California Environmental Protection Agency AIR RESOURCES BOARD	PERKINS ENGINES COMPANY LTD.	EXECUTIVE ORDER U-R-022-0028 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-45-9;

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	2PKXL05.9YH1	5.9	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger and Smoke Puff Limiter	Agricultural Tractor and 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 (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
75≤KW<130	Tier 1	STD	N/A	9.2	N/A	N/A	N/A	20	15	50
		CERT	--	7.8	--	--	--	6	3	11

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 18th day of December 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model S mary Form

Manufacturer: **Perkins Engines Company Ltd.**

Engine category: **Nonroad CI**

EPA Engine Family: **2PKXL05.9YH1**

Mfr Family Name: **AS EPA**

Process Code: **New Submission**

U-R-022-0028

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
	1947/2200	151.7 @ 2200	81.5	59.0	457.5 @ 1500	92.0	45.5	SPL, TC, DDI
	1947/2300	152.3 @ 2300	81.0	61.3	457.5 @ 1500	92.0	45.5	SPL, TC, DDI
	1929/2000	144.2 @ 2000	82.0	53.9	433.7 @ 1400	87.0	40.0	SPL, TC, DDI
	1929/2100	144.2 @ 2100	80.0	55.4	433.7 @ 1400	87.0	40.0	SPL, TC, DDI
	1929/2200	144.2 @ 2200	79.0	57.3	433.7 @ 1400	87.0	40.0	SPL, TC, DDI
	1929/2300	144.2 @ 2300	78.0	59.0	433.7 @ 1400	87.0	40.0	SPL, TC, DDI
	1941/2000	130.0 @ 2000	72.0	48.0	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	1941/2100	131.4 @ 2100	71.0	50.1	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	1941/2200	130.0 @ 2200	70.0	51.9	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	1941/2300	128.7 @ 2300	71.0	53.8	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	1931/2000	116.5 @ 2000	64.0	42.7	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	1931/2100	117.6 @ 2100	63.5	44.5	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	1931/2200	115.7 @ 2200	61.5	45.2	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	1931/2300	114.0 @ 2300	61.0	46.8	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	1983/1800	165.5 @ 1800	99.0	60.8	483.0 @ 1800	99.0	60.8	SPL, TC, DDI
	1940/2500	150.2 @ 2500	79.0	65.5	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
	1940/2400	148.2 @ 2400	78.5	62.3	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
	1940/2300	143.5 @ 2300	77.0	58.3	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
	1940/2200	138.8 @ 2200	78.0	58.0	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
	1939/2200	124.0 @ 2200	67.0	48.6	354.0 @ 1400	75.0	34.5	SPL, TC, DDI
	1939/2300	127.4 @ 2300	68.0	51.5	354.0 @ 1400	75.0	34.5	SPL, TC, DDI
	1939/2400	130.7 @ 2400	69.0	54.6	354.0 @ 1400	75.0	34.5	SPL, TC, DDI
	1939/2500	134.0 @ 2500	68.5	56.4	354.0 @ 1400	75.0	34.5	SPL, TC, DDI
	2047/2200	140.1 @ 2200	76.4	55.5	421.2 @ 1400	85.5	33.1	SPL, TC, DDI
	Caterpillar 3056	130.0 @ 2000	72.0	48.0	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	Caterpillar 3056	131.4 @ 2100	71.0	50.1	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	Caterpillar 3056	130.0 @ 2200	70.0	51.9	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	Caterpillar 3056	128.7 @ 2300	71.0	53.8	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	Caterpillar 3056	116.5 @ 2000	64.0	42.7	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	Caterpillar 3056	117.6 @ 2100	63.5	44.5	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	Caterpillar 3056	115.7 @ 2200	61.5	45.2	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	Caterpillar 3056	114.0 @ 2300	61.0	46.8	341.5 @ 1400	65.5	30.6	SPL, TC, DDI