California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR, INC.	EXECUTIVE ORDER U-R-001-0291-1 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)
2006	6CPXL18.1ESK	18.1	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module	Loader, Tractor, Generator and 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 < 560	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	3.9	2.8	0.16	6	4	11

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 hereby supersedes Executive Order U-R-001-0291 dated December 21, 2005.

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 16th day of March 2006.

J. Lourenco
for Allen Lyons, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Summary Form

UR-001-0291-1

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL18.1ESK**

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	C18	700@1800	419	254.0	2361@1400	468	220.5	EM,DI,TC,ECM,CAC
2	C18	700@2100	375	264.8	2361@1400	468	220.5	EM,DI,TC,ECM,CAC
3	C18	525@2100	271	191.1	1859@1400	376	177.0	EM, DI, TC, ECM,
4	C18	553@1800	319	193.0	1934@1400	389	183.2	EM, DI, TC, ECM,
5	C18	464@1800	265	160.2	1849@1250	373	157.0	EM, DI, TC, ECM,
6	C18	464@1800	268	162.5	1849@1250	382	160.6	EM, DI, TC, ECM,
7	C18	700@2100	375	264.7	2361@1400	468	220.3	EM, DI, TC, ECM,
8	C18	630@2100	343	242.4	2042@1400	407	191.5	EM, DI, TC, ECM,
9	C18	650@2100	347	244.9	2051@1500	414	208.9	EM, DI, TC, ECM,
10	C18	650@2000	358	240.6	2078@1200	410	165.4	EM, DI, TC, ECM,
11	C18	523@1800	302	182.5	2004@1200	404	163.2	EM, DI, TC, ECM,
12	C18	553@1800	320	194.0	2116@1200	432	193.9	EM, DI, TC, ECM,
13	C18	523@1800	302	182.5	2005@1200	405	182.5	EM, DI, TC, ECM,
14	C18	555@1800	320	193.6	2004@1200	403	162.8	EM, DI, TC, ECM,
15	C18	700@1800	419	254.0	2359@1400	468	220.5	EM, DI, TC, ECM,
16	C18	575@1900	327	209.0	2005@1300	402	175.8	EM, DI, TC, ECM,
17	C18	588@2100	308	217.9	2090@1400	418	196.8	EM, DI, TC, ECM,
18	C18	575@2100	299	211.5	1938@1400	388	182.8	EM, DI, TC, ECM,
19	C18	600@2100	315	222.6	2022@1400	407	191.7	EM, DI, TC, ECM,
20	C18	589@2000	310	208.3	2064@1300	407	177.9	EM, DI, TC, ECM,
21	C18	525@1800	297	179.6	1672@1300	336	147.1	EM, DI, TC, ECM,
22	C18	488@1800	276	166.8	1549@1300	309	135.2	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL18.1ESK**

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
23	C18	598@1800	354	214	1988@1300	393	172	EM,DI,TC,ECM,CA
24	C18	556@1800	329	199	1849@1300	365	160	EM,DI,TC,ECM,CA
25	C18	632@1800	374	227	2107@1300	417	182	EM,DI,TC,ECM,CA
26	C18	596@1800	348	211	1985@1300	391	171	EM,DI,TC,ECM,CA
27	C18	632@1800	374	227	2107@1300	417	182	EM,DI,TC,ECM,CA
28	C18	596@1800	348	211	1985@1300	391	171	EM,DI,TC,ECM,CA

Engine Model

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL18.1ESK**

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
9			339	210		417	239	EM, DI, TC, ECM,
30	C18	600@2100	309	218	2022@1400	399	188	EM, DI, TC, ECM,
31	C18	575@2100	292	206	1938@1400	376	177	EM, DI, TC, ECM,
32	C18	630@2100	331	234	2042@1400	387	182	EM, DI, TC, ECM,

Engine Model S

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL18.1ESK**

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
20			312	210		399	175	
33	C18	632@1800	377	228	2107@1300	409	179	EM, DI, TC, ECM,
34	C18	596@1800	357	216	1985@1300	386	169	EM, DI, TC, ECM,
35	C18	630@2100	338	239	2203@1400	425	200	EM, DI, TC, ECM,