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**Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS**

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August 24<sup>th</sup>, 2009

Reply to:  
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ASTM D02.B0.03 L-37 Surveillance Panel  
Members and Guests:

Attached for your review and comment are the unconfirmed minutes of the:

- **August 12<sup>th</sup>, 2009 L-37 Surveillance Panel Meeting conducted at the US Army TACOM Facility in Warren, MI.**

Please direct any corrections or comments to my attention.

Sincerely,

Galen Greene, Chairman  
L-37 Surveillance Panel

**Report of Meeting  
L-37 Surveillance Panel Meeting  
US Army TACOM  
Warren, MI**

August 12, 2009

**Attendees:**

Dana -	<b>Miller (TC)</b> , Guzikowski (TC), Pappademos (TC)
SwRI -	<b>Koehler</b>
Lubrizol -	Bartlett (TC), Gropp, <b>Greene</b>
Afton -	<b>Koglin (TC)</b> , Higuchi
Intertek-Parc -	<b>Smith</b>
TMC -	<b>Lind</b>
Chevron -	<b>Haire (TC)</b>
US Army -	<b>Comfort</b> , Brosnan
Arvin Meritor -	<b>McGlone</b>

TC = Teleconference

Voting Members in **BOLD**

The meeting was called to order at 1:45pm.

**1.0 Approval of Minutes:**

- **May 13, 2009 Surveillance Panel Meeting**

**Motion # 1** → Mr. McGlone/second Mr. Comfort to approve the minutes as presented. Motion for approval was passed with a vote of 9 for, 0 opposed, and 0 abstentions.

**2.0 Summary of Meeting Discussions**

**2.1 Discuss acceptance bands for new shipments of reference oils and requirements of suppliers**

The TMC recently reordered 5 drums of reference oil TMC 152. The analytical results from 2 of the 5 drums were different from the other 3 and the historical expectation on phosphorous and boron.

Historically, boron was around 230 ppm and phosphorous was around 1340 ppm. The 2 recent drums were 282 ppm and 287 ppm for boron and phosphorous was 1527 ppm and 1553 ppm, respectively or about 15% higher. The supplier noted that the normal range for boron was 190 to 290 ppm and for phosphorous was 1260-1540 ppm and that these drums were acceptable for distribution. The supplier is willing to work with the TMC and attempt to find a batch that will fall closer to our historical expectation. The supplier has noted that they will not take back the 2 drums.

The panel discussed whether the higher treat rate drums would cause any difference. General consensus was that if treat rate was too high, it may mask test problems with the test. The decision of the panel was to ask the supplier for a blend that is close to historical expectation and get two more drums. After the TMC does an analysis of this oil, the panel will decide how to proceed. One option will be to mix all 7 drums together (or any combination) to achieve an acceptable value.

The group also noticed that the supplier uses the XRF method for analytical analysis and the TMC is using ICP. The panel decided ICP was the preferred method, but when requesting new blends from the supplier, we should use XRF targets.

**Motion #2** → Mr. Smith/second Mr. Bell – Mr. Lind will ask supplier to see if they can locate 2 drums that are 1420 ppm ±5% phosphorous and 240 ppm ±5% boron by the XRF method (these numbers are the average of the 3 “good” drums). Mr. Lind will report what the supplier was able to locate at the next panel meeting. A decision for

moving forward will be decided by the panel at that time. Motion was approved with a vote of 7 for, 0 opposed, and 1 abstention.

## 2.2 Hardware Status

The chairman reviewed the recent pilot matrix activity with the panel. The labs have completed two rounds of testing with pilot batch 1 and pilot batch 2. Pilot batch 1 was designed to emulate the 2005 P4L792 hardware batch. After some severe results testing was stopped. Dana suggested a contact pattern shift (re-shim to flank in). Eight remaining axles were modified and tested (pilot batch 2). Preliminary results showed some improvement. Dana will move forward with pilot batch 3 (20 pieces, 10 lubrified, and 10 non-lubrified). The panel discussed changes to be implemented in Pilot batch 3. After reviewing all the results from Pilot batch 2, the Hardware Task Force will decide on a contact pattern to target as well as if additional lapping may be necessary. All labs should be done with testing (pilot batch 2) by Monday, August 17<sup>th</sup>. Dana needs a decision by end of the week of the 17<sup>th</sup> on how to proceed with lapping.

