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>039</u> - <u>02839</u> County Kanaw	na	District Elk	
Quad Blue Creek of the Elk River Pad Name Cocc	C	Field/Pool Name C	осо С
Farm name_New Well		_Well Number120	
Operator (as registered with the OOG) Columbia Gas Tra	ansmission LLC		
Address 1700 MacCorkle Ave SE City Ch	arleston	State WV	Zip <u>25314</u>
As Drilled location NAD 83/UTM Attach an as-drilled location Top hole Northing Landing Point of Curve Northing Not applicable Bottom Hole Northing	Eas	stingting	
Elevation (ft) 601 GL Type of Well	□New ■ Existing	Type of Report	□Interim ≣ Final
Permit Type Deviated Horizontal Horizon	ntal 6A 📕 Vertical	Depth Type	■ Deep □ Shallow
Type of Operation □ Convert □ Deepen □ Drill □	□ Plug Back □ Redri	illing B Rework	□ Stimulate
Well Type □ Brine Disposal □ CBM □ Gas □ Oil □ Sec	condary Recovery	olution Mining 🛚 Sto	orage 🗆 Other
	aced □ Brine ■Gas	□ NGL □ Oil	RECEIVED Of Oil and Gas
Drilled with □ Cable □ Rotary			JUL 1 0 2023
Drilling Media Surface hole □ Air □ Mud □Fresh Wa Production hole □ Air □ Mud □ Fresh Water □ Brine		hole □ Air □ Mud	□ Fyesh Westerment Brine Environmental Protection
Mud Type(s) and Additive(s) N/A. SOW rework existing - perf 4-1/2" + 7" csg for cement squeeze, no	injection, cut & pull 4-1/2"c	sg, perf & squeeze 7" to r	near surface. Run new 4-1/2"csg
tying to stub with external patch, cement to surface thru stage tool. Install			
Date permit issued08/26/2021 Date drilling comr	mencedN/A	Date drilling c	eased N/A
Date completion activities beganN/A	Date completion acti	,	
Verbal plugging (Y/N)N/A Date permission granted	1N/A	Granted by	N/A
Please note: Operator is required to submit a plugging application	ation within 5 days of v	erbal permission to pl	ug
Freshwater depth(s) ft40' and 498' per driller	Open mine(s) (Y/N) de	epths	N
Salt water depth(s) ft None reported by driller when drilled	Void(s) encountered (N
Coal depth(s) ft None reported by driller when drilled	Cavern(s) encountered		N
s coal being mined in area (Y/N)			

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Rev. 8/23/13 API 47- 039	_ 02839	Farm nai	ne New Wel	II		Well r	number_120	50	
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	В	asket epth(s)	Did cement circulate (* Provide details bel	
Conductor		existing well			T		·F-(-)		
Surface									
Coal									
Intermediate 1									
Intermediate 2									
Intermediate 3									
Production									
Tubing									
Packer type and d	epth set			·		I		· · · · · · · · · · · · · · · · · · ·	
Comment Details									
CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurr wt (pp	y \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	(ield : ³/sks)	Volume (ft ³)	Cemer Top (M		
Conductor	U. COMON.	existing we		(1)	/383)	111/	Top (IVI	(1113)	
Surface									
Coal									
Intermediate 1									
Intermediate 2									
Intermediate 3									
Production									
Tubing									
_) 5122 tion penetrated cedure			Loggers T Plug back					
Kick off depth	(ft) <u>N/A</u>							Office of Oil and	d Gas
Check all wire	line logs run	□ caliper □ neutron	□ density □ resistivity		ed/direction		uction nperature	JUL 1 0 20 sorvicy Departmental Properties	nt of
Well cored	Yes 🗆 No	Convention	al Sidev	vall	We	re cuttings c	ollected 🗆	Yes □ No	
DESCRIBE TH	HE CENTRALI	ZER PLACEMEN	NT USED FO	R EACH CA	SING ST	RING N/A		70 M 70 A	
WAS WELL C	OMPLETED A	S SHOT HOLE	□ Yes □	No DE	TAILS N	N/A			
WAS WELL C	OMPLETED C	PEN HOLE? [□Yes □ No	DETA	AILS N/A				
WERE TRACE	ERS USED	Yes □ No	TYPE OF TR	CACER(S) L	JSED				

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API 4	₁₇₋ 039 ₋ 02839	Farm nai	ne_New Well		Well number	12050		
			PERFORATI	ON RECORD				
Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations		Formation(s)		
	N/A	existing well				(-)		
					, ,			
						.=		

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

JUL 1 0 2023

Complete a separate record for each stimulation stage.

WV Department of Environmental Protection

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)
	N/A		existing well					<u> </u>
								-
								
					···			
		_						

Please insert additional pages as applicable.

