

Comments on proposed tests for D3945 XX  
injector ring test for PC 7

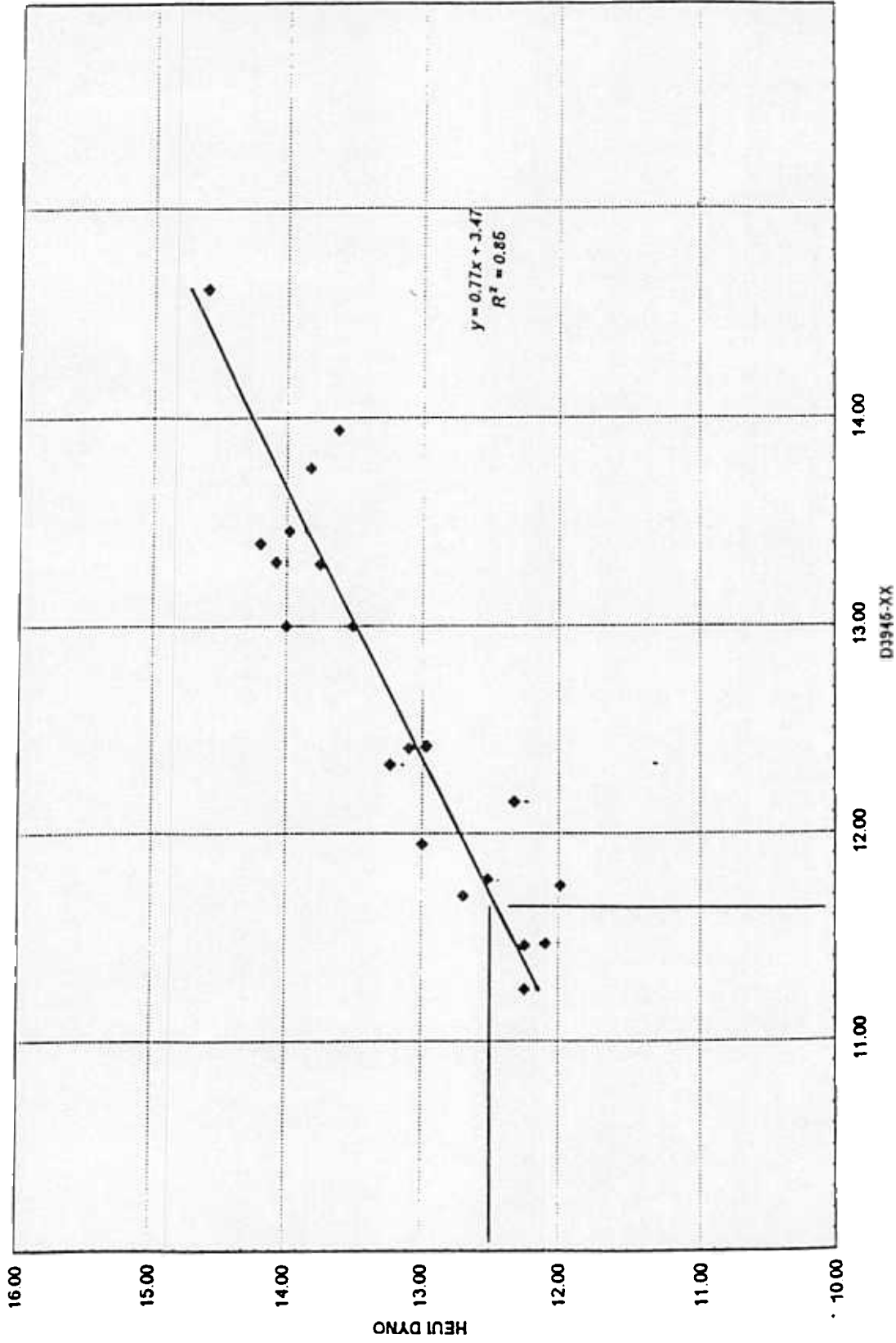
Presented to the HDEOCP

