

## **KUBOTA Corporation**

## EXECUTIVE ORDER U-R-025-0535

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 engines and emission control systems 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)
2012	CKBXL01.5BCD	1.123, 1.498	Diesel	5000
	FEATURES & EMISSION		TYPICAL EQUIPMENT APP	
	Indirect Diesel Inje	ection	Tractor, Compressor, Gener Other Industrial Equi	

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	EMISSION			E	EXHAUST (g/kw-l	ır)		OF	PACITY (%	(o)
POWER CLASS	STANDARD CATEGORY		HC	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
19 ≤ kW < 37	Interim Tier 4	STD	N/A	N/A	7.5	5.5	0.30	20	15	50
		CERT			5.1	1.1	0.17	6	8	12

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 \_\_\_\_\_ day of December 2011.

Annette Hebert, Chief

Mobile Source Operations Division

## **Engine Model Summary Form**

KUBOTA Corporation Manufacturer:

Engine category:

Nonroad CI CKBXL01.5BCD EPA Engine Family.

Mfr Family Name:

**New Submission** Process Code:

Attachment

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EO# U-R-025-0535

11/22/2011

D1105-FT 291@3600 22.5 13.6 48.1@2600 23.5 10.2 EM LD.T.A.	Engine Code 2.En	2.Engine Model	3.BHP@RPM (SAE Gross)	mm/stroke @ peak HP (for diesel only)	(lbs/hr) @ peak HP (for diesels only)	6. Torque @ RPM (SEA Gross)	mm/stroke@peak torque	8.Fuel Kate: 9.Emission Control (lbs/hr)@peak torque Device Per SAE J1930	9.Emission Control Device Per SAE J1930
29.1@3600     22.5     13.6     48.1@2600     23.5     10.2       27.4@3600     21.2     12.8     44.7@2600     21.8     9.5       37.3@3000     24.6     16.5     71.3@2200     24.8     12.2       38.6@3600     22.2     17.9     64.2@2600     23.0     13.4       38.6@3800     22.1     16.7     60.0@2600     24.1     11.9       38.6@3800     22.1     14.8     69.3@2200     24.1     11.9       38.6@3800     22.1     14.8     69.3@2100     24.1     11.9       38.6@3800     22.1     14.6     69.3@2100     24.1     11.9       38.6@3800     22.1     14.6     69.3@2100     24.4     9.3       38.2@2800     22.4     13.0     69.3@1700     24.4     9.3       38.4@2800     22.4     13.0     68.2@1600     24.4     9.3       28.2@2600     22.4     12.0     68.2@1600     24.4     8.6       28.4@2800     22.4     12.0     68.2@1600 <t< td=""><td></td><td>3/105-ET</td><td>29.1@3600</td><td>22.5</td><td>13.6</td><td>48.1@2600</td><td>23.5</td><td>10.2</td><td>50.50</td></t<>		3/105-ET	29.1@3600	22.5	13.6	48.1@2600	23.5	10.2	50.50
27.4@3600     21.2     12.8     44.7@2600     21.8     9.5       37.3@3000     24.6     16.5     71.3@2200     24.8     12.2       38.9@3600     22.2     17.9     64.2@2600     23.0     13.4       36.5@3600     20.8     16.7     60.0@2600     21.5     12.5       36.5@3600     22.1     16.7     60.0@2600     24.1     11.9       33.5@3600     22.1     14.8     69.3@200     24.1     11.9       33.5@3600     22.1     14.8     69.3@200     24.1     11.9       32.6@3700     21.1     14.2     69.3@2100     24.1     11.3       29.6@2700     21.1     12.7     67.9@1900     24.4     9.3       30.4@2600     22.4     13.0     69.3@1700     24.4     9.3       30.4@2600     22.4     13.0     68.9@1700     24.1     8.6       28.2@2600     20.7     12.0     68.2@1600     23.4     8.4       28.4@2400     22.4     12.0     64.0@1900	]	31105-ET	29.1@3600	22.5	13.6	48.1@2600	23.5	10.2	EM
37.3@3000     24.6     16.5     71.3@2200     24.8     12.2       38.9@3600     22.2     17.9     64.2@2600     23.0     13.4       36.5@3600     20.8     16.7     60.0@2600     21.5     12.5       35.5@3600     23.4     16.7     69.3@2200     24.1     11.9       33.5@2800     22.1     14.8     69.3@2200     24.1     11.9       33.5@2800     22.1     14.6     69.3@2100     24.1     11.9       32.9@2800     22.7     14.6     69.3@2100     24.1     11.9       32.9@2800     22.7     14.6     69.3@2100     24.4     9.3       30.4@2600     22.4     13.0     68.3@1700     24.4     9.3       30.4@2600     22.4     13.0     68.3@1700     24.4     9.3       28.2@2800     22.4     13.0     68.2@1600     22.6     9.6       28.2@2800     22.4     12.0     68.2@1600     22.6     9.6       28.4@2400     22.4     12.0     68.2@1600 <t< td=""><td></td><td>31105-<u>E</u>T</td><td>27.4@3600</td><td>21.2</td><td>12.8</td><td>44.7@2600</td><td>21.8</td><td>9.5</td><td>EW</td></t<>		31105- <u>E</u> T	27.4@3600	21.2	12.8	44.7@2600	21.8	9.5	EW
