California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR, INC.	EXECUTIVE ORDER A-013-0179 New On-Road Heavy-Duty Engines

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

IT IS ORDERED AND RESOLVED: 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 SIZES (L)	FUEL TYPE [1]	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS [2]	ECS & SPECIAL FEATURES [3]
2005	5CPXH0763EBK	12.5	Diesel	Diesel	HHDD	DDI, TC, CAC, ECM, SPL,OC

ENGINE (L)	ENGINE MODELS / CODES (rated power, in hp)
12.5	SEE ATTACHMENT
*	*
*	*
*	*

* =not applicable; **GVWR**=gross vehicle weight rating; **13 CCR xyz**=Title 13, California Code of Regulations, Section xyz; **40 CFR 86.abc**=Title 40, Code of Federal Regulations, Section 86.abc; **L**=liter; **hp**=horsepower; **kw**=kilowatt;
[1] **CNG/LNG**=compressed/liquefied natural gas; **LPG**=liquefied petroleum gas; **E85**=85% ethanol fuel; **MF**=multi fuel a.k.a. **BF**=bi fuel; **DF**=dual fuel; **FF**=flexible fuel;
[2] **L/M/H HDD**=light/medium/heavy heavy-duty diesel; **UB**=urban bus; **HDO**=heavy duty Otto;
[3] **ECS**=emission control system; **TWC/OC**=three-way/oxidizing catalyst; **WU (prefix)** =warm-up catalyst; **DPF**=diesel particulate filter; **HO2S/O2S**=heated/oxygen sensor; **HAFS/AFS**=heated/air-fuel-ratio sensor (a.k.a., universal or linear oxygen sensor); **TBI**=throttle body fuel injection; **SFI/MFI**=sequential/multi port fuel injection; **DGI**=direct gasoline injection; **GCARB**=gaseous carburetor; **IDI/DDI**=indirect/direct diesel injection; **TC/SC**=turbo/super charger; **CAC**=charge air cooler; **EGR**=exhaust gas recirculation; **PAIR/AIR**=pulsed/secondary air injection; **SPL**=smoke puff limiter; **ECM/PCM**=engine/powertrain control module; **EM**=engine modification; **2 (prefix)**=parallel; **(2) (suffix)**=in series; **(2004may26)**

Following are: 1) the FTP exhaust emission standards, or family emission limit(s) as applicable, under 13 CCR 1956.1 (urban bus) or 13 CCR 1956.8 (other than urban bus); 2) the EURO and NTE limits under the applicable California exhaust emission standards and test procedures for heavy-duty diesel engines and vehicles (Test Procedures); and 3) the corresponding certification levels, in g/bhp-hr, for this engine family. "Diesel" CO, EURO and NTE certification compliance may have been demonstrated by the manufacturer as provided under the applicable Test Procedures 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 1956.1 or 13 CCR 1956.8 are in parentheses.) [4]

	NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
STD	0.5	0.5	*	*	2.5	2.5	15.5	15.5	0.10	0.10	*	*
FEL	*	*	*	*	*	*	*	*	*	*	*	*
CERT	0.1	0.04	*	*	2.2	2.2	2.0	0.3	0.10	0.06	*	*
NTE	0.625		*		3.125		19.375		0.125		*	

[4] **g/bhp-hr**=grams per brake horsepower-hour; **FTP**=Federal Test Procedure; **EURO**=Euro III European Steady-State Cycle; **NTE**=Not-to-Exceed; **STD**=standard or emission test cap; **FEL**=family emission limit; **CERT**=certification level; **NMHC/HC**=non-methane/hydrocarbon; **NOx**=oxides of nitrogen; **CO**=carbon monoxide; **PM**=particulate matter; **HCHO**=formaldehyde;

BE IT FURTHER RESOLVED: Certification to the FEL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, or trading (ABT) programs. It will be used for determining compliance of any engine in this family and compliance with such ABT programs.

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

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

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this 23RD day of December 2004.

Raphael Susnowitz
for Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **On-highway HDDE**

