Well Operator's Report of Well Work



Well Number:	514416	
API:	47 - 103	- 03037
Submission:	✓ Initial	Amended
Notes:		

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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: 47-103-03037			
API <u>47</u> - 103 <u>02980</u> County Wetzel		ict GRANT	
Quad BIG RUN Pad Name BIG3		/Pool Name	
Farm name COASTAL FOREST RESOURCES	Well	Number 514416	
Operator (as registered with the OOG) EQT Production C			
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pitt	sburgh s	State PA	_{Zip} _15222
As Drilled location NAD 83/UTM Attach an as-drilled Top hole Northing 4,375,066 Landing Point of Curve Northing 4,375,238 Bottom Hole Northing 4,377,296	ed plat, profile view, and devi Easting 5 Easting 5 Easting 5	35,104 35,133	
Elevation (ft) 1452 GL Type of Well	■New □ Existing	Гуре of Report □I	nterim B Final
Permit Type Deviated Horizontal Horizon	tal 6A 🗆 Vertical	Depth Type	Deep Shallow
Type of Operation □ Convert □ Deepen ■ Drill □	Plug Back	□ Rework ■	Stimulate
Well Type □ Brine Disposal □ CBM ■ Gas □ Oil □ Sec	ondary Recovery	n Mining 🗆 Storag	ge 🗆 Other
Type of Completion ■ Single □ Multiple Fluids Produ Drilled with □ Cable ■ Rotary	ced □ Brine ■Gas ■ 1	NGL = Oil =	Other
Drilling Media Surface hole ■ Air □ Mud □ Fresh Wa	ter Intermediate hole	Air □ Mud □	Fresh Water 🗆 Brine
Production hole □ Air ■ Mud □ Fresh Water □ Brine	•		
Mud Type(s) and Additive(s) Water base Mud 13.5 ppg bartum sulfate, sodium chloride, xanthan gum, polyanionic cellulose, d	nodified starch, sodium hydroxide, phosphona	ites and alkyl phophates, glute	eraldehyde solution, calcium hydroxide,
partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, groun	d walnut shells, alcohol and modified fatty ac	id, ferrochrome lignosulfonate	a, calcium carbonate, fibrous cellulose
Date permit issued 12/26/2014 Date drilling comm	nenced 1/14/2015	Date drilling ceas	sed 8/29/2015
Date completion activities began10/15/2015	Date completion activities	ceased10/3	30/2015
Verbal plugging (Y/N)N Date permission granted	i N/A G	ranted by	N/A
Please note: Operator is required to submit a plugging applic	ation within 5 days of verbal	permission to plug	
Freshwater depth(s) ft 581', 753'	Open mine(s) (Y/N) depths		N
Salt water depth(s) ft 2,257', 2,370', 2,657'	Void(s) encountered (Y/N)		N

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Void(s) encountered (Y/N) depths _

 $\begin{array}{c} \textbf{Cavern(s) encountered (Y/N) depths} \\ \textbf{RECEIVED} \end{array}$

Coal depth(s) ft 743', 883', 919', 1,011', 1,240', 1,333'

Is coal being mined in area (Y/N)

Reviewed by:

