California Environmental Protection Agency AIR RESOURCES BOARD	MTU DETROIT DIESEL, INC.	EXECUTIVE ORDER U-R-052-0004-1 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 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)
2008	8MDDL95.4XTR	95.4, 76.3, 57.2	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Engine Control Module, Turbocharger, Charge Air Cooler	Crane, Loader, Tractor, Pump, Compressor, Genset

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons 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
kW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		CERT	--	--	5.9	1.1	0.16	8	2	10

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.

This Executive Order hereby supersedes Executive Order U-R-052-0004 dated December 10, 2007.

Executed at El Monte, California on this 27 day of April 2009.

Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Template

ATTACHMENT 1
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Engine Family	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
8MDDL95.4XTR	7073	12V-4000 C23	2253@1900	659@2253	802@2253	8410@1900	696@8410	527@8410	DFI, TC, CAC, ECM
8MDDL95.4XTR	7023	16V-4000	2001 @ 1800	480@2001	701@2001	9550@1500	540@9550	691@9550	DFI, TC, CAC, ECM
8MDDL95.4XTR	7022	16V-4000 C13	2347 @ 1800	555@2347	822@2347	11140@1500	635@11140	780@11140	DFI, TC, CAC, ECM
8MDDL95.4XTR	7021	16V-4000 C13L	2501 @ 1800	589@2501	868@2501	11873@1500	670@11873	827@11873	DFI, TC, CAC, ECM
8MDDL95.4XTR	7020	16V-4000	2699 @ 1800	628@2699	919@2699	11308@1700	648@11308	896@11308	DFI, TC, CAC, ECM
8MDDL95.4XTR	7019	16V-4000 C23	3004 @ 1800	701@3004	1022@3004	12583@1700	720@12583	987@12583	DFI, TC, CAC, ECM
8MDDL95.4XTR	7025	20V-4000 C23	3755 @ 1800	680@3755	1308@3755	15730@1700	705@15730	1265@15730	DFI, TC, CAC, ECM
8MDDL95.4XTR	7024	20V-4000 C23L	4023 @ 1800	740@4023	1409@4023	16850@1700	765@16850	1377@16850	DFI, TC, CAC, ECM
8MDDL95.4XTR	7026	20V-4000 C13L	3185 @ 1800	580@3185	1100@3185	15120@1500	640@15120	1037@15120	DFI, TC, CAC, ECM
8MDDL95.4XTR	7027	12V-4000 S23	1911 @ 1900	649@1911	663@1911	9221@1475	619@9221	613@9221	DFI, TC, CAC, ECM
8MDDL95.4XTR	7028	12V-4000 S83	2253 @ 1900	633@2253	807@2253	10014@1600	678@10014	729@10014	DFI, TC, CAC, ECM
8MDDL95.4XTR	7029	12V-4000 S83L	2501 @ 1900	696@2501	876@2501	10472@1700	740@10472	831@10472	DFI, TC, CAC, ECM
8MDDL95.4XTR	7032	12V-4000 G73	1167 @ 1200	448@1167	408@1167	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7033	12V-4000 G73	1482 @ 1200	601@1482	480@1482	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7081	16V-4000 G73	1529 @ 1200	465@1529	464@1529	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7082	16V-4000 G73	1864 @ 1200	561@1864	598@1529	Genset	NA	NA	DFI, TC, CAC, ECM
	3D = standby	3B = prime							
8MDDL95.4XTR	7090	12V-4000 R33	2250 @ 1800	663@2250	796@2250	6572@1800	663@6572	796@6572	DFI, TC, CAC, ECM

Engine Model ? nmary Template

ATTACHMENT
EO# U-R-052-0004-1
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Engine Family	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
8MDDL95.4XTR	7004	16V G83 3D	3353@1800	760@3353	1155@3353	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7005	16V G43 3D	3057@1800	690@3057	1046@3057	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7006	16V G83 3B	3057@1800	690@3057	1046@3057	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7008	20V G83L 3D	4680@1800	852@4680	1641@4680	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7009	20V G83 3D	4036@1800	704@4036	1468@4036	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7010	20V G43 3D	3674@1800	642@3674	1272@3674	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7011	20V G83L 3B	4036@1800	704@4036	1468@4036	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7012	20V G83 3B	3674@1800	642@3674	1272@3674	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7013	20V G43 3B	3339@1800	582@3339	1152@3339	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7000	12V-4000 G83	2561 @ 1800	733@2561	877@2561	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7001	12V-4000 G43	2328 @ 1800	655@2328	788@2328	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7002	12V-4000 G83	2328 @1800	655@2328	788@2328	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7003	12V-4000 G43	2038 @ 1800	571@2038	687@2038	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7007	16V-4000 G43	2709 @ 1800	500@2709	912@2709	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7004	16V-4000 G83	3353@1800	760@3353	1155@3353	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7006	16V-4000 G83	3353@1800	690@3057	1046@3057	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7005	16V-4000 G43	3057@1800	690@3057	1046@3057	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7008	20V-4000 G83L	4680@1800	852@4680	1641@4680	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7011	20V-4000 G83L	4036@1800	704@4036	1468@4036	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7009	20V-4000 G83	4036@1800	704@4036	1468@4036	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7012	20V-4000 G83	3674@1800	642@3674	1272@3674	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7010	20V-4000 G43	3674@1800	642@3674	1272@3674	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7013	20V-4000 G43	3339@1800	582@3339	1152@3339	Genset	NA	NA	DFI, TC, CAC, ECM
8MDDL95.4XTR	7018	12V-4000	1600@1800	438@1600	550@1600	7595@1500	560@7595	534@7595	DFI, TC, CAC, ECM
8MDDL95.4XTR	7017	12V-4000 C13	1801 @ 1800	539@1801	613@1801	8550@1500	630@8550	598@8550	DFI, TC, CAC, ECM
8MDDL95.4XTR	7016	12V-4000 C13L	1911 @ 1800	567@1911	647@1911	9072@1500	665@9072	628@9072	DFI, TC, CAC, ECM
8MDDL95.4XTR	7015	12V-4000	2025 @ 1800	597@2025	679@2025	8480@1700	630@8480	673@8480	DFI, TC, CAC, ECM
8MDDL95.4XTR	7014	12V-4000 C23	2253 @ 1800	667@2253	756@2253	9440@1700	690@9440	748@9440	DFI, TC, CAC, ECM