## CATERPILLAR INC.

EXECUTIVE ORDER U-R-001-0617 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in California Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-19-095;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)		
2020	LCPXL58.6HXG	58.6	Diesel	8000		
SPECIAL	FEATURES & EMISSION (	CONTROL SYSTEMS	TYPICAL EQUIPMENT A	APPLICATION		
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Engine Control Module, Oxidation Catalyst, Exhaust Gas Recirculation			Pump, Industrial Equipment, Commercial Equipment.			

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER	EMISSION		EXHAUST (g/kw-hr)				OPACITY (%)			
CLASS	STANDARD		NMHC	NOx	NMHC+NOx	СО	PM	ACCEL	LUG	PEAK
ELSE > 560 kW	Tier 4 Final	STD	0.19	3.5	N/A	3.5	0.04	N/A	N/A	N/A
		CERT	0.03	3.2		0.01	0.02			

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this

\_ day of August 2019.

Allen Lyons, Chief

**Emissions Certification and Compliance Division** 

ATTACHMENT 1 OF 1

## Engine Model Summary Template U-R-001-0617

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: nm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8,Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J193(	
LCPXL58.6HXG	1	3512E	1750@1200	704	563	7856@1200	704	563	DFI,TC,ECM,CAC,EGR,OC	
LCPXL58.6HXG	2	3512E	1476@1200	634	507	6457@1200	634	507	DFI,TC,ECM,CAC,EGR,OC	
LCPXL58.6HXG	Cert 1	3512E	1794@1200	742	599	7856@1200	742	599	DFI,TC,ECM,CAC,EGR,OC	