June 24 1997

Pat Fetterman

GF

SHEARED KV: HEUI DYNO - D3345-X

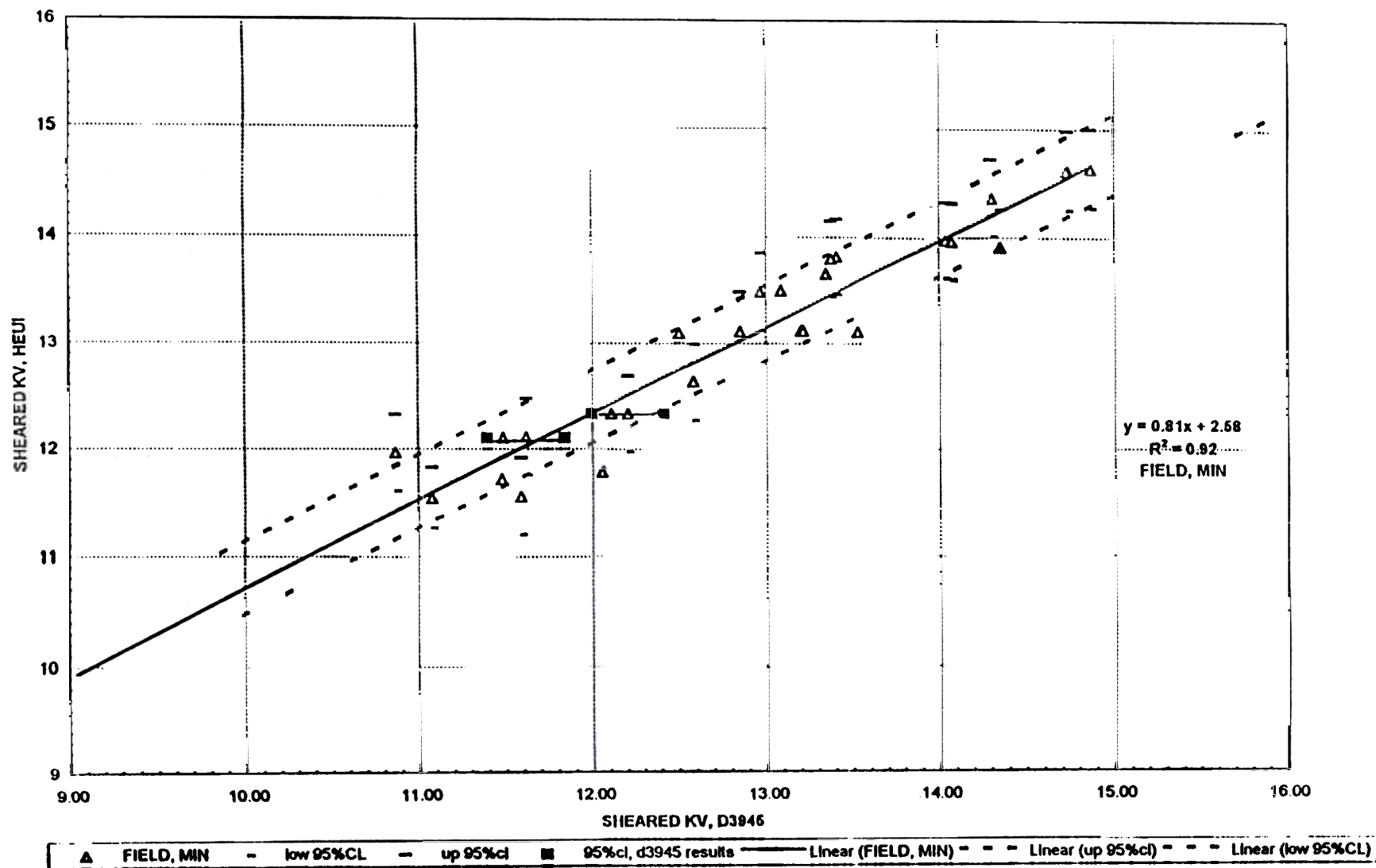


11