WR-35	ADI: 47 102	02027								Page _	_ of _
	API: 47-103		_	0.40741 50				E4	4416		
API 47- 103		Farm n	ame_C	OASTAL FO	REST	RESOUR	RCES We	ll number	4416 		
CASING STRINGS	Hole Size	Casing Size	D		ew or Jsed	Grade wt/ft		Basket Depth(s)		ent circulate le details b	
Conductor	30"	26"			NEW		94LB/FT	NONE	1	Y	
Surface	17.5"	13.375"	1,	022'	NEW	J-55 5	54.5LB/FT	NONE	 	Y	
Coal									1		
Intermediate 1	12.375"	9.625"	3.	004' 1	VEW	A-500	40LB/FT	NONE		Y	
Intermediate 2										·	
Intermediate 3										•	
Production	8.5"	5.5"	15	,056' 1	NEW	P-110	20LB/FT	NONE	1	N	
Tubing							-				
Packer type and de	epth set										
CEMENT DATA	Class/Type of Cement	Numbe of Sack	-	Slurry wt (ppg)		ield ³/sks)	Volume	Cem Top (!		W(
Conductor	CLASS A	98		15.6		.18	115.64				8
Surface	CLASS A	989		15.6	1	.20	1,186.8				8
Coal											
Intermediate 1	CLASS A	1,194		15.6	1	.18	1,408.9	0			8
Intermediate 2											
Intermediate 3											
Production	CLASS H / CLAS	S H 576 / 8	94	15.2 / 15.6	1.25	/ 2.06	2561.64	4,0	17	:	24
Tubing											
Drillers TD (ft	15,056' MD			Lo	ggers T	D (ft) <u>N/A</u>					
Deepest forma	tion penetrated <u>!</u>	Marcellus		Plu	g back	to (ft) N/A	<u> </u>				
Plug back pro-	cedure										
Kick off depth	(ft) 6,556' MD				-						
Check all wire	line logs run	□ caliper □ neutron		•	deviate gamma	ed/direction		nduction temperature	□sonic		
Well cored	Yes 🖪 No	□ Conventi	onal	□ Sidewall		W	ere cutting	s collected	Yes 🗆	No	
DESCRIBE TI	HE CENTRALIZ	ZER PLACEM	ENT U	SED FOR EA	ACH CA	SING ST	rring _				
SURFACE- JOINTS:											
	ENTRALIZERS RAN AT			128 tMD							
	sour aprial celifically			m							
WAS WELL C	COMPLETED A	S SHOT HOLE	E	Yes 🖪 No	DE	TAILS			RECEIVE of Oil an		
WAS WELL C	COMPLETED O	PEN HOLE?	□ Ye	s 🖪 No	DETA	AILS		JA			
WERE TRACI	ERS USED	Yes ■ No	TYI	PE OF TRAC	ER(S) L	SED		WV [Departme	nt of	

WR-35 Rev. 8/23/13	API: 47-103-03	037				Page	_ of
API 47- 103	- 02980 	Farm name_	COASTAL FOREST RESOURCES	_Well number_	514416		

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	Torroration date	MD III		Terrorutions	Please See Attached
	· · · · · · · · · · · · · · · · · · ·				
		-			
	-				
					

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	Attached
					<u> </u>			
					<u> </u>			
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			_					
					_			
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Please insert additional pages as applicable.

WR-35 Rev. 8/23/13 AI	DI: 17-102	-03037							Page of
API 47- 103 -			name_COASTAI	FOREST R	ESOURCES	_Well nur	mber_ 51	1416	
PRODUCING FO	DRMATION(S		<u>DEPTHS</u> 7,620'		7,895'	_ MD _			
Please insert addi	tional pages a	s applicable.				7			
GAS TEST									
SHUT-IN PRESS OPEN FLOW 12	Gas	Oil	_psi Botto NGL bpd 0.5			GAS ME	ON OF TO ASUREI ted # C	D BY	hrs Pilot
	TOP DEPTH IN FT NAME TVD 0	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD 0	BOTTOM DEPTH IN F MD	T DESCRIBE RO				
	•								
Please insert addit Drilling Contracto			IG (RIG 5)						
Address P.O. BOX	430		City	RENO		State O	HZ	ip 45773	
Logging Company Address 1805 Britte		hnology Servic	ces City	Houston		State T	x z	77043	
Cementing Compa Address 2504 Smith			City	Waynesburg		State P	A Z	p 15370	
timulating Comp			City	Cisco				p 76437	
Please insert addit		applicable.	City		^i	State	ZI	p <u>10101</u>	
Completed by Jir	m Helmick		Title VF	Completions	Telephone 41	2-395-55	18 te_1/25/20	16	RECEIVED Office of Oil and
Submittal of Hydra	aulic Fracturio	ng Chemical I			Attach copy of F.				JAN 27 20

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WR-35 Page ___ of ___ Rev. 8/23/13 API: 47-103-03037 02980 Farm name COASTAL FOREST RESOURCES Well number 514416 Drilling Contractor Savanna Drilling Rig 654 Zip _15357 City Rices Landing State PA Address 125 Industry Road Logging Company Gyrodata Inc Zip 15017 State PA Address 601 MAYER ST BRIDGEVILLE City Logging Company Hoss Co. Services LLC State WV Charleston City Address 614 Trotters Lane Cementing Company Baker Hughes Oil Field Operations Zip 26301 _State WV Address 837 Phillippi Pike City Clarksburg

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514416 Final Formations API #47-10303037

