State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-95

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 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 Caterpillar, Inc. 1999 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Loader, Tractor, Generator and Industrial Equipment

Fuel Type: Diesel

Engine Family	Liters	(Cubic Inches)	Exhaust Emission Control Systems and Special Features
XCPXL14.6ERK	14.6	(895)	Turbocharger Engine Control Module Charge Air Cooler

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM) certification exhaust emission standards, in grams per brake horsepower-hour (g/bhp-hr), and the opacity of smoke emission standards, in percent (%), during acceleration (Accel), lugging (Lug), and peak (Peak) modes, for this engine family are (Title 13, California Code of Regulations, Section 2423):

Exhaust Emissions (g/bhp-hr)				Smoke Opacity (%)		
THC	CO	NOx	PM	Accel	Lug	Peak
1.0	8.5	6.9	0.4	20	15	50

The THC, CO, NOx and PM exhaust emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

Exhaust Emissions (g/bhp-hr)				Smoke Opacity (%)		
THC	CO	NOx	PM	Accel	Lug	Peak
0.1	0.8	6.5	0.1	6	1	16

BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "Emission Control Labels--1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year.

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 2425 et seq.).

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

Executed at El Monte, California this 22nd day of December 1998.

R. B. Summerfield, Chief
Mobile Source Operations Division

LARGE ENGINE MODEL SUMMARY

11/24/98

EO: U-R-1-95

Manufacturer: CATERPILLAR INC.

Process Code: New Submission

EPA Engine Family: XCPXL14.6ERK

Manufacturer Family Name: N/A

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	660 @ 1800	358	216.9	2503 @ 1200	475	191.5	EM, DI, TC, ECM,
2	3406	427 @ 2000	213	143.3	1493 @ 1200	285	114.9	EM, DI, TC, ECM,
3	3406	325 @ 1800	176	106.7	1231 @ 1200	229	92.6	EM, DI, TC, ECM,
4	3406	350 @ 1800	190	115.1	1328 @ 1200	246	99.2	EM, DI, TC, ECM,
5	3406	375 @ 1800	202	122.2	1425 @ 1200	263	106.1	EM, DI, TC, ECM,
6	3406	400 @ 1800	215	130.0	1516 @ 1200	279	112.6	EM, DI, TC, ECM,
7	3406	425 @ 1800	226	137.0	1613 @ 1200	299	120.6	EM, DI, TC, ECM,
8	3406	325 @ 2000	163	109.4	1109 @ 1400	204	96.0	EM, DI, TC, ECM,
9	3406	350 @ 2000	175	118.0	1195 @ 1400	221	104.0	EM, DI, TC, ECM,
10	3406	375 @ 2000	185	124.7	1282 @ 1400	237	111.4	EM, DI, TC, ECM,
11	3406	400 @ 2000	197	132.7	1364 @ 1400	251	118.3	EM, DI, TC, ECM,
12	3406	425 @ 2000	209	140.5	1452 @ 1400	267	125.7	EM, DI, TC, ECM,
13	3406	450 @ 1800	241	145.8	1707 @ 1400	272	128.3	EM, DI, TC, ECM,
14	3406	375 @ 2100	183	129.0	1221 @ 1200	262	106.1	EM, DI, TC, ECM,
15	3406	400 @ 2100	192	136.0	1300 @ 1400	237	111.5	EM, DI, TC, ECM,
16	3406	425 @ 2100	203	143.3	1382 @ 1400	252	118.7	EM, DI, TC, ECM, CAC
17	3406	450 @ 2100	215	151.6	1463 @ 1400	266	125.1	EM, DI, TC, ECM,
18	3406	325 @ 2100	161	113.6	1055 @ 1400	199	93.5	EM, DI, TC, ECM,
19	3406	350 @ 2100	151	120.9	1138 @ 1400	212	99.6	EM, DI, TC, ECM,
20	3406	375 @ 2100	183	129.0	1221 @ 1400	225	106.1	EM, DI, TC, ECM,
21	3406	400 @ 2100	192	136.0	1300 @ 1400	237	111.5	EM, DI, TC, ECM,
22	3406	425 @ 2100	230	143.3	1382 @ 1400	252	118.7	EM, DI, TC, ECM,
23	3406	450 @ 2100	215	151.6	1463 @ 1300	266	125.1	EM, DI, TC, ECM,
24	3406	475 @ 2100	225	159.3	1544 @ 1400	279	131.4	EM, DI, TC, ECM,
25	3406	500 @ 2100	239	168.5	1627 @ 1400	293	138.1	EM, DI, TC, ECM,
26	3406	525 @ 2100	252	177.8	1707 @ 1400	310	145.8	EM, DI, TC, ECM,
27	3406	550 @ 2100	264	186.2	1788 @ 1400	321	151.5	EM, DI, TC, ECM,
28	3406	565 @ 2100	271	191.1	1836 @ 1400	331	156.1	EM, DI, TC, ECM,
29	3406	575 @ 2100	264	186.4	1871 @ 1400	380	178.8	EM, DI, TC, ECM,
30	3406	500 @ 2100	263	185.6	1635 @ 1400	313	147.4	EM, DI, TC, ECM,
31	3406	500 @ 2100	244	172.6	1450 @ 1200	260	104.9	EM, DI, TC, ECM,
32	3406	500 @ 2100	263	185.6	1635 @ 1400	313	147.4	EM, DI, TC, ECM,

33	3406	450 @ 2100	236	166.9	1475 @ 1200	284	133.7	EM, D TC, ECM,
34	3406	435 @ 2100	214	151	1450 @ 1200	260	104.9	EM, D C, ECM,
35	3406	500 @ 2100	244	172.6	1450 @ 1200	260	104.9	EM, DI, TC, ECM,
36	3406	425 @ 2100	221	156.4	1378 @ 1400	263	124.1	EM, DI, TC, ECM,
37	3406	400 @ 2100	209	147.5	1305 @ 1400	251	118.4	EM, DI, TC, ECM,
38	3406	360 @ 2100	188	132.8	1113 @ 1400	214	100.8	EM, DI, TC, ECM,
39	3406	360 @ 2100	188	132.8	1147 @ 1500	222	112.2	EM, DI, TC, ECM,
40	3406	425 @ 1800	226	137.0	1613 @ 1200	299	120.6	EM, DI, TC, ECM,
41	3406	425 @ 2000	209	140.5	1452 @ 1400	267	125.7	EM, DI, TC, ECM, CAC
42	3406	450 @ 1800	241	145.8	1707 @ 1200	318	128.3	EM, DI, TC, ECM,
43	3406	425 @ 2100	203	143.3	1382 @ 1400	304	143.3	EM, DI, TC, ECM,
44	3406	525 @ 2100	252	177.8	1707 @ 1400	310	145.8	EM, DI, TC, ECM,
45	3406	565 @ 2100	271	191.1	1836@ 1400	331	156.1	EM, DI, TC, ECM,
46	3406	475 @ 2100	246	173.5	1543 @ 1400	297	139.7	EM,DI,TC,ECM,
47	3406	490 @ 2200	264	177.8	1580 @ 1300	302	132.0	EM,DI,TC,ECM,
48	3406	535 @ 1500	340	171.6	2302 @ 1200	433	174.7	EM,DI,TC,ECM,
49	3406	525 @ 2100	252	178.0	1643 @ 1800	313	189.8	EM,DI,TC,ECM,

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