3/5/97 9:20 AM

EXCLUDES TF RR DATA

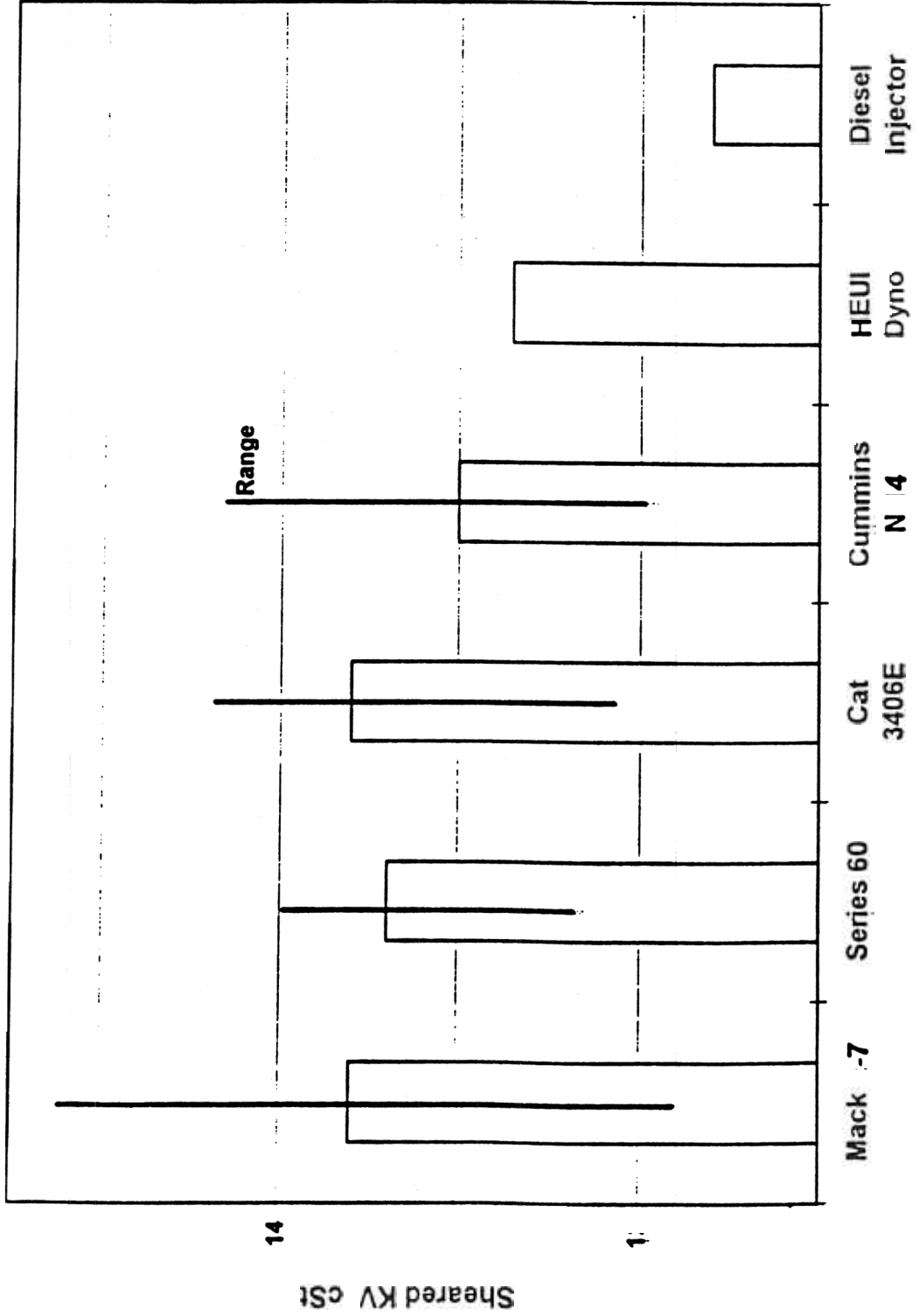
HEUI FIELD (MIN) - D3945 CORRELATIONS  
WITH 95%CL LIMIT



