HEAVY-DUTY ENGINE OIL CLASSIFICATION PANEL

OF

ASTM D02.B0.02

June 17, 2008

Hyatt Regency Vancouver – Vancouver, British Columbia

ACTION ITEMS

1. Form Bio Compatibility Bench Test and Oil Analysis Test Task Forces **Joe Franklin**

MINUTES

1.0 Call to order

1.1 The Heavy Duty Engine Oil Classification Panel (HDEOCP) was called to order by Chairman Jim McGeehan at 10:30 a.m. on Tuesday, June 17, 2008, in the Plaza B Room of the Hyatt Regency Vancouver, Vancouver, British Columbia.

1.2 There were 14 members present and 53 guests present. The attendance list is shown as Attachment **2.**

2.0 Agenda

2.1 The agenda was reviewed. A status report for the 6V92TA test was added to the agenda. (included as Attachment **1**)

3.0 Minutes

3.1 The minutes from December 4, 2007 were approved as written.

4.0 Membership

4.1 There were 2 membership changes: Brad Carter replaces Bill Kleiser at Oronite. Dave Duncan replaced Lew Williams for Lubrizol. See Attachment **3**.

5.0 Bio Diesel Testing Report

5.1 Dave Stehouwer presented the results of the B20 tests that the EMA and the NBB sponsored. See Attachment **4**. The tests conducted were: Mack T-12, Caterpillar C13, and Cummins ISB.

5.2 The C13 had 2 cold stuck second rings. That may not be ordinary and will need to be monitored.

5.3 The T12 test had the Stage 2 fuel flow setpoint raised to keep the engine load and resulting cylinder pressure equivalent to PC-10 fueled tests. The EOT Lead and 250 – 300 hour lead were severe outside of the reference acceptance bands.

5.4 In all 3 tests, the TAN increase was higher for the B20 runs than historical, but the TBN stayed about the same. The wear data were all within acceptable limits. The T12 had higher oxidation and lead corrosion. Non-rated sludge parts appeared clean and free of sludge. High fuel dilution conditions were not represented in this testing.

5.5 The T-12 upper rod bearing weight loss data was not included. It will be made available. The GC fuel dilution measurement was less than 0.10%; effectively zero. There are no standardized, diesel lubricant tests that yield fuel dilution. There are driving cycles that would yield fuel dilution. Other non-standard testing has been performed where fuel has been added to the crankcase.

5.6 The NBB and the EMA will meet to discuss options for further testing. Additional testing will be prioritized.

6.0 EMA Summary of the Bio Tests

6.1 Greg Shank presented EMA's thoughts on the bio tests. See Attachment **5a**. The T-12 result correlates very well with field data on other manufacturer's engines. The lead in the oil may suggest a drain interval reduction. At B100, piston deposits are higher. The higher TAN is indicative of something changing chemically. Post injection testing or bio spiking of the engine oil are areas for further investigation.

6.2 The EMA recommendations are: Form a Bio Compatibility Bench Test Task Force to look at Oxidation, TAN, Corrosion, Fuel Dilution and an Oil Analysis Test Development Task Force Methods – Bio – Used Oil Analysis. Greg's recommendation is for Joe Franklin to chair both task forces. Joe prefers to send an email to solicit members. A bench test is the quickest way to verify the effects. A modified engine test would be considered a new engine test.

7.0 EMA Report

7.1 Greg continued with the EMA report. See Attachment **5b**. No CJ-4 field data has been submitted to the EMA. Currently, the chemical limits are OK, even for 2010. Additional Performance Requirements Considered: Oxidation is still a concern. The EMA would like to see CJ-4 oils runs in the ROBO. Sump temps are rising. TBN depletion slope is different. Shear stability is unacceptable at lower soot or in today's engines. Aeration control: the test may not discriminate as well as it had in the past. Turbo deposits: Experience with CCV is increasing. Still looking at Turbo Deposit test development in Europe. Fuel Economy is a big issue, not willing to reduce HTHS below 3.5. Suggest forming a task group and bring data to the group. The shear stability shows that the oils fall out of grade, but no wear issues to date. The EMA will still review test redundancy for the next category. When it was first investigated, there were too many new variables.

7.2 ACEA E9 will include the T-11 in place of the T-8.

7.3 Turbo Deposit Test will not be available for the ACEA E9 category.

8.0 HDMO oil category

8.1 Steve Kennedy reviewed API action on older categories. See Attachment **6**. CF-4 expires in July 2008. A ballot will be issued to terminate licensing CG-4 and promote CH-4. The long term viability of CF is being considered. EMA recommends terminating CF licenses. No consensus in API LC; DEOAP to evaluate options. CF is tied to some other products. EMA supports CF-2, but test availability may drive action. The Surveillance Panel has targeted to have a long term plan by December ASTM. One possibility is to separate CF-2 from the MIL spec.

9.0 6V92 availability

9.1 Patrick Lai discussed the status of the 6V92TA 2 cycle diesel engine test. See attachment **7**. There has only been one test stand at one test laboratory with very little activity. A business decision has been made to remove that stand. If an announcement of another stand becoming available, then the category could be in a "provisional" status. Confirmed long term unavailability would make CF-2 obsolete. This test is needed for the MIL spec.

Additionally, there is a corporate test sponsor change from DDC to MTU. Some laboratories are considering establishment of a test stand, but this will take a few months.

9.2 Currently, the 6V92TA is temporarily unavailable. There are no physical constraints to conduct the test procedure. The API stated that if there is no resolution by December, the API will have to ask for a letter from ASTM to cease licensing.

10.0 Next meetings

10.1 The next meeting will be at the call of the chairman.

11.0 The meeting was adjourned at 11:45 am.