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Subject: Mack Surveillance Panel Teleconference, November 02, 2016 Pre-read
Date: Thursday, October 27, 2016 8:20:01 PM
Attachments: [ItmsT8_201610_proposed_mod.docx](#)
[Mack T8-E LTMS 20161102.pptx](#)

The first attachment is a draft chapter for the LTMS document to modernize and simplify T8 Itms. I started with the current T8 chapter and grafted in suggestions from the T13 chapter. Markup is captured in the word document. Note that the table of constants has been cleaned up in a way that we should probably do for T13, Cat Aeration, and maybe others of the modernized chapters. Should RELATIVE VISCOSITY @ 4.8% SOOT remain non-critical? Seems like it should be critical as one of the more important current criteria. It is required to be in control in the bullet under "Existing Test Stand". We could get rid of many mentions of "critical parameters only" and the apparent contradiction. Correlation with other criteria is pretty strong. It would further simplify the chapter if we call all three criteria critical. I think we could get rid of the dates and specific mention of criteria in "Existing Test Stand" bullets.

Surveillance panels should make better use of level 2 e_i alarms.

The second attachment tries to show you the impact of what happened with current LTMS versus what might have happened with modernized LTMS. Parameters could be tuned.

I'm sorry not to explain this in adequate detail but wanted to get something to you in advance of the meeting. I would be glad to discuss then and of course we can look at much more live. In the meantime, if you have questions, I will try to answer them.

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ADDING UP™

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From: Salgueiro, Bob [<mailto:Bob.Salgueiro@Infineum.com>]
Sent: Thursday, October 06, 2016 8:09 AM

To: Warden, Robert W.; Cooper, Mark (MAWC); Ahlborn, Jonathan [Jonathan.Ahlborn@Lubrizol.com]; Alessi, Michael (michael.i.alessi@exxonmobil.com); Bishop, Zack; Boese, Doyle; Bob.Campbell@aftonchemical.com; Cauley, Chris; Clark, Jeff (jac@astmtmc.cmu.edu); Conti, Ricardo (riccardo.conti@exxonmobil.com); Dvorak, Todd (Todd.Dvorak@aftonchemical.com); Garcia, Luiz (luiz.garcia@intertek.com); Grundza, Rich (reg@astmtmc.cmu.edu); Gutzwiller, James; Johnson, Kurt D.; Jullien, Paul (PJUL); Kennedy, Steve (steven.kennedy@exxonmobil.com); Kostan, Travis G.; Lanctot, Dan (dlanctot@tei-net.com); Lochte, Michael D. (mlochte) (SwRI); James.Matasic@lubrizol.com; McCord, James F. (jmccord) (SwRI); Moritz, Jim (Intertek); Moyer, Sean (sam@astmtmc.cmu.edu); OMalley, Kevin Kevin (OMalley@lubrizol.com); christian.porter@aftonchemical.com; Ritchie, Andrew; Ritzenthaler, Abaigeal (Abaigeal.Ritzenthaler@AftonChemical.com); Rutherford, Jim (JARU); Salvesen, Cliff (clifford.r.salvesen@exxonmobil.com); Santos, Elisa; Nicholas.Secue@Lubrizol.com; greg.shank@volvo.com; Sutherland, Mark [msutherland@tei-net.com]; Taylor, Chris (chris.taylor@vpracingfuels.com); VanScoyoc, Jonathan (vanscj@cpchem.com); Vega, Juan (Juan.Vega@Intertek.com)

Subject: [**EXTERNAL**] Mack Surveillance Panel Teleconference, October 05, 2016, 12:30 PM- 1:30 PM Eastern

The following are the unconfirmed minutes of the Mack Surveillance Panel Meeting held on October 5th, 2016. The meeting was conducted by Phone/WebEx. Please feel free to let me know if there are any changes or revisions needed. Thanks.

