

Filter Technology Australia Pty Ltd (FTA) commissioned Maitland Diesel Service (MDS) of Maitland New South Wales to conduct a study of exhaust emissions. The engine selected to be tested was a 1993 Detroit Series 60 DDEC III mounted on a chassis dyno both with and without FTA fuel and oil systems on diesel fuel and biodiesel 20% fuel. This engine had just undergone a rebuild.

The engine was run to establish base lines on diesel fuel and biodiesel 20% fuel. Baseline testing measured gas emissions, which included carbon monoxide (CO), carbon dioxide (CO₂), nitric oxide (NO_x) and opacity (OPA).

Fuel used was Mobil diesel and contained 1800ppm sulphur.

Three load segments would be simulated:

Full Horsepower (HP)	2100rpm
Half Horsepower	2100rpm
Full Torque	1200rpm

The test would be repeated after installing FTA filtration systems to both fuel and engine oil.



Detroit Series 60 DDEC III engine on test bed

*Diesel		
Reduced CO by		29.3%
Reduced CO ₂ by		27.9%
Reduced NO _x by		30.6%
Reduced Opacity		19.3%
Increased HP by (14HP)		2.8%
Increased Torque by (31ft lbs)		2.0%

*average of all three tests

*Bio-Diesel		
Reduced CO by		45.7%
Reduced CO ₂ by		22.5%
Reduced NO _x by		27.0%
Reduced Opacity		1.6%
Increased HP by (14HP)		1.6%
Increased Torque by (31ft lbs)		2.1%

*average of all three tests

conclusions

Lower emissions were reported with the fitment of FTA's filtration systems and reductions were recorded across all test parameters.

Reductions of emissions are of benefit to the whole community and the environment.

After installing Filter Technology Australia oil and fuel filters to a rebuilt engine, these tests have demonstrated that engines can remain operational while meeting the environmental legislative requirements.