792

Farm name WEBB, PATTY C.

Well number 220

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	15"	13 3/8"	14.3'	Used	LS		sanded in
Surface	8 7/8"	7"	508.1'	New	LS	64'	Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2231.89'	New	J-55		
Tubing							
Packer type and depth set							

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Comment Details Circulated Est. 70 sks to surface on surface cement job. Did not circulate on long string.

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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	140	15.6	1.18	165	Surface	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix	80/125	14.2	1.64/1.27	131/159	100'	8
Tubing							

Drillers TD (ft) 2250'

Loggers TD (ft) 2250'

Deepest formation penetrated Big Injun

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) \_\_\_\_\_

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

Well cored  Yes  No  Conventional  Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

7" ran centralizer on top of first joint, 4 1/2" ran 6 centralizers, 42' from bottom first centralizer, 84' spacing from top of first joint for centralizers 2-6

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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PRODUCING FORMATION(S)	DEPTHS	TVD	MD
Big Injun	2052'- 2082'		

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 \_\_\_\_\_

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

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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	874	0		
Sand	874	980			
Shale	980	1014			
Sand	1014	1174			
Shale	1174	1592			
Sand	1592	1757			
Shale	1757	1798			
Sand	1798	1890			
Little Lime	1890	1900			
Pencil Cave	1900	1907			
Big Lime	1907	2038			
Keener	2038	2052			
Big Injun	2052	2082			
Shale	2082	2250			

Please insert additional pages as applicable.

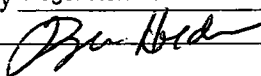
Drilling Contractor Noah Horn Well Drilling  
Address 1070 Sandy Valley Lane City Vansant State VA Zip 24656

Logging Company Weatherford International  
Address 1100 Performance Place City Youngstown State OH Zip 44502

Cementing Company C & J Energy Services  
Address 1650 Hackers Creek Rd City Jane Lew State WV Zip 26378

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 2/8/2018

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