Attendees;

Afton - Bob Campbell, Christian Porter, Abaigeal Ritzenthaler
Infineum - Bob Salgueiro (Secretary), Elisa Santos, Jim Gutzwiller
Intertek - Jim Moritz, Luiz Garcia, Juan Vega
Lubrizol – Nick Secue
Oronite - Mark Cooper (Chairman), Jim Rutherford
SwRI – Jim McCord, Robert Warden
TEI - Mark Sutherland
TMC - Sean Moyer
Volvo/Mack - Greg Shank

Mack Surveillance Panel Meeting

The Mack Surveillance Panel meeting was called to order at 12:35 PM Eastern, by Mark Cooper, Chairman of the Surveillance Panel. The agenda topics are listed below, with discussions and actions following.

Agenda Topics:

Mack T-8 LTMS

- Jim Rutherford presented some examples of T-8 LTMS using the existing T-8 LTMS and potential updates using newer approaches for LTMS, including examples for VI38, and RV48 at 50% and 100% DIN shear.
There was some interest expressed in evaluating potential revisions, particularly with continuous severity adjustments. Jim will work on a presentation with potential revisions, including evaluation of applying the revisions to historical data.
Potential severity impacts from drivers such as fuel or reference oil batch would be evaluated separately from LTMS revisions.

Update around T-12 rings / availability

- 3rd oil ring does not need to be ordered, there is no difference. Supplier trying to expedite but estimated timing is January, Volvo pushing for mid-Dec but raw material remains the hold up.

T-13 head gaskets – rusting

- TEI sent out photos of what appears to be rusting of orifices but not on sealing surfaces. TEI has been screening them out, but at 50% rejection rate. Next kits will begin to include them. Volvo claim the observed stain is a moly agent from the molding process, the grommets are nickel based so it is not rust. Volvo does not expect it to have any impact on the T-13 tests. TEI will send one of these gaskets to Volvo so Greg can share with their Parts person. Will follow up with another discussion.

T-12 head gaskets

- Afton spoke with Cometic and they confirmed they can make the gaskets \$3700 setup fee. Unit price would be similar. Cometic can still manufacture to any gasket thickness desired. Still need to use factory fire ring. Some concern about having to still use the fire ring. Switching from composite to Multi-layer Steel (MLS) gasket may not address the fire ring issue. Cometic were not supportive of putting the fire ring into the gasket. SwRI and Afton confirmed they still see the pushed gasket. Could use shims to protrude the liner more but run the risk of bore distortion or cracking the liner. Aftermarket gasket supplier Clevite was tried but similar results were obtained as with the factory gaskets. At one point, there was a part number for a bigger fire ring (stepped fire ring) but that part number is no longer available. Could we do metallurgy and measurements on the old fire rings and see if the new ones are different?
Volvo will find out if the fire ring changed when the gasket sealing material changed and by how much the fire rings compress. The composite was 2 to 4 thousandths thinner on the old gaskets. By matching the thickness of the old gasket. Afton will provide Cometic contact to TEI so TEI can pay for setup of dies to cut the new gaskets.

Reporting of T-13 outlier screening for upper bearing weight loss (UBWL), Top Ring Weight Loss (TRWL) and Average Liner Wear (ALW).

- Intertek confirmed that they do outlier screening for BWL but not for TRWL or ALW. TMC confirmed that the T-13 procedure states outlier screening should be done for TRWL and ALW. The report states the ring weight loss are not outlier screened. Volvo asked why this practice was put in place?
- ***Motion made that going forward, the labs would use E178 (1.887 Annex A11) to outlier screen for T-13 UBWL, TRWL, and ALW.***
Motion made by Bob Campbell seconded by Bob Warden.
No negatives, no waives, the motion carried.

T-13 coolant filter - Mack branded p/n 21937298 is interchangeable with Volvo coolant filter w/o additives p/n 21937327, which is shown in the T-13 Test Procedure

- Mack filter is a non-additized filter like the Volvo filter part number and they are interchangeable.
- ***Motion made to change wording in procedure to remove reference to part number and say use a Mack or Volvo branded coolant filter without additives.***
Motion made by Jim Moritz seconded by Greg Shank.
No negatives, no waives, the motion carried.

Other Business:

- None

Next Meeting:

- Scheduled for November 2 at 10:30 AM Eastern.

The Mack Surveillance Panel adjourned.

Respectfully submitted,

Bob Salgueiro

Industry Liaison Advisor

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