

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

API 47-043-03598 County LINCOLN District DUVAL
Quad GRIFFITHSVILLE 7.5' Pad Name E.P. BELL Field/Pool Name GRIFFITHSVILLE
Farm name HG ENERGY LLC Well Number 509
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 4,231,186 M Easting 417,332 M
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing 4,230,960 M Easting 417,316 M

Elevation (ft) 903' 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

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Date permit issued 4/29/19 Date drilling commenced 6/26/19 Date drilling ceased 7/10/19
Date completion activities began 7/23/19 Date completion activities ceased 7/25/19
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 140' Open mine(s) (Y/N) depths None
Salt water depth(s) ft 1080', 1130' Void(s) encountered (Y/N) depths None
Coal depth(s) ft 275', 480' Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) N

Reviewed by: JS
Reviewed

API 47- 043 - 03598 Farm name HG ENERGY LLC Well number 509

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"	13'	New	LS		Sand In
Surface	8 7/8"	7"	548.7'	New	LS	64'	Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2634.16'	New	LS		N
Tubing							
Packer type and depth set							

Comment Details Circulated Est. 70 sks to surface on 7" surface cement job. Did not circulate cement to surface on 4 1/2" cement job.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	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	115/125	13.2/14.2	1.64/1.27	189/186	800'	8
Tubing							

Drillers TD (ft) 2697' Loggers TD (ft) 2684'
 Deepest formation penetrated Berea Plug back to (ft) N/A
 Plug back procedure N/A

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Kick off depth (ft) 650'

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 _____

20 Centralizers every 88 from bottom on 4 1/2". Centralizer placed mid string on 7"

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>Berea</u>	<u>2362'- 2384'</u> TVD	<u>2547'- 2571'</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 _____ Oil _____ NGL _____ Water _____ GAS MEASURED BY
 _____ mcfpd _____ bpd _____ bpd _____ bpd 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 ₂ S, ETC)
Sand/Shale	0	480	0	480	RECEIVED Office of Oil and Gas AUG 16 2019 WV Department of Environmental Protection Drilled directional S 4.2° W a distance of 742'
Pittsburgh Coal	480	486	480	486	
Sand/Shale	486	1650	486	1710	
Big Lime	1650	1854	1710	1954	
Big Injun	1854	1953	1954	2079	
Shale	1953	2343	2079	2526	
Coffee Shale	2343	2362	2526	2547	
Berea	2362	2384	2547	2571	
Shale	2384	2505	2571	2697	
TD	2505		2697		

Please insert additional pages as applicable.

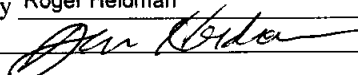
Drilling Contractor Noah Horn Well Drilling
 Address 1070 Sandy Valley Lane City Vansant State VA Zip 24656

Logging Company Weatherford International
 Address 13211 Old Hwy 50 City Flora State IL Zip 62839

Cementing Company Petroset Services
 Address P.O. Box 1076 City Wooster State OH Zip 44691

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 8/12/19

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

