

PC-11 SIMPLIFIED

DELIVERING THE NEXT GENERATION OF HEAVY DUTY ENGINE OILS.

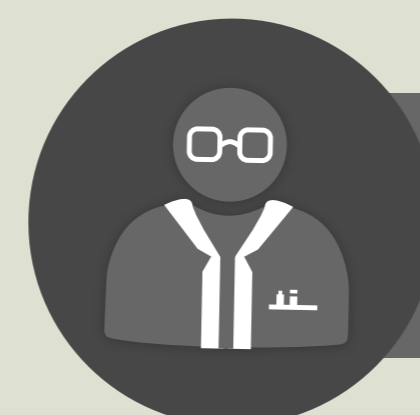
WHY A NEW DIESEL ENGINE OIL CATEGORY?



REGULATORS SET MORE STRICT GREENHOUSE GAS EMISSIONS LIMITS.



ENGINE MANUFACTURERS MUST MAKE CLEANER MORE FUEL EFFICIENT DIESEL ENGINES.



OIL ENGINEERS MUST MAKE NEW OILS FOR THESE NEW ENGINES. VOILÀ! PC-11.

DUE DECEMBER 2016!



1990 1995 1998 2002 2006 **2016** 2017



FLEET OWNER



DIESEL PICKUP TRUCKS



OWNER / OPERATOR



OFF-HIGHWAY VEHICLES

OUR PC-11 OILS HAVE ACCUMULATED

25,000,000

MILLION MILES

OF ON-HIGHWAY TESTING OF LOW-VISCOSITY AND PC-11 PROTOTYPE OILS



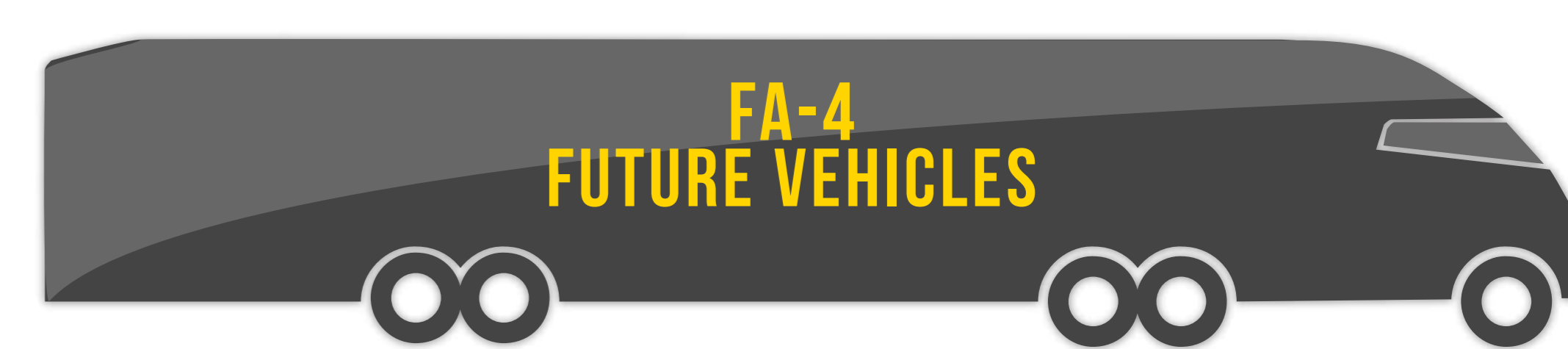
THAT'S ENOUGH TESTING TO TRAVEL EVERY ROAD IN THE UNITED STATES 6.25 TIMES.

Source: dot.gov



A DIRECT REPLACEMENT TO THE ENGINE OILS YOU ARE USING NOW AND WILL BE "BACKWARDS COMPATIBLE"

PC-11 WILL HAVE 2 CATEGORIES



OFFERED IN LOWER VISCOSITY GRADES FOR NEXT GENERATION ENGINES TO HELP MAXIMIZE FUEL ECONOMY.