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API 47- 039	_ 02839	Farm	_{name} New W	ell		Wel	l numbe	_{r_} 12050	<u> </u>
PRODUCING	FORMATION	<u>(S)</u> .	<u>DEPTHS</u>						
Oriskany	. 10-		5023 - 5076	TVD		M	D		
		 -							
			- 1 Marie 121 W.						
Please insert ac	lditional pages	as applicable.							
GAS TEST	□ Build up (⊐ Drawdown	□ Open Flow		OIL TEST	Γ □ Flow	□ Pump)	
SHUT-IN PRE	SSURE Suri	face	_psi Botto	om Hole	r	osi DUR	ATION (OF TEST _	hrs
	Gas		NGL		Water	GAS	MEASU	JRED BY	
LITHOLOGY/ FORMATION	DEPTH IN FT	BOTTOM DEPTH IN FT	DEPTH IN FT	DEPTH IN	FT DESC				
existing well	NAME TVD 0	TVD	MD 0	MD	TYPE	OF FLUID (FF	ŒSHWAI	IEK, BRINE, (OIL, GAS, H ₂ S, ETC)
							•		

								· · · ·	Office of Oil and Gas
Diameter	1'.' 1	1: 11				110-00			1 1 0 000
Please insert ad		s applicable.							JUL 1 0 2023
Drilling Contract Address 736 W I		268	City	Ingomar	_	State	, PA	Zip 151	WV Department of क्रिप्रहेंकुमुझाental Protection
Logging Compa	any Baker Atlas								
Address PO Box	301057		City	Dallas		State	TX	Zip _7530	03-1057
Cementing Com Address 736 W			L City	Ingomar		State	PA	Zip_1512	27-6613
Stimulating Con	npany Gladiate	or Energy LLC							
Address 3200 Sc Please insert add		s annliaghla	City	Houston		State	TX	Zip <u>7702</u>	27-7528
Completed by Signature	ıylanı Medvedev	va Va	Title Se	nior Wells F	Telepl	none 304-41	0-4313 Date 0	6/27/23	
	year						Date _	OIZIIZO	
Submittal of Hy	draulic Fracturi	ng Chemical D	isclosure Infor	mation	Attach co	py of FRAC	FOCUS	Registry	

COCO C 12050 ~ not to scale ~ Workover (as of 6/23/2023) 20" csg @ ~20'. Show FW @ 40' 13-3/8" 48# csg @ ~166'. Sea Level @ 601 ft. - Cemented w/ 165 sx - cement circulated to surface. Show FW @ 498' Light grey fill indicates cement in place during well construction. Dark grey fill indicates cement placed during workover. Maxton Sand 1320 - 1340! Little Lime 1340 - 1380' Injun Sand 1660 - 1680" Weir Sand 1755 - 1780 9-5/8" 32# csg @ ~1870' Berea Sand 1960 - 1963 Cemented w/ 650 sx - cement returned to surface. RECEIVED Office of Oil and Gas Shot 4' of Upper Perfs (U.P.2) at 6spf 2100' - 2104'. Squeeze 61bls Class A neat. Confirm cmt to surface w/CBL 3/30/23 JUL 1 0 2023 Shot 4' of Lower Perfs (L.P.2) at 6spf 2350' - 2354'. Would not circulate U.P.1 to L.P.2 or L.P.2 to U.P.2. WV Department of Drilling out after squeeze to surface from U.P.2 perf, Environmental Protection drilled hard cmt from 2092 to 2380'. Shot 4' of Upper Perfs (U.P.1) at 6spf 3276' -3280'. Would not circulate L.P.1 to U.P.1 Cement new 4-1/2" casing to surface through the Shot 4' of Mid Perfs (M.P.) at 6spf 3416' - 3420'. cement sleeve (3782') with 74.6bbls (355 sx) class A neat 15.6 ppg. Would not circulate L.P.1. to M.P. While attempting to circulate M.P. to U.P.1 broke down formation. Squeeze cement 5 bbl class A. CBL TOC ~3388'. 3/14/2023 Baker 7" RAL shows good cement 3740' -Drilling out inside, tagged / drilled cmt 3400 - 3480' 3640'. Confirmed overdisplaced shoe. Shot 4' of Lower Perfs (L.P.1) at 6spf 3576' - 3580'. 5/10/21 TOC behind 7" csg estimated @ 3800' based Can't circulate / inject, or circulate L.P.1 to U.P.1 on volumetrics. Due to migration issues, cement Run new 4-1/2" 11.6# N-80 LTC with external lead barrier is likely compromised. Unknown quality. seal patch on bottom of 1st joint and cement stage tool on top of 1st joint at 3782'. Pressure TOC behind 4-1/2" csg @ 4045' per CBL test to 2200 psi hydrostatic at seal depth. Good cement 4050 - 4130' Cut and pull 4-1/2" casing from 3824' Poor cement quality 4130 - 4974' Marcellus 4880 - 4904' 4' stringer of good cement 4974 - 4978' Cement quality unknown below 4978' (BLI) Onondaga 4904 - 5016 7 23# N-80 csg @ ~5016' - Cemented with 150 sx. Oriskany 5016 - 5073' - Calc fill-up TOC @ ~3800' (gas storage) Unsuccessful perf and cmt squeeze attempt 4980' - 4985' (4 spf 60 deg) / injection test on 7" with Phase 1 of workover. - Perforation covered with internal Homco Weatherford casing patch, 4974' - 4994', during phase 2 of workover. Storage perfs are approximate Original 2003 4-1/2" 11.6# N-80 casing 3824' - 5117' 08/11/2023 5024 - 5042' TD 5122' - Cemented with 90 sx. - TOC @ 4045' based on CBL.

Columbia Gas Transmission, LLC

1700 MacCorkle Ave., SE, Charleston, WV, USA 25314



July 3rd, 2023

WV DEP – Office of Oil & Gas 601 57th Street, SE Charleston, WV 25304-2345

Enclosed is the post well work permit application for the following Columbia Gas Transmission existing storage well:

Coco C 12050 (API 47-039-02839)

If you have questions, feel free to call.

Regards,

Maria Medvedeva

Senior Wells Engineer

Well Engineering & Technology Columbia Gas Transmission, LLC

Mob: 304-410-4313

maria medvedeva@tcenergy.com

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