



**Winston H. Hickox**  
Agency Secretary

# Air Resources Board

**Alan C. Lloyd, Ph.D.**  
Chairman

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**Gray Davis**  
Governor

August 15, 2002

Mr. Paul Beck  
Vice President, Low Emission Technology Program  
Clean Air Partners, Inc.  
5066 Santa Fe Street  
San Diego, California 92109

Dear Mr. Beck:

The California Air Resources Board (ARB) has reviewed your request for verification of the Engelhard DPX diesel particulate filter (DPF) for use with a specified list of natural gas/diesel bi-fuel engines. ARB previously verified that the Engelhard DPX (both MEX and NEX catalyst formulations) reduces emissions of diesel particulate matter (PM) by 85 percent or greater from most 1994-2001 on-road heavy-duty diesel engines, thereby qualifying the DPX as a Level 3 diesel emission control strategy. Based on its evaluation of the data provided by Clean Air Partners, ARB hereby verifies that the Engelhard DPX reduces emissions of diesel PM consistent with a Level 3 device in on-road applications powered by natural gas/diesel bi-fuel engines belonging to the engine families listed in Table 1. This verification also applies to Caterpillar engines belonging to the engine families listed in Table 2 which have been converted to bi-fuel operation using the Power Systems Associates and Clean Air Partners bi-fuel retrofit systems certified by ARB.

**Table 1. Power Systems Associates Engine Families  
Verified for Use with the Clean Air Partners' DPF**

Model Year	Engine Families
1996	TPS629EZJARK
1997	VPS442DZJ6RK, VPS442DZJARK, VPS629EZJ6RK, VPS629EZJ6RM
1998	WPSXH0629E6J, WPSXH0729E6J
1999	XPSXH0442E6J, XPSXH0629E6J, XPSXH0729E6J
2000	YPSXH0442E6J, YPSXH0629E6J, YPSXH0729E6J
2001	1PSXH0442E6J, 1PSXH0629E6J, 1PSXH0629E6K, 1PSXH0729E6J
2002	2PSXH0442E6J, 2PSXH0629E6J, 2PSXH0629E6K, 2PSXH0729E6J

*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

**Table 2. Caterpillar Engine Families Verified for Use with the Clean Air Partners' DPF When Converted to Bi-Fuel Operation**

<b>Model Year</b>	<b>Engine Families</b>	<b>Bi-Fuel Retrofit Executive Orders</b>
1998	WCPXH0442HRK	B-49-16
	WCPXH0629ERK	B-49-9
	WCPXH0729ERK	B-49-12
1999	XCPXH0442HRK	B-49-14
	XCPXH0629ERK	B-49-8
	XCPXH0729ERK	B-49-11
2000	YCPXH0442HRK	B-49-13
	YCPXH0629ERK	B-49-7
	YCPXH0729ERK	B-49-10
2001	1CPXH0442HRK	B-40-10
	1CPXH0629ERK	B-40-11
	1CPXH0729ERK	B-40-12
2002	2CPXH0442HRK	B-40-7
	2CPXH0629ERK	B-40-8
	2CPXH0729ERK	B-40-9

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

- The DPF must be identical to the Engelhard DPX, and may use either the MEX or NEX catalyst formulation.
- The average engine exhaust temperature must be at least 225 degrees Celsius.
- The engine must be both certified in California for on-road applications and used in on-road applications.
- The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- The engine must be predominantly fueled by natural gas as intended. The supplemental diesel fuel used must have a sulfur content no more than that in commercially available California diesel fuel.
- Clean Air Partners must install a backpressure monitor and indicator light on all vehicles retrofitted with its DPF.

Mr. Paul Beck  
August 15, 2002  
Page 3

The ARB estimates that the Clean Air Partners DPF will incur no discernible fuel economy penalty when used in a compatible application.

As specified in the Diesel Emission Control Strategy Verification Procedure, the ARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is: **CA/CAP/2002/PM3/N00/ON/DPF01**. This identification number should be used in reference to this verification as part of the system-labeling requirement.

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, Clean Air Partners is responsible for honoring a warranty (Section 2707) and conducting in-use compliance testing (Section 2709).

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//

Robert H. Cross, Chief  
Mobile Source Control Division

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