

October 29, 1999

Reply to: Wim van Dam
Chevron Chemical Co.
Oronite Additives
100 Chevron Way (60-1214)
Richmond CA 94802
Phone (510) 242-1404
Fax (510) 242-3173
E-mail : WVDA@CHEVRON.COM

ASTM Mack Surveillance Panel Members,

Please find attached the unconfirmed minutes of the Mack Surveillance Panel meeting held on September 9 in Richmond, Virginia. Please let me know if you have any questions about the minutes.

Best Regards,

Wim van Dam.

UNCONFIRMED MINUTES OF THE ASTM MACK SURVEILLANCE PANEL MEETING

**Richmond, Virginia
September 9, 1999**

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1. Call to Order

1.1. The Mack surveillance panel was called to order at 1:00 pm on September 9, 1999. The agenda is shown as attachment 1. The attendance list is shown as attachment 2.

2. Membership

2.1. No changes in membership were reported

3. Approval of Minutes from the previous meetings

3.1. The minutes of the meeting on June 21, 1999 were approved without further comments.

4. Scope and Objectives (Charlie Passut, attachment 3)

4.1. The chairman presented the scope and objectives for the Mack surveillance panel, see attachment 3. No changes were made since the last meeting in June.

5. TMC Report (Jeff Clark, attachment 4)

5.1. Jeff Clark gave his report over the October 1999 reporting period. No Mack T-9 reference tests have been reported. 6 Mack T-8 / T-8E tests have been run. One of these failed statistically. The test was mild on Viscosity Increase @ 3.8% soot. The remaining 5 tests were all aborted; 3 for the soot % being outside of the window, 1 for an improperly torqued injection pump and the last one because of an oil leakage.

5.2. The one T-8 test that was a statistical fail caused an EWMA warning limit. There was some discussion about whether or not a change in reference oil batch could explain the mild trend. Taking a closer look at the CUSUM chart showed that the mild trend started a long time ago in 1995. This was before the introduction of TMC 1004/3. Another explanation that was offered for the mild trend is that

laboratories, with the introduction of the Mack T-8E test, started targeting slightly higher soot levels.

5.3. A liner wear measurement round robin, held in 1998, resulted in calibration of two Taylor-Hobson talysurf devices. The PDI Microanalyzers were not calibrated in 1998. A second round robin, held in 1999, confirmed that the talysurf instruments, which are being used as the standard, were still in compliance. In addition, two of the five PDI instruments calibrated.

5.4. In the process of analysing the liner wear data from the 2 talysurf and 5 PDI devices it became apparent that there is a bias between the two instrument types. The PDIs are consistently milder than the talysurf devices, a difference that is more evident for low wear levels than for high wear levels. For “passing wear levels”, the difference can be as big as 1 micrometer.

5.5. An evaluation of the liner wear measurements per measurement location revealed that the talysurf instruments gave poorer precision for the low wear positions. The precision was poor due to the fact that in some cases the wear was based on the depth of a scratch in the liner surface and not the wear step itself. The measurement procedure offers a way to eliminate these scratches from the wear measurement but this was not done for the round robin measurements. One of the difficulties might be that the scratches the software uses to compute wear are not always visible in the plot of the wear trace.

5.6. The conclusion from the round robin data is that perhaps the PDI data was milder than talysurf data due to operator errors in the talysurf measurements. If the talysurf measurements had been done correctly, the wear results on average would have been lower, and the bias between the two instrument types could be reduced or eliminated, resulting in the calibration of all participating devices.

5.7. Jeff Clark accepted an action item to talk with the operators to find out why the procedure was not followed correctly. The measurement traces from the talysurf devices will be re-evaluated to find the correct wear data. If necessary, the reference cylinder liners will have to be remeasured with the talysurf devices to come up with a correct dataset.

5.8. It was suggested that for the talysurf measurements it might be possible to apply an electronic filtering of the signal which could reduce the chance of operator error. This option will be discussed with the operators.

5.9. A motion to accept Jeff Clark’s TMC report was accepted by the panel.

6. CPD Report (Gary Tietze, Attachment 5)

6.1. The new top piston rings are now in all kits available from TEI. All old style rings have been sent back to Mack and TEI received a credit for the returned rings.

6.2. TEI is exploring the option of shipping the kits as a set of separate parts rather than built together. The rationale for this is that TEI puts the kits together and the laboratories take them apart for measurements before building up the engine.

6.3. A motion to accept the CPD report was accepted by the panel.

7. Rotational Viscosity Measurement (Attachment 6)

7.1. Dino Righi, on behalf of Herman George, gave an update on the status of the rotational viscosity measurement Task Force. The results of the preliminary round robin are available and have been analysed. Based on this work, some modifications to the method have been developed and a second round robin is underway. The results of this second round robin will be available by the end of 1999.

8. Old / New Business

8.1. Jeff Clark informed the panel that the Mack T-9 test procedure will be submitted for the December 1999 D2 ballot.

9. Next Meeting

9.1 The next meeting will be held on December 6, 1999 in Reno, CA.