38.9@3600     22.2     17.9     64.2@2600     23.0     13.4       36.6@3600     20.8     16.7     60.0@2600     21.5     12.5       35.6@3600     23.4     15.7     69.3@2200     24.1     11.9       33.5@3000     22.1     14.8     69.3@2200     24.1     11.9       33.5@2850     22.9     14.6     69.3@2100     24.1     11.9       32.9@2800     22.7     14.2     69.3@2100     24.1     11.3       29.6@2700     21.1     12.7     67.9@1900     24.4     9.3       29.6@2700     21.1     12.7     67.9@1900     24.4     9.3       30.4@2600     22.4     13.0     68.9@1700     24.4     9.3       28.2@2600     22.4     13.0     68.2@1600     23.5     8.4       28.2@2600     22.3     12.0     66.5@1600     24.4     8.7       28.4@2400     22.4     12.0     66.5@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600 <td< td=""><td></td><td>/1505-ET</td><td>37.3@3000</td><td>24.6</td><td>16.5</td><td>71.3@2200</td><td>24.8</td><td>12.2</td><td>EM</td></td<>		/1505-ET	37.3@3000	24.6	16.5	71.3@2200	24.8	12.2	EM
36.6@3600     20.8     16.7     60.0@2600     21.5     12.5       35.6@3000     23.4     15.7     69.3@2200     24.1     11.9       33.5@3000     22.1     14.8     69.3@2200     24.1     11.9       33.5@2850     22.9     14.6     69.3@2100     24.1     11.9       32.9@2800     22.7     14.2     69.3@1700     24.4     9.3       29.6@2700     27.1     12.7     67.9@1900     23.9     10.2       29.6@2700     22.4     13.0     69.3@1700     24.4     9.3       30.4@2600     22.4     13.0     68.9@1700     24.4     9.3       28.2@2800     22.4     13.0     68.9@1700     24.3     9.2       28.2@2800     20.7     12.0     68.2@1600     24.1     8.6       28.4@2400     22.4     12.0     64.0@1900     22.6     9.6       28.4@2400     22.4     12.0     68.2@1600     24.4     8.7       28.6@2200     22.4     12.0     68.2@1600		/1505-ET	38.9@3600	22.2	17.9	64.2@2600	23.0	13.4	EW
35.5@3000     23.4     15.7     69.3@2200     24.1     11.9       33.5@3800     22.1     14.8     69.3@2200     24.1     11.9       33.5@2850     22.9     14.6     69.3@2100     24.1     11.9       32.9@2800     22.7     14.2     69.3@2100     24.4     9.3       29.6@2700     21.1     12.7     67.9@1900     24.4     9.3       30.4@2600     22.4     13.0     68.3@1700     24.4     9.3       28.2@2600     22.4     13.0     68.3@1700     24.4     9.3       28.2@2600     22.4     13.0     68.9@1700     24.4     9.3       28.2@2600     20.7     12.0     68.2@1600     24.1     8.6       28.2@2600     20.7     12.0     66.5@1600     22.4     8.7       28.2@2400     22.4     12.0     66.5@1600     22.4     8.7       28.2@2400     22.4     10.9     65.3@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600     24		/1505-ET	36.5@3600	20.8	16.7	60.0@2600	21.5	12.5	EM
33.5@3000     22.1     14.8     693@2200     24.1     11.9       33.5@2850     22.9     14.6     693@2100     24.4     9.3       32.9@2800     22.7     14.2     693@2100     24.4     9.3       29.6@2700     21.1     12.7     67.9@1900     24.4     9.3       30.4@2600     22.4     13.0     69.3@1700     24.4     9.3       30.4@2600     22.4     13.0     68.9@1700     24.4     9.3       30.4@2600     22.4     13.0     68.9@1700     24.1     8.6       28.2@2600     20.7     12.0     68.2@1600     24.1     8.6       28.2@2600     20.7     12.0     66.6@1900     23.4     8.9       28.2@2600     22.3     12.5     66.4@1900     23.4     8.6       28.4@2400     22.4     12.0     66.3@1600     24.4     8.7       28.2@2400     22.1     11.4     66.3@1600     24.4     8.7       26.0@2200     22.1     10.9     66.3@1600     24.4 <td></td> <td>/1505-ET</td> <td>35.5@3000</td> <td>23.4</td> <td>15.7</td> <td>69.3@2200</td> <td>24.1</td> <td>11.9</td> <td>EM</td>		/1505-ET	35.5@3000	23.4	15.7	69.3@2200	24.1	11.9	EM
