State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-119
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: Tractor, Generator 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
YCPXL18.0MRJ	18.0	1104	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	2.2	6.7	0.3	17	4	25

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

10/28/99

LARGE ENGINE MODEL SUMMARY

Manufacturer: **CATERPILLAR INC.**

Process Code: **New Submission**

EO: u-R-1-119

EPA Engine Family: **YCPXL18.0MRJ**

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 HP2	and Peak Torque	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	
1 - Cert Engine	3408	535 @ 2100	222	209.4	1705 @ 1400	268	168.1	EM, DI, TC, SPL,
2	3408	505 @ 2100	206	194.2	1601 @ 1400	250	157.0	EM, DC~~AC~~, SPL,
3	3408	475 @ 2100	192	181.1	1497 @ 1400	233	146.6	EM, DC~~AC~~, SPL,
4	3408	525 @ 2100	212	199.3	1671 @ 1400	256	160.6	EM, DC~~AC~~, SPL,
5	3408	425 @ 2100	171	160.7	1311 @ 1400	205	128.4	EM, DC~~AC~~, SPL,
6	3408	490 @ 2100	181	170.9	1404 @ 1400	218	137.2	EM, DC~~AC~~, SPL,
7	3408	505 @ 2000	207	185.7	1625 @ 1400	246	154.5	EM, DC~~AC~~, SPL,
8	3408	475 @ 1800	215	173.3	1561 @ 1350	246	148.8	EM, DC~~AC~~, SPL,
9	3408	505 @ 1800	230	186.0	1662 @ 1350	262	158.5	EM, DC~~AC~~, SPL,
10	3408	450 @ 2000	187	167.9	1432 @ 1400	223	140.1	EM, DC~~AC~~, SPL,
11	3408	490 @ 2000	202	180.8	1575 @ 1400	241	151.5	EM, DC~~AC~~, SPL,
12	3408	425 @ 1800	191	154.5	1393 @ 1350	223	135.1	EM, DC~~AC~~, SPL,
13	3408	450 @ 1800	203	163.5	1477 @ 1350	232	140.3	EM, DC~~AC~~, SPL,
14	3408	465 @ 1800	210	169.8	1530 @ 1350	240	143.4	EM, DC~~AC~~, SPL,
15	3408	405 @ 1900	192	163.6	1528 @ 1200	243	131.0	EM, DC~~AC~~, SPL,
16	3408	505 @ 2100	206	194.2	1601 @ 1400	250	157.0	EM, DC~~AC~~, SPL,
17	3408	505 @ 2100	206	194.2	1601 @ 1400	250	157.0	EM, DC~~AC~~, SPL,
18	3408	525 @ 2100	212	199.3	1671 @ 1400	256	160.6	EM, DC~~AC~~, SPL,
19	3408	525 @ 2100	212	199.3	1671 @ 1400	256	160.6	EM, DC~~AC~~, SPL,
20	3408	475 @ 2100	192	181.1	1497 @ 1400	233	146.6	EM, DC~~AC~~, SPL,
21	3408	525 @ 2100	212	199.3	1671 @ 1400	256	160.6	EM, DC~~AC~~, SPL,
22	3408	505 @ 2100	206	194.2	1601 @ 1400	250	157.0	EM, DC~~AC~~, SPL,
23	3408	505 @ 2100	206	194.2	1601 @ 1400	250	157.0	EM, DC~~AC~~, SPL,
24	3408	505 @ 1800	230	186.0	1662 @ 1350	262	158.0	EM, DC~~AC~~, SPL,
25	3408	443 @ 1900	192	164.0	2072 @ 1200	243	131.0	EM, DC~~AC~~, SPL, CAC

TC, CAC, SPL