

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

API 47-043-03620 County LINCOLN District DUVAL
Quad GRIFFITHSVILLE 7.5' Pad Name NATHANIEL MASON Field/Pool Name GRIFFITHSVILLE
Farm name JOSHUA BRUMFIELD, JUSTIN WHITE Well Number 223
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 4,232,582 M Easting 415,287 M
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 915' 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 7/18/21 Date drilling commenced 12/22/21 Date drilling ceased 1/5/22
Date completion activities began 1/25/22 Date completion activities ceased 1/31/22
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 WV Department of
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Freshwater depth(s) ft N/A Open mine(s) (Y/N) depths None
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths None
Coal depth(s) ft 402' Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) N

Reviewed by:
TL

03/04/2022

API 47- 043 - 03620

Farm name JOSHUA BRUMFIELD, JUSTIN WHITE Well number 223

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'	New	LS		Sand In
Surface	10 7/8"	8 5/8"	500.8'	New	LS		Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2554.09'	New	LS		Y
Tubing							
Packer type and depth set							

Comment Details Circulated Est. 75 sks to surface on 8 5/8" job, Circulated Est. 15 sks to surface on 4 1/2" 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	215	15.6	1.18	254	Surface	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix	125/125	13.2/14.2	1.64/1.27	205/159	86'	8
Tubing							

Drillers TD (ft) 2580' Loggers TD (ft) 2580'
 Deepest formation penetrated Berea Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 600'

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 _____

10 Centralizers every 88' from bottom on 4 1/2", Centralizer placed mid string and 42' from bottom on 8 5/8"

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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 _____

03/04/2022

API 47- 043 - 03620 Farm name JOSHUA BRUMFIELD, JUSTIN WHITE Well number 223

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	1/25/22	2410'	2420'	40	Berea

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	1/31/22	10	1255	2533	1133	5000	162	250 gals HCL

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PRODUCING FORMATION(S)	DEPTHS
Berea	2406'- 2426' 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 ₂ S, ETC)
Sand/Shale	0	402	0		
Pittsburgh Coal	402	408			
Sand/Shale	408	1688			
Big Lime	1688	1894			
Big Injun	1894	1988			
Shale	1988	2386			
Coffee Shale	2386	2406			
Berea	2406	2426			
Shale	2426	2580			
TD	2580				

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 Appalachian Well Surveys
 Address 10291 Ohio Avenue City Cambridge State OH Zip 43725

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Cementing Company Lightning Energy Services
 Address PO Box 580 City Bridgeport State WV Zip 26330

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Stimulating Company Reliance Well Services
 Address 510 Cranberry Street Suite 230 City Erie State PA Zip 16507

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Please insert additional pages as applicable.

Completed by Roger Heldman Telephone 304-420-1107
 Signature  Title Operations Manager Date 2/24/22

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

03/04/2022

W In Ason 223

Invoice



Reliance
WELL SERVICES LLC

510 Cranberry Street
Suite 230
Erle, PA 16507
Phone 814.454.1644
Fax 814.454.1164
24 Hour 412.906.0992

P.O.#	Inv. Date	Invoice #
12050	1/31/2022	12199

Job Date	DUE DATE
1/31/2022	3/2/2022

HG Energy, LLC
5260 DuPont Rd
Parkersburg, WV 26101

API#	Lease	Well#	State	County	Stages	Terms & Type
	Nathaniel	223	WV	Lincoln	1	Oil/Gas

Description	Quantity	Unit Price	Amount
Pump Truck Charge (#136)	1		
Blender Truck Charge (#210)	1		
Control Van Charge (#710)	1		
Iron/Connections Truck Charge (#507)	1		
Acid HCL 15%	250		
4 N 1 - Inhibitor & Iron Control (in acid)	1		
Sand: Bulk 20/40 API/100 LB (#628)	50		
AP-1 - Oxidizing Breaker	10		
Pro Gel 4.0L - Liquid Guar	30		
BXL 10C - Crosslinker	10		
BXL-A - Breaker Activator	10		
Pro CLA Firm LP - Clay Control	10		
Pro Flo II - Surfactant	10		
BioClear 1000 - Dry Biocide	1		
DISCOUNT FOR PAYMENT WITHIN TERMS	1		
NON DISCOUNTED ITEMS			
Mileage (5 Trucks @ 200 miles/way - Waived after first well of same trip)	0		
Fuel Surcharge (Per Stage Under 1 Hr)	1		

Thank you for your business.

Total [REDACTED]

Terms are Net 30, based on the job completion date. Balances not paid after 30 days are subject to a monthly 1.5% service charge in addition to the Non Discounted total amount due.

Balance Due [REDACTED]

03/04/2022