**Timing** – Once gears are lapped they will be shipped to Maumee for assembly. Maumee should receive gears the week of August 24<sup>th</sup>. There is a mandatory furlough at Dana in early September; therefore, Maumee likely will not have axles ready to ship until mid September.

At the request of Mr. Miller, labs should send EOT photos as well as pre test contact pattern to TMC in PDF format for easy viewing.

## 3.0 Adjournment

**Motion to adjourn** → Mr. Bell/second Mr. Smith

Meeting Adjourned at 3:34 pm

Respectfully submitted,



Galen Greene  
L-37 Surveillance Panel Chairman



D02.B0.03

## L-37 Surveillance Panel Meeting

8/12/09

1:30 pm – 3:30 pm

US Army – TACOM

Warren, MI

Galen Greene (The Lubrizol Corporation)



D02.B0.03

L-37 Surveillance Panel Meeting

### Agenda

- I. Call to Order
- II. Membership Review
- III. Approval of Meeting Minutes
  - i. 5/13/09 SP Meeting
- IV. Discuss acceptance bands for new shipments of reference oils and requirements of suppliers
- V. Hardware Status
- VI. New Business
- VII. Adjournment



## Membership Review

Galen Greene	The Lubrizol Corporation (Chairman)
Tom Bryson	Volvo Power Train Corporation
Allen Comfort	AMSTA-TR-D/210 US Army Tacom-Tardec
John Dharte	American Axle & Manufacturing
Mike Haire	Chevron Global Lubricants
Brian Koehler	Southwest Research Institute
Cory Koglin	Afton Chemical Company
Kenny Miller	Dana Corporation
Don Lind	ASTM Test Monitoring Center
Thelma Marougy	Eaton Corporation
Bruce McGlone	ArvinMeritor Materials Engineering
Dale Smith	Intertek-PARC Technical Services

**Total 12 Voting Members**

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## Hardware Status – Review of Pilot Matrix Results

- 20 gear sets were manufactured and built
- 4 labs participated in a 12 test matrix
  - Complete results and photos are on the TMC website
  - Conclusions:
    - Non-lubrited results seemed to improve versus the rejected batch
      - The HTF did notice micro pitting issues
    - Lubrited seemed to be only a slight improvement over rejected batch
      - There was one test with broken teeth
      - Most of the “pass” oil runs showed severe pitting/spalling

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## Hardware Status – Review of Pilot Matrix Results

- After Dana reviewed the results, a new contact pattern was suggested
- The 8 remaining axles were sent back to Dana and were re-shimmed to shift the contact pattern flank in
- Only preliminary results in, but this appears to have helped
- Discussion on the build of the next 20 axles and lapping...

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ASTM L-37 Surveillance Panel Membership/Mailing List

Meeting Date: August 12, 2009

Initials*	Name	Voting Status	Company Name & Address	Phone/Email Info
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DB	Bell, Don	Non Voting	Afton Chemical 500 Spring Street Richmond, VA 23219	Phone: 804-788-6332 Fax: 804-788-6243 E-Mail: don.bell@afonchemical.com
B <sup>2</sup>	Brosnan, Bridget	Non-Voting	<del>AMSTA-FAR-D/210</del> RDTA - DP/MS IID 6501 East 11 Mile road Warren, MI 48397-5000	Phone: 586-574-5221 4221 Fax: 586-574-4224 E-Mail: bridget.brosnan@us.army.mil
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\* Initial to indicate attendance at subject meeting



## ASTM L-37 Surveillance Panel Membership/Mailing List





Meeting Date: August 12, 2009

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\* Initial to indicate attendance at subject meeting

## ASTM L-37 Surveillance Panel Membership/Mailing List

Meeting Date: August 12, 2009

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\* Initial to indicate attendance at subject meeting

ASTM L-37 Surveillance Panel Membership/Mailing List

Meeting Date: August 12, 2009

Attachment 2  
Page 4 of 4

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	Sullivan, Bill	Non Voting	William T. Sullivan, Inc. 5 Scheiber Drive Brick, NJ 08723	Phone: 908-930-3512 Fax: 267-220-7750 E-Mail: wtsullivan@comcast.net
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TC	<i>Guizhou, Joe</i>			
TC	<i>Popovskov, Lou</i>			

\* Initial to indicate attendance at subject meeting