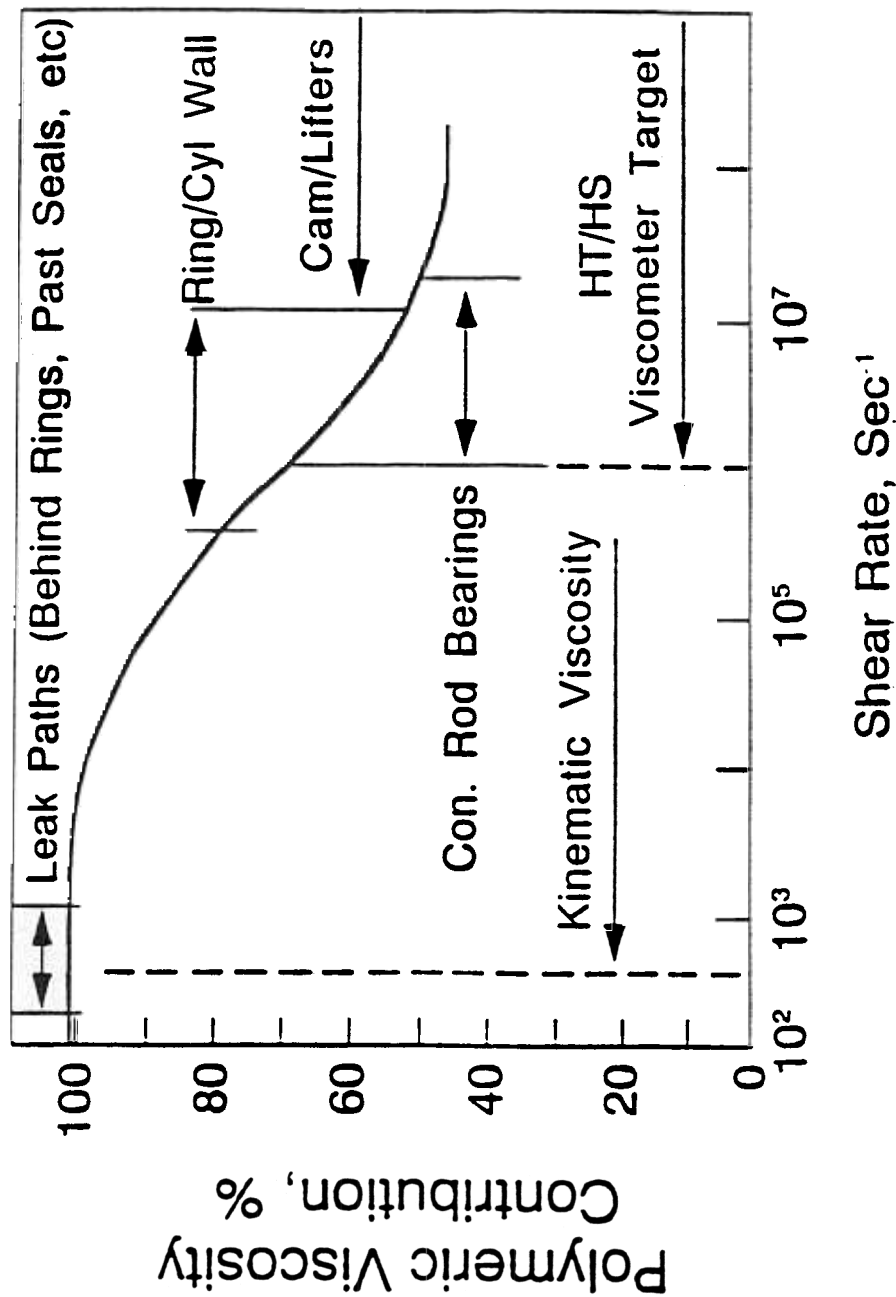
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ATTACHMENT 3  
Pg. 21

