California Environmental Protection Agency AIR RESOURCES BOARD	John Deere Power Systems	EXECUTIVE ORDER U-R-004-0315 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)
2008	8JDXL04.5111	4.5	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Smoke Puff Limiter	Pump, Compressor, Generator Set, Other 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
56 ≤ kW < 75	Tier 3	STD	N/A	N/A	4.7	5.0	0.40	20	15	50
		FEL	--	--	--	--	0.35	--	--	--
		CERT	--	--	4.0	0.9	0.30	19	4	35

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 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 14th day of December 2007.

/s/ Annette Hebert, Chief
Mobile Source Operations Division

Engine category: **Nonroad CI**

EPA Engine Family: **8JDXL04.5111**

M mily Name: **350HAE**

s Code: **Re-Submission**

Attachment p. 1 of 4

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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
4045HF280A	4045H	99.24@2200	76.80@2200	38.01@2200	294.99@1600	91.8@1600	33.07@1600	EM DFI TC CAC, SPL
4045HF280B	4045H	99.24@2400	72.50@2400	39.16@2400	269.18@1600	83.9@1600	30.21@1600	EM DFI TC
4045HF280C	4045H	99.24@2200	75.40@2200	37.20@2200	280.24@1600	87.4@1600	31.44@1600	EM DFI TC
4045HF280D	4045H	99.24@1800	90.00@1800	36.51@1800				EM DFI TC
		74 kW						

Engine Model Summary Form

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Attachment p. 2 of 4

nufacturer: **John Deere Power Systems**

gine category: **Nonroad CI**

Engine Family: **8JDXL04.5111**

Family Name: **350HAE**

ocess Code: **Running Change**

ngine 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
45HF280A	4045H	see attachment p. 1 of 4						EM SPL DFI TC, CAC
45HF280B	4045H							EM SPL DFI
45HF280C	4045H							EM SPL DFI
45HF280D	4045H							EM SPL DFI
045HFS80	4045H	99.24@1800	90.00@1800	36.51@1800				EM SPL DFI

Engine Model Summary Form

Manufacturer: **John Deere Power Systems**
Engine category: **Nonroad CI**
EPA Engine Family: **8JDXL04.5111**
M[illegible]Family Name: **350HAE**
[illegible]ess Code: **Running Change**

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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
4045HLV52	4045H	71.6kW 95.89@2200	76.20@2200	37.70@2200	274.38@1600	90.1@1600	32.41@1600	EM SPL DFI TC, CAC
4045HLV53	4045H	85.16@2200	67.30@2200	33.29@2200	244.14@1600	78.1@1600	28.09@1600	EM SPL DFI

Engine Model Summary Form

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Attachment

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Manufacturer: **John Deere Power Systems**
Engine category: **Nonroad CI**
EPA Engine Family: **8JDXL04.5111**
Mfr Family Name: **350HAE**
Process Code: **Running Change**

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
4045HL286A	4045H	89.85@2200	74.80@2200	35.50@2200	275.08@1600	89.3@1600	31.75@1600	EM SPL DFI CAL, TC
4045HL286B	4045H	79.80@2200	66.80@2200	32.01@2200	249.27@1600	80@1600	28.18@1600	EM SPL DFI
		59.6kW						