State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER DE-05-006-08

Pursuant to the authority vested in the California Air Resources Board (ARB) by Health and Safety Code, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code section 39515 and 39616 and Executive Order G-14-012;

This action relates to Verification under sections 2700 through 2711 of Title 13 of the California Code of Regulations:

Miratech Emissions Solutions,
CombiKat® CBS Particulate Trap

ARB has reviewed Miratech Emissions Solutions' request for verification of the CombiKat® CBS Particulate Trap diesel particulate filter (DPF). 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 CombiKat® CBS Particulate Trap DPF reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater than or equal to 85 percent reductions) (California Code of Regulations (CCR), Title 13, sections 2702 (f) and (g) and section 2708) and complies with the ARB January 1, 2009, nitrogen dioxide (NO_2) limit (CCR, Title 13, section 2702 (f) and section 2706 (a)). Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below, classifies the CombiKat® CBS Particulate Trap as a Level 3 Plus system, for use with stationary emergency and prime generators using engine families listed in Attachment 1.

This verification is subject to the following terms and conditions:

- The engine must be used in a stationary application associated with prime or emergency standby generators.
- The engines are model years 1996 or newer, certified to nonroad diesel emission standards Tier 1, Tier 2, Tier 3, Tier 4i with a rated horse power between 50 and 75 or over 750, or Tier 4 Alt 20% NOx and PM, and having the engine family names listed in Attachment 1.
- The engine must be a certified off-road engine meeting 0.2 grams per brake horsepower hour (g/bhp-hr) diesel particulate matter (PM) or less based on certification or in-use emissions testing (as tested on an appropriate steady-state certification cycle outlined in the ARB off-road regulations – similar to ISO 8178 D2)
- The engine must be in its original certified configuration.
- The engine must not employ exhaust gas recirculation.
- The engine must not have a pre-existing oxidation catalyst, diesel particulate filter, or selective catalytic reduction.

- The engine must be four-stroke.
- The engine can be turbocharged or naturally-aspirated.
- The engine must be certified in California.
- Miratech Emissions Solutions must review actual operating conditions (duty cycle, baseline emissions, exhaust temperature profiles, engine backpressure, and other pre-installation compatibility assessments as required in section 2706(t) of Title 13, of the CCR) prior to retrofitting an engine with the CombiKat® CBS Particulate Trap to ensure compatibility.
- The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- The product must not be operated with fuel additives, as defined in section 2701 of Title 13, of the CCR, unless explicitly verified for use with fuel additive(s).
- The other terms and conditions specified below.

Table 1: Conditions for the CombiKat® CBS Particulate Trap

Parameter	Value
Application	Stationary Emergency Standby and Prime Power Generation
Engine Type	Diesel, with or without turbocharger, certified to 0.2 g/bhp-hr or less of PM
Minimum Exhaust Temperature for Filter Regeneration	The engine must operate at the load level required to achieve sufficient exhaust temperature for regeneration at the rated PM level of the engine, per Figure 1. Operation at lower temperatures is allowed, but only for a limited duration. Per Figure 1, operate in the "Passive Regeneration Okay" side of the graph for at least 30 Minutes.
Maximum Consecutive Minutes Operating Below Passive Regeneration Temperature	720 Minutes
Number of Cold Start and 30 Minute Idle Sessions before Regeneration Required	24
Number of Hours of Operation Before Cleaning of Filter Required	Application Specific. Per calculations provided below under 'Filter Sizing'. 2000 Hours Typical.
Fuel	California diesel fuel with less than or equal to 15 ppm sulfur or a biodiesel blend provided that the biodiesel portion of the blend complies with ASTM D6751, the diesel portion of the blend complies with Title 13 (CCR), sections 2281 and 2282, and the blend contains no more than 20 percent biodiesel by volume.
Verification Level	Level 3 Plus Verification: • PM - at least 85% reduction • NO_2 - meets January 2009 limit

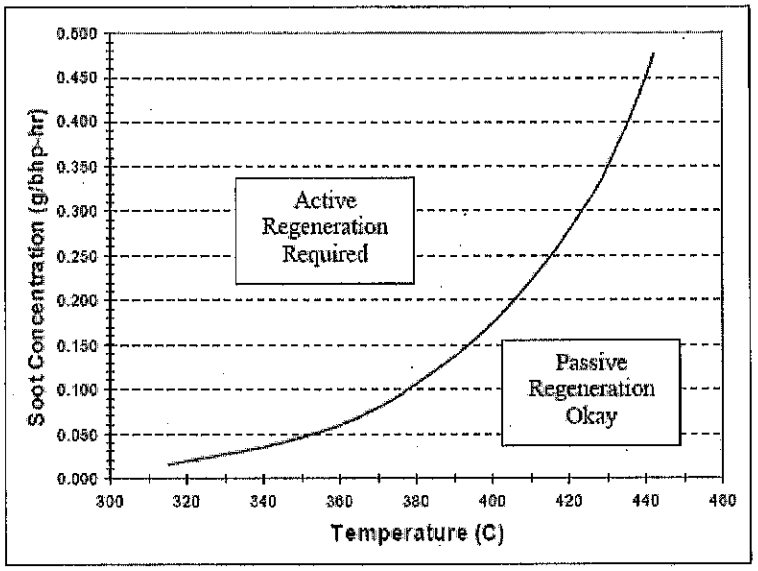

Figure 1: Passive Regeneration Temperature Requirements

The CombiKat® CBS Particulate Trap consists of a catalyzed passive diesel particulate filter and a diesel particulate filter monitoring system. A schematic of the approved label is shown in Attachment 2. Labels attached to the DPF and the engine must be identical.

This Executive Order is valid provided that installation instructions for CombiKat® CBS Particulate Trap do not recommend tuning the engine to specifications different from those of the engine manufacturer. The product must not be used with any other systems or engine modifications without ARB and manufacturer approval.

Changes made to the design or operating conditions of CombiKat® CBS Particulate Trap, as exempted by ARB, which adversely affect the performance of the engine's pollution control system, shall invalidate this Executive Order.

No changes are permitted to the device. ARB must be notified in writing of any changes to any part of CombiKat® CBS Particulate Trap. Any changes to the device must be evaluated and approved by ARB. Failure to do so shall invalidate this Executive Order.

Marketing of the CombiKat® CBS Particulate Trap 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 approval is obtained from ARB.

As specified in the Diesel Emission Control Strategy Verification Procedure (Title 13 CCR section 2706 (g)), ARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is:

CA/MES/2005/PM3+/N00/ST/DPF01.

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, Miratech Emissions Solutions is responsible for honoring their warranty (California Code of Regulations (CCR), Title 13, section 2707) and conducting in-use compliance testing (section 2709).

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

Systems verified under this Executive Order shall conform to all applicable California emissions regulations. This Executive Order does not release Miratech Emissions Solutions from complying with all other applicable regulations.

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

Executive Order DE-05-006-07 is hereby superseded and is of no further force and effect.

Executed at Sacramento, California, this 27th day of July 2016.

Richard W. Corey
Executive Officer
by

Cynthia Marvin, Chief
Transportation and Toxics Division

Attachment 1
Attachment 2