

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



API 47 - 061 - 01688 County Monongalia District Clay  
Quad Blacksville, WV Pad Name Coastal Field/Pool Name \_\_\_\_\_  
Farm name Coastal Forest Resources Company Well Number 13H  
Operator (as registered with the OOG) Northeast Natural Energy LLC  
Address 707 Virginia Street, E., Suite 1200 City Charleston State WV Zip 25301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4395406.8 Easting 568198.1  
Landing Point of Curve Northing 4395668.9 Easting 568325.1  
Bottom Hole Northing 4397091.0 Easting 567253.1

Elevation (ft) 1,420' 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)  
Synthetic Based Mud for horizontal section, B/O-BASE 365, CALCIUM CHLORIDE POWDER, G-SEAL PLUS, HRP, LIME, M-I WATE (BARITE), M-I-X II MEDIUM, MEGADRIL P SYSTEM, MEGADRIL P SYSTEM RENTAL, MEGAMUL, SAFE-CARB 250, VERSATHIN HF, VERSAWET, VG-PLUS, VINSEAL MEDIUM, WALNUT NUT PLUG MEDIUM

Date permit issued 10/28/2014 Date drilling commenced 11/21/2014 Date drilling ceased 3/11/2015  
Date completion activities began 12/21/2015 Date completion activities ceased 1/3/2016  
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 1,243' Open mine(s) (Y/N) depths \_\_\_\_\_  
Salt water depth(s) ft 2,510' Void(s) encountered (Y/N) depths \_\_\_\_\_  
Coal depth(s) ft 600', 1,200' Cavern(s) encountered (Y/N) depths \_\_\_\_\_

Is coal being mined in area (Y/N) \_\_\_\_\_

**APPROVED**  
NAME: [Signature]  
DATE: 12/16/2016

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Office of Oil and Gas  
N  
OCT - 9 2016  
Reviewed by:  
WV Department of  
Environmental Protection  
02/09/2017

API 47-061 - 01688 Farm name Coastal Forest Resources Company Well number 13H

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	30	24	50	N	N/A	N/A	Y to surface
Surface	17.5	13 3/8	1,380'	N	54.5	N/A	Y 40 bbl return
Coal							
Intermediate 1	12.25	9 5/8	2,732'	N	40	N/A	Y 15 bbl return
Intermediate 2							
Intermediate 3							
Production	8.5	5.5	14,728'	N	20	N/A	Estimated top 2000'
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	4,500 psi ready mix	36.4		.75	27.27	CTS	48
Surface	Class A	1,054	15.2	1.27	1,271	CTS	8
Coal							
Intermediate 1	Class A	889	15.2	1.26	1,074	CTS	8
Intermediate 2							
Intermediate 3							
Production	50/50 Premium NE - 1.3% R-3.3% MPA 170	2,804	14.5	1.17	2,661	Estimated 2,000'	48
Tubing							

Drillers TD (ft) 14,719' Loggers TD (ft) 14,694'

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

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 6,560'

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 \_\_\_\_\_

Surface: bow spring centralizers every 3rd joint or aprox 120'

Intermediate: bow spring centralizers every 3rd joint or aprox 120'

Production: Hard bodied spiral centralizers every other joint or aprox 80' from TD to KOP then bow spring from KOP to 9 5/8" every forth joint or aprox 140'

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS 29 stages, 40 shots per stage

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

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)
					Please See Attachment

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)
						Please	See	Attachment

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Please insert additional pages as applicable.

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02/03/2017

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	8,200.67'	TVD	14,719' MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3055 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST 48 hrs

OPEN FLOW Gas 5976 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<sub>2</sub>S, ETC)

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 <sub>2</sub> S, ETC)
	0		0		Please See Attachment

Please insert additional pages as applicable.

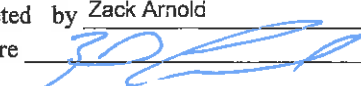
Drilling Contractor Pioneer 63  
Address 1250 NE Loop 410 Suite 1000 City San Antonio State TX Zip 78209

Logging Company Baker Hughes  
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Cementing Company Baker Hughes  
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Stimulating Company Schlumberger  
Address 1080 US-33 City Weston State WV Zip 26452

Please insert additional pages as applicable.

Completed by Zack Arnold Telephone 304.212.0437  
Signature  Title General Manager - Operations Date 10/27/16

