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

API <u>47</u> - <u>059</u> - <u>02243</u> County <u>MINGO</u>	District HARDEE
Quad NAUGATUCK Pad Name	Field/Pool Name
Farm name MARYNARD, RAYMOND	Well Number <u>2365</u>
Operator (as registered with the OOG)QUALITY NATU	RAL GAS, LLC
Address P.O. BOX 480 City A	LEN State KY Zip 41601
As Drilled location NAD 83/UTM Attach an as-drille  Top hole Northing  Landing Point of Curve Northing  Bottom Hole Northing	Easting
Elevation (ft) 851.1 GL Type of Well	New □ Existing Type of Report □Interim ■Final
Permit Type   Deviated   Horizontal   Horizontal	tal 6A
Type of Operation □ Convert □ Deepen ■ Drill □	Plug Back □ Redrilling □ Rework ■ Stimulate
Well Type □ Brine Disposal □ CBM ■ Gas □ Oil □ Sec	ondary Recovery   Solution Mining   Storage   Other
Type of Completion □ Single ■ Multiple Fluids Production  Drilled with □ Cable ■ Rotary	
Drilling Media Surface hole ■ Air □ Mud □ Fresh Wat	
Production hole Air Mud Fresh Water Brine Mud Type(s) and Additive(s)  N/A	
Date permit issued 4/24/2014 Date drilling comn	nenced_ 5/13/2014 Date drilling ceased 5/19/2014
Date completion activities began 9/16/2015	0/46/2045
Verbal plugging (Y/N) N Date permission granted	Granted by
Please note: Operator is required to submit a plugging applica	ation within 5 days of verbal permission to PECEIVED Office of Oil and Gas
Freshwater depth(s) ftNone Encountered	Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Encountered	Void(s) encountered (Y/N) depths
Coal depth(s) ft 83-87'	Cavern(s) encountered (Y/N) depths VV Department of
Is coal being mined in area (Y/N)N	Environmental Protection Reviewed by:

07/22/2016

API 47- <u>059</u>	- 02243	Farm nam	e_MARYNA	RD, RAY	MOND	Well	number_ 236	55			
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft		Basket Depth(s)		nent circulate (Y/N) ide details below*		
Conductor	17 1/2"	13 3/8"	42'	New		LS	None				
Surface	12 1/4"	9 5/8"	441'	New	_	LS	397', 44'		Yes - 4bbls		
Coal											
Intermediate 1	8 7/8"	7"	1752'	New		LS	None		Yes - 6bbls		
Intermediate 2											
Intermediate 3	liate 3										
Production	6 3/8"	4 1/2"	3654'	New	L	65	None	N	o - 500' up in 7"		
Tubing	bing										
Packer type and d	epth set										
Comment Details								-			
CEMENT	Class/Type	Number	Slurry		/ield	Volume	Cemer		WOC		
DATA Conductor	of Cement Class A	of Sacks	wt (ppg	g) (n	<sup>3</sup> /sks)	(ft. <sup>3</sup> )	Top (M	(D)	(hrs)		
Surface	Class A	150	15.5		1.18	177	Surfac	ce	8		
Coal	O.G.C.										
Intermediate 1	Class A	100, 125	15.6, 12	2.3 1.18	3, 1.84	118, 230	) Surfac	ce	8		
Intermediate 2			· ·								
Intermediate 3											
Production	Class A	145	13.6		145	275.5	500' up	in 7"	8		
Tubing											
_	tion penetrated	HARRELL SHALE		Loggers T Plug back							
Check all wire	line logs run	a caliper neutron	■ density ■ resistivity	□ deviat	ed/directi a ray		nduction emperature	<b>≜</b> soni	ic		
Well cored	Yes 🖪 No	□ Convention	al 🗆 Sidev	vall	W	ere cuttings	collected				
	HE CENTRALI 90, 2539.60, 2361.20, 2183, 2	ZER PLACEMEN	NT USED FO	R EACH C	ASING S	TRING 360			rposes only.		
WAS WELL	COMPLETED A	AS SHOT HOLE	□ Yes ■	No Di	ETAILS						
WAS WELL	COMPLETED (	OPEN HOLE?	⊃Yes ∄ No	o DET	AILS _						
WERE TRAC	ERS USED 🗆	Yes ■ No	TYPE OF T	RACER(S)	USED						

