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

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DEC 1 9 2014

WV Department of Environmental Protection 47.590 _ 2109 MINGO _ District LEE API County DELBARTON Quad Field/Pool Name Pad Name Farm name DALLAS T. RUNYON _ Well Number 2010 QUALITY NATURAL GAS, LLC Operator (as registered with the OOG) P.O. BOX 480 ALLEN KY 41601 Address City State Zip 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) 727.4 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 Fluids Produced DBrine □ Other **■**Gas □ NGL □ Oil Drilled with

Cable Rotary Intermediate hole Air D Mud D Fresh Water D Brine Drilling Media Surface hole ■ Air □ Mud □Fresh Water Production hole ■ Air □ Mud □ Fresh Water □ Brine Mud Type(s) and Additive(s) N/A Date drilling commenced 12/18/2009 Date drilling ceased 10/21/2009 12/31/2009 Date permit issued 11/19/2014 Date completion activities ceased Date completion activities began N/A Date permission granted ____ Granted by Verbal plugging (Y/N) Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug 103', 198' None Encountered Freshwater depth(s) ft Open mine(s) (Y/N) depths ___ 950' None Encountered Salt water depth(s) ft Void(s) encountered (Y/N) depths 41', 55', 81' None Encountered Coal depth(s) ft Cavern(s) encountered (Y/N) depths _ No Is coal being mined in area (Y/N) Reviewed by:

API 47- 590												
CASING STRINGS	Hole Size	•		Depth		w or sed	Grade wt/ft		Basket Depth(s)		Did cement circulate (Y/N) * Provide details below*	
Conductor	17 1/2"	13 3/8"		115' Nev		lew	LS					
Surface	12.3/8"	12.3/8" 9.5/8"		256'		lew	LS		212', 88'		Yes	;
Coal		112 . 14										
Intermediate 1	8 7/8"		7"	1,817'	N	lew L	LS	None	9	Yes		
Intermediate 2										Ì		
Intermediate 3			İ									
Production	6 3/8"		4 1/2"	4,114	N	lew	J	l-55	None	•	No - 500' up in 7"	
Tubing										İ	-	
Packer type and d	lepth set		<u> </u>									
Comment Details												
CEMENT DATA	Class/Type of Cement		Number of Sacks		Slurry wt (ppg)		ield ³/sks)	Volume (ft.²)		Cement Top (MD)		WOC (hrs)
Conductor	Class A		OI Sacks_	- '	и (ррв)	'	ranay	<u></u>		- op (<u>-</u>)		()
Surface	Class A/2 9	6	150sks		15.5	1	.18	177		SURFACE		8
Coal												
Intermediate 1	Class A/2%, Po	z Mix	135, 135	15	5.6, 12.3	1.18	3, 1.84	159, 24	8 3	SURFACE		8
Intermediate 2												
Intermediate 3			· ·		•							
Production	Class A/Kinzer	Blenc	155		13.6	1	.90	295	5	00' UP IN 7	•	8
Tubing	-				-							
Drillers TD (fit Deepest forma Plug back pro	tion penetrated	Devor	nian Shale			-	D (ft) 4.10 to (ft) N/					
Kick off depth	n (ft) N/A							-				
Check all wire	cline logs run		a caliper	densist		deviate gamma	ed/directi a ray		induction temperat		sonic	
	Yes 🗆 No								-	ed 🗆 Ye		
DESCRIBE T 3849', 3716', 3583', 3451	HE CENTRAL 1', 3318', 3185' 3052' 2919'	IZER										
		•										
WAS WELL	COMPLETED	AS SI	HOT HOLE	□ Yes	A No	DI	ETAILS					
WAS WELL	COMPLETED	OPEN	N HOLE?	Yes	■ No	DET	AILS _					
WEDETDAC	EDCLISED 1	ı Vac	■ No	ፐ ሂፆፑ (TRAC	ER(S) !	USED					

API	47- <u>590</u> - <u>2109</u>	Farm name_	DALLAS T. RUNYON	Well number2010	
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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	11/19/2014	2702'	2725'	18	Shale
1	11/19/2014	3504'	3712'	50	Upper Shale
2	11/20/2014	4018'	4136'	32	Lower Shale
					
 		-			
				 	
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				-	
		_		1	
				 	
				1	

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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)
11/20/14	_	3,382	3,994	1,739	NONE	NONE	654,225 (N2)
11/20/14	-	2,894	2,971	1,160	NONE	NONE	1,505,237 (N2)
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				:-011	henta.		
				ELAHOL			
	Date 11/20/14	Date Rate (BPM) 11/20/14 —	Date Rate (BPM) Pressure (PSI) 11/20/14 — 3,382	Date Rate (BPM) Pressure (PSI) Pressure (PSI) 11/20/14 — 3,382 3,994 11/20/14 — 2,894 2,971	Date Rate (BPM) Pressure (PSI) Pressure (PSI) ISIP (PSI) 11/20/14 — 3,382 3,994 1,739 11/20/14 — 2,894 2,971 1,160	Date Rate (BPM) Pressure (PSI) Pressure (PSI) ISIP (PSI) Proppant (Ibs)	Date Rate (BPM) Pressure (PSI) Pressure (PSI) ISIP (PSI) Proppant (Ibs) Water (bbls)

Please insert additional pages as applicable.

