California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR INC.	EXECUTIVE ORDER U-R-001-0387 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)
2010	ACPXL106.T2E	84.7	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Smoke Puff Limiter and Engine Control Module	Generator

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
KW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	N/A	N/A	N/A
		CERT	--	--	6.2	1.9	0.16	--	--	--

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 21 day of October 2009.

Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Template

ATTACHMENT 1 of 5

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12/22/10

Engine Family	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
ACPXL106.T2E	Cert Test 1	C175-16	4422 @ 1800	935.8	1511.5	12902.4 @	NA	NA	EM,DI,TA
ACPXL106.T2E	Cert Test 2	3512C	2500@1900	703.7	890.2	7390@1400	712.4	664	EM,DI,TC,ECM
ACPXL106.T2E	1	3512C	2500@1900	881	689	7388@1400	690	650	EM,DI,TC,ECM
ACPXL106.T2E	2	3512C	1502@1800	523	432	5255@1500	515	520	EM,DI,TC,ECM
ACPXL106.T2E	3	3512C	2350@1900	828	647	6945@1400	653	615	EM,DI,TC,ECM
ACPXL106.T2E	4	3512C	2250@1900	787	615	6651@1400	626	590	EM,DI,TC,ECM
ACPXL106.T2E	5	3512C	2150@1900	751	587	6354@1400	602	567	EM,DI,TC,ECM
ACPXL106.T2E	6	3512C	2250@1900	784	613	6314@1400	599	564	EM,DI,TC,ECM
ACPXL106.T2E	7	3512C	2150@1900	751	587	6034@1400	575	542	EM,DI,TC,ECM
ACPXL106.T2E	8	3512C	1250@1200	419	519	5876@900	551	334	EM,DI,TC,ECM
ACPXL106.T2E	9	3512C	1476@1200	495	613	6935@900	649	393	EM,DI,TC,ECM
ACPXL106.T2E	10	3512C	2500@1900	703.7	890.2	7390@1400	712.4	664	EM,DI,TC,ECM
ACPXL106.T2E	11	3512C	2250@1900	637.3	806.2	6656@1400	652.8	608.5	EM,DI,TC,ECM
ACPXL106.T2E	12	3512C	2250@1900	637.3	806.2	6221@1400	620.9	578.7	EM,DI,TC,ECM
ACPXL106.T2E	13	3508C	900@1200	568	306	4230@900	630	254	EM,DI,TC,ECM
ACPXL106.T2E	14	3512C	1476@1200	602	486	6455@1200	NA	NA	EM,DI,TC,ECM
ACPXL106.T2E	15	3516C	2150@1200	690	743	9403@1200	NA	NA	EM,DI,TC,ECM
ACPXL106.T2E	16	3516C	1855@1200	589.8	635	8113@1200	NA	NA	EM,DI,TC,ECM
ACPXL106.T2E	17	C175-16	4034 @ 1800	837	1351.9	11770.3 @	NA	NA	EM, DI, TA
ACPXL106.T2E	18	C175-16	3717 @ 1800	764.7	1235.2	10845.4 @	NA	NA	EM, DI, TA
ACPXL106.T2E	19	C175-16	2588 @ 1200	759.8	811.7	15363.7 @	NA	NA	EM, DI, TA
ACPXL106.T2E	20	C15	787@1800	423	256.2	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	21	C18	861@1800	479	289.7	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	22	C18	923@1800	510	309	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	23	C18	765@2100	375	264.7	2578@1400	484	227.9	EM, DI, TC,
ACPXL106.T2E	24	C18	800@2100	389	274.5	2696@1400	503	236.9	EM, DI, TC,
ACPXL106.T2E	25	C27	1214@1800	332	401.5	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	26	C27	1141@1800	311	376.9	NA	NA	NA	EM, DI, TC,

