State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-116
Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board at Sections 43000.5, 43013, and 43018 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9; and

IT IS ORDERED AND RESOLVED: That the following diesel engines and the exhaust emission control systems produced by the manufacturer are certified as described below for use in heavy-duty off-road equipment:

Model Year: 2000

Typical Equipment Usage: Generator, Loader and Industrial equipment

Engine Power Ratings Range: 175 – 750 horsepower, inclusive

Fuel Type: Diesel

Engine Family	Displacement Liters	Displacement Cubic Inches	Exhaust Emission Control Systems and Special Features
YCPXL10.5MRG	10.5	644	Smoke Puff Limiter Turbocharger Charge Air Cooler

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

	Exhaust Emissions (g/hp-h)				Smoke Opacity (%)		
	THC	CO	NOx	PM	Accel	Lug	Peak
Standard	1.0	8.5	6.9	0.4	20	15	50
Certification	0.2	1.6	5.5	0.1	16	4	32

BE IT FURTHER RESOLVED: That the listed engine models comply with "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 "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, Sections 2425 *et seq.*).

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

Executed at El Monte, California this 7 day of December 1999.

R. B. Summerfield, Chief
Mobile Source Operations Division

6/3/99

LARGE ENGINE MODEL SUMMARY

EO: U-R-1-116

Manufacturer: **CATERPILLAR INC.**

Process Code: **New Submission**

EPA Engine Family: **YCPXL10.5MRG**

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	3306	362 @ 1800	220	133.0	1328 @ 1200	266	107.0	EM, DI, TC, SPL,
2	3306	320 @ 1800	208	126.0	1196 @ 1400	234	110.0	EM, DCAC, SPL,
3	3306	349 @ 1800	208	126.0	1196 @ 1400	234	110.0	EM, DCAC, SPL,
4	3306	311 @ 1800	202	122.0	1142 @ 1400	221	104.0	EM, DCAC, SPL,
5	3306	311 @ 1800	202	122.0	1142 @ 1400	221	104.0	EM, DCAC, SPL,
6	3306	311 @ 1800	202	122.0	1142 @ 1400	221	104.0	EM, DCAC, SPL,
7	3306	306 @ 1800	197	120.0	1134 @ 1400	223	105.0	EM, DCAC, SPL,
8	3306	306 @ 1800	197	120.0	1134 @ 1400	223	105.0	EM, DCAC, SPL,
9	3306	330 @ 2200	168	124.0	1092 @ 1400	217	102.0	EM, DCAC, SPL,
10	3306	325 @ 2200	167	123.0	1074 @ 1400	213	100.0	EM, DCAC, SPL,
11	3306	325 @ 2100	168	119.0	1047 @ 1400	209	99.0	EM, DCAC, SPL,
12	3306	325 @ 2100	168	119.0	1047 @ 1400	209	99.0	EM, DCAC, SPL,
13	3306	325 @ 2000	172	116.0	1057 @ 1400	208	98.0	EM, DCAC, SPL,
14	3306	295 @ 2000	160	107.0	929 @ 1400	192	90.0	EM, DCAC, SPL,
15	3306	325 @ 1800	192	116.0	1125 @ 1200	229	93.0	EM, DCAC, SPL,
16	3306	325 @ 1800	192	116.0	1125 @ 1200	229	93.0	EM, DCAC, SPL,
17	3306	310 @ 2200	164	121.0	1029 @ 1400	209	98.0	EM, DCAC, SPL,
18	3306	300 @ 2200	159	118.0	991 @ 1400	203	95.0	EM, DCAC, SPL,
19	3306	285 @ 2200	146	108.0	934 @ 1400	183	86.0	EM, DCAC, SPL,
20	3306	310 @ 2100	167	118.0	1008 @ 1400	206	97.0	EM, DCAC, SPL,
21	3306	310 @ 2100	167	118.0	1008 @ 1400	206	97.0	EM, DCAC, SPL,
22	3306	260 @ 2200	134	99.0	817 @ 1400	162	76.0	EM, DCAC, SPL,
23	3306	300 @ 2100	161	114.0	986 @ 1400	198	93.0	EM, DCAC, SPL,
24	3306	300 @ 2100	160	113.0	985 @ 1400	194	92.0	EM, DCAC, SPL,
25	3306	270 @ 2100	146	103.0	884 @ 1400	181	85.0	EM, DCAC, SPL,
26	3306	310 @ 2000	169	114.0	1044 @ 1400	205	97.0	EM, DCAC, SPL,
27	3306	290 @ 2000	160	108.0	963 @ 1400	194	91.0	EM, DCAC, SPL,
28	3306	275 @ 2000	149	100.0	897 @ 1400	181	85.0	EM, DCAC, SPL,
29	3306	310 @ 1850	178	111.0	1034 @ 1400	209	99.0	EM, DCAC, SPL,
30	3306	300 @ 1850	176	110.0	992 @ 1400	202	95.0	EM, DCAC, SPL,
31	3306	310 @ 1800	186	113.0	1073 @ 1200	225	91.0	EM, DCAC, SPL,
32	3306	300 @ 1800	179	109.0	1017 @ 1400	207	97.0	EM, DCAC, SPL,
33	3306	300 @ 1800	179	109.0	1020 @ 1400	207	97.0	EM, DCAC, SPL

34	3306	300 @ 1800	181	11[illegible]	1015 @ 1400	204	96.0	EM[illegible]I, TC, SPL,
35	3306	300 @ 1800	178	10[illegible]	1014 @ 1400	204	96.0	EM, DCAC, SPL,
36	3306	285 @ 1800	170	103.0	981 @ 1200	206	83.0	EM, DCAC, SPL,
37	3306	260 @ 1800	154	93.0	888 @ 1200	187	75.0	EM, DCAC, SPL,
38	3306	265 @ 2200	138	102.0	847 @ 1400	168	79.0	EM, DCAC, SPL,
39	3306	260 @ 2200	134	99.0	854 @ 1400	163	77.0	EM, DCAC, SPL,
40	3306	250 @ 2200	130	96.0	800 @ 1400	159	75.0	EM, DCAC, SPL,
41	3306	230 @ 2200	120	89.0	738 @ 1400	149	70.0	EM, DCAC, SPL,
42	3306	225 @ 2200	118	87.0	701 @ 1400	141	67.0	EM, DI, TC, SPL,
43	3306	250 @ 2100	132	93.0	791 @ 1400	156	74.0	EM, DCAC, SPL,
44	3306	250 @ 2100	132	93.0	791 @ 1400	156	74.0	EM, DCAC, SPL,
45	3306	195 @ 2100	106	74.0	630 @ 1400	119	55.0	EM, DCAC, SPL,
46	3306	231 @ 2000	123	83.0	718 @ 1400	144	68.0	EM, DCAC, SPL,
47	3306	210 @ 2000	113	76.0	653 @ 1400	131	62.0	EM, DCAC, SPL,
48	3306	265 @ 1800	155	94.0	942 @ 1200	185	75.0	EM, DCAC, SPL,
49	3306	250 @ 1800	145	88.0	848 @ 1400	166	78.0	EM, DCAC, SPL, CAC

Engine family: YCPXL10.5MRG

EO: U-R-1-116