California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR, INC.	EXECUTIVE ORDER U-R-001-0233 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 engine and emission control system 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)
2004	4CPXL58.6ERK	51.8 and 58.6	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module	Crane, Loader, Pump, Compressor, Generator and Industrial Equipment

The engine models and codes are attached.

The following are the exhaust certification standards (STD) 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
KW > 560	Tier 1	STD	1.3	9.2	N/A	11.4	0.54	20	15	50
		CERT	0.4	8.8	--	1.4	0.18	18	4	23

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 15TH day of December 2003.

Allen Lyons, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Summary Form

Manufacturer: **Caterpillar Inc.**

Engine category: **Nonroad CI**

EPA Engine Family: **4CPXL58.6ERK**

Mfr Family Name:

Process Code: **New Submission**

U-R-001-0233

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
1	3512B	2250@1900	604	772	6329@1400	605	570 CAC,	EM,DI,TC,ECM
2	3512B	1450@1750	421	496	5187@1300	494	432	EM,DI,TC,ECM
3	3512B	1700@1750	487	573	6077@1300	561	491	EM,DI,TC,ECM
4	3512B	1303@1200	550	444	5700@1200	NA	NA	EM,DI,TC,ECM
5	3512B	1478@1200	631	510	6463@1200	NA	NA	EM,DI,TC,ECM
6	3512B	1621@1200	704	568	7090@1200	NA	NA	EM,DI,TC,ECM
7	3512B	1784@1800	514	622	5200@1800	NA	NA	EM,DI,TC,ECM
8	3512B	1971@1800	559	678	5747@1800	NA	NA	EM,DI,TC,ECM
9	3512B	2172@1800	610	739	6334@1200	NA	NA	EM,DI,TC,ECM
10	3512B	1492@1800	433	525	4349@1800	NA	NA	EM,DI,TC,ECM
11	3512B	1644@1800	476	576	4793@1800	NA	NA	EM,DI,TC,ECM
12	3512B	1810@1800	521	631	5278@1800	NA	NA	EM,DI,TC,ECM
13	3512B	1847@1800	530	642	5384@1800	NA	NA	EM,DI,TC,ECM
14	3512B	2028@1800	573	694	5912@1800	NA	NA	EM,DI,TC,ECM
15	3512B	1478@1200	617	498	6463@1200	NA	NA	EM,DI,TC,ECM
16	3512B	1910@1800	530	642	5568@1800	NA	NA	EM,DI,TC,ECM
17	3512B	2001@1900	540	690	5623@1400	NA	NA	EM,DI,TC,ECM
18	3512B	1476@1200	625	505	6457@1200	NA	NA	EM,DI,TC,ECM
19	3512B	1509@1800	424	513	4399@1800	NA	NA	EM,DI,TC,ECM
20	3512B	1476@1200	625	505	6457@1200	NA	NA	EM,DI,TC,ECM
21	3512B	1500@1800	425	515	6542@1350	471	428	EM,DI,TC,ECM
22	3512B	1575@1800	445	539	6542@1350	471	428	EM,DI,TC,ECM
23	3512B	1650@1800	464	562	6542@1350	471	428	EM,DI,TC,ECM
24	3512B	1677@1200	713	576	7334@1200	NA	NA	EM,DI,TC,ECM
25	3512B	1200@1800	344	413	3500@1350	347	315	EM,DI,TC,ECM
26	3512B	2150@1900	574	733	6038@1400	580	547	EM,DI,TC,ECM