California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR, INC.	EXECUTIVE ORDER U-R-001-0290 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 December 15, 1998 Settlement Agreement between the Air Resources Board and the manufacturer, and any modifications thereof to the Settlement Agreement;

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	6CPXL15.2ESK	15.2	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module	Loader, Tractor, Generator, Off-road Vehicle

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
450 ≤ KW < 560	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	3.4	3.4	0.15	6	1	8

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 21st day of December 2005.

Raphael Susnowitz

for Allen Lyons, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**
Engine category: **Nonroad Over 50 Hp**
EPA Engine Family: **6CPXL15.2ESK**
Mfr Family Name: **NA**
Process Code: **New Submission**

U-R-001-0290

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	C15	717@1800	399	241.7	NA	NA	NA	EM,DI,TC,ECM,CAC
2	C15	412@2100	222	156.5	1465@1400	292	137.7	EM,DI,TC,ECM,CAC
3	C15	361@2100	194	137.0	1283@1400	259	122.1	EM,DI,TC,ECM,CAC
4	C15	347@1850	197	122.8	1449@1300	296	129.4	EM,DI,TC,ECM,CAC
5	C15	475@2100	248	175.1	1601@1400	327	154.1	EM,DI,TC,ECM,CAC
6	C15	433@1800	246	148.8	1516@1400	316	148.7	EM,DI,TC,ECM,CAC
7	C15	447@1800	261	157.8	1305@1350	269	122.0	EM,DI,TC,ECM,CAC
8	C15	430@1800	254	153.5	1322@1425	272	130.1	EM,DI,TC,ECM,CAC
9	C15	457@1700	273	155.8	1779@1200	360	145.4	EM,DI,TC,ECM,CAC
10	C15	469@1800	269	162.6	1779@1200	356	143.6	EM,DI,TC,ECM,CAC
11	C15	436@1700	255	145.8	1692@1200	344	138.9	EM,DI,TC,ECM,CAC
12	C15	413@1700	244	139.4	1606@1200	324	130.8	EM,DI,TC,ECM,CAC
13	C15	540@2000	288	193.8	1736@1400	351	165.5	EM,DI,TC,ECM,CAC
14	C15	540@2100	280	198.0	1817@1400	364	171.2	EM,DI,TC,ECM,CAC
15	C15	580@2100	309	218.3	1954@1400	389	183.1	EM,DI,TC,ECM,CAC
16	C15	595@2100	318	224.3	2005@1400	398	187.3	EM,DI,TC,ECM,CAC
17	C15	401@1800	235	142.0	1387@1250	286	120.1	EM,DI,TC,ECM,CAC
18	C15	375@1800	219	132.4	1354@1250	278	116.9	EM,DI,TC,ECM,CAC
19	C15	401@1900	218	139.0	1438@1200	296	119.4	EM,DI,TC,ECM,CAC
20	C15	408@1700	244	139.4	1589@1200	326	131.7	EM,DI,TC,ECM,CAC
21	C15	389@1700	232	132.9	1512@1200	311	125.7	EM,DI,TC,ECM,CAC
22	C15	369@1700	221	126.4	1435@1200	299	120.6	EM,DI,TC,ECM,CAC
23	C15	394@1800	231	139.7	1498@1200	308	124.2	EM,DI,TC,ECM,CAC
24	C15	359@1800	210	127.0	1286@1200	266	107.4	EM,DI,TC,ECM,CAC
25	C15	354@1800	205	123.8	1285@1200	268	108.2	EM,DI,TC,ECM,CAC
26	C15	331@1800	193	117.1	1232@1200	258	104.2	EM,DI,TC,ECM,CAC
27	C15	347@1850	207	128.7	1449@1300	297	130.0	EM,DI,TC,ECM,CAC
28	C15	409@1800	240	145.4	1561@1200	319	129.0	EM,DI,TC,ECM,CAC
29	C15	440@2100	231	162.8	1482@1200	301	141.9	EM,DI,TC,ECM,CAC
30	C15	474@2100	244	172.8	1685@1400	342	161.2	EM,DI,TC,ECM,CAC
31	C15	530@2100	281	198.2	1850@1400	374	175.9	EM,DI,TC,ECM,CAC

