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

API 47 - 069 - 00170 County Ohio	District Libertry
Quad Bethany Pad Name Clarence Farmer Pad	Field/Pool Name
Farm name Clarence Farmer OHI 206H	Well Number <u>837777</u>
Operator (as registered with the OOG) Chesapeake Appalachia, L.L.C.	
Address P.O. Box 18496 City Oklahoma City	State OK Zip 73154-0496
Landing Point of Curve Northing Ea	asting <u>536141.0</u> asting
Bottom Hole Northing 4441398.0 Ea	asting 537057.8
Elevation (ft) 1330 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 □ Red	drilling Rework Stimulate
Well Type □ Brine Disposal □ CBM ■ Gas □ Oil □ Secondary Recovery □	Solution Mining
Type of Completion ■ Single □ Multiple Fluids Produced □ Brine ■Gas Drilled with □ Cable ■ Rotary	s 🗆 NGL 🗆 Oil 🗆 Other
Drilling Media Surface hole ■ Air □ Mud ■ Fresh Water Intermediate Production hole □ Air ■ Mud ■ Fresh Water □ Brine Mud Type(s) and Additive(s) SOBM	e hole □ Air ■ Mud ■ Fresh Water □ Brine
7/00/00	0/44/0040
Date permit issued 5/14/2013 Date drilling commenced 7/23/20	
Date completion activities began Date completion ac	
Verbal plugging (Y/N) Date permission granted	Granted by
Please note: Operator is required to submit a plugging application within 5 days of	of verbal permission to plug
Freshwater depth(s) ft 425' Open mine(s) (Y/N	
Salt water depth(s) ft 750' Void(s) encountered	d (Y/N) depths Y 627'
	5 v.
Coal depth(s) ft 627' Cavern(s) encounter	ecoived

API 47- 069	00170	Farm n	ame Clarence	Farmer C	HI 2061	H we	ll number_	837777	
			ame						
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft		Basket Depth(s)		nent circulate (Y/ N ide details below*
Conductor	30"	20"	122'	New		55 94#	Depail(s)	1.04	Y
Surface	17 1/2:	13 3/8"	659'	New	+	5 54.5#			Y
Coal	17 172.			7,00	1				· ·
Intermediate 1	12 1/4"	9 5/8"	2102'	New	.1-2	55 40#			Y
Intermediate 2	12 1/4		2102	1404		30 4011			<u> </u>
Intermediate 3					† ·				
Production	8 3/4" / 8 1/2"	5 1/2"	15730'	New	P-1	10 20#			Y
Tubing	001112	2 3/8"	Approx. 6894'	New	+	N-80			•
Packer type and d	epth set	2 0/0	Approx. 0004	11011	<u>-</u>		l		
Comment Details				 					
CEMENT	Class/Type	Numb	er Slurry	u.	Yield	Volum	e i	Cement	WOC
DATA	of Cement	of Sac			ft ³ /sks)	(ft ¹)		op (MD)	(hrs)
Conductor	Class A	306	15.6		1.18	361.0		Surface	8
Surface	Class A	469	15.6		1.21	567.4	9 5	Surface	8
Coal									
Intermediate 1	Class A	745	15.6		1.20	894	,	Surface	8
ntermediate 2									
Intermediate 3								-	
Production	Class H	326	3 15.6		1.18	3850.3	34	862'	8
Tubing	NA	NA			NA	NA		NA	
Drillers TD (fi Deepest forma Plug back pro	tion penetrated	Marcellus		Loggers ? Plug back		A			
Kick off depth	, .		□ density			ional 🗆			
Well cored 1	⊐Yes ■ No	□ neutror Convent	·	_	•		temperatu gs collected	re □son d ∎Yes	
			IENT USED FO hird jt and every 4th joint to su		ASING S	STRING _			
Production - Run 1st	centralizer 3' from Shoe	2nd at top of the first jo	int and then one every 3rd	d joint to TOC.					
WAS WELL	COMPLETED A	AS SHOT HOL	E 🗆 Yes 🗆	No D	ETAILS				ved
WAS WELL	COMPLETED (OPEN HOLE?	□ Yes □ N	o DET	TAILS _	-			
WERE TRAC	ERS USED	Yes □ No	TYPE OF TI	RACER(S)	USED _				
								attion of Ch a	nd Gas

API 47- 069 00170 Clarence Farmer OHI 206H Well number Well number	
--	--

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft	Perforated to MD ft.	Number of Perforations	Formation(s)
			-		

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)
					_		
			+				
					Re	ceiv	ed
					1 1 1		
		Stimulations Date Rate (BPM)				Date Rate (BPM) Pressure (PSI) Pressure (PSI) ISIP (PSI) Proppant (lbs)	

Please insert additional pages as applicable.

