



Linda S. Adams
Secretary for
Environmental Protection

Air Resources Board

Mary D. Nichols, Chairman
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Sacramento, California 95812 • www.arb.ca.gov



Arnold Schwarzenegger
Governor

January 24, 2008

Reference No. RAS-08-15

Mr. Joe Aleixo
DCL International Incorporated
Post Office Box 90
Concord, Ontario
Canada L4K 1B2

Dear Mr. Aleixo:

Using the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines* (Procedure), Air Resources Board (ARB) staff reviewed DCL International Incorporated's (DCL) application for conditional verification of the MINE-X SOOTFILTER® diesel particulate filter system (MINE-X SOOTFILTER) for use with off-road diesel engines. Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, ARB hereby finds that the MINE-X SOOTFILTER reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater than or equal to an 85 percent reduction). ARB also finds that the MINE-X SOOTFILTER satisfactorily completed at least 33 percent of the durability demonstration period for off-road diesel engines. Accordingly, ARB determines that the system merits conditional verification and, subject to the terms and conditions specified below, classifies the MINE-X SOOTFILTER as a Level 3 system for off-road applications that use diesel engines from the engine families listed in Attachment 1.

The aforementioned conditional verification is subject to the following terms and conditions:

- The MINE-X SOOTFILTER is conditionally verified, on rubber tire off-road applications only, for a period not to exceed three years from the date of this letter. For the MINE-X SOOTFILTER to be considered for full verification, DCL must complete all remaining requirements as specified in the letter RAS-08-01 within three years of the date of this letter.
- Conditional verification is equivalent to verification for the purposes of satisfying the requirements of in-use emission control regulations.
- The engine must be certified to a PM emission level equal to or less than 0.15 grams per brake horsepower-hour.

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

- The application must have a duty cycle with an average temperature profile of greater than 300 degrees Celsius for at least 30 percent of the operating cycle.
- The engine is originally manufactured from model year 1996 through 2008 having one of the engine family numbers listed in Attachment 1.
- The engine must be in either the Tier 1, Tier 2 or Tier 3 emissions standard categories.
- The engine must not have a rated power of at least 175 horsepower and less than 300 horsepower.
- The engine must not employ exhaust gas recirculation.
- The engine must be four-stroke
- The engine can be mechanically or electronically controlled.
- The engine can be turbocharged or naturally aspirated.
- The engine may or may not have a pre-existing original equipment manufacturer oxidation catalyst.
- The engine must not have a pre-existing diesel particulate filter from the original equipment manufacturer.
- The engine must be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- The engine must be operated on diesel fuel with a sulfur content of no more than 15 parts per million (ppm) by weight.
- The product must not be operated with fuel additives, as defined in Section 2701 of Title 13, of the California Code of Regulations (CCR), unless explicitly verified for use with the fuel additive(s).
- Lubricating oil, or other oil, should not be mixed with the fuel.
- The product must not be used with any other systems or engine modifications without ARB and manufacturer approval.
- The other terms and conditions specified below.

It is also ordered and resolved that installation of the MINE-X SOOTFILTER, manufactured by DCL International Incorporated, 241 Bradwick Drive, Concord, Ontario, Canada L4K 1K5, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, the MINE-X SOOTFILTER is exempt from the prohibitions in section 27156 of the Vehicle Code for installation on off-road equipment using engines from the families listed in Attachment 1.

This exemption is only valid provided the engines meet the aforementioned conditions.

ARB reserves the right in the future to review this conditional verification letter and the exemption provided herein to assure that the exempted and conditionally verified add-

on or modified part continues to meet the standards and procedures of Title 13, sections 2222, et seq and sections 2700 through 2710, of the California Code of Regulations (CCR).

The MINE-X SOOTFILTER is a passively regenerated diesel particulate filter system consisting of a catalyzed non-blocking flow-through filter followed by a wall-flow diesel particulate filter and a backpressure and temperature monitoring system. The major components of the MINE-X SOOTFILTER are identified in Attachment 2. A schematic of the approved product and engine labels is shown in Attachment 3

No changes are permitted to the device. ARB must be notified, in writing, of any changes to any part of the MINE-X SOOTFILTER. Any changes to the device must be evaluated and approved by ARB. Failure to do so shall invalidate this conditional verification.

Changes made to the design or operating conditions of the MINE-X SOOTFILTER, as exempted by ARB, which adversely affect the performance of the vehicle's pollution control system, shall invalidate this conditional verification.

Marketing of the MINE-X SOOTFILTER using identification other than that shown in this conditional verification letter or for an application other than that listed in this conditional verification letter shall be prohibited unless prior approval is obtained from ARB.

This conditional verification shall not apply to any MINE-X SOOTFILTER advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

As specified in the Procedure, ARB assigns each diesel emission control strategy a family name. The designated family name for the conditional verification as outlined above is:

CA/DCL/2008/PM3/N00/OFF/DPF01.

DCL, their distributors, or installers shall review actual operating conditions prior to retrofitting an engine with the MINE-X SOOTFILTER to ensure compliance with the terms and conditions of this conditional verification.

Additionally, as stated in the Procedure, DCL is responsible for honoring the required warranty (section 2707) and conducting in-use compliance testing (section 2709).

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This conditional verification is valid provided that the diesel fuel used in conjunction with the device complies with Title 13, CCR, sections 2281 and 2282, and if biodiesel is used, the biodiesel blend shall be 20 percent or less subject to the following conditions:

- The biodiesel portion of the blend complies with the American Society for Testing and Materials specification D6751 applicable for 15 ppm sulfur content;
- The diesel fuel portion of the blend complies with Title 13, CCR, sections 2281 and 2282;
- The use of biodiesel applies to devices verified to reduce only diesel particulate matter; and other alternative diesel fuels such as, but not limited to, ethanol diesel blends and water emulsified diesel fuel are excluded from this conditional verification.

Systems conditionally verified in this letter shall conform to all applicable California emissions regulations.

This conditional verification does not release DCL from complying with all other applicable regulations.

Violation of any of the above conditions shall be grounds for revocation of this conditional verification.

Thank you for participating in ARB's diesel emission control strategy verification program. If you have any questions or comments, please contact Ms. Shawn Daley, Manager, at (626) 575-6972 or by email to sdaley@arb.ca.gov.

Sincerely,

/s/

Robert H. Cross, Chief
Mobile Source Control Division

Attachment 1: ARB Approved Model Year 1996 to 2008 Engine Families for the Conditionally Verified MINE-X SOOTFILTER
Attachment 2: Parts List for the Conditionally Verified MINE-X SOOTFILTER
Attachment 3: Label for the MINE-X SOOTFILTER

cc: Ms. Shawn Daley, Manager
Retrofit Assessment Section

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bcc: Erik White, MSCD
Mark Schuy, MSCD

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