31	C15	350@2100	281	190.2	1650@1400	374	175.9	EM,DI,TC,ECM,CA
32	C15	347@1850	200	124.5	1449@1300	297	129.8	EM,DI,TC,ECM,CA
33	C15	569@1800	329	199.1	NA	NA	NA	EM,DI,TC,ECM,CA
34	C15	569@1800	329	199.1	NA	NA	NA	EM,DI,TC,ECM,CA
35	C15	642@1800	363	171.0	NA	NA	NA	EM,DI,TC,ECM,CA
36	C15	642@1800	363	171.0	NA	NA	NA	EM,DI,TC,ECM,CA
37	C15	713@1800	397	240.0	NA	NA	NA	EM,DI,TC,ECM,CA
38	C15	713@1800	397	240.0	NA	NA	NA	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL15.2ESK**

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
39	C15	500@1900	292	187	1743@1300	357	156	EM,DI,TC,ECM,CA
40	C15	460@1800	279	169	1537@1300	325	142	EM,DI,TC,ECM,CA
41	C15	511@1800	310	188	1711@1300	358	156	EM,DI,TC,ECM,CA
42	C15	478@1800	280	170	1591@1300	322	141	EM,DI,TC,ECM,CA
43	C15	437@1800	258	156	1452@1300	295	129	EM,DI,TC,ECM,CA
44	C15	540@2100	281	198	1817@1400	362	170	EM,DI,TC,ECM,CA
45	C15	478@1800	280	170	1581@1300	322	141	EM,DI,TC,ECM,CA
46	C15	437@1800	258	156	1451@1300	295	129	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL15.2ESK**

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
47	C15	642@1800	375	227	2264@1400	423	199	EM, DI, TC, ECM,
48	C15	642@1800	375	227	2264@1400	423	199	EM, DI, TC, ECM,
49	C15	503@1500	364	184	2002@1369	406	187	EM, DI, TC, ECM,
50	C15	503@1500	364	184	2002@1369	406	187	EM, DI, TC, ECM,
51	C15	436@1900	245	156	1538@1425	315	151	EM, DI, TC, ECM,
52	C15	436@1900	246	157	1538@1425	315	151	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL15.2ESK**

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
33			332	201		361	170	
34			332	201		361	170	
35			373	226		409	192	
35			373	226		409	192	
53	C15	394@1800	231	140	1498@1200	308	124	EM, DI, TC, ECM,
54	C15	354@1800	202	122	1285@1200	262	106	EM, DI, TC, ECM,
55	C15	440@2100	231	163	1483@1400	301	142	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 4**

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
25			202	122.2		262	105.8	
26			192	116.0		251	101.4	
56	C15	475@2100	248	175.2	1601@1400	327	154.0	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL15.2ESK**

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
25			207	125.1		266	107.4	
26			194	117.6		258	104.2	
47			365	220.7	NA	NA	NA	
48			365	220.7	NA	NA	NA	
49			344	173.6	NA	NA	NA	
50			344	173.6	NA	NA	NA	
55						312	147.1	
57	C15	393@1800	233	140.8	1330@1200	272	109.9	EM, DI, TC, ECM,
58	C15	362@1800	213	129.2	1282@1200	265	107.1	EM, DI, TC, ECM,
59	C15	362@1800	214	129.8	1283@1200	267	107.7	EM, DI, TC, ECM,
60	C15	333@1800	201	121.9	1235@1200	258	104.0	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 - 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,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 6**

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
61	C15	443@2100	230	162.2	1574@1400	317	149.5	EM, DI, TC, ECM,

Engine Model

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 7**

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
19			220	140.6		304	122.6	
25			210	126.9		273	110.4	
62	C15	361@2100	188	132.9	1283@1400	263	123.7	EM, DI, TC, ECM,
63	C15	412@2100	213	150.3	1465@1400	300	141.3	EM, DI, TC, ECM,
64	C15	413@1700	244	139.5	1606@1200	324	130.8	EM, DI, TC, ECM,

Part Number

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 7**

Engine Code	Engine Model	Injection Pump	Injector	Turbo Charge	Electronic Control Module	After Treatment Device (Specify)	Smoke Puff Limiter	Sensor Assemblies	
								Description	Part Number
40				2954114					
41				2954114					
47				2842711					
48				2842711					
48				2842711					
50				2842711					
62	C15	2800574	2800574	2367659	3012205	NA	3012205	SEE	COMMENTS
63	C15	2800574	2800574	2367659	3012207	NA	3012207	SEE	COMMENTS
64	C15	2530615	2530615	2303542	2995261	NA	2995261	SEE	COMMENTS

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