PRODUCING FORMATION(S) Marcellus	Well number			
Please insert additional pages as applicable.				
Please insert additional pages as applicable. GAS TEST				
SHUT-IN PRESSURE Surface				
SHUT-IN PRESSURE Surface				
SHUT-IN PRESSURE Surface				
SHUT-IN PRESSURE Surface				
SHUT-IN PRESSURE Surface				
OPEN FLOW Gas Oil NGL Water GAS MEASURED BY bpd BOTTOM bpd BOTTOM bpd Estimated □ Orifice □ Pi LITHOLOGY/FORMATION TOP BOTTOM TOP BOTTOM DEPTH IN FT DEPTH IN FT				
Note	_ hrs			
Note				
TOP	ot			
DEPTH IN FT DESCRIBE ROCK TYPE AND RECORD QUANTITY				
NAME TVD				
D	AND			
LS	, H ₂ S, ETC)			
COAL 628 638 628 638 PITTSBURGH COAL				
SILT/SH 638 1250 638 1250 SILTSOTNE & SHALE SS/SILT 1250 1650 1250 1650 SANDSTONE & SILTSOTNE LS 1650 1754 1650 1754 BIG LIME BGIJ SS 1754 1965 1754 1965 BIG INJUN SANDSTONE SH 1965 6137 1965 6434 SHALE GENESEO 6137 6156 6434 6462 GENESEO SHALE TULLY LS 6156 6202 6462 6530 TULLY LIMESTONE HAMILTON 6202 6304 6530 6740 HAMILTON GREY SHALE MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
SS/SILT 1250 1650 1250 1650 SANDSTONE & SILTSTONE LS 1650 1754 1650 1754 BIG LIME BGIJ SS 1754 1965 1754 1965 BIG INJUN SANDSTONE SH 1965 6137 1965 6434 SHALE GENESEO 6137 6156 6434 6462 GENESEO SHALE TULLY LS 6156 6202 6462 6530 TULLY LIMESTONE HAMILTON 6202 6304 6530 6740 HAMILTON GREY SHALE MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
LS 1650 1754 1650 1754 BIG LIME BGIJ SS 1754 1965 1754 1965 BIG INJUN SANDSTONE SH 1965 6137 1965 6434 SHALE GENESEO 6137 6156 6434 6462 GENESEO SHALE TULLY LS 6156 6202 6462 6530 TULLY LIMESTONE HAMILTON 6202 6304 6530 6740 HAMILTON GREY SHALE MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
BGIJ SS 1754 1965 1754 1965 BIG INJUN SANDSTONE SH 1965 6137 1965 6434 SHALE GENESEO 6137 6156 6434 6462 GENESEO SHALE TULLY LS 6156 6202 6462 6530 TULLY LIMESTONE HAMILTON 6202 6304 6530 6740 HAMILTON GREY SHALE MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
SH 1965 6137 1965 6434 SHALE GENESEO 6137 6156 6434 6462 GENESEO SHALE TULLY LS 6156 6202 6462 6530 TULLY LIMESTONE HAMILTON 6202 6304 6530 6740 HAMILTON GREY SHALE MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
GENESEO 6137 6156 6434 6462 GENESEO SHALE TULLY LS 6156 6202 6462 6530 TULLY LIMESTONE HAMILTON 6202 6304 6530 6740 HAMILTON GREY SHALE MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
TULLY LS 6156 6202 6462 6530 TULLY LIMESTONE HAMILTON 6202 6304 6530 6740 HAMILTON GREY SHALE MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Nomac Drilling City Mt. Morris State PA Zip 15349				
HAMILTON 6202 6304 6530 6740 HAMILTON GREY SHALE MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
MARCELLUS 6304 6431/TD 6740 15732/TD MARCELLUS SHALE Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
Please insert additional pages as applicable. Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
Drilling Contractor Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349 Logging Company Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
Logging Company Nomac Drilling Address 171 Locust Ave Extension City Mt. Morris State PA 23p 15349				
Address 171 Locust Ave Extension City Mt. Morris State PA Zip 15349				
	VEU			
remening romozity bana region				
Address 837 Philippi Pike City Clarksburg State WV Zip 26301				
Address City City State City				
Stimulating Company				
	ano Gas			
Address City State Zip Office of On Other Please insert additional pages as applicable. WV Dept. of Environ	imental Prote			
Completed by Marlene Williams Telephone 405-935-4158				
Signature Manual Milliages Title Regulatory Analyst Date 1-16-2014				
Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry				

