

Reviewed
D. Miller 9-4-18

WR-35
Rev. 8/23/13

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

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MAY 7 2018

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API 47-075-00034 County Pocahontas District Green Bank
Quad Wildell, WV Pad Name _____ Field/Pool Name Glady storage
Farm name U.S. Dept of Interior Well Number 7477
Operator (as registered with the OOG) Columbia Gas Transmission, LLC
Address 1700 MacCorkle Ave SE City Charleston State WV Zip 25325-1273

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing _____ Easting _____
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 3505.6 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 - well not drilled deeper during rework

Date permit issued 9/29/16 Date drilling commenced _____ Date drilling ceased _____
Date rework/stim activities began 10/19/16 Date rework/stim activities ceased 10/21/16
Verbal plugging (Y/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 _____ Open mine(s) (Y/N) depths _____
Salt water depth(s) ft _____ Void(s) encountered (Y/N) depths _____
Coal depth(s) ft _____ Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) _____

Reviewed by:

DM

09/07/2018

API 47-075 - 00034 Farm name U.S. Dept of Interior Well number 7477

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							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							
Packer type and depth set							

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Comment Details No existing casing was altered and no additional casing installed during permitted well work.

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							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) _____ Loggers TD (ft) _____
 Deepest formation penetrated _____ Plug back to (ft) _____
 Plug back procedure _____
 No casing cemented during permitted well work.

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 _____

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 _____

API 47- 075 - 00034 Farm name U.S. Dept of Interior Well number 7477

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

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Complete a separate record for each stimulation stage.

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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	10/19/16	10	1260	N/A	N/A	0	150	6000 gals acid

Please insert additional pages as applicable.

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API 47- 075 - 00034 Farm name U.S. Dept of Interior Well number 7477

PRODUCING FORMATION(S)	DEPTHS
Oriskany (storage)	TVD 5928 - 6140 MD

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Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1566 psi Bottom Hole _____ psi DURATION OF TEST 0.75 hrs

OPEN FLOW Gas 13800 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd
 calculated @ 2050 psi maximum surface
 GAS MEASURED BY Estimated Orifice Pilot choke

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		

Please insert additional pages as applicable.

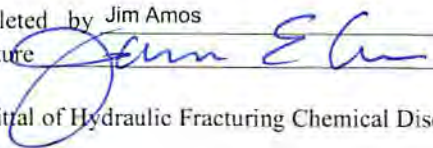
Drilling Contractor _____
 Address _____ City _____ State _____ Zip _____

Logging Company Baker Atlas Logging
 Address 106 Island Ave City Buckhannon State WV Zip 26201

Cementing Company _____
 Address _____ City _____ State _____ Zip _____

Stimulating Company C&J Energy Services
 Address 528 Industrial Park Rd City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Jim Amos Telephone 304-483-0073
 Signature  Title Senior Engineer Date 4/18/18

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

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Glady 7477 (API 075-00034)

Work Performed

Performed CTCO and acid stimulation.

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