hear Breakdown of 15W-40 O in Field vs HEUI Dyno and Diesel nj Tests



# SHEAR RATES IN VARIOUS ENGINE REGIMES

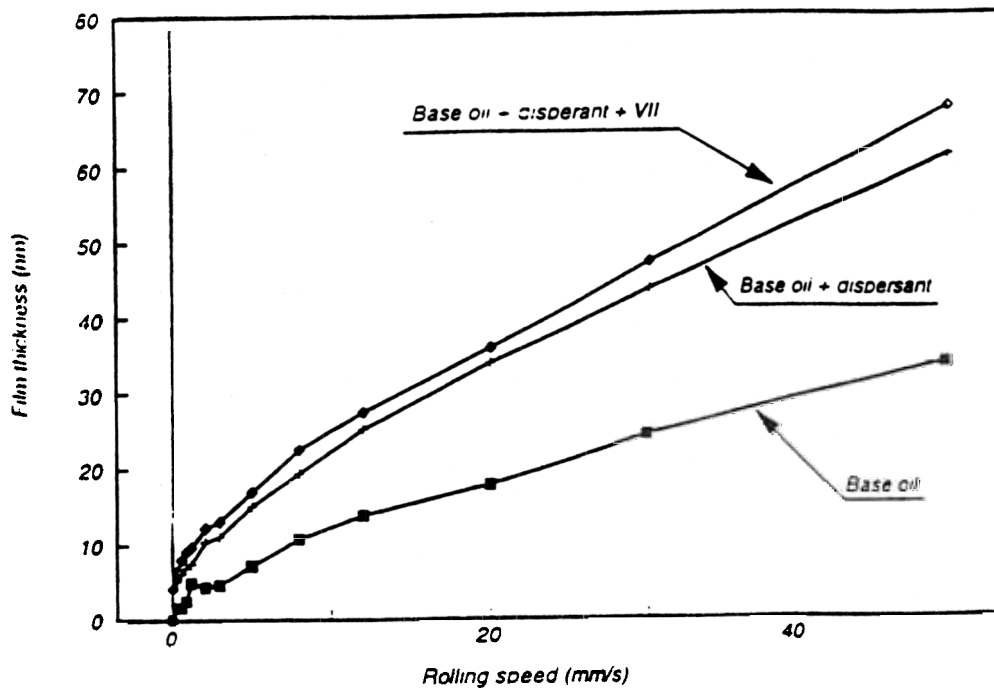


# **FACTORS AFFECTING HT/HS VISCOSITY**

- **Viscosity Modifier (V.M.) Chemistry**
- **Viscosity Modifier Molecular Weight**
- **Base Stock Viscosity Index**

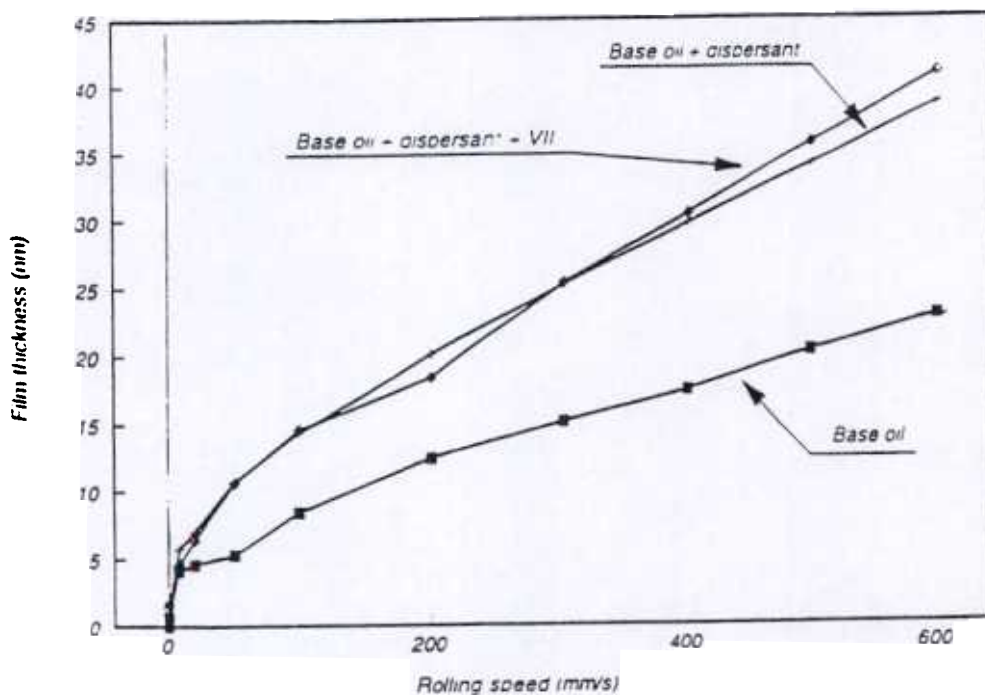
**Fig 21. EFFECT OF CONSTITUENTS ON OFT**

Studies completed at 30 degs C



**EFFECT OF CONSTITUENTS ON OFT**

Studies completed at 100 degs C



Effect

## Summary of key technical points

- Minimum oil film thickness at engine working surfaces is not related to KV100 for non-Newtonian fluids
  - HTHS for bearings, rings, liners
- Basestock plus Newtonian D.I. components for E.P.
- Engine wear is also controlled by D.I. technology
- PC-7 oils must pass wear tests to qualify
  - Mack T-9
  - Cummins M11
  - RFWT



