

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)
2004	4CPXL11.1ESK	11.1	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module			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	4.0	N/A	--	N/A	N/A	N/A
		CERT	--	--	3.6	3.3	0.20	15	3	24


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.

Executed at El Monte, California on this 13TH day of July 2004.


 Allen Lyons, Chief
 Mobile Source Operations Division

Engine Model Summary Form

WR-001-0253

Manufacturer: CATERPILLAR INC.
 Engine category: Nonroad Over 50 Hp
 EPA Engine Family: 4CPXL11.1ESK
 Mfr Family Name: NA
 Process Code: New Submission

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
1 Cert Engine	C11	fuel rates are 450@1800	nominal values. 256	Due to product- ion 154.9	ion engine avgs. 1509@1400	these fuel rates 297	may change. 139.7	EM,DI,TC,ECM,CAC EM,DI,TC,ECM,CAC

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **4CPXL11.1ESK**
 Mfr Family Name:
 Process Code: **Running Change - 1**

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
4	C11	364@2100	188	132.5	1294@1400	251	118.1	EM,DI,TC,ECM,CA
5	C11	300@1800	191	115.3	1125@1300	226	98.9	EM,DI,TC,ECM,CA
6	C11	250@1800	198	119.8	1180@1300	238	112.0	EM,DI,TC,ECM,CA
7	C11	261@1800	164	99.1	972@1300	202	95.2	EM,DI,TC,ECM,CA
9	C11	310@1800	176	106.7	1069@1300	217	95.1	EM,DI,TC,ECM,CA
10	C11	294@1800	168	101.6	1014@1300	207	90.3	EM,DI,TC,ECM,CA
11	C11	308@1800	176	106.6	1055@1300	214	93.4	EM,DI,TC,ECM,CA
12	C11	294@1800	167	101.5	1003@1300	205	89.7	EM,DI,TC,ECM,CA
13	C11	279@1800	160	96.7	951@1300	197	86.1	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **4CPXL11.1ESK**

Mfr Family Name:

Process Code: **Running Change - 2**

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
2	C11	450@1800	256	154.9	1509@1400	297	154.9	EM,DI,TC,ECM,CA
3	C11	450@2100	220	156.0	1509@1400	297	154.9	EM,DI,TC,ECM,CA
8	C11	385@2100	194	136.0	1300@1400	262	123.0	EM,DI,TC,ECM,CA
14	C11	264@1800	167	101.0	925@1080	200	73.0	EM,DI,TC,ECM,CA
15	C11	270@1800	174	105.0	945@1080	204	74.0	EM,DI,TC,ECM,CA
16	C11	275@1800	173	105.0	964@1080	208	76.0	EM,DI,TC,ECM,CA
17	C11	281@1800	176	106.0	984@1080	213	77.0	EM,DI,TC,ECM,CA
18	C11	286@1800	180	109.0	1003@1080	216	78.0	EM,DI,TC,ECM,CA
19	C11	291@1800	180	109.0	1023@1080	221	80.0	EM,DI,TC,ECM,CA
20	C11	297@1800	183	111.0	1042@1080	224	81.0	EM,DI,TC,ECM,CA
21	C11	302@1800	185	112.0	1062@1080	224	81.0	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **4CPXL11.1ESK**
 Mfr Family Name:
 Process Code: **Running Change - 3**

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
7		167	101.0	203	96.0			

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **4CPXL11.1ESK**

Mfr Family Name:

Process Code: **Running Change - 5**

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
5			190	115.2				
8			207	146.4	1297@1400			
9		308@1800	180	108.7		214	93.7	
10			176	106.7	1013@1300	207	90.5	
11			180	108.7		214	93.7	
12			176	106.7		207	90.5	
13		278@1800	165	99.7				
22		300@2100	181	127.9	1095@1400	219	102.9	EM,DI,TC,ECM,CA
23		350@2100	191	135.1	1179@1400	232	109.3	EM,DI,TC,ECM,CA