State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-13-123-1

Relating to Certification of New Heavy-Duty Motor Vehicle Engines

CATERPILLAR, INC

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 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-45-9;

IT IS ORDERED AND RESOLVED: That the following 1998 model-year Caterpillar, Inc. diesel-cycle engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Fuel Type: Diesel

Engine Family	Engine Displacement Liters	(Cubic Inches)	Exhaust Emission Control Systems and Special Features
WCPXH0893ERK	14.6	(893)	Turbocharger Charge Air Cooler Engine Control Module

Engine models and codes are listed on attachments.

The following are the certification exhaust emission standards for this engine family in grams per brake horsepower-hour:

Total Hydrocarbons	Carbon Monoxide	Nitrogen Oxides	Particulates
1.3	15.5	4.0	0.10

The following are the certification exhaust emission values for this engine family in grams per brake horsepower-hour:

Total Hydrocarbons	Carbon Monoxide	Nitrogen Oxides	Particulates
0.2	1.4	3.8	0.08

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2035 et seq.).

BE IT FURTHER RESOLVED: That the aforementioned engine family has been conditionally certified subject to the following conditions:

1. Any engine which employs a defeat device shall not be covered by this Executive Order.

2. Within 120 days following the issuance of Executive Order A-13-123, the manufacturer must show cause, to the satisfaction of the Executive Officer or his designee, that the strategy for fuel injection timing, including timing during the fuel economy mode, is not a defeat device.

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 order and attachments.

Executed at El Monte, California this 25th day of February 1998.

R. B. Summerfield, Chief
Mobile Source Operations Division

LARGE ENGINE MODEL SUMMARY

9/24/97

EO: A-13-123-1

Manufacturer: CATERPILLAR INC.

Process Code: New Submission

EPA Engine Family: WCPXH0893ERK

Manufacturer Family Name: NA

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
Note: Peak HP	and Peak Torque	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	
1 - Cert Engine	3406	550 @ 1800	290	175.7	1850 @ 1200	327	131.9	EM, DI, TC, ECM,
2	3406	550 @ 1800	290	175.7	1850 @ 1200	327	131.9	EM, DI, ~~TC~~, ECM,
3	3406	500 @ 1800	272	164.9	1850 @ 1200	329	132.9	EM, DI, ~~TC~~, ECM,
4	3406	500 @ 1800	269	162.8	1850 @ 1200	327	131.9	EM, DI, ~~TC~~, ECM,
5	3406	500 @ 1800	265	160.5	1850 @ 1200	329	132.8	EM, DI, ~~TC~~, ECM,
6	3406	500 @ 1800	261	158.3	1850 @ 1200	327	131.9	EM, DI, ~~TC~~, ECM,
7	3406	500 @ 1800	272	164.9	1850 @ 1200	312	126.1	EM, DI, ~~TC~~, ECM,
8	3406	500 @ 1800	269	162.8	1850 @ 1200	310	125.1	EM, DI, ~~TC~~, ECM,
9	3406	500 @ 1800	272	165.0	1850 @ 1200	329	132.8	EM, DI, ~~TC~~, ECM,
10	3406	475 @ 1800	261	157.8	1650 @ 1200	293	118.2	EM, DI, ~~TC~~, ECM,
11	3406	500 @ 1800	269	162.8	1850 @ 1200	327	131.9	EM, DI, ~~TC~~, ECM,
12	3406	475 @ 1800	257	155.7	1650 @ 1200	290	117.2	EM, DI, ~~TC~~, ECM,
13	3406	475 @ 1800	261	157.8	1750 @ 1200	312	126.1	EM, DI, ~~TC~~, ECM,
14	3406	475 @ 1800	257	155.7	1750 @ 1200	310	125.1	EM, DI, ~~TC~~, ECM,
15	3406	475 @ 1800	252	152.5	1750 @ 1200	312	126.1	EM, DI, ~~TC~~, ECM,
16	3406	475 @ 1800	248	150.4	1750 @ 1200	310	125.1	EM, DI, ~~TC~~, ECM,
17	3406	475 @ 1800	261	157.8	1650 @ 1200	293	118.2	EM, DI, ~~TC~~, ECM,
18	3406	475 @ 1800	257	155.7	1650 @ 1200	290	117.2	EM, DI, ~~TC~~, ECM,
19	3406	475 @ 1800	253	152.5	1650 @ 1200	293	118.2	EM, DI, ~~TC~~, ECM,
20	3406	475 @ 1800	248	150.4	1650 @ 1200	290	117.2	EM, DI, ~~TC~~, ECM,
21	3406	455 @ 1800	248	150.4	1750 @ 1200	312	126.1	EM, DI, ~~TC~~, ECM,
22	3406	455 @ 1800	248	150.4	1550 @ 1200	275	110.9	EM, DI, ~~TC~~, ECM,
23	3406	455 @ 1800	245	148.3	1750 @ 1200	310	125.1	EM, DI, ~~TC~~, ECM,
24	3406	455 @ 1800	245	148.3	1550 @ 1200	272	109.9	EM, DI, ~~TC~~, ECM,
25	3406	455 @ 1800	248	150.4	1650 @ 1200	293	118.2	EM, DI, ~~TC~~, ECM,
26	3406	455 @ 1800	245	148.3	1650 @ 1200	290	117.2	EM, DI, ~~TC~~, ECM,
27	3406	455 @ 1800	242	146.3	1650 @ 1200	293	118.2	EM, DI, ~~TC~~, ECM,
28	3406	455 @ 1800	238	144.2	1650 @ 1200	290	117.2	EM, DI, ~~TC~~, ECM,
29	3406	435 @ 1800	236	143.1	1650 @ 1200	293	118.2	EM, DI, ~~TC~~, ECM,
30	3406	435 @ 1800	233	290	1650 @ 1200	290	117.2	EM, DI, ~~TC~~, ECM,
31	3406	435 @ 1800	230	139.5	1650 @ 1200	293	118.2	EM, DI, ~~TC~~, ECM,
32	3406	435 @ 1800	227	137.4	1650 @ 1200	290	117.2	EM, DI, ~~TC~~, ECM,