WR-35 Rev. 8/23/13

API 47- 590	_ 2109	Farm n	ame DALLAS	T. RUNYO	٧	Well number	2010	
								
PRODUCING	FORMATION(S	1 (3	<u>DEPTHS</u>					
UPPER SHALE	<u> </u>	3	3712-2702	_TVD		MD		
LOWER SHALE	.	4	136-4018'					
		_						
								
Please insert ad	ditional pages as	applicable.						
GAS TEST	□ Build up □	Drawdown	Open Flow	,	OIL TEST o	Flow 🗆 Pump		
SHUT-IN PRE	SSURE Surfa	ace 438	_psi Botto	m Hole	psi	DURATION C	F TEST 240 hr	s
OPEN FLOW	Gas	Oil	NGL		Water	GAS MEASU	RED BY	
0121112011			opd		bpd			
LITHOLOGY/	TOP	воттом	TOP	BOTTOM				_
FORMATION	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN			RECORD QUANTITYAN ER, BRINE, OIL, GAS, H2	
	NAME TVD 0	TVD	<u>MD</u> 0	MD_	1 YPE OF F	LUID (FRESHWA)	ER, BRINE, OIL, GAS, H2	3, EIC)
SEE ATTACHED	0		<u> </u>					
	 							
								
		1! - 1-1 -					· *** · · · · · · · · · · · · · · · · · ·	
	lditional pages a							
Drilling Contra	actor MOUNTAIN	RIDGE		BASSOUS	w. at 1 =	a. KY	40906	
Address 72 OLI	D 25 E		City	BARBOUR	VILLE	State KY	Zip 40906	
Logging Comp	any WEATHERF	ORD						
Address			City	LONDON	·	State KY	Zip <u>40741</u>	
	mpany NABORS	COMPLETION &	PRODUCTION !	SERVICES				
Cementing Con Address 580 H/	mpany NABORS	COMPLETION	City	NORTON		State VA	Zip 24273	
Address			·					
Stimulating Co		RSAL,WELL S		41151	_	State KY	7: 41601	
Address PO BO			City	ALLEN		State Ki	Zip 41601	
Please insert ac	iditional pages a	s applicable.						
Completed by	Darrell Fluharty				Telephon	e 606-874-8041		
Signature	T.		Title F	ield Supervis	or	Date _	12-17-14	
0-1	ydraulie Fracturi	ina Chamiaal I	Nicologura Info	rmation	Attach conv	of FRACFOCUS	S Registry	
Supmittal Of H	yurauno-chiciun	mg Chemiicai i	ションこいつのこと ガガム		, muon copy			

API#47-5902109

		API#47-59021	.09	
TOP	воттом	ТОР	воттом	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID
DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	(FRESHWATER, BRINE, OIL, GAS, H2S,
NAME TVD	TVD	MD	MD	ETC)
0	8			
8	41			
41	45			
45	55			
55	59			
59	81			
81	86			
86	1210			
1210	1320			
1320	1332			
1332	1383			
1383	1453			
1453	1600			
1600	1612			
1612	1705			
1705	1715			
1715	1760			
1760	1821			
1821	2029			
2029	2632			
2632	2705			
2705	4160			
				-0
				SECEIVED Gas
				ALCO OIL SILVE
			O,	100 18501a
				oriment of
				MY Departal Protes
				ENVITORITION
	DEPTH IN FT NAME TVD 0 8 41 45 55 59 81 86 1210 1320 1332 1383 1453 1600 1612 1705 1715 1760 1821 2029 2632	DEPTH IN FT NAME TVD 0 8 8 41 41 45 45 55 55 59 59 81 81 86 86 1210 1210 1320 1320 1332 1332 1383 1383 1453 1453 1600 1600 1612 1612 1705 1705 1715 1715 1760 1760 1821 1821 2029 2029 2632 2632 2705	TOP DEPTH IN FT NAME TVD DEPTH IN FT TVD MD 0 8 8 41 45 45 55 55 59 59 59 81 81 86 86 1210 1320 1332 1383 1453 1453 1600 1612 1705 1715 1715 1760 1760 1821 1821 2029 2632 2632 2632 2705	TOP DEPTH IN FT NAME TVD DEPTH IN FT TVD DEPTH IN FT NAME TVD TVD MD 0 8 41 41 45 45 45 55 55 59 59 59 81 86 86 1210 1210 1320 1332 1383 1453 1453 1600 1612 1600 1612 1705 1715 1760 1821 1705 1715 1760 1821 2029 2632 2632 2632 2632 2705