



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JAN 18 2008

OFFICE OF  
AIR AND RADIATION

Mr. Ken Katch  
Caterpillar, Inc.  
Bldg AC 6146, PO Box 610  
Route 29 & Rensch Road  
Mossville, IL 61552-0610

Dear Mr. Katch:

The U.S. Environmental Protection Agency (EPA) has reviewed your request for full verification of the Caterpillar Emissions Upgrade Group. Based on our evaluation of the verification application, the test data, and additional information provided, EPA hereby fully verifies this technology for the emission reductions described below. This verification is for the purpose of EPA's National Clean Diesel Campaign. This full verification supersedes prior conditional verification dated July 19, 2006.

This technology is approved for use on the following engines and/or vehicles provided all of the required operating criteria are met as described below:

Select Caterpillar model 3306 diesel engines for nonroad applications from model years 1988 through 1995 with mechanical direct fuel injection.

Technology	Fuel (maximum sulfur content)	Particulate Matter (PM) %	Carbon Monoxide (CO) %	Hydro- carbons (HC) %	Oxides of Nitrogen (NOx) %
Caterpillar Emissions Upgrade Group	500 ppm	22	13	71	37

The following operating criteria must be met in order for appropriately retrofitted engines to achieve the aforementioned emissions reductions:

1. The Caterpillar Emissions Upgrade Group includes the components necessary to upgrade Caterpillar model 3306 diesel engines with model years from 1988 through 1995 to US EPA Nonroad Tier 1 emissions levels. The primary components are the turbocharger, fuel pump/governor, fuel injection nozzles, pistons/rings/liners, and after-coolers if applicable.
2. The servicing dealer must follow specific installation instructions approved by Caterpillar, check and/or replace other engine parts and validate that the upgraded engine has the necessary Tier 1 components installed and has been tested to ensure the proper fuel delivery, power, torque and speed. The dealer must submit a validation form to Caterpillar in order to receive a label for the upgraded engine and to comply with this verification.
3. The engine must be operated with fuel that contains no more than 500 ppm sulfur.

Information on the Emissions Upgrade Group, percent reductions, applicable engines, and in-use testing program will be posted on the EPA National Clean Diesel Campaign website ([www.epa.gov/cleandiesel](http://www.epa.gov/cleandiesel)). As you know, Caterpillar will be responsible for completing the required in-use testing program and for submitting all in-use testing data, including the results of smoke testing, to EPA. The in-use upgraded engines must comply with all US EPA Nonroad Tier 1 emissions standards.

Thank you for participating in EPA's National Clean Diesel Campaign. If you have any questions or comments, please contact Kuang Wei, of my staff, at (202) 343-9329.

Sincerely,



Lori Stewart, Acting Director  
Transportation and Regional Programs Division  
Office of Transportation and Air Quality