

Reviewed

Ray Miller 9-4-18

Page ___ of ___

WR-35
Rev. 8/23/13

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

API 47-075-00030 County Pocahontas District Green Bank
Quad Wildell, WV Pad Name _____ Field/Pool Name Glady Storage
Farm name US Dept of the Interior Well Number 7464
Operator (as registered with the OOG) Columbia Gas Transmission, LLC
Address PO Box 1273 City Charleston State WV Zip 25314

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4281105.7 m Easting 607797.6 m
Landing Point of Curve Northing N/A Easting N/A
Bottom Hole Northing not measured (vertical wellbore) Easting not measured (vertical wellbore)

Elevation (ft) 3466.0 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 - no drilling performed

Date permit issued 7/20/17 Date drilling commenced N/A Date drilling ceased N/A
Date rework activities began 6/6/17 Date rework activities ceased 9/19/17
Verbal plugging (Y/N) N/A Date permission granted _____ Granted by _____

RECEIVED
Office of Oil and Gas
NOV 20 2017
WV Department of
Environmental Protection

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft none observed during rework Open mine(s) (Y/N) depths none observed during rework
Salt water depth(s) ft none observed during rework Void(s) encountered (Y/N) depths none observed during rework
Coal depth(s) ft none observed during rework Cavern(s) encountered (Y/N) depths none observed during rework
Is coal being mined in area (Y/N) N

Reviewed by:

DM

09/07/2018

API 47-075 - 00030 Farm name US Dept of the Interior Well number 7464

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							

Comment Details No casing or tubing ran during rework, no casing or tubing cemented during rework, and no casing or tubing pulled during rework.

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) 6080 Loggers TD (ft) _____

Deepest formation penetrated Helderberg Plug back to (ft) N/A

Plug back procedure _____

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 _____
N/A

RECEIVED
Office of Oil and Gas

NOV 20 2017

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WV Department of
Environmental Protection

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47- 075 - 00030 Farm name US Dept of the Interior Well number 7464

PERFORATION RECORD

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

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	9/13/17	4	1050	N/A	N/A	N/A	229	9000 gal HCl acid

RECEIVED
Office of Oil and Gas
NOV 20 2017

Please insert additional pages as applicable.

WV Department of Environmental Protection

API 47- 075 - 00030 Farm name US Dept of the Interior Well number 7464

PRODUCING FORMATION(S)	DEPTHS
Oriskany (natural gas storage)	TVD 5877 - 6070 MD
_____	_____
_____	_____
_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1868 psi Bottom Hole _____ psi DURATION OF TEST 0.75 hrs

OPEN FLOW Gas 46000 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)
	0		0		

Please insert additional pages as applicable.

Drilling Contractor N/A
Address _____ City _____ State _____ Zip _____

Logging Company N/A
Address _____ City _____ State _____ Zip _____

Cementing Company N/A
Address _____ City _____ State _____ Zip _____

Stimulating Company C&J Energy Services
Address 1650 Hackers Creek Rd City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by James Amos Telephone 304-483-0073
Signature Title Sr WET Engineer Date 11/6/17

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

RECEIVED
Office of Oil and Gas
NOV 20 2017

WV Department of
Environmental Protection
09/07/2018