California Environmental Protection Agency AIR RESOURCES BOARD	Mitsubishi Heavy Industries, Ltd.	EXECUTIVE ORDER U-R-035-0047 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)
2003	3MVXL04.2AAA	4.2	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger	Excavator

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 1	STD	N/A	9.2	N/A	N/A	N/A	20	15	50
		CERT	--	6.0	--	--	--	4	4	5

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 27TH day of January 2003.

Allen Lyons, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Summary Form

Manufacturer: Mitsubishi Heavy Industries, Ltd.

Engine category: Nonroad CI

EPA Engine Family: 3MVXL04.2AAA

Mfr Family Name: S4K-T

Process Code: New Submission

U-R-035-0047

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
S4K-T 312C	S4K-T	94hp@1950	79	34	274ftlb@1400	82	25	DI,TC
S4K-T 311C	S4K-T	82.3hp@1800	79	31	274ftlb@1400	91	27	DI TC
S4K-Y1T62DG	S4K-T	82.3hp@1800	79	31	274ftlb@1400	91	27	DI TC
S4K-Y1T62DP	S4K-T	82.3hp@2200	67	32	257ftlb@1400	81	25	DI TC
S4K-T 311B	S4K-T	82.3hp@1800	79	31	274ftlb@1400	91	27	DI TC
S4K-T 312B	S4K-T	87.7hp@1900	78	33	274ftlb@1400	89	27	DI TC
S4K-Y1DT62DG	S4K-T	82.3hp@1800	79	31	274ftlb@1400	91	27	DI TC
S4K-Y1DT62DP	S4K-T	83hp@2200	66	32	257ftlb@1400	81	25	DI TC
3064 312C2	S4K-T	94hp@1950	84.6	43.6	274ftlb@1500	90.4	35.9	DI TC
3064 311C2	S4K-T	82.3hp@1800	79.3	37.9	264ftlb@1500	88.7	35.2	DI TC