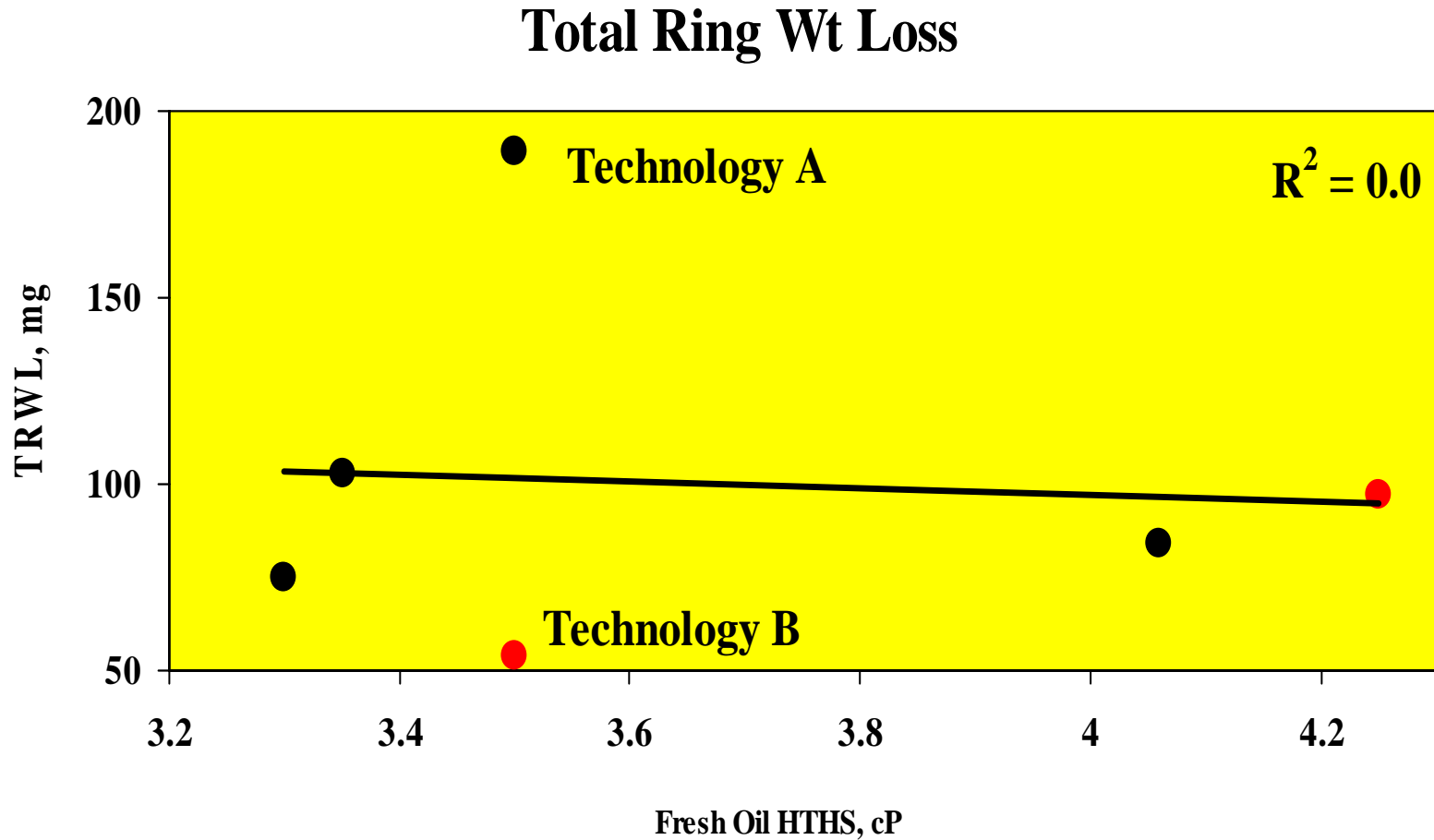
## Summary of key technical points (cont.)

