California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR, INC.	EXECUTIVE ORDER U-R-001-0288 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	6CPXL11.1ESK	11.1	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module	Loader, Tractor, Dozer, Scraper, Grader, Off-road Vehicle 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
130 ≤ KW < 450	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	3.6	3.3	0.20	15	3	24

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: **6CPXL11.1ESK**

Mfr Family Name: **NA**

Process Code: **New Submission**

U-R-001-0288

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
Note: Peak HP	and Peak Torque	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	EM,DI,TC,ECM,CAC
1	C11	450@1800	256	154.9	1509@1400	297	139.7	EM,DI,TC,ECM,CAC
2	C11	450@1800	265	160.5	1507@1350	295	134.0	EM, DI, TC, ECM,
3	C11	450@2100	231	163.4	1516@1400	276	139.6	EM, DI, TC, ECM,
4	C11	264@2100	188	133.0	1294@1400	251	118.1	EM, DI, TC, ECM,
5	C11	325@1800	190	115.2	1125@1300	226	99.0	EM, DI, TC, ECM,
6	C11	350@1800	198	120.0	1181@1400	238	112.0	EM, DI, TC, ECM,
7	C11	286@1800	167	101.0	972@1400	203	96.0	EM, DI, TC, ECM,
8	C11	385@2100	207	146.4	1297@1400	262	123.0	EM, DI, TC, ECM,
9	C11	308@1800	180	108.7	1070@1300	214	93.7	EM, DI, TC, ECM,
10	C11	294@1800	176	106.7	1013@1300	207	90.5	EM, DI, TC, ECM,
11	C11	308@1800	180	108.7	1055@1300	214	93.7	EM, DI, TC, ECM,
12	C11	294@1800	176	106.7	1003@1300	207	90.5	EM, DI, TC, ECM,
13	C11	278@1800	165	99.7	951@1300	197	86.1	EM, DI, TC, ECM,
14	C11	264@1800	167	101.0	925@1080	200	73.0	EM, DI, TC, ECM,
15	C11	270@1800	174	105.0	945@1080	204	74.0	EM, DI, TC, ECM,
16	C11	275@1800	173	105.0	964@1080	208	76.0	EM, DI, TC, ECM,
17	C11	281@1800	176	106.0	984@1080	213	77.0	EM, DI, TC, ECM,
18	C11	286@1800	180	109.0	1003@1080	216	78.0	EM, DI, TC, ECM,
19	C11	291@1800	180	109.0	1023@1080	221	80.0	EM, DI, TC, ECM,
20	C11	297@1800	183	183	1042@1080	224	81.0	EM, DI, TC, ECM,
21	C11	302@1800	185	112.0	1062@1080	224	81.0	EM, DI, TC, ECM,
22	C11	300@2100	181	127.9	1095@1400	219	102.9	EM, DI, TC, ECM,
23	C11	350@2100	191	135.1	1179@1400	232	109.3	EM, DI, TC, ECM,
24	C11	450@1800	237	143.5	1406@1400	278	126.3	EM, DI, TC, ECM,
25	C11	420@2100	208	146.8	1415@1400	283	133.5	EM, DI, TC, ECM,
26	C11	324@1800	200	121.0	1008@1350	190	86.0	EM, DI, TC, ECM,
27	C11	353@1800	216	131.0	1045@1350	221	100.0	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL11.1ESK**

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
14					929@1000			
15					933@1000			
16					968@1000			
17					968@1000			

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL11.1ESK**

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
6	C11		204	123				
14	C11					203	68	
15	C11		171	104	949@1000	208	70	
16	C11					213	72	
17	C11				988@1000	218	73	
26	C11		205		1008@1600	213	112	
27	C11		221		1089@1600	227	120	

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL11.1ESK**

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
Note: Peak HP	and Peak Torque	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	EM,DI,TC,ECM,CA
1	C11	450@1800	256	154.9	1509@1400	297	139.7	EM,DI,TC,ECM,CA
2	C11	450@1800	265	160.5	1507@1350	295	134.0	EM, DI, TC, ECM,
3	C11	450@2100	231	163.4	1516@1400	276	139.6	EM, DI, TC, ECM,
4	C11	264@2100	188	133.0	1294@1400	251	118.1	EM, DI, TC, ECM,
5	C11	325@1800	190	115.2	1125@1300	226	99.0	EM, DI, TC, ECM,
6	C11	350@1800	198	120.0	1181@1400	238	112.0	EM, DI, TC, ECM,
7	C11	286@1800	167	101.0	972@1400	203	96.0	EM, DI, TC, ECM,
8	C11	385@2100	207	146.4	1297@1400	262	123.0	EM, DI, TC, ECM,
9	C11	308@1800	180	108.7	1070@1300	214	93.7	EM, DI, TC, ECM,
10	C11	294@1800	176	106.7	1013@1300	207	90.5	EM, DI, TC, ECM,
11	C11	308@1800	180	108.7	1055@1300	214	93.7	EM, DI, TC, ECM,
12	C11	294@1800	176	106.7	1003@1300	207	90.5	EM, DI, TC, ECM,
13	C11	278@1800	165	99.7	951@1300	197	86.1	EM, DI, TC, ECM,
14	C11	264@1800	167	101.0	925@1080	200	73.0	EM, DI, TC, ECM,
15	C11	270@1800	174	105.0	945@1080	204	74.0	EM, DI, TC, ECM,
16	C11	275@1800	173	105.0	964@1080	208	76.0	EM, DI, TC, ECM,
17	C11	281@1800	176	106.0	984@1080	213	77.0	EM, DI, TC, ECM,
18	C11	286@1800	180	109.0	1003@1080	216	78.0	EM, DI, TC, ECM,
19	C11	291@1800	180	109.0	1023@1080	221	80.0	EM, DI, TC, ECM,
20	C11	297@1800	183	183	1042@1080	224	81.0	EM, DI, TC, ECM,
21	C11	302@1800	185	112.0	1062@1080	224	81.0	EM, DI, TC, ECM,
22	C11	300@2100	181	127.9	1095@1400	219	102.9	EM, DI, TC, ECM,
23	C11	350@2100	191	135.1	1179@1400	232	109.3	EM, DI, TC, ECM,
24	C11	450@1800	237	143.5	1406@1400	278	126.3	EM, DI, TC, ECM,
25	C11	420@2100	208	146.8	1415@1400	283	133.5	EM, DI, TC, ECM,
26	C11	324@1800	200	121.0	1008@1350	190	86.0	EM, DI, TC, ECM,
27	C11	353@1800	216	131.0	1045@1350	221	100.0	EM, DI, TC, ECM,
1B	C11	450@1800	256	154.9	1509@1400	297	139.7	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL11.1ESK**

Mfr Family Name:

Process Code: **Correction - 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
22	C11	325@2100						

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL11.1ESK**

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
7			168	100.0				
14			159	96.6	929@1000	193	65.1	
15			160	96.7	949@1000	196	66.0	
16			164	99.3	968@1000	202	68.0	
17			167	101.3	988@1000	206	69.3	
18			169	102.1	1008@1000	209	75.9	
19			171	103.4	1027@1000	210	70.6	
20			174	105.4	1047@1000	213	71.7	
21			177	107.4	1067@1000	220	74.1	
27			208	125.8				

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **6CPXL11.1ESK**

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
7			165					
18						210	70.6	
27						223		
28	C11	286@1800	168	102.0	972@1400	204	96.0	EM, DI, TC, ECM,