

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

API 47 - 043 - 03585 County LINCOLN District DUVAL
Quad GRIFFITHSVILLE 7.5' Pad Name GRIFFITH, AUSTIN Field/Pool Name GRIFFITHSVILLE
Farm name HG ENERGY LLC Well Number 164
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 4,231,376 M Easting 415,212 M
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 851' 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 8/21/18 Date drilling commenced 8/25/18 Date drilling ceased 8/30/18
Date completion activities began 9/18/18 Date completion activities ceased 9/19/19
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

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Freshwater depth(s) ft 205', 292' Open mine(s) (Y/N) depths None
Salt water depth(s) ft 1055' Void(s) encountered (Y/N) depths None
Coal depth(s) ft 205', 292' Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) N

Reviewed by:
JS

REVIEWEC
Jeffrey Smith 11-19-18

WR-35
Rev. 8/23/13

API 47-043 - 03585 Farm name HG ENERGY LLC Well number 164

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"	17'	New	LS		Sand In
Surface	8 3/4"	7"	421.58'	New	LS	64'	Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2451.46'	New	J-55		Y
Tubing							
Packer type and depth set							

Comment Details Circulated Est. 15 sks to surface on 7" surface cement job. Circulated Est. 30 sks 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	105	15.6	1.18	124	Surface	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix	125/125	13.2/14.2	1.64/1.27	205/186	68'	8
Tubing							

Drillers TD (ft) 2525 Loggers TD (ft) 2523
 Deepest formation penetrated Berea Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) N/A

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 _____
12 Centralizers every 66 from bottom on 4 1/2". Centralizer placed mid string on 7"

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS SEP 27 2018

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____
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WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
	TVD	MD
Berea	2338'- 2360'	

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	292	0		
Pittsburgh Coal	292	298			
Sand/Shale	298	1614			
Big Lime	1614	1820			
Big Injun	1820	1920			
Shale	1920	2318			
Coffee Shale	2318	2338			
Berea	2338	2360			
Shale	2360	2525			
TD	2525				

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 13211 Old Hwy 50 City Flora State IL Zip 62839

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Cementing Company C&J Energy Services
Address 580 Hawthorn Dr City Norton State VA Zip 24273

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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 *Roger Heldman* Title Operations Manager Date 9/20/18

12/28/2018



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

Frac HG Energy

Company Rep: Dustin Hendershot
Treater: Daniel L Graham
9/19/2018
Well: A .Griffith #164
Lincoln County, OH

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Casing

OD: 4.5"
ID: N/A
Weight: 10.5 lb.
TD: 2425 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: 4432 psi
Breakdown: 1244 psi
Max: 880 psi
Average: 849 psi
Displacement: 872 psi

Volumes:

Pad 25 BBL
Treatment: 45 BBL
0.15% Acid: 250 Gal
Total: 141 BBL
Flush: 36 BBL

Open Hole

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

Perforations

of Shots: N/A
Top Perf: N/A
Bottom Perf: N/A

Rates

Average: 4 bbl/min
Max: 4 bbl/min

Notes:

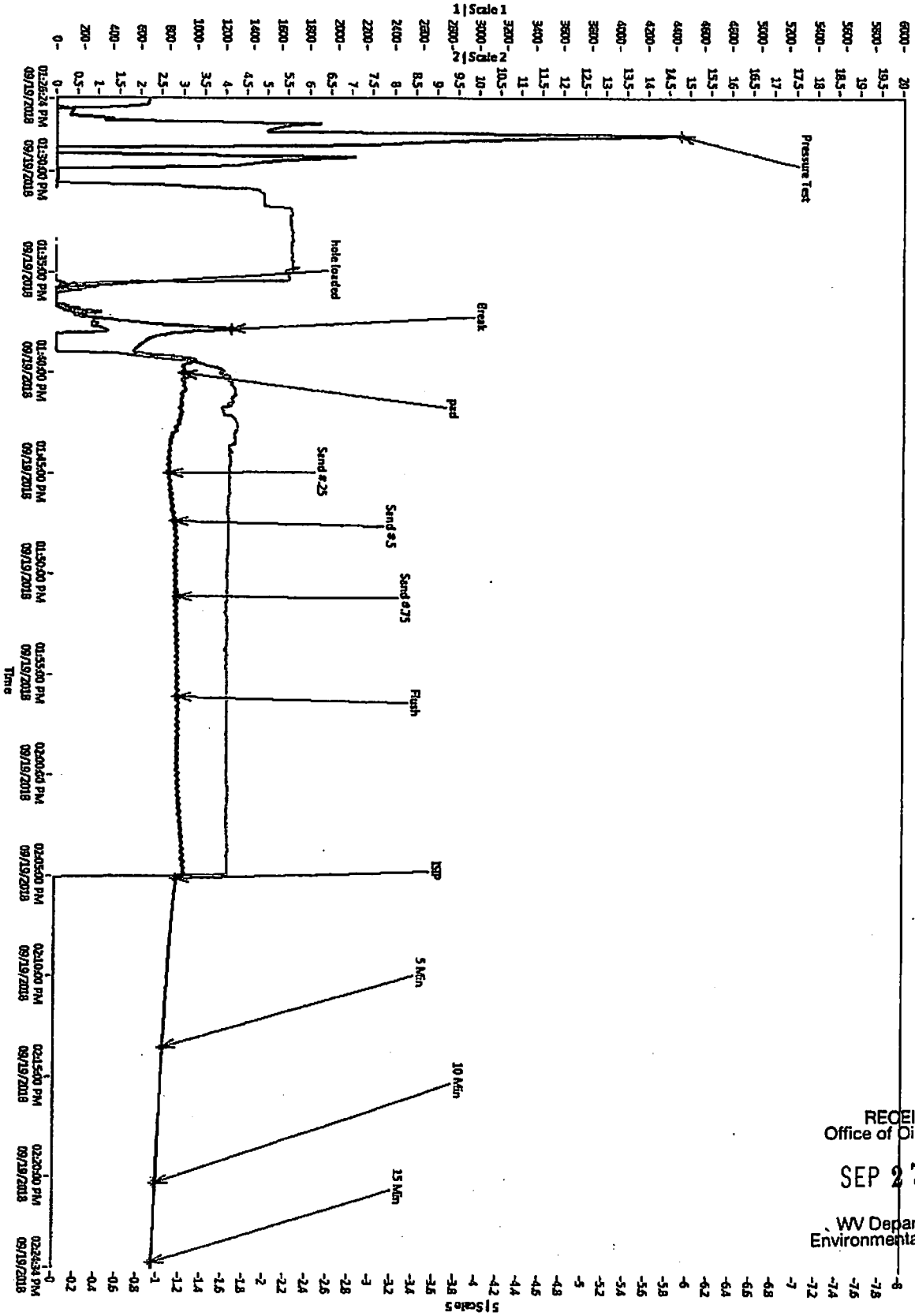
Invoice #: 21901
Waiting on location 4 HRS Blender broke down



HG Energy A Griffith #164 Inv#21801

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1 1 Pressure 1
2 1 Base
5 1 Recorder PPA
KKK



HG Energy A Griffith #164 Inv#21901

Timestamp	Annotation	Pressure 1	Rate	Stage Total (bbf)	Grand Total (bbf)
9/19/2018 1:29:26 PM	Pressure Test	1602.07	0.00	1.80	1.80
9/19/2018 1:35:47 PM	hole loaded	38.59	1.04	27.94	27.94
9/19/2018 1:38:00 PM	Break	864.73	0.00	1.08	1.08
9/19/2018 1:40:00 PM	pad	804.96	3.90	4.33	4.33
9/19/2018 1:44:59 PM	Sand #.25	802.77	4.12	25.00	25.00
9/19/2018 1:47:21 PM	Sand #.5	842.49	4.09	9.60	34.68
9/19/2018 1:51:04 PM	Sand #.75	868.47	4.08	15.03	49.76
9/19/2018 1:58:04 PM	Flush	868.07	4.03	20.16	70.00
9/19/2018 2:05:07 PM	ISIP	861.85	0.00	35.96	106.10
9/19/2018 2:13:31 PM	5 Min	772.68	0.00	35.96	106.10
9/19/2018 2:20:14 PM	10 Min	729.22	0.00	35.96	106.10
9/19/2018 2:24:16 PM	15 Min	707.16	0.00	35.96	106.10

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