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

API 47 - 069 - 00170 County Ohio)	District Libertry	
Quad Bethany Pad Name C	larence Farmer Pad	_ Field/Pool Name _	
Farm name Clarence Farmer OHI 206H		Well Number 837	777
Operator (as registered with the OOG) Chesapeake A	Appalachia, L.L.C.		
Address P.O. Box 18496 City	Oklahoma City	State OK	Zip <u>73154-0496</u>
Top hole Northing 444172.3		asting <u>536141.0</u>	
Landing Point of Curve Northing Bottom Hole Northing 4441398.0	Ea	sting sting 537057.8	
Bottom Hole Northing 1777-00-0		isting	
Elevation (ft) 1330 GL Type of W	ell ■New □ Existing	Type of Report	■Interim □Final
Permit Type Deviated Horizontal Horizontal	rizontal 6A 🛮 D Vertical	Depth Type	□ Deep
Type of Operation □ Convert □ Deepen ■ Drill	□ Plug Back □ Rec	Irilling 🗆 Rework	□ Stimulate
Well Type □ Brine Disposal □ CBM ■ Gas □ Oil □	□ Secondary Recovery □	Solution Mining	torage 🗆 Other
Type of Completion ■ Single □ Multiple Fluids P Drilled with □ Cable ■ Rotary	roduced □ Brine ■Ga	s 🗆 NGL 🗆 Oil	□ Other
Drilling Media Surface hole ■ Air □ Mud ■ Fresh	n Water Intermediat	ehole □Air ■Mu	d ■ Fresh Water □ Brine
Production hole Air Mud Fresh Water		e note divina	a a reductivator a Dimit
Mud Type(s) and Additive(s) SOBM			
Date permit issued 5/14/2013 Date drilling	commenced7/23/20	13 Date drilling	ceased 8/14/2013
Date completion activities began	Date completion a	ctivities ceased	
Verbal plugging (Y/N) Date permission gr			
			Received
Please note: Operator is required to submit a plugging a	pplication within 5 days o	f verbal permission to	plug
Freehwater denth(s) # 425'	Open mine(s) (Y/N) depths	
riesiiwatei depiii(s) it	Void(s) encountered	d (Y/N) denths	Y 627' On and Gas
Salt water depth(s) ft 750' Coal depth(s) ft 627'	Cavern(s) encounter	ered (Y/N) denths	Y 627' Office of Oil and Gas WV Dept. of Environmental Profession
Is coal being mined in area (Y/N)			
is come come in mode (1714)			Reviewed by:

API 47- 069	- 00170	Farm n	_{ame} Clarence	Farmer C)HI 206H	IW	ell number_83	37777		
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft		Basket Depth(s)		nt circulate (Y/ N) details below*	
Conductor	30"	20"	122'	New	J-5	5 94#			Υ	
Surface	17 1/2:	13 3/8"	659'	New	J-55	54.5#			Υ	
Coal										
Intermediate 1	12 1/4"	9 5/8"	2102'	New	J-5	5 40#			Υ	
Intermediate 2										
ntermediate 3										
Production	8 3/4" / 8 1/2"	5 1/2"	15730'	New	P-1	10 20#			Y	
Tubing		2 3/8"	Approx. 6894'	New	١	1-80			,	
Packer type and d	epth set			±	·		•			
Comment Details			<u>.</u>							
CEMENT DATA	Class/Type of Cement	Numb of Sac			Yield ft ³ /sks)	Volum (ft ³)		ment (MD)	WOC (hrs)	
Conductor	Class A	306			1.18	361.0		rface	8	
Surface	Class A	469			1.21	567.4	9 Su	rface	8	
Coal										
Intermediate 1	Class A	745	15.6	6	1.20	894	Su	rface	8	
Intermediate 2										
Intermediate 3										
Production	Class H	326	3 15.6	6	1.18	3850.	34 8	362'	8	
Tubing	NA	NA			NA	NA.	ı	NA		
-	t) 15,732' ation penetrated ocedure				TD (ft) k to (ft)					
Kick off depth (ft) 6048' Check all wireline logs run										
Well cored □ Yes ■ No Conventional Sidewall Were cuttings collected ■ Yes □ No										
DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING Surface / Coal - Run centralizers in the middle and top of the first joint, top of the third jt and every 4th joint to surface.										
			oint and then one every 3				4.497			
						· -				
WAS WELL COMPLETED AS SHOT HOLE										
WAS WELL	COMPLETED	OPEN HOLE?	□ Yes □ N	No DE	TAILS _					
WERE TRAC	CERS USED	Yes Do	TYPE OF T	ΓRACER(S	USED _			e of Oil and		

