



# Air Resources Board



**Matthew Rodriguez**  
Secretary for  
Environmental Protection

**Mary D. Nichols, Chairman**  
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**Edmund G. Brown Jr.**  
Governor

July 23, 2014

Mr. Daniel Piché  
Product Development Engineer  
MIRATECH  
420 South 145th East Avenue  
Mail Drop A  
Tulsa, Oklahoma 74108-1305

Dear Mr. Piché:

Using the *Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines*, California Code of Regulations (CCR), title 13, sections 2700 through 2711, (Procedure), the Air Resources Board (ARB) has reviewed the Miratech Group, LLC's (MIRATECH) application for the verification of the Low Temperature Regeneration Diesel Oxidation Catalyst/Diesel Particulate Filter (MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF) titled, "MIRATECH CARB Final Verification Application for the LTR<sup>™</sup> DOC/DPF," dated June 27, 2014. Based on the evaluation of the data provided, and pursuant to the terms and conditions specified below, ARB hereby finds that the MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater or equal to 85 percent PM reduction) (CCR, title 13, sections 2702 (f) and 2708)) and complies with the ARB January 1, 2009, nitrogen dioxide (NO<sub>2</sub>) limit (CCR, title 13, section 2702 (f) and section 2706 (a)), allowing the Plus designation.

ARB also finds that the MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF satisfactorily completed the 500 hours of durability demonstration required for stationary emergency standby generator verification with associated emissions tests. Accordingly, ARB determines that the system merits verification and, subject to the terms and conditions specified below and in the associated Executive Order (EO DE-14-005), classifies the MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF as a Level 3 Plus system for stationary emergency standby generator applications powered by certified Tier 3, 2, or 1, off-road diesel engines. The Executive Order for the MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF, which includes a list of applicable engine families for which the MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF is verified, the verified parts list, and verification labels, is attached. This information and additional verification information can be found at <http://www.arb.ca.gov/diesel/verdev/vt/stationary.htm>.

*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 aforementioned verification is subject to the terms and conditions found in EO DE-14-005 and summarized below.

<b>Summary of Conditions for the MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF System</b>	
<b>Parameter</b>	<b>Value</b>
Application	Stationary Emergency Power Generation
Size Range	Diesel engines rated greater than or equal to 50 hp
Engine Type	Diesel, with or without turbocharger, without EGR, Tier 1, Tier 2, or Tier 3 certified to 0.22 g/bhp-hr or less of PM.
Minimum Exhaust Temperature for Filter Regeneration	260° Celsius / 500° Fahrenheit. At 550° Fahrenheit, regeneration takes approximately 45 minutes.
Maximum Consecutive Minutes Operating Below Passive Regeneration Temperature	720 Minutes
Number of Cold Start and 40 Minute Idle Sessions before Regeneration Required	18
Number of Hours of Operation Before Cleaning of Filter Required	Application Specific. 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 CCR, title 13, sections 2281 and 2282, and the blend contains no more than 20% biodiesel by volume
PM Verification Level	Level 3 Plus Verification: PM – at least 85% reduction NO2 – meets January 2009 limit

Since there may be significant variations from application to application, MIRATECH must review actual operating conditions (duty cycle, baseline emissions, exhaust temperature profiles, engine backpressure, and ensure the engine does not consume lubricating oil at a rate greater than that specified by the engine manufacturer, and other pre-installation compatibility assessments as required in section 2706(t) of title 13, of the CCR) prior to retrofitting an engine with a MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF to ensure compatibility. MIRATECH must ensure that the installation of the MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF system conforms to all applicable industrial safety requirements. The

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product must not be used with any other systems or engine modifications without ARB and manufacturer approval.

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

**CA/MES/2014/PM3+/N00/ST/DPF01**

This designated family name must be used in reference to this verification as part of the system labeling requirement. Labels attached to the MIRATECH<sup>®</sup> LTR<sup>™</sup> DOC/DPF and the engine must be identical.

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, MIRATECH is responsible for honoring the record keeping requirements (CCR, title 13, section 2702), their warranty (CCR, title 13, section 2707), conducting in-use compliance testing (CCR, title 13, section 2709), and complying with the system labeling requirements (CCR, title 13, section 2706 (j)).

Violation of any of the above conditions or conditions found in EO DE-14-005 shall be grounds for revocation of this verification and Executive Order.

Thank you for participating in ARB's diesel emission control strategy verification program. Should you have any questions or comments, please contact Mr. John Lee, Air Resources Engineer, at (916) 327-5975.

Sincerely,



Cynthia Marvin, Chief  
Transportation and Toxics Division

Attachment

cc: John Lee  
Air Resources Engineer  
Control Strategies Section