33	3406	435 @ 1800	230	145.1	1550 @ 1200	275	110.9	EM, DI, CAC, ECM,
34	3406	435 @ 1800	233	1.0	1550 @ 1200	272	109.9	, DI, CAC, ECM,
35	3406	435 @ 1800	230	139.5	1550 @ 1200	275	110.9	EM, DI, CAC, ECM,
36	3406	435 @ 1800	227	137.4	1550 @ 1200	272	109.9	EM, DI, CAC, ECM,
37	3406	410 @ 1800	222	134.4	1550 @ 1200	268	108.2	EM, DI, CAC, ECM,
38	3406	410 @ 1800	211	127.9	1550 @ 1200	268	108.2	EM, DI, CAC, ECM,
39	3406	410 @ 1800	222	134.4	1450 @ 1200	252	101.9	EM, DI, CAC, ECM,
40	3406	410 @ 1800	211	127.9	1450 @ 1200	252	101.9	EM, DI, CAC, ECM,
41	3406	435 @ 1800	224	135.5	1650 @ 1200	285	115.1	EM, DI, CAC, ECM,
42	3406	375 @ 1800	193	116.9	1450 @ 1200	251	101.3	EM, DI, CAC, ECM,
43	3406	435 @ 1800	224	135.5	1550 @ 1200	269	108.5	EM, DI, CAC, ECM,
44	3406	375 @ 1800	193	116.9	1450 @ 1200	251	101.3	EM, DI, CAC, ECM,
45	3406	375 @ 1800	207	125.4	1550 @ 1200	269	108.5	EM, DI, CAC, ECM,
46	3406	375 @ 1800	207	125.4	1450 @ 1200	251	101.3	EM, DI, CAC, ECM,
47	3406	375 @ 1800	193	116.9	1550 @ 1200	269	108.5	EM, DI, CAC, ECM,
48	3406	375 @ 1800	193	116.9	1450 @ 1200	251	101.3	EM, DI, CAC, ECM,
49	3406	375 @ 1800	207	125.3	1450 @ 1200	251	101.3	EM, DI, CAC, ECM, CAC

ENGINE FAMILY: WCPXH0893ERK. EO: A-13-123-1