WR-35 Rev. 8/23/13

API 47- 069 00170 Clarence Farmer OHI 206H Well number	837777 r
--	-------------

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
-	·				

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)
				<u> </u>				
				-		<u> </u>		
-	 							
			-					
						 		
							_	
				<u> </u>				
					· · · · · · · · · · · · · · · · · · ·			
				-				
-	 						Rece	Ived

Please insert additional pages as applicable.

API 47- 069 - 00170 Fa		Farm r	name Clarence F	armer OHI 206	6HWell number			
PRODUCING I	FORMATION(S	3)	<u>DEPTHS</u>					
	ORIVITION				_			
Marcelius			6304	_TVD <u>674</u>	MD			
	• • • • • • • • • • • • • • • • • • • •							
Please insert ad	ditional pages as	s applicable.						
GAS TEST	□ Build up □	Drawdown	□ Open Flow	OII	TEST - Flow - Pump			
SHUT-IN PRES	SSURE Surfa	ace	_psi Botto	m Hole	psi DURATION OF TEST hrs			
OPEN FLOW	Gas	Oil	NGL	W	ater GAS MEASURED BY			
OI EIVI EO W					bpd □ Estimated □ Orifice □ Pilot			
LITHOLOGY/	TOP	воттом	ТОР	воттом				
FORMATION	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DESCRIBE ROCK TYPE AND RECORD QUANTITYAND			
TORMATION	NAME TVD	TVD	MD	MD	TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)			
	0		0					
LS	0	628	0	628	LIMESTONE & MINOR SILTSTONE			
COAL	628	638	628	638	PITTSBURGH COAL			
SILT/SH	638	1250	638	1250	SILTSOTNE & SHALE			
SS/SILT	1250	1650	1250	1650	SANDSTONE & SILTSTONE			
LS	1650	1754	1650	1754	BIG LIME			
BGIJ SS	1754	1965	1754	1965	BIG INJUN SANDSTONE			
SH	1965	6137	1965	6434	SHALE			
GENESEO	6137	6156	6434	6462	GENESEO SHALE			
TULLY LS	6156	6202	6462	6530	TULLY LIMESTONE			
HAMILTON	6202	6304	6530	6740	HAMILTON GREY SHALE			
MARCELLUS	6304	6431/TD	6740	15732/TD	MARCELLUS SHALE			
		0.00						
								
Please insert ad	ditional pages a	s applicable.	-					
Drilling Contra	ctor Nomac Drill		Ott.	Mt. Morris	State PA Zip 15349			
Address 171 Lo	cust Ave Extension		City	1410.1113	State Zip Zip			
Logging Comp	any Nomac Drilli	ing						
Address 171 Lo	cust Ave Extension		City	Mt. Morris	State PA Zip 15349			
					State PA Zip 15349 .			
	npany Baker Hu	ghes						
Address 837 Ph	ilippi Pike		City	Clarksburg	State WV Zip 26301			
Stimulating Co			City	. <u>-</u> -	StateZip			
	Iditional names a		City		Office of Cill and Gas			
riease insert ad	lditional pages a	s applicable.			WV Dept. of Environmental Protection			
Completed by	Marlene William	าร			m + 405 025 4159			
Signature	narley,	Millian	2 Title R	legulatory Analys	Date 1-16-2014			
Submittal of H	ydraulic Fractur	ing Chemical	Disclosure Info	rmation A	ttach copy of FRACFOCUS Registry			