

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	FVSXL12.8T4F	12.8	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Electronic Control Modules, Smoke Puff Limiter, Exhaust Gas Recirculation, Diesel Oxidation Catalyst, Periodic Trap Oxidizer, Selective Catalytic Reduction-Urea			Loaders, Other Industrial Equipment	

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):

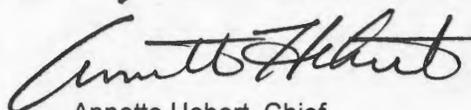
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	STD	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		CERT	0.10	0.19	--	0.03	0.001	--	--	--

**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 10 day of February 2015.



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

Attachment 1 of 1

**Engine Model Summary Template**

U-R-003-0071  
2-3-2015

Engine Family	1.Engine Code	2.Engine Model	3.kW@RPM (SAE Gross)	4.Fuel Rate: mm <sup>3</sup> /stroke @ peak kW (for diesel only)	5.Fuel Rate: kg/hr @ peak kW (for diesels only)	6.Torque Nm @ RPM (SEA Gross)	7.Fuel Rate: mm <sup>3</sup> /stroke@ peak torque	8.Fuel Rate: (kg/hr)@ peak torque	9.Emission Control Device Per SAE J1930
FVSXL12.8T4F	13-42*)	13-71 D13J	336@1900	244 ± 4%	69 ± 4%	2407@1140	330 ± 4%	59 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	**Ref to 13-42	D13J	315@1900	230 ± 4%	65 ± 4%	2340@1140	321 ± 4%	57 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	13-51, 13-84	D13J	290@1900	213 ± 4%	61 ± 4%	2276@1140	318 ± 4%	54 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	13-50, 13-83	D13J	251@1900	183 ± 4%	53 ± 4%	2276@1100	317 ± 4%	52 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	**Ref to 13-50	D13J	251@1900	183 ± 4%	53 ± 4%	1810@1100	250 ± 4%	41 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	***Ref to 13-50	D13J	251@1900	183 ± 4%	53 ± 4%	1770@1100	244 ± 4%	40 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	13-49, 13-82	D13J	218@1900	167 ± 4%	47 ± 4%	2071@1000	289 ± 4%	43 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	**Ref to 13-49	D13J	218@1900	167 ± 4%	47 ± 4%	1620@1000	226 ± 4%	34 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	***Ref to 13-49	D13J	218@1900	167 ± 4%	47 ± 4%	1605@1000	224 ± 4%	33 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	13-48, 13-81	D13J	199@1900	152 ± 4%	43 ± 4%	1999@1000	282 ± 4%	42 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	**Ref to 13-48	D13J	199@1900	152 ± 4%	43 ± 4%	1520@1000	213 ± 4%	32 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	***Ref to 13-48	D13J	199@1900	152 ± 4%	43 ± 4%	1435@1100	200 ± 4%	30 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	13-63, 13-80	D13J	284@1800	216 ± 4%	58 ± 4%	1928@1350	259 ± 4%	52 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC
FVSXL12.8T4F	13-62, 13-79	D13J	230@1700	187 ± 4%	48 ± 4%	1692@1275	230 ± 4%	44 ± 4%	EM,ECM,TC,CAC,EGR,SPL,DPF,DDI, SCR-U,DOC

\*) Test engine

\*\* MultiTorque Curve Level 1

\*\*\* MultiTorque Curve Level 2