Engine Model Summary Template

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Engine Family	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
ACPXL106.T2E	27	C27	1069@1800	291	352.1	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	28	C27	998@1800	271	328.3	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	29	C27	1150@2100	282	398.9	3876@1400	379	357.4	EM, DI, TC,
ACPXL106.T2E	30	C27	1151@2100	277	391.7	3876@1400	375	353	EM, DI, TC,
ACPXL106.T2E	31	C27	1150@1800	325	393.9	3876@1400	379	357.4	EM, DI, TC,
ACPXL106.T2E	32	C27	950@2100	233	328.7	3202@1400	317	298.2	EM, DI, TC,
ACPXL106.T2E	33	C27	950@1800	266	321.8	3202@1400	317	298.2	EM, DI, TC,
ACPXL106.T2E	34	C27	1050@2100	261	368.3	3539@1400	343	323	EM, DI, TC,
ACPXL106.T2E	35	C27	1050@1800	298	360.6	3539@1400	343	323	EM, DI, TC,
ACPXL106.T2E	36	C27	800@2100	200	282.3	2697@1400	265	249.9	EM, DI, TC,
ACPXL106.T2E	37	C27	800@1800	223	270.6	2697@1400	265	249.9	EM, DI, TC,
ACPXL106.T2E	38	C27	875@2100	217	307.1	2950@1400	288	270.8	EM, DI, TC,
ACPXL106.T2E	39	C27	875@1800	242	293	2950@1400	288	270.8	EM, DI, TC,
ACPXL106.T2E	40	C27	950@1800	272	329	3206@1400	303	285	EM, DI, TC,
ACPXL106.T2E	41	C27	950@2100	245	346	3206@1400	303	285	EM, DI, TC,
ACPXL106.T2E	42	C27	764@1800	209	253	2547@1400	248	233	EM, DI, TC,
ACPXL106.T2E	43	C32	1500@2100	376	530.8	4422@1400	418	393.4	EM, DI, TC,
ACPXL106.T2E	44	C32	951@1800	266	322.7	3205@1400	298	280.3	EM, DI, TC,
ACPXL106.T2E	45	C32	951@2100	238	336.9	3205@1400	298	280.3	EM, DI, TC,
ACPXL106.T2E	46	C32	1124@1800	319	386.1	3792@1400	365	344.1	EM, DI, TC,
ACPXL106.T2E	47	C32	1124@2100	279	393.6	3792@1400	365	344.1	EM, DI, TC,
ACPXL106.T2E	48	C32	1200@1800	336	407.3	4045@1400	390	367.2	EM, DI, TC,
ACPXL106.T2E	49	C32	1200@2100	301	425.9	4045@1400	390	367.2	EM, DI, TC,
ACPXL106.T2E	50	C32	1350@1800	384	464.7	4552@1400	438	412.4	EM, DI, TC,
ACPXL106.T2E	51	C32	1350@2100	340	480.6	4552@1400	438	412.4	EM, DI, TC,
ACPXL106.T2E	52	C32	1016@1750	294	345.9	3635@1300	349	305.4	EM, DI, TC,
ACPXL106.T2E	53	C32	1110@2100	296	419	3743@1400	386	364	EM, DI, TC,
ACPXL106.T2E	54	C32	1225@2100	327	462	4129@1400	425	400	EM, DI, TC,

