

	CATERPILLAR INC.	EXECUTIVE ORDER U-R-001-0442
		New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the 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-02-003;

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)
2012	CCPXL18.1ESK	18.1	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Engine Control Module			Loader, Dozer, Excavator, Scraper, Motor Grader, Off-road Truck, Paving Equipment, Industrial Equipment	

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for hydrocarbon (HC), 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 CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Interim ALT 20% NOX and PM	STD	0.19	2.0	N/A	3.5	0.02	20	15	50
		FEL	N/A	3.8	--	N/A	0.20	N/A	N/A	N/A
		CERT	0.16	3.8	--	2.6	0.15	9	4	13

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

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 3 day of November 2011.


 Annette Hebert, Chief
 Mobile Source Operations Division

Engine Model Summary Template

U-R-001-0442

7/23/2012
R/C

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/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 J1930
CCPXL18.1ESK	Cert Test 3	C18	553@1800	320	194	2116@1200	422	170	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	Cert Test 2	C18	700@1800	402	243	2361@1400	467	220	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	Cert Test 1	C18	700@1800	414	250	2361@1400	467	220	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	1	C18	553@1800	319	193	1934@1400	389	183.2	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	2	C18	650@2100	339	239	2051@1500	417	210	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	3	C18	523@1800	302	182.5	2004@1200	404	163.2	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	4	C18	555@1800	320	193.6	2004@1200	403	162.8	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	5	C18	553@1800	320	194	2116@1200	422	170	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	6	C18	523@1800	302	182.5	2005@1200	400	161	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	7	C18	525@1800	302	183	1672@1300	346	151	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	8	C18	488@1800	276	166.8	1549@1300	309	135.2	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	9	C18	488@1800	274	166	1549@1300	308	135	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	10	C18	598@1800	359	217	1988@1300	405	177	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	11	C18	556@1800	334	202	1849@1300	373	163	EM,DI,TC,ECM,CAC
CCPXL18.1ESK	12	C18	542@1800	321	195	1762@1300	347	152	EM,DI,TC,ECM,CAC