California Environmental Protection Agency AIR RESOURCES BOARD	Cummins Inc.	EXECUTIVE ORDER U-R-002-0146-1 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 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)
2002	2CEXL015.AAA	15	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Powertrain Control Module	Crane, Loaders, Tractor, Dozer, Pump, Compressor and Other Industrial Equipment

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, 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
225 ≤ KW < 450	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		FEL	N/A	N/A	N/A	N/A	0.12	N/A	N/A	N/A
		CERT	--	--	5.8	0.4	0.07	15	1	42

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.

This Executive Order hereby cancels and replaces Executive Order U-R-002-0146 dated December 20, 2001.

Executed at El Monte, California on this 25TH day of September 2002.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model S[illegible]mary Form

ATTACHMENT Pg 1 of 1

U-R-002-0146-1

Manufacturer: **Cummins Inc.**

Engine category: **Nonroad CI**

EPA Engine Family: **2CEXL015.AAA**

Mfr Family Name: **A103**

Process Code: ~~**New Submission**~~ Running change

* New Model

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
2825:FR10318	QSX15-C	600@1800	328	199	2050@1400	417	197 DI	PCM,TC,CAC
2825:FR10310	QSX15-C	500@2100	243	172.4	1743@1400	375	177.1	PCM,TC,CAC
2825:FR10316	QSX15-C	425@2100	210	148.5	1450@1400	297	140.3	PCM,TC,CAC
2825:FR10317	QSX15-C	360@2100	186	131.7	1215@1400	244	115.4	PCM,TC,CAC
2825:FR10319	QSX15-C	425@2100	210	148.5	1435@1400	294	138.8	PCM,TC,CAC
2825:FR10320	QSX15-C	600@2100	294	208	2050@1400	415	196	PCM,TC,CAC
2825:FR10342	QSX15-C	460@1800	254	154.3	1743@1400	356	168.1	PCMTC,CAC
2825:FR10345	QSX15-C	380@2100	193	136.7	1161@1400	233	109.8	PCM,TC,CAC
2825:FR10346	QSX15-C	440@1800	244	147.8	1650@1400	348	164.5	PCM,TC,CAC
2825:FR10371	QSX15-C	450@2000	227	153.2	1670@1400	352	166.3	PCM,TC,CAC
2825:FR10372	QSX15-C	375@2000	194	130.8	1380@1400	280	132.4	PCM,TC,CAC
2825:FR10375	QSX15-C	560@1800	314	190.5	2050@1400	417	197.0	PCM,TC,CAC
2825:FR10376	QSX15-C	540@2100	264	187.2	1730@1400	357	168.5	PCM,TC,CAC
2825:FR10377	QSX15-C	525@2100	259	183.7	1743@1400	375	177.1	PCM,TC,CAC
2825:FR10378	QSX15-C	475@2100	238	168.2	1743@1400	375	177.1	PCM,TC,CAC
2825:FR10379	QSX15-C	400@2100	201	142.0	1453@1400	302	142.8	PCM,TC,CAC
2825:FR10380	QSX15-C	350@2100	180	127.7	1180@1400	239	112.7	PCM,TC,CAC
2825:FR10381	QSX15-C	530@1800	252	178.4	1706@1400	343	162.0	PCM,TC,CAC
2825:FR10383	QSX15-C	510@1800	242	171.1	1743@1400	375	177.1	PCM,TC,CAC
2825:FR10384	QSX15-C	425@1800	198	140.2	1452@1400	287	135.6	PCM,TC,CAC
2825:FR10385	QSX15-C	360@1800	172	121.8	1230@1400	243	114.8	PCM,TC,CAC
2825:FR10455	QSX15-C	450@2100	225	159.0	1690@1400	356	168.1	PCM,TC,CAC
2825:FR10453	QSX15-C	425@2000	218	147.0	1595@1400	337	159.0	PCM,TC,CAC
2825:FR10454	QSX15-C	425@2000	218	147.0	1500@1400	313	148.0	PCM,TC,CAC
2825:FR10465	QSX15-C	475@1800	261	158.3	1625@1400	327	154.2	PCM,TC,CAC
2825:FR10488	QSX15-C	400@2100	201	142.0	1380@1400	280	132.4	PCM,TC,CAC
* 2825:FR10491	QSX15-C	635@2100	309	219.0	2050@1400	417	197 DI	PCM,TC,CAC