- Dyno wear tests show little or no response to viscosity changes as great as 15W-40 to 10W-30
- Field test data show no advantage for S.I.G. performance at KV100

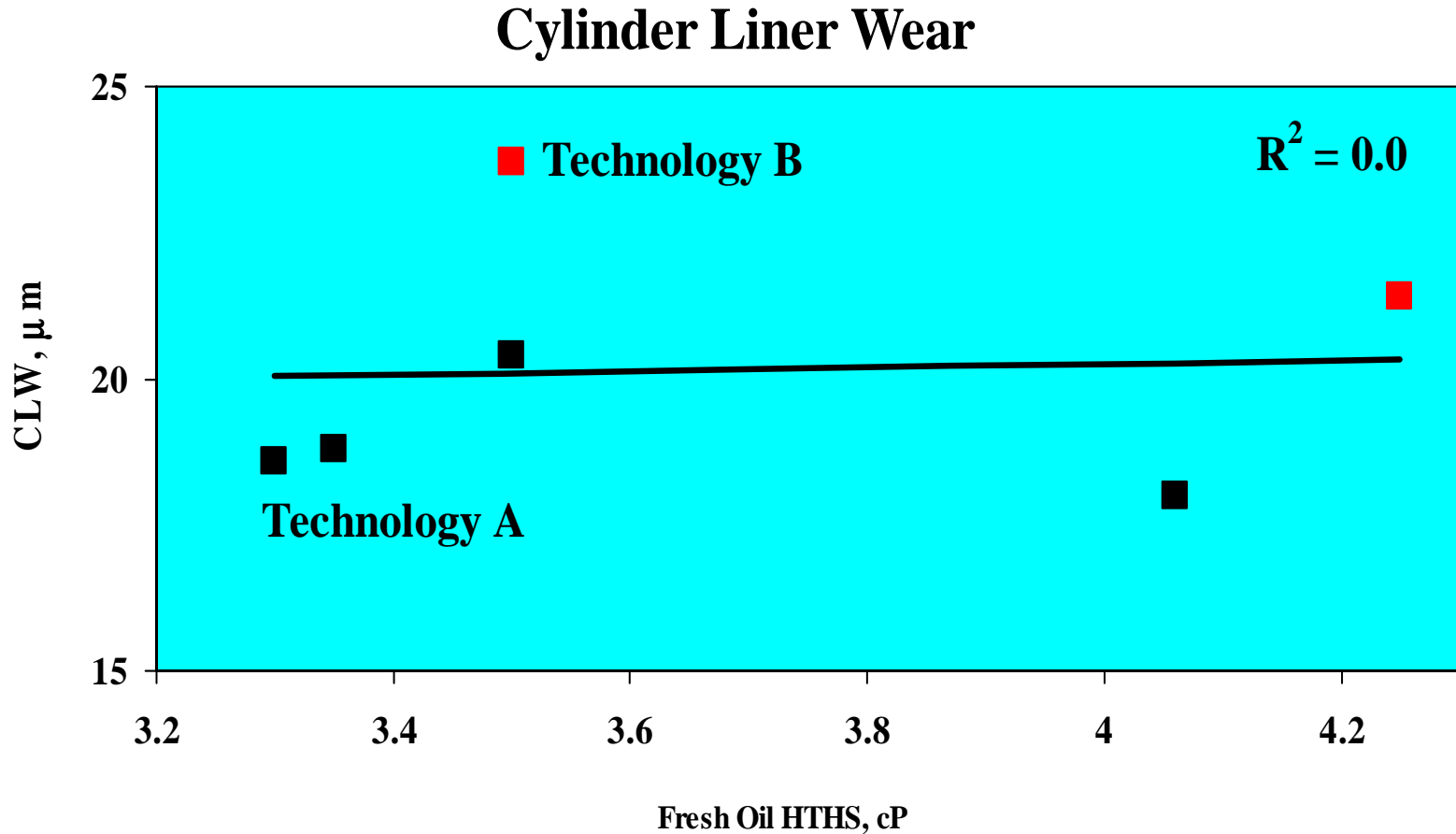
However field oils should remain in grade most of the time for field “cosmetics”

- HEUI is slightly more severe than most truck on-highway truck engines
  - HUEI S.I.G. correlates to 12.0 in 30 pass injector rig
  - 12.0 also roughly correlates to 3.7 HTHS w/50 SSI VM

# Mack T-9 Performance versus HTHS



# Mack T-9 Performance versus HTHS



# Mack T-9 Performance versus HTHS

