

# MACK-Volvo Surveillance Panel Meeting Notes

## 08/01/2023 @ 2:00 PM EST

### Attendees

SwRI: Robert Warden, Travis Kostan, Jose Starling, Isaac Leer  
Oronite: Josephine Martinez, David Lee  
Afton: Joseph Hoehn, Bob Campbell  
Infineum: David Brass (Chairman), Elisa Santos, Jacob Goodale, Todd Dvorak  
Intertek: Garrett White (Secretary), Andrew Smith, Juan Vega  
Lubrizol: Austin Brininger  
CP Chem:  
Haltermann:  
Exxon Mobil: Paul Rubas, Steve Jetter  
TMC: Sean Moyer  
TEI: Derek Grosch  
Ford:  
Volvo:

### Agenda

1. Reference Oil for MACK T-11 Replacement Test
2. MACK T-11 Replacement Procedure
3. Reference Oils for Volvo T-13
4. MACK T-12 Coordinated Reference Status
5. All Other Business

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### *Action Items and Key Points*

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- NCDT looking to replace the T-11 with an ISB viscosity increase test which is currently in the early stages of trial and development.
- T-13 reached an industry Zi action limit alarm after a test completed by lab G on batch C liners and oil 823-1.
- MACK/Volvo members reached a consensus that a new reference oil is recommended for PC-12 due to the new proposed limits for IRPH and KV40%.
- Lab G completed their reference on the new batch of hardware for the T-12. Other labs to report their data the same week as this meeting.
- Statisticians were asked to review the T-12 coordinated reference data once it has been reported to the TMC and to also finalize their recommendations on how to address the T-13 ICF/target changes before the next panel meeting.

## Summary of Discussion

### MACK T-11 Replacement Test

- NCDT looking to replace the T-11 with the ISB viscosity increase test.
- A new reference oil similar to the performance of the T-11 reference oil has been requested for use in the replacement test.
- Testing performed in the ISB with the current T-11 reference oil showed similar correlation between soot and viscosity growth as seen in the T-11 references.
- Bob Campbell – Concerned about the exponential nature of the trend. Calibrating with an oil with this trend can drastically influence the calculation of the SA's.
- Andrew – Will the pass/fail be based on a soot window at a certain viscosity increase?
- David B – Should be a percent soot at a certain amount of viscosity increase.
- David B – We are referencing with oils with similar exponential trends, such as the T-8
- Bob Campbell – Need to answer the question of whether we need 1 or 2 reference oils.
- David B – Sean, any thoughts on how SA's can be affected by having 2 reference oils.
- Sean – Would need some time to think on that.
- Bob Campbell – Perhaps we may need to look at the use of a transform for the oils due to the exponential nature of the breaks at 11.5 cSt increase.
- David B – Do we have a sense check of the soot we are getting at 108 hours?
- Bob W – It is similar to the levels in the T-11. Will send the data to the group after the meeting.
- Andrew – 5% at 180 hours is a good estimate in the T-11.
- David B – Hearing we may need 2 different tests and then 1 reference oil for each test type, we will need to confirm if 10 tests for each is enough. Are we ok with utilizing the T-8 reference oil for this purpose regardless of the exponential growth?
- Unknown - Seems like the T-8 oil is ok but a shallower oil would be preferred.
- Andrew – I would like to bring this to Cummins for the next panel meeting to see if they have any questions or feedback.

### MACK T-11 Replacement Procedure

- The panel for T-11 replacement test has requested feedback from the MACK SP on the procedure.
- Any feedback can be directed to Robert Warden or delivered during the development meetings.

### Volvo T-13 Reference Oils

- David – Current oil is 823 and moving to 823-1, both currently have the same targets for KV40 and IRPH.
- Another test (5<sup>th</sup> run) was completed on 823-1 with batch C liners. Industry Zi alarm was triggered for both KV40 and IRPH.
- The results generated from these 5 runs have IRPH ranging from 95 to 124 while KV40 is ranging from 41 to 63 %.

- NCDT is looking to move the limits for the T-13 in PC-12 from 125 to 80 for IRPH and 75 to 50 for KV40%.
- David B - Question from NCDT meeting, do the MACK/Volvo SP members believe we need a new reference oil for the change in limits?
- Andrew – Makes sense to have a new oil so that it performs borderline to the new limits.
- Bob C – I think we do need another oil that is closer to the new limits.
- Sean M – We’re talking about replacing 823 with a new oil correct?
- David B – Yes
- David B – The option is for the panel to handle the new oil procurement or to have NCDT make a request to investigate what will be needed to generate a new oil and matrix requirements.
- David B – I will provide the feedback to NCDT that a new reference oil should be considered for funding and will put out a request for reference oil supply. If you are interested in supplying a reference oil for this test please contact the TMC.

#### **Current T-13 Reference Oils**

- Industry Zi alarms triggered for both KV40 and IRPH by lab G on a test with 823-1 and liner batch C.
- David B - I would like to ask the statisticians to come back with a recommendation by the next meeting to address the industry alarm.

#### **MACK T-12 Coordinated Reference**

- Labs A, D and G completed testing on the final batches of hardware.
- Lab G is the only lab to report data.
- David B – I would like to request that the statisticians review the data once all data has been reported in the LTMS.
- The next meeting will be used to address the T-12 coordinated reference data and T-13 reference oil 823-1 target/CF discussion.

#### **AOB**

- None

#### **Next Meeting Date/Time**

Next meeting was not scheduled.

Meeting Adjourned, 8/1/2023 @ 3:18 PM EST