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	1		756	
SAND/SHALE	1		746	
WASHINGOTN COAL	746		748	
SAND/SHALE	748		886	
WAYNESBURG COAL	886		888	
SAND/SHALE	888		922	
COAL	922		923	
SAND/SHALE	923		1,014.00	
UNIONTOWN COAL	1,014.00		1,015.00	
SAND/SHALE	1,015.00		1,243.00	
PITTSBURGH COAL	1,243.00		1,248.00	
SAND/SHALE	1,248.00		1,336.00	
COAL	1,336.00		1,340.00	
SAND/SHALE	1,340.00		2,343.00	
MAXTON	2,343.00		2,354.00	
SAND/SHALE	2,354.00		2,499.00	
BIG LIME	2,499.00		2,613.00	
SAND/SHALE	2,613.00		2,629.00	
BIG INJUN	2,629.00		2,666.00	
SAND/SHALE	2,666.00		2,881.00	
WEIR	2,881.00		3,318.00	
GORDON	3,318.00		3,477.00	
BAYARD	3,477.00		3,974.00	
WARREN	3,974.00		4,124.00	
SPEECHLEY	4,124.00		5,016.00	
RILEY	5,016.00		5,646.00	
BENSON	5,646.00		5,969.00	
ALEXANDER	5,969.00		7,143.00	7,118.90
RHINESTREET	7,143.00		·	
SONYEA	7,204.00	7,176.20		•
MIDDLESEX	7,388.00	· ·	•	•
GENESEE	7,446.00	· ·	•	·
GENESEO	7,569.00			7,509.60
TULLY	7,612.00			
HAMILTON	7,647.00	7,530.30		7,619.50
MARCELLUS	7,895.00	7,619.50		

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Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
nitiation Sleeve	9/25/2015	15,054.00	15,056.00	10	MARCELLUS
1	10/15/2015	14,905.00	15,031.00	56	MARCELLUS
2	10/16/2015	14,757.00	14,879.00	40	MARCELLUS
3	10/16/2015	14,607.00	14,727.00	40	MARCELLUS
4	10/17/2015	14,457.00	14,579.00	40	MARCELLUS
5	10/17/2015	14,307.00	14,427.00	40	MARCELLUS
6	10/17/2015	14,156.00	14,277.00	40	MARCELLUS
7	10/17/2015	14,007.00	14,129.00	40	MARCELLUS
8	10/18/2015	13,857.00	13,979.00	40	MARCELLUS
9	10/18/2015	13,707.00	13,829.00	40	MARCELLUS
10	10/19/2015	13,557.00	13,674.00	40	MARCELLUS
11	10/19/2015	13,407.00	13,527.00	40	MARCELLUS
12	10/19/2015	13,257.00	13,377.00	40	MARCELLUS
13	10/20/2015	13,110.00	13,229.00	40	MARCELLUS
14	10/20/2015	12,957.00	13,079.00	40	MARCELLUS
15	10/20/2015	12,807.00	12,929.00	40	MARCELLUS
16	10/20/2015	12,657.00	12,779.00	40	MARCELLUS
17	10/21/2015	12,507.00	12,630.00	40	MARCELLUS
18	10/21/2015	12,357.00	12,477.00	40	MARCELLUS
19	10/21/2015	12,207.00	12,327.00	40	MARCELLUS
20	10/21/2015	12,057.00	12,179.00	40	MARCELLUS
21	10/22/2015	11,907.00	12,029.00	40	MARCELLUS
22	10/22/2015	11,757.00	11,878.00	40	MARCELLUS
23	10/22/2015	11,607.00	11,729.00	40	MARCELLUS
24	10/24/2015	11,457.00	11,579.00	40	MARCELLUS
25	10/24/2015	11,306.00	11,429.00	40	MARCELLUS
26	10/24/2015	11,157.00	11,279.00	40	MARCELLUS
27	10/24/2015	11,007.00	11,129.00	40	MARCELLUS
28	10/24/2015	10,857.00	10,979.00	40	MARCELLUS
29	10/25/2015	10,707.00	10,824.00	40	MARCELLUS
30	10/25/2015	10,557.00	10,679.00	40	MARCELLUS
31	10/25/2015	10,407.00	10,529.00	40	MARCELLUS
32	10/26/2015	10,254.00	10,379.00	40	MARCELLUS
33	10/26/2015	10,107.00	10,229.00	40	MARCELLUS
34	10/26/2015	9,957.00	10,079.00	40	MARCELLUS
35	10/27/2015	9,807.00	9,929.00	40	MARCELLUS
36	10/27/2015	9,657.00	9,783.00	40	MARCELLUS
37	10/27/2015	9,507.00	9,629.00	40	MARCELLUS
38	10/28/2015	9,357.00	9,479.00	40	MARCELLUS
39	10/28/2015	9,209.00	9,329.00	40	MARCELLUS
40	10/28/2015	9,057.00	9,179.00	40	MARCELLUS
41	10/28/2015	8,907.00	9,029.00	40	MARCELLUS
42	10/29/2015	8,757.00	8,879.00	40	MARCELLUS
43	10/29/2015	8,607.00	8,729.00	40	MARCELLUS
44	10/29/2015	8,457.00	8,574.00	40	MARCELLUS
45	10/29/2015	8,307.00	8,428.00	40	MARCELLUS
46	10/30/2015	8,157.00	8,279.00	40	MARCELLUS
47	10/30/2015	8,007.00	8,129.00	40	MARCELLUS