33.5@2850     22.9     14.6     69.3@2100     24.1     11.3       32.9@2800     22.7     14.2     69.3@1700     24.4     9.3       29.6@2700     21.1     12.7     67.9@1900     23.9     10.2       30.4@2600     22.4     13.0     68.3@1700     24.4     9.3       30.4@2600     22.4     13.0     68.3@1700     24.4     9.3       28.2@2600     20.7     12.0     68.2@1600     24.1     8.6       28.2@2600     20.7     12.0     66.5@1600     23.4     9.2       28.2@2500     20.7     12.0     66.5@1600     23.4     8.6       29.2@2500     22.3     12.5     66.4@1900     23.4     8.7       28.4@2400     22.4     12.0     64.0@1900     24.4     8.7       27.0@2300     22.4     12.0     68.2@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600     24.4     8.3       26.0@2200     22.1     13.1     68.2@1900     24.		/1505-ET	33.5@3000	22.1	14.8	69.3@2200	24.1	11.9	EM
32.9@2800     22.7     14.2     69.3@1700     24.4     9.3       29.6@2700     21.1     12.7     67.9@1900     23.9     10.2       30.4@2600     22.4     13.0     69.3@1700     24.4     9.3       30.4@2600     22.4     13.0     68.9@1700     24.3     9.2       28.2@2600     20.7     12.0     68.2@1600     24.1     8.6       28.2@2500     20.7     12.0     66.5@1600     23.4     9.9       29.2@2500     22.3     12.5     66.4@1900     23.4     9.9       28.4@2400     22.4     12.0     64.0@1900     24.4     8.7       28.2@2400     22.4     12.0     69.3@1600     24.4     8.7       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.2     10.9     65.3@1600     24.4     8.7       30.3@2700     22.1     13.1     68.2@1900     24.4     10.2       30.8@2700     22.1     13.3     68.3@1900     24.		/1505-ET	33.5@2850	22.9	14.6	69.3@2100	24.1	11.3	EW
29.6@2700     21.1     12.7     67.9@1900     23.9     10.2       30.4@2600     22.4     13.0     69.3@1700     24.4     9.3       30.4@2600     22.4     13.0     68.9@1700     24.1     8.6       28.2@2600     20.7     12.0     68.2@1600     24.1     8.6       28.2@2600     20.7     12.0     66.5@1600     23.4     9.9       29.2@2500     22.3     12.5     66.4@1900     23.4     9.9       28.4@2400     22.4     12.0     64.0@1900     22.6     9.6       28.2@2400     22.4     12.0     69.3@1600     24.4     8.7       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600     23.1     8.3       30.3@2700     21.7     13.1     68.2@1900     24.4     8.7       30.8@2700     22.1     13.1     68.3@1900     24.4     10.4       30.8@2700     22.1     13.1     68.3@1900     24.		/1505-ET	32.9@2800	22.7	14.2	69.3@1700	24.4	9.3	EM
30.4@2600     22.4     13.0     69.3@1700     24.4     9.3       30.4@2600     22.4     13.0     68.9@1700     24.3     9.2       28.2@2600     20.7     12.0     68.2@1600     24.1     8.6       28.2@2600     20.7     12.0     66.5@1600     23.5     8.4       29.2@2500     22.3     12.5     66.4@100     23.4     9.6       28.4@2400     22.4     12.0     64.0@1900     24.4     8.7       28.2@2400     22.4     12.0     68.2@1600     24.4     8.6       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600     24.4     8.7       30.3@2700     21.7     13.1     68.2@1900     24.4     8.3       30.8@2700     22.1     13.1     69.3@1900     24.4     10.4       30.8@2700     22.7     13.1     69.3@1900     24.4<		/1505-ET	29.6@2700	27.1	12.7	67.9@1900	23.9	10.2	EM
