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Agency Secretary

Air Resources Board

Alan C. Lloyd, Ph.D.
Chairman

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Gray Davis
Governor

August 2, 2001

Mr. Marty Lassen
Johnson Matthey
434 Devon Park Drive
Wayne, PA 19087-1816

Dear Mr. Marty Lassen:

The Air Resources Board (ARB) has reviewed your request for verification of your Continuously Regenerating Technology (CRT) filter system. Based on its evaluation of the data provided, ARB hereby verifies that the Johnson Matthey CRT filter system reduces emissions of diesel particulate matter (PM) by 85 percent or greater (or to at most 0.01 grams per brake horsepower-hour) for engines from the engine families in Table 1 in the applications listed in Table 2, for an emissions durability of 150,000 miles. The CRT filter system is therefore a Level Three retrofit device for those engines and applications.

Table 1. Engine Families Verified for Use with the ECS.

Engine Series	Engine Family
1999 Detroit Diesel Corporation Series 50 Bus	XDDXH08.5FJN
2000 Detroit Diesel Corporation Series 50 Bus	YDDXH08.5FJN
1999 Detroit Diesel Corporation Series 50 Truck	SDDXH08.5EJL
1998 Detroit Diesel Corporation Series 60 12.7L	WDDXH12.7EGD

Table 2. Verified Applications of the ECS.

Applications	
Refuse haulers	School buses
Fuel tanker trucks	Long haul trucks
Urban buses	Long haul buses

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

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The aforementioned verification is valid provided the following operating criteria are met:

1. The engine must be operated with a fuel that contains a sulfur content of no more than 15 parts per million by weight.
2. The engine exhaust temperature must be at least 270 degrees Celsius for 40 percent of the operating cycle.
3. The engine's exhaust must produce an oxides of nitrogen (NOx) to PM ratio of at least 8, with a preference for a NOx/PM ratio of 15 or higher.
4. The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
5. Johnson Matthey must install a backpressure monitor and indicator light on all vehicles retrofitted with a CRT filter system.

Since there may be variation in driving conditions, we recommend review of actual vehicle operating conditions (actual duty cycle, baseline emissions, engine backpressure, exhaust temperature profiles, fuel consumption, and fuel sulfur), prior to retrofitting a vehicle(s) with the ECS, to ensure proper operation of the ECS.

The ARB estimates that the CRT filter system will incur no discernible fuel economy penalty when used in a compatible application.

After reviewing the submitted data, the ARB does not find that the CRT filter system has an appreciable effect on overall NOx emissions.

Thank you for participating in ARB's diesel retrofit verification program. Should you have any questions or comments, please contact Ms. Annette Hebert, Branch Chief, Heavy-Duty Diesel In-Use Strategies Branch, at (626) 575-6973.

Sincerely,

//s//

Michael P. Kenny
Executive Officer