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Canan Mirror	Stimulation	Ave Pump Rate	Ave Treatment	Max Breakdown	ICID (DCI)	Amount of Proppant	Amount of Water	Amount of
Stage Number	Date	(BPM)	Pressure (PSI)	Pressure (PSI)	ISIP (PSI)	(lbs)	(bbls)	Nitrogen/other (units
Initiation Sleeve	10/15/2015	9.8	8,130.00	9,433.00	6,211.00	0	694	0
1	10/15/2015	53.1	8,602.00	9,945.00	4,135.00	249,709	14755	0
2	10/16/2015	92.7	8,810.00	9,219.00	4,002.00	252,164	6575	0
3	10/16/2015	84.7	9,024.00	9,321.00	4,209.00	250,429	7536	0
4	10/17/2015	96	8,979.00	9,218.00	4,688.00	250,379	6856	0
5	10/17/2015	90.7	9,032.00	9,214.00	4,641.00	250,152	6977	0
6	10/17/2015	90.1	9,061.00	9,247.00	4,698.00	249,808	6967	0
7	10/18/2015	92.6	9,105.00	9,242.00	4,691.00	250,218	6452	0
8	10/18/2015	91.5	9,007.00	9,460.00	4,859.00	250,809	6276	0
9	10/18/2015	90.6	9,031.00	9,303.00	4,559.00	250,431	6141	0
10	10/19/2015	93.5	9,006.00	9,329.00	4,530.00	250,018	7083	0
11	10/19/2015	86.5	9,044.00	9,436.00	4,769.00	249,545	6399	0
12	10/19/2015	96	9,034.00	9,261.00	4,902.00	250,374	6368	0
13	10/20/2015	97.6	8,965.00	9,096.00	4,732.00	250,052	6328	0
14	10/20/2015	97.9	9,039.00	9,294.00	4,736.00	279,355	6905	0
15	10/20/2015	95.3	9,134.00	9,340.00	5,301.00	250,985	6454	0
16	10/20/2015	85.7	8,791.00	9,638.00	4,925.00	249,850	6452	0
17	10/21/2015	100.1	8,852.00	9,102.00	5,141.00	251,579	6295	0
18	10/21/2015	100.40	8,957.00	9,167.00	5,402.00	250,112	6,361	0
19	10/21/2015	96.00	9,002.00	9,285.00	5,742.00	251,068	6,514	0
20	10/22/2015	94.90	8,982.00	9,197.00	5,597.00	250,752	6,515	0
21	10/22/2015	101.80	8,970.00	9,144.00	5,523.00	249,879	5,877	0
22	10/22/2015	98.70	9,002.00	9,392.00	5,346.00	250,345	5,716	0
23	10/23/2015	97.30	8,938.00	9,253.00	4,995.00	249,040	6,128	0
24	10/24/2015	100.9	8,455.00	8,873.00	5,236.00	248,662	6149	0
25	10/24/2015	99.4	8,400.00	8,615.00	4,696.00	248,227	5432	0
26	10/24/2015	102.3	8,830.00	9,132.00	4,937.00	250,348	5518	0
27	10/24/2015	101.9	8,466.00	8,703.00	5,022.00	250,448	5736	0
28	10/25/2015	101.4	8,330.00	8,551.00	5,202.00	249,589	6106	0
29	10/25/2015	100.7	8,575.00	8,773.00	5,101.00	251,148	6141	0
30	10/25/2015	100.6	8,488.00	8,778.00	4,970.00	249,524	5818	0
31	10/26/2015	100.7	8,602.00	9,132.00	5,322.00	250,657	5946	0
32	10/26/2015	100.4	8,301.00	8,453.00	5,117.00	250,769	5631	0
33	10/26/2015	98.8	8,291.00	8,471.00	5,395.00	251,135	4431	0
34	10/27/2015	100.8	8,249.00	8,893.00	5,318.00	250,018	5809	0
35	10/27/2015	100.2	8,181.00	8,514.00	5,309.00	250,339	5598	0
36	10/27/2015	100.4	8,421.00	8,613.00	4,978.00	250,439	5806	0
37	10/28/2015	101.20	8,442.00	8,760.00	5,149.00	250,672	5,742	0
38	10/28/2015	100.90	8,378.00	8,776.00	5,280.00	250,059	5,536	0
39	10/28/2015	102.00	8,316.00	8,942.00	5,624.00	250,805	5,683	0
40	10/28/2015	102.50	8,290.00	8,653.00	5,589.00	250,039	5,660	0
41	10/28/2015	102.2	8,140.00	8,638.00	5,605.00	250,311	5805	0
42	10/29/2015	101.1	7,996.00	9,180.00	5,675.00	249,670	5777	0
43	10/29/2015	91.3	8,770.00	9,242.00	5,241.00	251,436	6028	0
44	10/29/2015	99.6	8,884.00	9,317.00	5,369.00	250,092	5705	0
45	10/29/2015	100.5	8,736.00	9,125.00	5,754.00	249,986	5557	0
46	10/30/2015	101.8	8,665.00	9,076.00	5,400.00	249,250	5543	0
47	10/30/2015	100.6	8,407.00	8,818.00	5,277.00	250,784	5549	0

