California Environmental Protection Agency AIR RESOURCES BOARD	Mitsubishi Heavy Industries, Ltd.	EXECUTIVE ORDER U-R-035-0063 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 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-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2004	4MVXL05.0AAE	3.3, 5.0	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger	Loader, Tractor, Dozer, Pump, Compressor and Industrial Equiment

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37≤ KW < 75	Tier 2	STD	N/A	N/A	7.5	5.0	0.40	20	15	50
		CERT	--	--	6.6	1.4	0.31	15	6	32

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

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

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 12TH day of May 2003.

Allen Lyons, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Su nary Form

Manufacturer: **Mitsubishi Heavy Industries, Ltd.**

Engine category: **Nonroad CI**

EPA Engine Family: **4MVXL05.0AAE**

Mfr Family Name: **SS-DTDP**

Process Code: **New Submission**

U-R-035-0063

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
S4S-DT71CWL	S4S-DTDP	80.5@2600	54	31	187ftlb@1600	58	20	DI TC
S4S-DT71SSL	S4S-DTDP	80.5@2600	54	31	187ftlb@1600	58	20	DI TC
S4S-DT72CWL	S4S-DTDP	71@2600	48	27	174ftlb@1600	53	19	DI TC
S4S-DT72SSL	S4S-DTDP	71@2600	48	27	174ftlb@1600	53	19	DI TC
S4S-DT81PA	S4S-DTDP	80.5@2600	54	31	187ftlb@1600	58	20	DI TC
S4S-DT81PB	S4S-DTDP	71@2600	48	27	174ftlb@1600	53	19	DI TC
S4S-DT85PA	S4S-DTDP	80.5@2600	54	31	187ftlb@1600	58	20	DI TC
S4S-DT85PB	S4S-DTDP	71@2600	48	27	174ftlb@1600	53	19	DI TC
S4S-Y2DT61T	S4S-DTDP	77@2500	54	30	181ftlb@1600	54	19	DI TC
S6S-Y2DT31IL	S6S-DTDP	99@2200	51	37	275ftlb@1400	56	26	DI TC
S6S-Y2DT73B	S6S-DTDP	77@2200	41	30	222ftlb@1400	45	21	DI TC
S6S-Y2DT74B	S6S-DTDP	87@2200	47	34	257ftlb@1400	53	25	DI TC
S6S-Y2DT75B	S6S-DTDP	99@2200	51	37	275ftlb@1400	56	26	DI TC