State of California AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-26

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. 1997 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: Industrial Equipment, Agriculture Tractor

Fuel Type: Diesel

Exhaust Emission Control
Systems and Special Features

VCP6.6RZDARC 6.6 (403)

Turbocharger
Charge Air Cooler
Smoke Puff Limiter

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 matters (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):

<u>Exhaust</u>	<u>Emissi</u>	ons (g/l	ohp-hp)	Smoke	<u>Opaciity</u>	(%)
<u>THC</u>	<u>co</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
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:

<u>Exhaust En</u>	nission	s (g/bl	np-hr)	Smoke Opacity (%)	
Engine Family	<u>THC</u>	<u>co</u>	<u>NOx</u>	<u>PM</u>	Accel Lug Peak
VCP6.6RZDARC	0.1	1.3	4.6	0.2	4 3 6

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 //

day of December 1996.

R. B. Summerfield, Chief

Mobile Source Operations Division

1997 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET HEAVY-DUTY OFF-ROAD DIESEL ENGINES

Manufacturer Caterpilla Displacement 6.6 / 4			ar Inc. Engine Family				VCP6.6RZDARC					
			403	Liters/Cubic Inches			Engine Configuration:				I 6	
All Codes in Eng.	Family:	CA	498		50S	XX	Cert Tes	Proced	шгея:	ARB	EPA	XX
Valves/Ports per C	ylinder	2	valves/cyl		S	trokes	per Combi	ustion C	ycle:	4		
Maximum Rated F	Power:	275	HP	(205	KW)	@		2450		RPM
Ignition: Compre	ession X	x		Compi	essio	n with	Glow Plug	3			Spark	-
Fuel Type (s):	Dedicated	X	Flex-Fuel		Dual	-Fuel		Diesel	XX	M100		M85
	CNG		LNG	LPG		Oth	er (specify	')				
Diesel Cert Fuel:	40 CFR 86	.1313-94	XX			Oth	er (specify	')				
Primary Service E	quipment:	Indu	strial, Agric	ulture '	Fracto	or						
Exhaust ECS (e.g	., MFI, TC,	CAC):	EM, T	C, SPL	, DI, 0	CAC						

(Use abbreviations per SAE J1930 JUN93)

Engine Model (Eng. Code)	Rated HP @ RPM	Fuel Rate @ Rated HP mm³/stroke (lbs/hr)	Fuel Pump & Injector Part No.	ECM/PCM Part No.	EGR Valve Part No.	PTOX / Catalytic Converter Part No.
3116 (1)	MAX 275 @ 2450	125 (103.3)	4P2995/4P2995			
3116 (2)	251 @ 2100	120 (84.9)	1278218/1278218			
3116 (3)	MIN 225 @ 2100	110 (78.0)	1278218/1278218			

ISSUE DATE	03 SEPT 96										
REVISION NO.											
REVISION DATE											