30.4@2600     22.4     13.0     68.9@1700     24.3     9.2       28.2@2600     20.7     12.0     68.2@1600     24.1     8.6       28.2@2600     20.7     12.0     68.5@1600     24.1     8.6       29.2@2500     22.3     12.5     66.4@1900     23.4     9.9       28.4@2400     22.4     12.0     64.0@1900     22.6     9.6       28.4@2400     22.4     12.0     69.3@1600     24.4     8.7       28.2@2400     22.4     12.0     68.2@1600     24.4     8.6       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.2     10.9     65.3@1600     24.4     8.7       30.3@2700     21.7     13.1     68.2@1900     24.1     10.2       30.8@2700     22.1     13.1     69.3@1900     24.4     10.4		/1505-ET	30.4@2600	22.4	13.0	69.3@1700	24.4	9.3	Ē
28.2@2600     20.7     12.0     68.2@1600     24.1     8.6       28.2@2600     20.7     12.0     66.5@1600     23.5     8.4       29.2@2500     22.3     12.5     66.4@1900     23.4     9.9       28.4@2400     22.4     12.0     69.3@1600     24.4     8.7       28.2@2400     22.4     12.0     68.2@1600     24.4     8.7       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600     24.4     8.7       30.3@2700     21.7     13.1     68.2@1900     24.1     10.2       30.8@2700     22.7     13.1     69.3@1900     24.1     10.4		/1505-ET	30.4@2600	22.4	13.0	68.9@1700	24.3	9.2	EM
28.2@2600     20.7     12.0     66.5@1600     23.5     8.4       29.2@2500     22.3     12.5     66.4@1900     23.4     9.9       28.4@2400     22.4     12.0     64.0@1900     22.6     9.6       28.2@2400     22.4     12.0     69.3@1600     24.4     8.7       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600     24.4     8.7       30.3@2700     21.7     13.1     68.2@1900     24.4     8.3       30.8@2700     21.7     13.1     68.2@1900     24.1     10.2       30.8@2700     22.1     13.1     69.3@1900     24.4     10.4		/1505-ET	28.2@2600	20.7	12.0	68.2@1600	24.1	8.6	EM
29.2@2500     22.3     12.5     66.4@1900     23.4     9.9       28.4@2400     22.4     12.0     64.0@1900     22.6     9.6       28.2@2400     22.4     12.0     69.3@1600     24.4     8.7       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.1     11.4     69.3@1600     24.4     8.7       30.3@2700     21.7     13.1     68.2@1900     24.1     10.2       30.8@2700     22.1     13.1     69.3@1900     24.1     10.4		/1505_ET	28.2@2600	20.7	12.0	66.5@1600	23.5	8.4	EM
28.4@2400     22.4     12.0     64.0@1900     22.6     9.6       28.4@2400     22.4     12.0     69.3@1600     24.4     8.7       28.2@2400     22.4     12.0     68.2@1600     24.1     8.6       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.2     10.9     65.3@1600     24.1     8.3       30.3@2700     21.7     13.1     68.2@1900     24.1     10.2       30.8@2700     22.1     13.3     69.3@1900     24.4     10.4		/1505-ET	29.2@2500	22.3	12.5	66.4@1900	23.4	6.6	EM
28.4@2400     22.4     12.0     69.3@1600     24.4     8.7       28.2@2400     22.4     12.0     68.2@1600     24.1     8.6       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.2     10.9     65.3@1600     23.1     8.3       30.3@2700     21.7     13.1     68.2@1900     24.1     10.2       30.8@2700     22.1     13.3     69.3@1900     24.4     10.4		71505-ET	28.4@2400	22.4	12:0	64.0@1900	22.6	9.6	EM
28.2@2400     22.4     12.0     68.2@1600     24.1     8.6       27.0@2300     22.1     11.4     69.3@1600     24.4     8.7       26.0@2200     22.2     10.9     65.3@1600     23.1     8.3       30.3@2700     21.7     13.1     68.2@1900     24.1     10.2       30.8@2700     22.1     13,3     69.3@1900     24.4     10.4		/1505-ET	28.4@2400	22.4	12.0	69.3@1600	24.4	8.7	EM
27.0@2300 22.1 11.4 69.3@1600 24.4 8.7   26.0@2200 22.2 10.9 65.3@1600 23.1 8.3   30.3@2700 21.7 13.1 68.2@1900 24.1 10.2   30.8@2700 22.1 13.3 69.3@1900 24.4 10.4		/1505-ET	28.2@2400	22.4	12.0	68.2@1600	24.1	8.6	EM
26.0@2200 22.2 10.9 65.3@1600 23.1 8.3   30.3@2700 21.7 13.1 68.2@1900 24.1 10.2   30.8@2700 22.1 13.3 69.3@1900 24.4 10.4		/1505-ET	27.0@2300	22.1	11.4	69.3@1600	24.4	8.7	EM
30.3@2700 21.7 13.1 68.2@1900 24.1 10.2 30.8@2700 22.1 13.3 69.3@1900 24.4 10.4		/1505-ET	26.0@2200	22.2	10.9	65.3@1600	23.1	6.3	EN
30.8@2700 22.1 13.3 69.3@1900 24.4 10.4	**	/1505-ET	30.3@2700	21.7	13.1	68.2@1900	24.1	10.2	EM ,
		∕1505-ET	30.8@2700	22.1	13.3	69.3@1900	24.4	10.4	EM