WR-35 Rev. 8/23/13

API 47- 059 - 02243 Farm name MARYNARD, RAYMOND Well number 2365

## PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	9/16/2015	3533	3337	46	SHALE
2	9/16/2015	2645	2570	30	BEREA/SHALE
<u></u>					
	-			-	
			-		
<u> </u>					
<u></u>					
			<u> </u>	<u> </u>	

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	9/16/15	89	2634	2769	1353	NONE	NONE	806 mmscf N2, 12bbl acid
2	9/16/15	89	2726	2803	1792	NONE	NONE	802 mmmscf N2, 12 acid
			·					
						ļ		
							RECI	EIVED
						C	ffice of C	IVED II and Gas
<u> </u>					<u> </u>		APR 0	<b>6</b> 2016
						ļ	MALDON	
						- En.	v Depa	rtment of
L							ronmenta	tment of

Please insert additional pages as applicable.

API 47- 059	_ 02243	Farm 1	name MARYNAF	RD, RAYM	DND	Well numbe	r_2365	
PRODUCING	FORMATION(	S)	<u>DEPTHS</u>					
BEREA				TVD		MD		
DEVONIAN SH	IALE (BROWN)		2609-3540'	_ 1,5				
		·			T <sub>1</sub> ,42			
Please insert ac	dditional pages a	s applicable.						
GAS TEST	□ Build up □	Drawdown	■ Open Flow		OIL TEST $\ \square$	Flow   Pum	p	
SHUT-IN PRE	ESSURE Surf	ace 410	_psi Botto	m Hole	psi	DURATION	OF TEST 72 hrs	;
OPEN FLOW		Oil jpd l	NGL opd	bpd .		GAS MEAS		
LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN MD	FT DESCRIBE		O RECORD QUANTITY AND TER, BRINE, OIL, GAS, H <sub>2</sub> S	
SEE ATTACHED	0		0					
SEE ATTACHED								
							19 4 ×	156 12
(EW)								
- 1- 1							<del></del>	
70.1							100	
Please insert ac	  ditional pages a	s applicable						
	3 (5	5.5						
Address 72 OLI	nctor MOUNTAIN D 25 E	RIDGE	City	BARBOUF	RVILLE	State KY	Zip 40906	
		OBD						
Address	oany WEATHERI	-ORD	City	LONDON		State KY	Zip 40741	
				THE STATE OF THE S		State	Z.ip	
Cementing Con Address 580 HA	mpany <u>C &amp; J EN</u> AWTHORN DR	ERGY SERVIC	City	NORTON		State VA	Zip 24273	
-		NEDOV CEE:				State	Z.ip	
Stimulating Co Address 580 HA	ompany C&JE	:NERGY SERV	City	NORTON	_	State VA	Zip 24273	
-	ditional pages a	s applicable.	City			State VA	Zip <u></u>	
	and the second state	ie. It				606 074 0044	0-11 000 540 4045	
Completed by Signature	Darrell Fluharty	10 F	Title Fi	eld Supervis	_ Telephone or	Date	Cell 606-548-1915	_
orginature	1		11110			Date_	/ 4	

**WELL #2365** 

## API#47-5902243

WELL #2365			API#47-59022	.43	
					DESCRIBE ROCK TYPE AND RECORD
	TOP	BOTTOM	TOP	BOTTOM	QUANTITY AND TYPE OF FLUID
LITHOLOGY/ FORMATION	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	(FRESHWATER, BRINE, OIL, GAS, H2S, ETC)
TOP SOIL	0	15			
SAND	15				-
SAND/SLATE	55	İ			
COAL	83	87	<u>.</u>		
SLATE	87	125			
SAND	125	190			
SLATE	190				
SAND	260	295			
SAND/SLATE	295	540			
SLATE	540	590	,		
SAND	590	665			
SLATE	665	685			
SAND/SLATE	685	814			
SAND	814	855			
SAND/SLATE	855	880			
SAND	880	935			
SLATE	935	1005			
SAND	1005	1067			
SALT SAND	1067	1128			
SAND/SLATE	1128	1168			
SAND	1168	1214			
SALT SAND	1214	1296			
SAND/RED ROCK	1296	1262			
RED ROCK/SLATE	1262	1355			
SAND	1355	1710			
LITTLE LIME	1710	1760			
BIG LIME	1760	1958			
INJUN	1958	2010			RECEIVED
WEIR	2010	2512			Office of Oil and Gas
COFFEE SHALE	2512	2539			APR <b>0 6</b> 2016
BEREA	2539	2609			WV Department of
BROWN SHALE	2609	3540		Er	vironmental Protection
HARRELL SHALE	3540	3660			07/22/2016