California Environmental Protection Agency AIR RESOURCES BOARD	AB VOLVO PENTA	EXECUTIVE ORDER U-R-014-0064 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 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	2VPXL12.1ABA	12.1	Diesel	8000

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

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
225 ≤ kW < 450	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		CERT	-	-	5.7	0.6	0.13	4	2	7

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 26TH day of November 2002.

Allen Lyons, Chief
Mobile Source Operations Division

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Engine Model Summary Template

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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.I Dev
2VPXL12.1ABA	1	TWD1240VE	416@2100	218	153	1475@1200	269	189	ECM, DOT TC, CAC
2VPXL12.1ABA	2	TWD1240VE	394@2100	208	146	1401@1200	261	184	
2VPXL12.1ABA	3	TWD1240VE	369@2100	193	136	1328@1200	246	173	
2VPXL12.1ABA	4	TWD1240VE	343@2100	180	127	1291@1200	235	165	
2VPXL12.1ABA	5	TWD1240VE	416@2100	218	153	1475@1200	269	189	
2VPXL12.1ABA	6	TWD1240VE	369@2100	193	136	1328@1200	246	173	
2VPXL12.1ABA	7	TWD1240VE	394@1800	219	132	1401@1200	262	158	