

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

API 47-39-06349 W County KANAWHA District BIG SANDY
Quad CLENDENIN Pad Name _____ Field/Pool Name _____
Farm name DANIEL & LAURA BODKINS Well Number CRUM 1A
Operator (as registered with the OOG) RAVEN RIDGE ENERGY, LLC
Address 3230 PENNSYLVANIA AVENUE City CHARLESTON State WV Zip 25302

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

Elevation (ft) 1089' 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)
Soap

Date permit issued 12/27/2012 Date drilling commenced 2/18/2013 Date drilling ceased 2/25/2013
Date completion activities began 5/25/2014 Date completion activities ceased 6/10/2014
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 200' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,300' - 1,800' Void(s) encountered (Y/N) depths N
Coal depth(s) ft NONE OF RECORD Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

API 47- 39 - 06349 Farm name DANIEL & LAURA BODKINS Well number CRUM 1A

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/fl	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	14 1/4"	13 3/8"	30'	NEW	J55 - 42LBS		YES - CEMENTED BY RIG
Surface	12 1/4"	9 5/8"	374'	NEW	LS - 17LBS		YES
Coal							
Intermediate 1	8 3/4"	7"	1867'	NEW	J55 - 23LBS		YES
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2187'	NEW	J55 - 10.5 LBS		YES
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	CLASS I	10 - Cemented by Hand				GROUND LEVEL	8
Surface	CLASS I	120	15.6	1.18	118.8	GROUND LEVEL	8
Coal							
Intermediate 1	CLASS I	336	15.6	1.18	396.5	GROUND LEVEL	8
Intermediate 2							
Intermediate 3							
Production	CLASS I	130	15.6	1.18	153.4	1530'	8
Tubing							

Drillers TD (ft) ^{2544'} _____ Loggers TD (ft) ^{2560'} _____
 Deepest formation penetrated ^{WEIR} _____ Plug back to (ft) _____
 Plug back procedure _____

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 _____

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS This well was originally completed as a shot hole. We later ran back in and set 4 1/2" and cemented to 1530'

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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PRODUCING FORMATION(S)	DEPTHS	TVD	MD
WEIR	<u>2130 - 2196</u>	<u>2160 - 2180</u>	

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 100 psi Bottom Hole _____ psi DURATION OF TEST 12 hrs
 OPEN FLOW Gas Oil NGL Water GAS MEASURED BY
10 mcfpd 2 bpd _____ bpd 5 bpd 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	1510'	0		
UPPER SALT SAND	1510'	1594'			
SHALE	1594'	1640'			
LOWER SALT SANDS	1640'	1770'			
SAND/SHALE	1770'	1794'			
SAND/SHALE	1794'	1850'			
LITTLE LIME	1850'	1870'			
BIG LIME	1870'	1944'			
SQUAW	1944'	1990'			
SAND/SHALE	1990'	2130'			
WEIR	2130'	2196'			
SHALE	2196'	2390'			
BEREA	2390'	2448'			
SAND/SHALE	2448'	2544'			

Please insert additional pages as applicable.

Drilling Contractor R & R Well Service
 Address Ambler Ridge City Walton State WV Zip 25286
 Logging Company Nabors Completion & Production
 Address 82 Elkins Road City Buckhannon State WV Zip 26201
 Cementing Company Universal Well Services
 Address 5 Hall Run Road City Buckhannon State WV Zip 26201
 Stimulating Company Producers Service Corporation
 Address 109 South Graham Street City Zanesville State OH Zip 43701

Please insert additional pages as applicable.

Completed by Danielle N. Boggs Telephone 304-344-9291
 Signature *Danielle N. Boggs* Title Operations Manager Date 2/12/2015

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