JK

File Copy

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- 039 - 06327 County Kanawha District Elk
Quad Big Chimney Pad Name _____ Field/Pool Name Yeager
Farm name Central WV Regional Airport Well Number #2
Operator (as registered with the OOG) Reserve Oil and 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 4248087.70 Easting 448052.12
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 785 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

Date permit issued 12/19/2011 4/28/2014 Date drilling commenced 6/6/2014 08/27/2013 Date drilling ceased 6/6/2014 09/06/2013
Date completion activities began 6/19/2014 Date completion activities ceased 6/19/2014
Verbal plugging (Y/N) No 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 N/A Open mine(s) (Y/N) depths No
Salt water depth(s) ft 768 , 1011 Void(s) encountered (Y/N) depths No
Coal depth(s) ft 1062 - 1065 Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) NO

Received
Office of Oil & Gas
SEP 16 2014

Reviewed by:
R.F.

09/19/2014

WR-35
Rev. 8/23/13

API 47- 039 - 06327 Farm name Central WV Regional Airport Well number Yeager #2

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 3/8"	18 FT	New	48 #	none	CTS by hand
Surface	12 1/4"	9 5/8"	336 FT	New	26 #	1684 FT	Yes, 5bbl to pit
Coal							
Intermediate 1	8 3/4"	7"	1646 FT	New	17 #	1295 FT	Yes, 5bbl to pit
Intermediate 2							
Intermediate 3							
Production	6 1/2"	4 1/2"	4314.30 FT	New	11.6 #	jts: 11, 21, 31,	
Tubing						41, & 51	
Packer type and depth set							

Comment Details Ran 4 1/2" production casing into existing hole, and cement into place.

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	Portland	7				GL	7
Surface	Type 1	120	14.8	1.4	168	GL	13
Coal							
Intermediate 1	Type 1	225	14.8	1.4	315	GL	16
Intermediate 2							
Intermediate 3							
Production	Stringlite 250	160	12.5	2.21	354		24
Tubing							

Drillers TD (ft) 4326 Loggers TD (ft) 4336
Deepest formation penetrated Devonian Shale 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
13 3/8": no centralizers used
9 5/8": 1 centralizer at joint 6
7": 3 centralizers at joints: 10, 20, 34
4 1/2": 6 centralizers at joints: 10, 20, 30, 40, 50, & 60

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

09/19/2014

WR-35
Rev. 8/23/13

API 47- 039 - 06327 Farm name Central WV Regional Airport Well number Yeager #2

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	6/19/2014	4170	3458	40	Huron, Devonian Shale
2	6/19/2014	3376	2536	40	Huron

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) 7½% HCL	Amount of Nitrogen/other (units)
1	6/19/14	52 526	2470	4407	1883		390 gallons	1000189 N2
2	6/19/14	51818	2143	2346	1673		1005 gallons	1000189 N2

Please insert additional pages as applicable.

09/19/2014

WR-35
Rev. 8/23/13

API 47- 039 - 06327 Farm name Central Regional Airport Well number Yeager #2

PRODUCING FORMATION(S)	DEPTHS	
Huron	2529 - 3663 TVD	2536 - 3670 MD
Devonian Shale	3663 - 4163	3670 - 4170

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface _____ psi Bottom Hole 180 psi DURATION OF TEST 7 hrs

OPEN FLOW Gas 84 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		
					See Attachment A

Please insert additional pages as applicable.

Drilling Contractor Kanawha Valley Drilling
Address 929 Charleston Road City Spencer State WV Zip 25276

Logging Company Alberts Completion & Production Services Co.
Address 515 West Greens Road, Suite 1100 City Houston State TX Zip 77067

Cementing Company Baker Hughes / Universal Well Services
Address 17015 Aldine Westfield Road / Rt 5 Hall Rd City Houston / Buckhannon State TX / WV Zip 77073 / 26201

Stimulating Company Universal Well Services
Address Rt 5 Hall Road City Buckhannon State WV Zip 26201

Please insert additional pages as applicable.

Completed by Ryan Fields Telephone 304-927-5228
Signature Ryan Fields Title office assistant Date 9/10/2014

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

09/19/2014

Yeager #2 47-39-06327 Attachment A

Formation	TOP (TVD)	BOTTOM (TVD)	TOP (MD)	BOTTOM (MD)	Remarks
KB to GL			0	7	768', hole wet
Rock	0	53	7	60	start soap
Sand & Shale	53	108	60	115	pump
Shale	108	208	115	215	
Sand	208	245	215	252	1011', 3" stream
Shale	245	661	252	668	
Salt Sand	661	1055	668	1062	1974', crude oil
Coal	1055	1058	1062	1065	
Shale	1058	1089	1065	1096	2005', gas,
Maxton	1089	1199	1096	1206	4/10th thru 2"
Shale	1199	1209	1206	1216	
Sand	1209	1341	1216	1348	4326', gas,
Little Lime	1341	1372	1348	1379	4/10th thru 2"
Shale	1372	1375	1379	1382	
Big Lime	1375	1558	1382	1565	
Injun	1558	1584	1565	1591	
Squaw	1584	1595	1591	1602	
Shale	1595	2031	1602	2038	
Brea	2031	2043	2038	2050	
Shale	2043	2123	2050	2130	
Huron	2123	3663	2130	3670	
Devonian Shale	3663	4319	3670	4326	

09/19/2014