State of California AIR RESOURCES BOARD

FXFCUTIVE ORDER U-R-10-12

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

KOMATSU DRESSER CORPORATION

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 Komatsu Dresser Corp. 1999 model-year engines with rated power between 175 and 750 horsepower and exhaust emission control systems are certified as described below in heavy-duty offroad equipment:

Typical Equipment Usage:

Crane, Loader, Tractor, Dozer, Pump, Compressor, and Generator Set

Fuel Type:

Diesel

Engine Family	Displacement <u>Liters Cubic Inches</u>		Exhaust Emission Control Systems and Special Features		
XKDXL0359ABA (A403)	5.9	359	Charge Air Cooler Turbocharger		

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/hp-h), and the opacity-of-smoke emission standards in percent (%) during acceleration (Accel), lugging (Lug), and peak (Peak) modes for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

<u>Exhaus</u>	st Emiss	ions (g/l	np- <u>h)</u>	<u>Smoke</u>	opacity	<u>/ (%)</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 emissions certification values in grams per brake horsepower-hour, and the opacity-of-smoke emissions certification values in percent for this engine family are:

<u>Exhau</u>	st Emis	sions (<u>g/hp-h)</u>	<u>Smoke (</u>	Opacity	(%)
<u>THC</u>	<u>co</u>	<u>N0x</u>	<u>PM</u> _	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
0.3	0.6	5.1	0.1	6	1	22

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, Sections 2425 et seq.).

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

Executed at El Monte, California this 30 day of November 1998.

R. B. Summerfield, Chief Mobile Source Operations Division

LARGE ENGINE MOLEL SUMMARY

Manufacturer: Komatsu Process Code: New Submission

EPA Engine Family: XKDXL0359ABA Manufacturer Family Name: A403

EPA Engine Family: XKDXL0359ABA		Manufacturer Family Name:			A403			
LEngine 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 J193
CPL 2063 FR 9897 FR 90539	SA6D102EA-1 SA6D102EA-1	185@2200 185@2200	93 93	69.0 69.0	580@1500 580@1500	111 111	56.3 56.3	TC CA
CPL 1962 FR 90019	SA6D102E-1	166@2100	84	59.4	463@1500	89	45.0	TC CA
CPL 2147 FR 90444	SA6D102E-1	171@2200	84	62.4	469@1400	99	43.8	TC CA
				e de la companya de l				
					1			
			To the second se					