EPA Engine Family: **5CPXH0763EBK**

Mfr Family Name: **NA**

Process Code: **New Submission**

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
Cert Eng	C13	445@1800	271	164.3	1750@1200	330	133.1	EM,DI,TC,ECM,CAC,SPL
1	C13	445@1800	270	163.2	1650@1200	316	127.6	EM,DI,TC,ECM,CA
2	C13	445@1800	272	164.8	1650@1200	312	125.8	EM,DI,TC,ECM,CA
3	C13	445@1800	268	162.4	1550@1200	293	118.3	EM,DI,TC,ECM,CA
4	C13	445@1800	272	164.7	1750@1200	327	132.0	EM,DI,TC,ECM,CA
5	C13	425@1800	257	155.8	1450@1200	276	111.5	EM,DI,TC,ECM,CA
6	C13	425@1800	262	158.6	1450@1200	275	111.1	EM,DI,TC,ECM,CA
7	C13	395@1800	242	146.8	1450@1200	276	111.5	EM,DI,TC,ECM,CA
8	C13	395@1800	245	148.2	1450@1200	275	111.1	EM,DI,TC,ECM,CA
9	C13	425@1800	257	155.8	1550@1200	294	118.8	EM,DI,TC,ECM,CA
10	C13	425@1800	260	157.2	1550@1200	297	120.0	EM,DI,TC,ECM,CA
11	C13	405@1800	248	150.5	1550@1200	294	118.8	EM,DI,TC,ECM,CA
12	C13	405@1800	251	151.8	1550@1200	294	118.8	EM,DI,TC,ECM,CA
13	C13	425@1800	257	155.8	1550@1200	294	118.8	EM,DI,TC,ECM,CA
14	C13	425@1800	260	157.2	1550@1200	297	120.0	EM,DI,TC,ECM,CA
15	C13	445@1800	268	162.5	1550@1200	294	118.8	EM,DI,TC,ECM,CA
16	C13	445@1800	270	163.2	1550@1200	291	117.6	EM,DI,TC,ECM,CA
17	C13	445@1800	267	161.8	1650@1200	313	126.4	EM,DI,TC,ECM,CA
18	C13	445@1800	271	164.0	1650@1200	313	126.4	EM,DI,TC,ECM,CA
19	C13	395@1800	243	147.0	1400@2100	297	108.8	EM,DI,TC,ECM,CA
20	C13	395@1800	245	148.3	1400@2100	297	108.8	EM,DI,TC,ECM,CA
21	C13	525@1800	308	186.4	1650@1200	313	126.4	EM,DI,TC,ECM,CA
22	C13	425@1800	257	155.8	1450@1200	275	111.1	EM,DI,TC,ECM,CA
23	C13	425@1800	261	157.9	1650@1200	313	126.4	EM,DI,TC,ECM,CA
24	C13	455@1800	252	152.8	1550@1200	274	110.7	EM,DI,TC,ECM,CA
25	C13	525@1800	314	189.9	1650@1200	322	130.1	EM,DI,TC,ECM,CA
26	C13	425@1800	257	155.8	1450@1200	275	111.1	EM,DI,TC,ECM,CA
27	C13	425@1800	260	157.2	1650@1200	316	127.7	EM,DI,TC,ECM,CA
28	C13	425@1800	261	157.9	1650@1200	313	126.4	EM,DI,TC,ECM,CA
29	C13	445@1800	268	162.5	1550@1200	294	118.8	EM,DI,TC,ECM,CA
30	C13	445@1800	271	164.0	1750@1200	332	134.1	EM,DI,TC,ECM,CA
31	C13	445@1800	273	165.4	1750@1200	332	134.1	EM.DI.TC.ECM.CA

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32	C13	425@1800	257	155.8	1450@1200	275	111.1	EM,DI,TC,ECM,CA
33	C13	425@1800	261	157.9	1450@1200	277	111.7	EM,DI,TC,ECM,CA
34	C13	425@1800	257	155.8	1550@1200	294	118.8	EM,DI,TC,ECM,CA
35	C13	470@1800	286	172.8	1650@1200	319	128.9	EM,DI,TC,ECM,CA
36	C13	470@1800	286	172.8	1650@1200	319	128.9	EM,DI,TC,ECM,CA
37	C13	455@1800	270	163.7	1550@1200	302	121.7	EM,DI,TC,ECM,CA
38	C13	445@1800	273	165.4	1550@1200	296	119.4	EM,DI,TC,ECM,CA
39	C13	445@1800	276	166.9	1550@1200	297	120.0	EM,DI,TC,ECM,CA
40	C13	395@1800	247	149.6	1450@1200	281	113.3	EM,DI,TC,ECM,CA
41	C13	395@1800	247	149.6	1450@1200	282	113.9	EM,DI,TC,ECM,CA
42	C13	425@1800	263	159.3	1550@1200	310	125.2	EM,DI,TC,ECM,CA
43	C13	485@1800	300	182.0	1550@1200	299	120.5	EM,DI,TC,ECM,CA
44	C13	485@1800	299	181.0	1650@1200	339	137.0	EM,DI,TC,ECM,CA
45	C13	485@1800	295	178.6	1650@1200	321	129.5	EM,DI,TC,ECM,CA
46	C13	425@1800	263	159.3	1550@1200	310	125.2	EM,DI,TC,ECM,CA
47	C13	485@1800	299	181.0	1750@1200	333	134.3	EM,DI,TC,ECM,CA
48	C13	485@1800	294	177.8	1750@1200	333	134.4	EM,DI,TC,ECM,CA
49	C13	425@1800	263	159.3	1550@1200	310	125.2	EM,DI,TC,ECM,CA

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