Engine Model Summary Template

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Engine Family	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
ACPXL106.T2E	55	C32	950@1600	295	317	3627@1200	350	282	EM, DI, TC,
ACPXL106.T2E	56	C32	1110@2100	296	419	3743@1400	386	364	EM, DI, TC,
ACPXL106.T2E	57	C32	1225@2100	327	462	4129@1400	425	400	EM, DI, TC,
ACPXL106.T2E	58	C175-16	4376 @ 1800	934	1492.5	12768 @ 1800	NA	NA	EM,DI,TA
ACPXL106.T2E	59	C175-16	3988 @ 1800	843.4	1347.6	11637 @ 1800	NA	NA	EM,DI,TA
ACPXL106.T2E	60	C175-16	3670 @ 1800	762.8	1218.9	10709 @ 1800	NA	NA	EM,DI,TA
ACPXL106.T2E	61	3508C	915@1200	572	308	4002@1200	NA	NA	EM,DI,TC,ECM
ACPXL106.T2E	62	3516C	2100@1750	468.0	734.7	7523@1300	535.5	624.4	EM,DI,TC,ECM
ACPXL106.T2E	63	C15	865@1800	465	281.6	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	64	C15	787@1800	423	256.2	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	65	C15	787@1800	423	256.2	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	66	C15	787@1800	423	256.2	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	67	C18	923@1800	510	309.0	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	68	C18	923@1800	510	309.0	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	69	C18	861@1800	479	289.7	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	70	C18	861@1800	479	289.7	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	71	C18	923@1800	510	309.0	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	72	C18	861@1800	479	289.7	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	73	C18	923@1800	510	309.0	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	74	C18	800@2100	405	286	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	75	C18	800@1900	428	273	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	76	C18	800@1750	460	271	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	77	C27	1214@1800	332	401.5	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	78	C27	1141@1800	311	376.9	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	79	C27	1141@1800	311	376.9	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	80	C27	1069@1800	291	352.1	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	81	C27	1069@1800	291	352.1	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	82	C27	998@1800	271	328.3	NA	NA	NA	EM, DI, TC,

Engine Model Summary Template

Engine Family	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
ACPXL106.T2E	83	C27	998@1800	271	328.3	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	84	C27	1214@1800	332	401.5	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	85	C32	1502@1800	418	506.3	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	86	C32	1357@1800	374	453.1	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	87	C32	1330@1500	469	473	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	88	C32	1357@1800	374	453.1	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	89	C32	1502@1800	418	506.3	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	90	C32	1257@1800	356	431.2	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	91	C32	1126@1800	324	392.1	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	92	C32	1502@1800	418	506.3	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	93	C32	1330@1500	469	473	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	94	C32	1502@1800	418	506.3	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	95	C32	1330@1500	469	473	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	96	C32	1257@1800	356	431.2	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	97	C32	1110@1500	408	412.2	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	98	C32	1357@1800	385	466	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	99	C32	1357@1800	385	466	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	100	C32	1502@1800	429	519	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	101	C32	1502@1800	429	519	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	102	C32	1257@1800	363	440	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	103	C32	1126@1800	333	403	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	104	C32	1502@1800	424	514	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	105	C32	800@2100	207	292.9	2447@1350	239	217.1	EM, DI, TC,
ACPXL106.T2E	106	C32	1000@2100	262	370	3047@1400	310	292	EM, DI, TC,
ACPXL106.T2E	107	C32	1000@2100	262	370	3047@1400	310	292	EM, DI, TC,
ACPXL106.T2E	108	C32	800@2100	209	296	2447@1350	249	227	EM, DI, TC,
ACPXL106.T2E	109	C32	861@2100	216	306	2607@1400	264	249	EM, DI, TC,
ACPXL106.T2E	110	C32	920@2100	244	345	3023@1400	312	294	EM, DI, TC,

Engine Model Summary Template

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Engine Family	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
ACPXL106.T2E	111	C32	800@2100	209	295	2473@1350	249	227	EM, DI, TC,
ACPXL106.T2E	112	C32	920@2100	239	338	3023@1400	312	294	EM, DI, TC,
ACPXL106.T2E	113	C32	860@2100	221	313	2599@1400	263	248	EM, DI, TC,
ACPXL106.T2E	114	C32	1502@1800	424	514	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	115	C32	1357@1800	380	460	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	116	C32	1330@1500	427	431	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	117	C32	1257@1800	358	433	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	118	C32	1126@1800	328	397	NA	NA	NA	EM, DI, TC,
ACPXL106.T2E	119	3512C	1750@1200	728.6	588.2	7660@1200	NA	NA	EM,DI,TC,ECM