

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 47-087-04789 County ROANE District SMITHFIELD  
Quad LOONEYVILLE 7.5' Pad Name LONG, JACKSON Field/Pool Name CLOVER  
Farm name WEBB, PATTY C. Well Number 221  
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 4,285,450 M Easting 476,348 M  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing \_\_\_\_\_ Easting \_\_\_\_\_

Elevation (ft) 1,145' 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 5/5/16 Date drilling commenced 11/3/17 Date drilling ceased 11/9/17  
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 1145' 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

  
4-30-19

WR-35  
Rev. 8/23/13

API 47-087 - 04789 Farm name WEBB, PATTY C. Well number 221

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"	10'	Used	LS		sanded in
Surface	8 7/8"	7"	591.93'	New	LS	64'	Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2341.96'	New	J-55		N
Tubing							
Packer type and depth set							

Comment Details Circulated Est. 55 sks to surface on surface cement job. Did not circulate on long string.

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	165	15.6	1.18	195	Surface	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix	100/125	14.2	1.64/1.27	164/159	221'	
Tubing							

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Drillers TD (ft) 2375'      Loggers TD (ft) 2375'  
 Deepest formation penetrated Big Injun      Plug back to (ft) N/A  
 Plug back procedure N/A

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

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

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Well cored     Yes     No       Conventional       Sidewall      Were cuttings collected     Yes     No

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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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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	11/17/17	2154'	2164'	40	Big Injun

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	12/5/17	5	606	767	713	2500	139	0

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Big Injun	2138'- 2156'	TVD	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	950	0		
Sand	950	1066			
Shale	1066	1164			
Sand	1164	1253			
Shale	1253	1672			
Sand	1672	1857			
Shale	1857	1884			
Sand	1884	1984			
Little Lime	1984	2020			
Pencil Cave	2020	2026			
Big Lime	2026	2116			
Keener	2116	2138			
Big Injun	2138	2156			
Shale	2156	2375			

Please insert additional pages as applicable.

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

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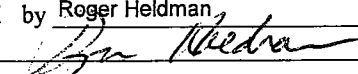
Logging Company Weatherford International  
Address 1100 Performance Place City Youngstown State OH Zip 44502

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Environmental Protection

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 2/8/18

05/03/2019

Prepared for:

HG Energy

Dustin Hendershot



Prepared by:

Producers Service Corp

Daniel L Graham

109 S. Graham St.

Zanesville, OH 43702

740-454-6253

INVOICE #:	20324
WELL NAME:	Jackson long221
COUNTY/STATE:	Roane/WV
TOWNSHIP/FIELD:	Clover Field
DATE of SERVICE:	12/5/2017
CUSTOMER PO#:	

Description	Notes	Amount	Units	Unit Cost	Total Cost
FLUID PUMP CHARGE 0-3000 PSI MIN CHARGE 4 HRS		1	EA		
BLENDER CHARGE 0-10 BPM		1	EA		
MILEAGE CHARGE PER UNIT ONE WAY			MI		
IC ACID 15%		250	GAL		
PRO HIB II		0.5	GAL		
ACID DELIVERY		2	HR		
PRO CLA LOK (KCL SUBSTITUTE)		15	GAL		
PRO NE-21		5	GAL		
PRO GEL 4		150	LB		
BUFFER I		50	LB		
BUFFER II		50	LB		
BIO CLEAR 750		1	LB		
AP BREAKER		15	LB		
BXL-A		10	GAL		
BXL-10C		10	GAL		
SAND 20/40 OTTAWA		25	CWT		
SAND DELIVERY / TON MILES		375	TMILE		
DATA VAN		1	STAGE		

Customer Approval:

