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# Mack PC 10 Engine Test Update

November 11, 2004



- Mack T-12

- Ring, Liner, Rod Bearing Wear / Corrosive Wear / Oxidation / OC

- Based on Mack T10 & Mack T11

- With ULSD Fuel

- Length - ~ 300 Hours

- Two Phase Test

- Phase 1 100 hr ( 4.0 % Soot )

- Phase 2 200 hr ( EOT of 6 % Soot )

- Phase 2 260 F Oil Temp

- Increased EGR Flow (Heavy EGR)  
(35% Phase 1 – 15-20% Phase 2)

- Precision Matrix Required



**•Hardware ( External )**

- Same as T10 Except – VGT Turbo replaces small T10 Turbo  
Two Production EGR Coolers ( Breadboard ) Replaces Tube Cooler  
EGR on/off Valve**

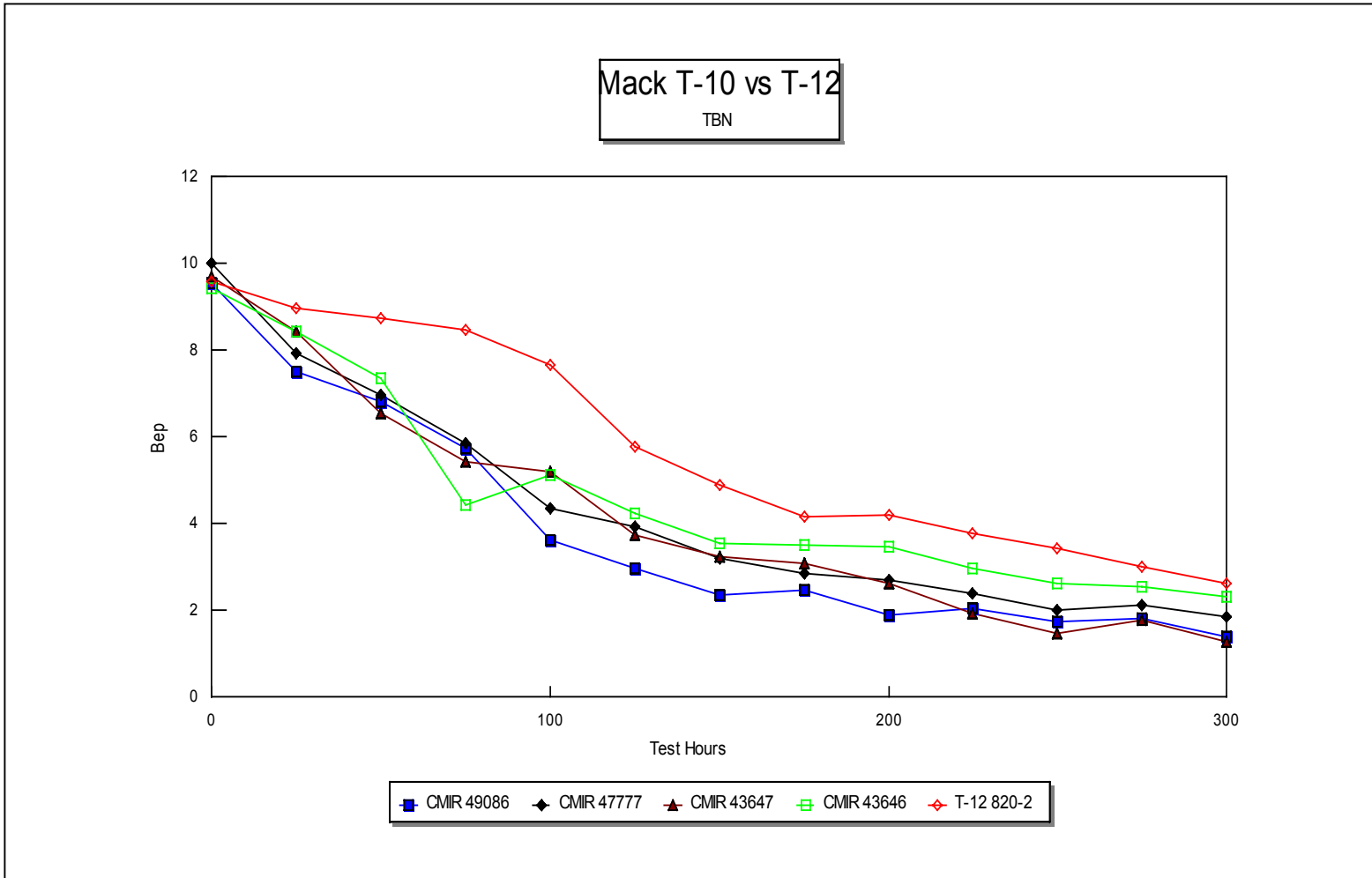
**Hardware ( Internal )**

**T11 Power Cylinder ( T10 Top Ring ) & T11 Heads  
New Nozzles & Spray Angle**

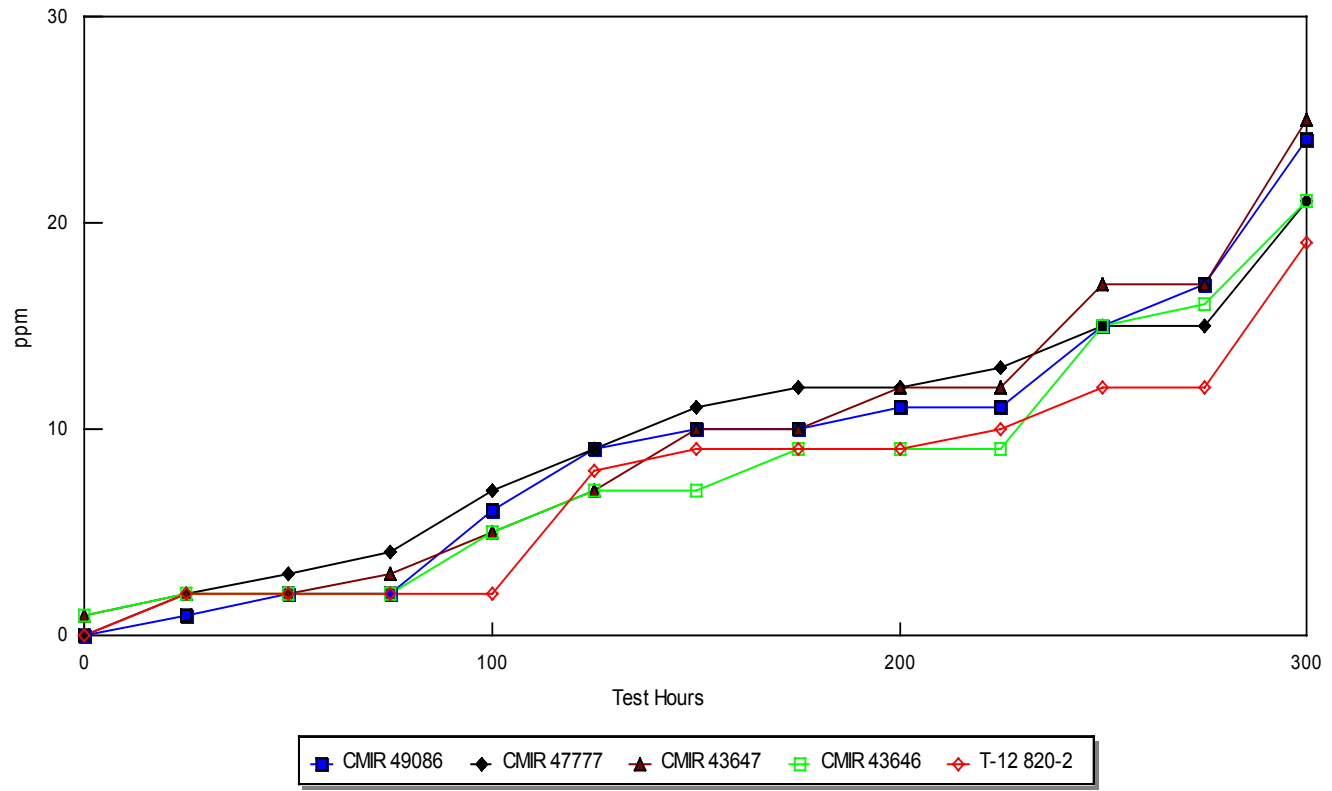
**– T12 Conversion Kits Sent to Labs**

- T12 TASK FORCE – Numerous Teleconferences, Oct 20 Mtg in San Antonio –  
Next Meeting Nov 22<sup>nd</sup> @ ExxonMobil**
- Draft Procedure # 2 Now Available, T12 Parts List Completed**
- Completed Test on 820-2 ( T10 Ref Oil ) , 2<sup>nd</sup> Test to Complete Mid November**

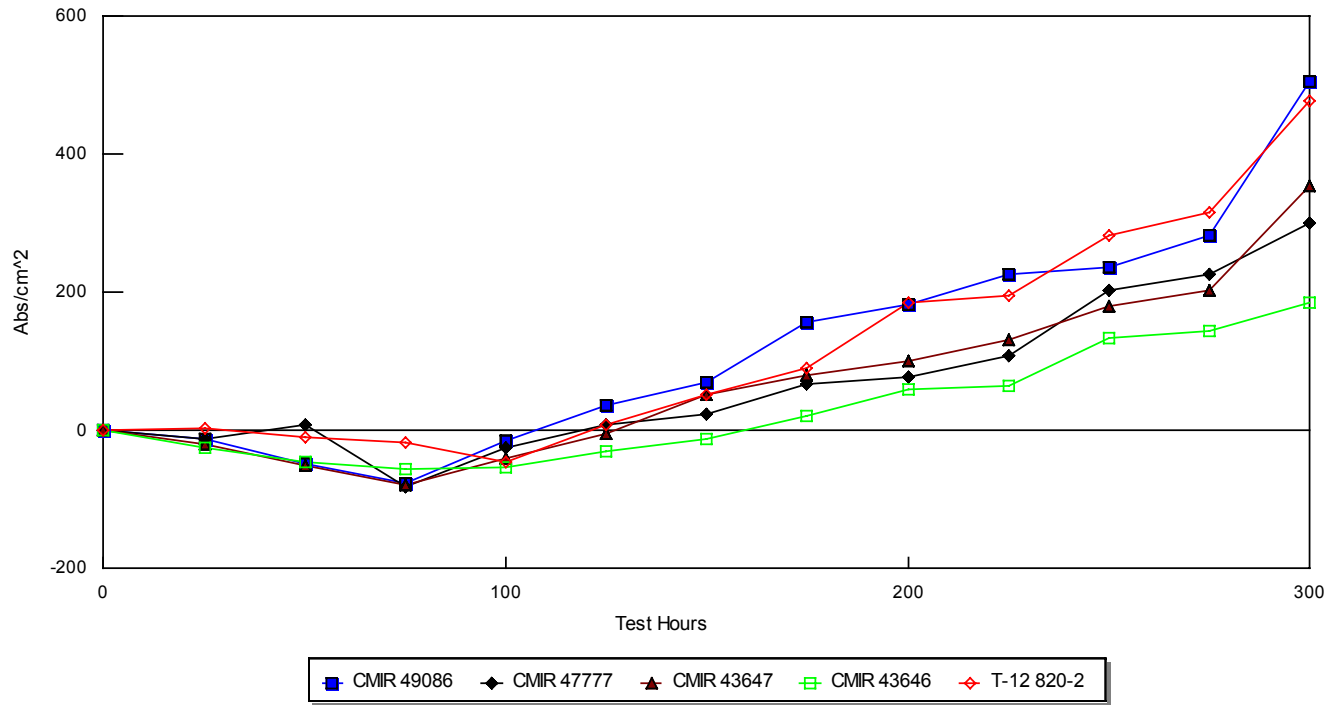




### Mack T-10 vs T-12 Used Oil Lead

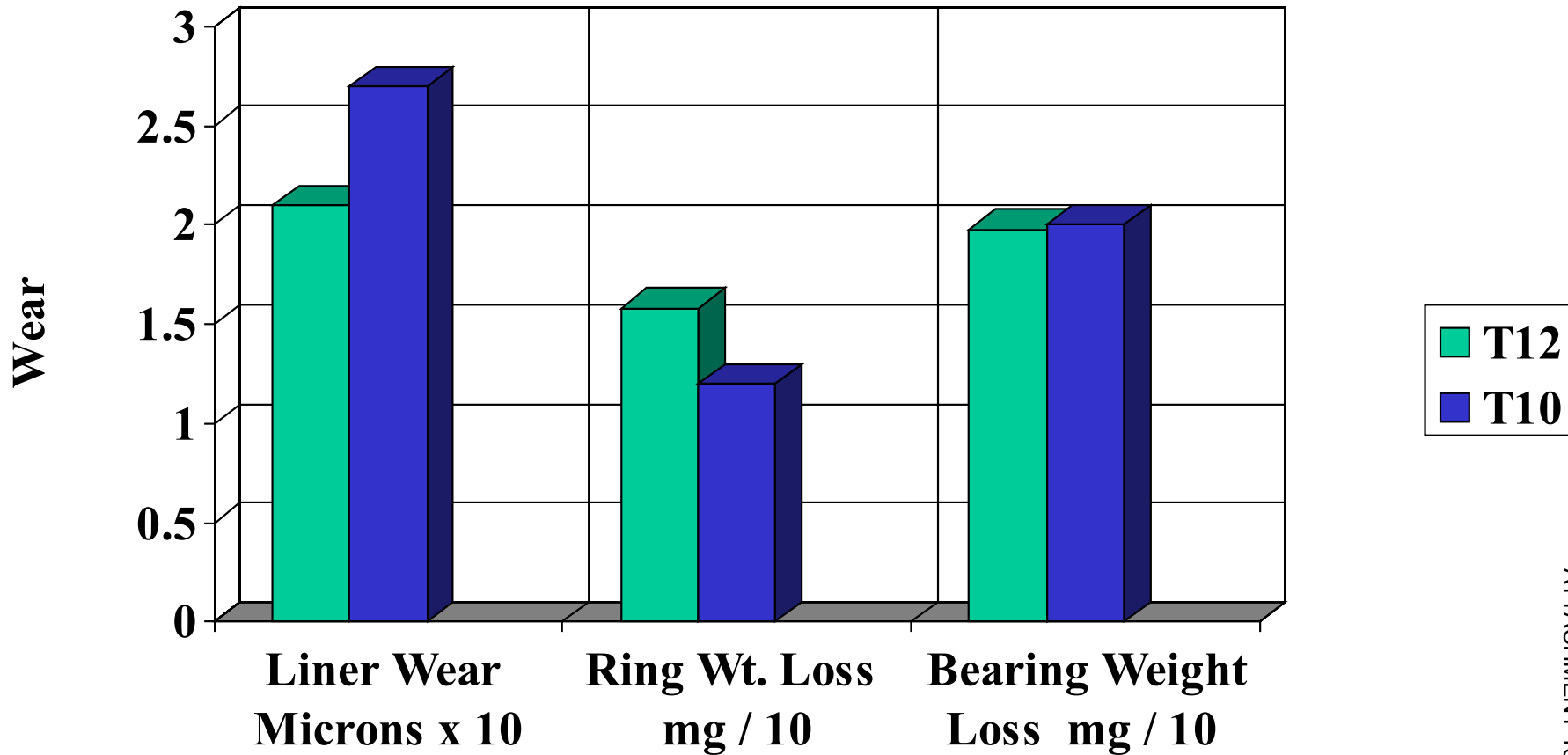


### Mack T-10 vs T-12 Oxidation FTIR Area



# Wear T12 vs T10

820-2 Ref Oil



GLS Nov 11<sup>th</sup> 04



Mack Powertrain Division

## T12 PC10 Engine Oil Test Development Schedule

	July	August	September	October	November	December
EGR Mapping	█	█				
Soot Mapping		█	█			
TBN Depletion Mapping			█			
Run Demonstration Test				█	█	
Run Discrimination Test						█
Deliver Draft Procedure				█	█	
Deliver Procedure for Matrix Testing						█

