

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

API 47 - 021 - 05719 County Gilmer District Troy
Quad Burnt House 7.5 Pad Name Ward Field/Pool Name _____
Farm name Patrick & Leslie Ward Well Number 2027
Operator (as registered with the OOG) Waco Oil & Gas Co., Inc.
Address P.O. Box 397 City Glenville State WV Zip 26351

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 200898 Easting 1601406
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 1078' 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 11/29/2010 Date drilling commenced 05/11/2011 Date drilling ceased 05/17/2011
Date completion activities began 06/13/2011 Date completion activities ceased 06/13/2011
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 40, 90 Open mine(s) (Y/N) depths No
Salt water depth(s) ft None Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

AX WS
05/25/14
APPROVED
NAME: Jacquelin J...
DATE: 5/12/14
05/27/2016

API 47-021 - 05719 Farm name Patrick & Leslie Ward Well number 2027

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	15"	11 3/4	169	N	32		Y
Coal							
Intermediate 1	10"	8 5/8	1708	N	23		Y
Intermediate 2							
Intermediate 3							
Production	6 1/4	4 1/2	5162	N	10.5		
Tubing							
Packer type and depth set							

Comment Details _____

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	A	106	15.6	1.18		Surface	8
Coal							
Intermediate 1	A	440	15.6	1.18		Surface	8
Intermediate 2							
Intermediate 3							
Production	50/50 Pos	680	14.3	1.29			
Tubing							

Drillers TD (ft) 5217 Loggers TD (ft) 5215
 Deepest formation penetrated Alexander Plug back to (ft) _____
 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 Ran one every 4th joint from 2300 to TD

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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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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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	06/13/2011	5090	4910	12	Alexander
2		4640	4610	24	Raliegh
3		4320	3950	36	Balltown
4		3452	3318	16	Speechly

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	06/13/11	36	2878	3131	2555			N2 700,119 C02 34 Ton
2	06/13/11	58.1	2772	2699	2269			N2 934,301 C02 34 Ton
3	06/13/11	27.3	2129	2389	2206			N2 850,000 C02 46 Ton
4	06/13/11	29.8	2092	2200	2089			N2 765,191 C02 16 Ton
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Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS	TVD	MD
Speechly	3318		
Balltown	3950		
Riley	4610		
Alexander	4910		

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 460 psi Bottom Hole _____ psi DURATION OF TEST 2 hrs

OPEN FLOW Gas 40 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		
Topsoil	0	6			Brown, soft
Red Rock	6	20			Red, soft
Shale & Red Rock	20	380			Red-Grey, hard & soft
Shale & Sand	380	1740			Grey, hard
Shale	1740	1960			Grey, hard
Lime	1960	2060			Grey, hard
Injun	2060	2150			Copper, hard
Shale	2150	2412			Grey, med
Berca	2412	2416			
SD-SH	2416	3294			
Speechly	3294	3350			
SH-SD	3350	3980			
Balltown	3980	4014			

Please insert additional pages as applicable.

Drilling Contractor Waco Oil & Gas Co., Inc.
Address P.O. Box 397 City Glenville State WV Zip 26351

Logging Company Weatherford
Address _____ City Weston State WV Zip 26452

Cementing Company Universal Well Service
Address _____ City Buckhannon State WV Zip 26201

Stimulating Company Universal Well Service
Address _____ City Buckhannon State WV Zip 26201

Please insert additional pages as applicable.

Completed by Stephen E. Holloway Telephone 304-462-5347
Signature  Title Land Manager Date 02/18/16

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

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API

47-021-05719

FARM NAME

Patrick & Leslie Ward

WELL NUMBER

2027

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 QUANTITIES AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC.)
	0		0		
Sd - Sh	4014	4430			
1st Riley	4430	4450			
Sd - Sh	4450	4598			
2nd Riley	4598	4630			
Sd - Sh	4630	4720			
3rd Riley	4720	4738			
Sd - Sh	4738	4804			
Benson	4804	4812			
Sd - Sh	4812	5020			
Alexander	5020	5098			
Sh-Sd	5098	5216			

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