Amy Muller 11-19-15

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PM

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

API 47- 39 - 6373 County Kanawha District Spring Hill
Quad Charleston West Pad Name ____ Field/Pool Name ____
Farm name South Charleston Municipal Bldg. Commission Well Number Country Club # 1
Operator (as registered with the OOG) Reserve Oil & Gas Inc-
Address 929 Charleston Road City Spencer State WV Zip 25276

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) 765 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)

Date permit issued 4/17/2015 Date drilling commenced 6-25-15 Date drilling ceased 7-17-15

Date completion activities began 8/24/2015 Date completion activities ceased 8/24/2015

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

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Freshwater depth(s) ft 55 Open mine(s) (Y/N) depths N

Salt water depth(s) ft 1090 Void(s) encountered (Y/N) depths None

Coal depth(s) ft N A Cavern(s) encountered (Y/N) depths N

Is coal being mined in area (Y/N) No

Reviewed by:

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API 47- ___ - _____ Farm name_____ Well number_____

PRODUCING FORMATION(S) DEPTHS

_____ _____ TVD _____ MD

_____ _____ _____

_____ _____ _____

_____ _____ _____

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☑ Open Flow OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface 0 psi Bottom Hole 10 psi DURATION OF TEST 12 hrs

OPEN FLOW Gas 2 mcfpd Oil NA bpd NGL NA bpd Water NA 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_2S, ETC)
K.B to G.L	0	7	0		
Clay	7	12			
Rock	12	60			Hole damp at 60-80'
Sand	60	80			
Grey Sand	80	150			
Sd x Sh	150	890			1090' - brine water
Salt Sand	890	1539			
~~Maxton~~	1539	1557			
L. Lime	1557	1588			
B. Lime	1590	1786			
Injun	1786	1816			
Grey Shale	1816	2138			
Berea	2238	2250			
Sd x Sh	2250	3240			Gas Vapor at 2381'

Please insert additional pages as applicable.

Drilling Contractor Kanawha Valley Drilling
Address _____ City _____ State _____ Zip _____

Logging Company Cowserv
Address _____ City _____ State _____ Zip _____

Cementing Company CES - Long String
Address _____ City _____ State _____ Zip _____

Stimulating Company CES CoAS Frac
Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Doug Douglass Telephone 304-927-5228
Signature Doug Douglass Title Land Manager Date 10/1/15

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

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API 47- ____ - _____ Farm name_____Well number_____

PRODUCING FORMATION(S) DEPTHS

_____ _____ TVD _____ MD

_____ _____ _____

_____ _____ _____

_____ _____ _____

Please insert additional pages as applicable.

GAS TEST □ Build up □ Drawdown □ Open Flow OIL TEST □ Flow □ Pump

SHUT-IN PRESSURE Surface _____psi Bottom Hole_____psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY □ Estimated □ Orifice □ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
	0		0		
Huron	3240	4020			
Dev. Shale	4020	4535			
Black Shale	4535	4545			
Brown Shale	4545	4600			
Dark Gray Shale	4600	4624			Gas vapor

Please insert additional pages as applicable.

Drilling Contractor _____
Address _____ City _____ State _____ Zip _____

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company _____
Address _____ City _____ State _____ Zip _____

Stimulating Company _____
Address _____ City _____ State _____ Zip _____
Please insert additional pages as applicable.

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Completed by _____ Telephone _____
Signature _____ Title _____ Date _____

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

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API 47- ___ - _____ Farm name_____ Well number_____

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	17 1/2	13 3/4	23'	N	42		Y
Surface	12 1/4	9 5/8	336'	N	32	84'	Y
Coal							
Intermediate 1	8 3/4	7	1877	Used	19	320'	Y
Intermediate 2							
Intermediate 3							
Production	6 1/4	4 1/2	4623'	Used	11.6	6 Baskets	N
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	Type 1	7				surface	
Surface	Type 1	13				surface	
Coal							
Intermediate 1	Type 1	210				surface	
Intermediate 2							
Intermediate 3							
Production	Strength Lite 250	160	13	2-34			
Tubing							

Drillers TD (ft) 4624 Loggers TD (ft) _____

Deepest formation penetrated Lower Huron 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 _____

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 _____

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API 47- 39 - 6373 Farm name SC Municipal Bldg. Comm. Well number Country Club # 1

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1		3472	4460	60	Huron, Brown Shale

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	8/24/15	N/A	N/A	2808	1232	N/A		14,000 cscf

Please insert additional pages as applicable.

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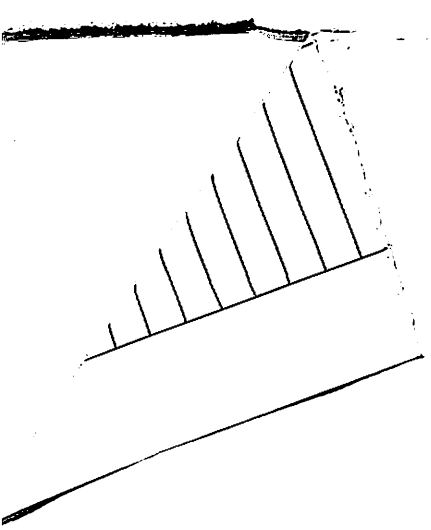

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