

**State of California
AIR RESOURCES BOARD**

EXECUTIVE ORDER DE-12-003

Pursuant to the authority vested in the Air Resources Board (ARB) by the *Health and Safety Code*, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by *Health and Safety Code Sections* 39515 and 39516 and Executive Order G-02-003;

Relating to Exemptions under Section 27156 of the *Vehicle Code*, and Verification under Sections 2700 to 2711 of Title 13 of the *California Code of Regulations* (CCR)

Diesel Emission Technologies (DET) Limited Liability Corporation (LLC)
UltraTrap™

ARB has reviewed DET's request for verification of the UltraTrap™ system. Based on an evaluation of the data provided and pursuant to the terms and conditions specified below, the Executive Officer of ARB hereby finds that the UltraTrap™ system reduces emissions of diesel particulate matter (PM) consistent with a Level 3 Plus device (greater than or equal to an 85 percent reduction and meets the 2009 nitrogen dioxide emissions limit) (Title 13, CCR, Sections 2702 (f) and 2708). Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below, classifies the UltraTrap™ system as a Level 3 Plus system for heavy-duty on-road vehicles that use certain certified heavy-duty diesel engines. Engines for which the UltraTrap™ system is verified, the verified parts list, the verified labels, swapping and re-designation information, and other product information can be found here:

<http://www.arb.ca.gov/diesel/verdev/companies/det/ultratrap.htm>.

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

- The verification is restricted to only those engine families and models listed in <http://www.arb.ca.gov/diesel/verdev/companies/det/ultratrap.htm> used in on-road applications.
- The engine must be certified as a heavy duty engine and used by an on-road motor vehicle with a manufacturer's Gross Vehicle Weight Rating of over 14,000 pounds.
- The application must have a duty cycle with a temperature profile greater than 260 degrees Celsius for at least 60 percent of the time.
- The engine must be in its original certified configuration.
- The engine must not employ exhaust gas recirculation.

- The engine may or may not be certified to have an original equipment manufacturer (OEM) diesel oxidation catalyst.
- The engine must not be certified to have an OEM diesel particulate filter (DPF).
- The engine must be certified for on-road applications at a PM emission level of at most 0.1 grams per brake horsepower-hour (g/bhp-hr), and greater than 0.01 g/bhp-hr.
- The engine must be certified for on-road applications at an oxides of nitrogen (NO_x) emission level of at most 5.0 g/bhp-hr, and greater than 2.5 g/bhp-hr.
- The engine must have a NO_x to PM ratio of 20:1 or greater.
- The engine must be rated to at least 125 horsepower (hp) and at most 550 hp.
- The engine must have a displacement of at least 5.3 liters and at most 16 liters.
- The engine must have a four-stroke combustion cycle.
- The engine may be turbocharged or naturally aspirated.
- The engine must be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- Lube oil, or other oil, must not be mixed with the fuel.
- The engine must be operated on fuel that has a sulfur content of no more than 15 parts per million (ppm) by weight.
- The system must not be operated with fuel additives, as defined in Section 2701 of Title 13 of CCR, unless explicitly verified for use with the fuel additive(s).
- The system must not be used with any other systems or engine modifications without ARB and manufacturer's approval.
- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of the UltraTrap™ system, manufactured by DET LLC, 725 North Cypress Street, Orange, California 92867, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore the UltraTrap™ system is exempt from the prohibitions in Section 27156 of the *Vehicle Code* for installation on heavy-duty on-road vehicles. This exemption is only valid provided the engines meet the aforementioned conditions.

The UltraTrap™ system consists of the following major system components, listed in order from exhaust inlet to outlet as they are arranged within the exhaust system of the

vehicle: one inlet module, one filter body (containing one cordierite DPF), and one outlet module. The UltraTrap™ system also includes a backpressure monitor system, a temperature sensor, and warning system. The major components of the UltraTrap™ system are identified in the parts list. The parts list and schematics of the approved product and engine labels are available on the website shown above. A detailed version of the parts list can be found in Attachment 1.