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Hydraulic Fracturing Fluid Product Component Information Disclosure

10/15/2015
10/30/2015
West Virginia
Wetzel
47-103-03037-00-00
EQT Production
514416
-80.59175100
39.52444400
NAD83
NO
7,620
12,403,860
0







Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	FTS International	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	89.41977	None
Sand (Proppant)	FTS International	Proppant					
			Crystalline Silica	14808-60-7	100.00000	10.18633	None
MC MX 437-5	Multi-Chem	Calcium nitrate solution					
			Calcium nitrate	10124-37-5	60.00000	0.05738	None
Hydrochloric Acid 15%)	FTS International	Acidizing					
and the same of th			Hydrochloric Acid	7647-01-0	15.00000	0.03182	None
RW-900	FTS International	Friction reducer					
			Hydrotreated light distillate	64742-47-8	30.00000	0.01655	None
			Alkyl Alcohol	Proprietary	10.00000	0.00552	None
			Oxyalkylated alcohol	Proprietary	5.00000	0.00276	None
lVG-1 ○	FTS International	Gelling agent					
fice JA			Petroleum distillate	64742-47-8	55.00000	0.00296	None
Z offi			Guar gum	9000-30-0	50.00000	0.00269	None
Om Om			Clay	14808-60-7	2.00000	0.00011	None
VE air			Surfactant	68439-51-0	2.00000	0.00011	None
S-50ESI Z	FTS International	Scale inhibitor					

		SV Actual Control	Ethylene glycol	107-21-1	10.00000	0.00247None
CI-150	FTS International	Acid Corrosion Inhibitor				
			Isopropanol	67-63-0	30.00000	0.00012None
			Ethylene glycol	107-21-1	30.00000	0.00012None
			Organic amine resin salt	Proprietary	30.00000	0.00012None
			Quaternary ammonium compound	Proprietary	10.00000	0.00004None
			Aromatic aldehyde	Proprietary	10.00000	0.00004None
			Dimethylformamide	68-12-2	10.00000	0.00004None
NE-100	FTS International	Non-emulsifier				
			2-Propanol	67-63-0	10.00000	0.00004None
			2-Butoxyethanol	111-76-2	10.00000	0.00004None
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00002 None
FE-100L	FTS International	Iron control				
			Citric acid	77-92-9	55.00000	0.00005None
APB-1	FTS International	Breaker				
			Ammonium persulfate	7727-54-0	95.00000	0.00003None

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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^{*} Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

