California Environmental Protection Agency **Air Resources Board**	**ISUZU MOTORS LIMITED**	**EXECUTIVE ORDER U-R-006-0409** 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-14-012;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems 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)
2015	FSZXL05.2MXC	5.193	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Control Module, Turbocharger, Charge Air Cooler, Electronic Direct Injection, Exhaust Gas Recirculation, Oxidation Catalyst, Periodic Trap Oxidizer	Excavator

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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 (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
75 ≤ kW < 130	Tier 4 Final/ ALT 20% NOx	STD	0.19	0.40	N/A	5.0	0.02	N/A	N/A	N/A
		FEL	N/A	3.40	--	N/A	N/A	--	--	--
		CERT	0.06	2.78	--	0.01	0.02	--	--	--

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

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 6th day of May 2015.

Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

CARB EO. U-R-006-0409
DATE:04/10/2015

ATTACHMENT 1 of 1

Engine Model Summary Template

Engine Family	Engine Code	Engine Model	BHP@RPM (SAE Gross)	Fuel Rate: mm/stroke @ peak HP (for diesel only)	Fuel Rate: lbs/hr @ peak HP (for diesels only)	Torque @ RPM (SEA Gross)	Fuel Rate: mm/stroke @peak torque	Fuel Rate: lbs/hr @peak torque	Emission Control Device Per SAE J1930
FSZXL05.2MXC	4HK1XDMCA -01	CM-4HK1X	172.2@2000	138.0@2000	61.4@2000	497.1@1500	151.7@1500	50.6@1500	ECM, TC, CAC, DFI, EGR, OC, PTOX
FSZXL05.2MXC	4HK1XDMCA -02	CM-4HK1X	166.3@1800	147.9@1800	59.2@1800	494.2@1500	150.5@1500	50.2@1500	ECM, TC, CAC, DFI, EGR, OC, PTOX