OUR BIGGEST INVESTMENT YET

9 FIRED ENGINE TESTS EACH PC-11 — OIL MUST PASS —

\$ 1.3 MILLION SPENT PER PC-11 TEST

NEARLY **2X** THE AMOUNT SPENT FOR EACH TEST DURING CJ-4 OILS

32,400 HRS SHELL SCIENTISTS SPENT DEVELOPING PC-11 OILS

TWICE AS MANY HOURS AS IT TOOK TO BUILD THE EIFFEL TOWER

Source: history.com



PROPOSED CATEGORY 11 WILL DELIVER IMPROVEMENTS IN:

AERATION CONTROL

HELPS PREVENT BUBBLES WITHIN OIL FOR SUSTAINED WEAR PROTECTION



FUEL ECONOMY

\$2.5 MILLION PER DAY*

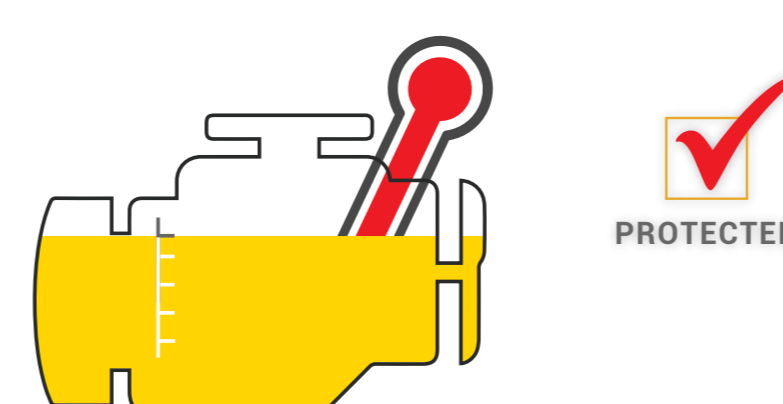
HOW MUCH MONEY NORTH AMERICAN TRANSPORT COULD SAVE WITH A 1% IMPROVEMENT IN FUEL ECONOMY
*Assuming Diesel at \$2.50/gal

4 MILLION TONS OF CO₂ SAVED/YEAR WITH 1% FUEL ECONOMY IMPROVEMENT

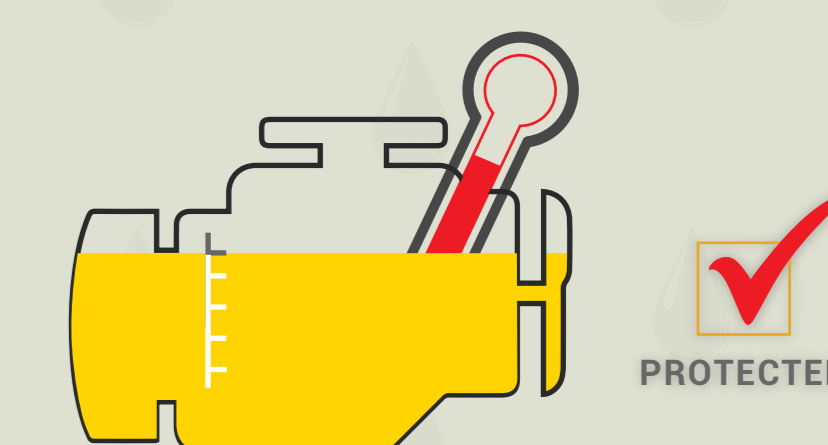
ENOUGH TO FILL ABOUT **79** FOOTBALL STADIUMS
Source: architecture.about.com

OXIDATION STABILITY

RETAINS KEY OIL PROPERTIES IN HOTTER ENGINE CONDITIONS



PROPOSED CATEGORY 11 OILS ARE DESIGNED TO PROTECT NEWER, HOTTER RUNNING ENGINES WITHOUT ANY SACRIFICE IN WEAR PROTECTION.



OLDER ENGINE TEMPERATURES



NEWER ENGINE TEMPERATURES

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