California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR INC.	EXECUTIVE ORDER A-013-0169-1 New On-Road Heavy-Duty Engines

Pursuant to the authority vested in the Air Resources Board (ARB) by Health and Safety Code (HSC) Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order (EO) G-02-003; and

Pursuant to the December 15, 1998 Settlement Agreement (SA) between ARB and the manufacturer, and any modifications thereof to the Settlement Agreement;

IT IS ORDERED AND RESOLVED: That the engine and emission control systems produced by the manufacturer are certified as described below for use in on-road motor vehicles with a manufacturer's GVWR over 14,000 pounds. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	ENGINE SIZE (liter)	FUEL TYPE (CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas)	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS (L/M/H HDD=light/medium/heavy heavy-duty [HD] diesel; UB=urban bus; HDO=HD Otto)
2004	4CPXH0537H3K	8.8	Diesel (ultra low sulfur diesel, <15ppm sulfur)	Diesel	UB

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	ENGINE MODELS / CODES (rated power in horsepower, hp)
DDI, TC, CAC, ECM, SPL, DPF	C9: 1 (330 hp)

GVWR=gross vehicle weight rating TWC/OC=three-way/oxidizing catalyst WU (prefix) =warm-up cat. O2S=oxygen sensor HO2S=heated O2S TBI=throttle body fuel injection MFI=multi port fuel injection SFI=sequentialMFI DDI/IDI=direct /indirect diesel injection TC/SC=turbo/super charger CAC=charge air cooler EGR=exhaust gas recirculation AIR=secondary air injection PAIR=pulsed AIR SPL=smoke puff limiter ECM/PCM=engine /powertrain control module EM=engine modification 2 (prefix)=parallel (2) (suffix)=in series HC=hydrocarbon NMHC=non-methane HC NOx=oxides of nitrogen CO=carbon monoxide PM=particulate matter HCHO=formaldehyde g/bhp-hr=grams per brake horsepower-hour

The following are the exhaust emission standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT), in g/bhp-hr, for this engine family under the "Federal Test Procedure" (FTP) (Title 13, California Code of Regulations, (13 CCR) Section 1956.1 (urban bus) or 1956.8 (other than urban bus)), and under the "Euro III Test Procedure" (EURO) in the Settlement Agreement, including EURO's "Not-to-Exceed" standard(s). "Diesel" CO certification compliance may have been demonstrated pursuant to Code of Federal Regulations, Title 40, Part 86, Subpart A, Section 86.091-23(c)(2)(i) in lieu of testing. (For flexible- and dual-fueled engines, the CERT values in brackets [ ] are those when tested on conventional test fuel. For multi-fueled engines, the STD and CERT values for default operation permitted in 13 CCR Section 1956.1 or 1956.8 are in parentheses.)

			EURO'S NOT-TO-EXCEED STD		NMHC: 0.6250		NOx: *		NMHC+NOx: 3.125		PM: 0.0125			
* = not applicable	HC		NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
(DIRECT) STD	*	*	0.5	0.5	*	*	2.5	2.5	15.5	15.5	0.01	0.01	*	*
CERT	*	*	0.1	0.03	*	*	2.4	2.4	0.6	0.1	0.004	0.01	*	*

BE IT FURTHER RESOLVED: For the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR Sections 1965 (emission control labels), and 2035 et seq. (emission control warranty).

BE IT FURTHER RESOVED: That the listed engine models are certified to the 2004-2006 model-year alternative exhaust emissions standards for new diesel fuel urban bus engines per 13 CCR Section 1956.1(a)(11)(A), and their sale as engines for new urban buses is limited to sales to transit districts that are exempted by the Executive Officer under subsections 1956.2(c)(8) or (d)(7) from the requirements of subsections 1956.2(c)(5) or (d)(4), respectively; and that pursuant to section 1956.1(a)(6) and the 1998 Heavy-Duty Diesel Engine Settlement Agreements with ARB, these exhaust emission standards are identical to the primary standards for 2003 model-year new diesel fuel urban bus engines applicable to the manufacturer, and as a result, the listed engine models may also be used to re-power 2003 and earlier model-year urban buses consistent with the fleet and reporting requirements in 13 CCR Sections 1956.2 and 1956.4 [to be recodified as Sections 2023, 2023.1 and 2023.4 pursuant to Board action on February 24, 2005].

BE IT FURTHER RESOLVED: The manufacturer shall submit quarterly reports of sales of all engines in this family to transit fleets in California. The reports shall be submitted to the Executive Officer within 45 days after the end of each calendar quarter and shall include engines sold during the reporting quarter. At a minimum, the reports shall provide the following information: name of the transit fleet, engine serial numbers, and any other information deemed necessary by the Executive Officer.

BE IT FURTHER RESOLVED: The above-described certification is also subject to the following terms, limitations and conditions: (i) the manufacturer must take appropriate measures to ensure that all vehicles equipped with engines covered by this Executive Order bear appropriate labels in the vehicle fuel tank filler area and the driver's dashboard area disclosing the low sulfur (15 ppm maximum) fuel requirement, (ii) the manufacturer must take appropriate measures to ensure that all vehicles equipped with engines covered by this Executive Order are sold only to fleets with central fueling capability for low sulfur diesel fuel, and (iii) the manufacturer must require these fleet owners to sign agreements which require the fleet owner to use appropriate low sulfur diesel fuel and stipulate that the fleet owner is at risk of voiding the warranty for use of improper diesel fuel.

BE IT FURTHER RESOLVED: The listed engine models are conditionally certified subject to the following conditions: (1) The Settlement Agreement is in effect; and, (2) The manufacturer is in compliance with all applicable certification requirements of the Settlement Agreement and any modifications thereof.

Engines certified under this Executive Order shall conform to all applicable California emission regulations, and all Settlement Agreement's applicable requirements and any modifications thereof.
The Bureau of Automotive Repair will be notified by copy of this Executive Order.
This Executive Order hereby supersedes Executive Order A-013-0169 dated February 18, 2004.

Executed at El Monte, California on this 8TH day of September 2005.

Allen Lyons, Chief
Mobile Source Operations Division