The UltraTrap™ system is comprised of a single DPF designed to filter the exhaust from a single engine. UltraTrap™ systems with multiple DPFs, including designs with two or more filter components canned together or multiple individually-canned filter components in parallel or in series (or any combination thereof), are not valid under this Executive Order. Channeling exhaust from a single engine through multiple UltraTrap™ systems, deployed in parallel or in series or any combination thereof, is also not valid under this Executive Order.

This Executive Order is valid provided that installation instructions for the UltraTrap™ system do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

DET must ensure that the installation of the UltraTrap™ system conforms to all applicable industrial safety requirements.

DET is responsible for ensuring the DPF is correctly sized for each engine.

DET is required to notify ARB, in writing, when 90 percent of the 12- by 15-inch filter stock has been sold. At that point, DET is prohibited from further sales of the 12- by 15-inch filter and the 15.9-liter engines of engine families 2MBXH15.9DJB and 3MBXH15.9DJB will be excluded from the UltraTrap™ system engine family list.

Prior to ultimate sale, DET is required to provide written notification to prospective customers of the 12- by 15-inch filter system that it may not be possible to purchase replacement cores after the warranty expires.

For any valid warranty claim involving a 12-by 15-inch filter core, DET is required to purchase back, at original price, the entire filter system if no verified replacement DPF 12-by 15-inch core is available.

No changes are permitted to the device. ARB must be notified, in writing, of any changes to any part of the UltraTrap™ system. Any changes to the device must be evaluated and approved in writing by ARB. Failure to do so will invalidate this Executive Order.

Changes made to the design or operating conditions of the UltraTrap™ system, as exempted by ARB, which adversely affect the performance of the vehicle's pollution control system, shall invalidate this Executive Order.

Marketing of the UltraTrap™ system using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order shall be prohibited unless prior written approval is obtained from ARB.

This Executive Order shall not apply to any UltraTrap™ system advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

A copy of this Executive Order must be provided to the ultimate purchaser at the time of sale.

As specified in Section 2706(j) (Title 13, CCR) of the *Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (Procedure)*, ARB assigns each diesel emission control strategy a family name. The designated family name for the verification as outlined above is:

CA/DET/2012/PM3+/N00/ON/DPF01

As stated in the Procedure, DET is responsible for recordkeeping requirements (Section 2702), honoring the required warranty (Section 2707), and conducting in-use compliance testing (Section 2709).

Proper engine maintenance is critical for the proper functioning of the diesel emission control strategy. The owner of the vehicle on which the diesel emission control strategy is installed is strongly advised to adhere to all good engine maintenance practices. Failure to document proper engine maintenance, including keeping records of the engine's oil consumption, may be grounds for denial of a warranty claim.

This Executive Order 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, and
- The diesel fuel portion of the blend complies with Title 13, CCR, Sections 2281 and 2282.

Other alternative diesel fuels such as, but not limited to, ethanol diesel blends and water emulsified diesel fuel are excluded from this Executive Order.

Systems verified under this Executive Order shall conform to all applicable California emissions regulations.

The terms and conditions of this Executive Order must be satisfied regardless of where the system is sold in order for the system to be considered verified.

UltraTrap™ systems sold as verified, or which carry ARB-approved label, must satisfy all the terms and conditions of this Executive Order.

This Executive Order does not release DET from complying with all other applicable regulations.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order.

In addition to the foregoing, ARB reserves the right in the future to review this Executive Order and the exemption and verification provided herein to assure that the exempted and verified add-on or modified part continues to meet the standards and procedures of Title 13, CCR, Section 2222, et seq, and Title 13, CCR, Sections 2700 through 2711.

Executed at El Monte, California, and effective this 10th day of July 2012.

A handwritten signature in blue ink, appearing to read "Michael M. Cross for".

Robert H. Cross, M.S.M.E., P.E.
Chief, Mobile Source Control Division