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Unapproved Minutes of the June 1, 2011
Sequence IVA Surveillance Panel Meeting
held in Warren, MI

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A copy of the Agenda is included as Attachment 1

The signed attendance sheet is included as Attachment 2.

No membership changes were made.

Bill Buscher agreed to be the motion and action item recorder for the meeting.

Minutes from May 12, 2010 Surveillance panel meeting were approved with no changes.

Action Item Review

Motions and Action Items

As Recorded at the Meeting by Bill Buscher

1. Action Item – Labs to provide a list of what connectors are failing on the engine wiring harnesses, so that OHT can attempt to procure replacement connectors to allow for repair of existing wiring harnesses. Labs to respond to OHT within two weeks of today's meeting.

Done.

2. Action Item – Labs to draft a maintenance procedure and interval for engine mounts and driveline. Submit a recommendation to the surveillance panel by 7/1/10.

Incomplete. Work done so far and new target date to be discussed at today's meeting.

3. Motion – Form a task force to develop a recommendation to the surveillance panel for adopting LTMS 2nd Edition to the Sequence IVA. Task force to report to surveillance panel within six weeks of today's meeting.

Bill Buscher / Jason Bowden / Passed 12-0-0

Was on hold pending the outcome of LTMS 2 acceptance in the Sequence IIIG and VID test types. To be discussed at today's meeting.

4. Action Item – Accept both potential reference oils as GF-5 category reference oils. Consider using oil # 2 (ACW = 18µm) for the Sequence IVA and replacing reference oil 1009. Conduct a follow-up surveillance panel conference call to develop a plan for adopting one or both of these potential reference oils.

Donated testing on reference oil 1010 (Oil # 2) has been completed. Acceptance of reference oil 1010 and possible replacement of reference oil 1009 to take place at today's meeting.

5. Action Item – Include Todd Dvorak's analysis report on KA24E Green fuel data in today's meeting minutes.

Done.

Driveline Maintenance Procedures

Eric Liu reviewed a maintenance procedure he has proposed for addressing driveline issues in the IVA. A copy of the procedure is included as attachment 3. Eric also discussed some work he had done regarding stiffness. Using a shaft with a stiffness of 0.7°/100 ft-lbs, he obtained a result of 57 µm with reference oil 1006-2. The stand had reference with on reference oil 1007 and provided 73.54 µm. When the driveline was replaced with a 3 in. OD solid tube shaft, a result of 113 µm was obtained on reference oil 1006-2. Al Lopez discussed some work he had done regarding driveline and mounting. He had obtained severe results on one stand and had replaced the current engine mounts with the stock engine mounts and was able obtain more reasonable results. Al also informed the panel rubber elements can be within ±30% and that, over time, these elements will harden and change stiffness. Al recommended that rubber elements be replaced on an annual basis. Harmonic balancers were also mentioned as potential issue. After some discussion, a motion was made for Labs to report engine mount and driveline configuration, including photos, and harmonic balancer information for each test stand to the TMC by 7/1/11. A conference call will held to attempt to standardize on a procedure and this procedure will be circulated by eballot by 8/1/11.

Fuel suppliers report

Two batches have been blended in the past six months. Results of analysis from previous batches were reviewed and are found to be acceptable. Batches are blended when ever orders are placed by lab(s)

TMC Report

Rich Grundza reviewed sections of his report for the panel. There were no questions or comments. A copy of the TMC report is available at the TMC Website.

ACC Report.

Jeff Clark presented sections of the ACC report. A copy of the report is available at the ACC website. There were no questions on the report.

Test Hardware Report

Bill Buscher reviewed the hardware status to date. There appear to be no hardware shortages and there appears to be sufficient hardware to carry the test through 2015. A copy of Bill's presentation is included as attachment 4.

Reference Oil Status

Al Lopez gave a presentation, included as attachment 5, which discussed the status of the reference oils used in the IVA. The panel agreed to re-introduce reference oil 1006-2. New targets would be set using donated tests, two each from Intertek and Southwest and one result from Lubrizol. Reintroduction would begin after driveline issues are addressed. This was approved unanimously. Al also recommended suspending the use of 1009 for calibration purposes which was also approved unanimously. The panel also agreed not to introduce reference oil 1010, due to its good performance in the IVA.

LTMS Review

The subject of LTMS was addressed. This had been an action item from the May 2010 meeting and each panel had agreed to evaluate LTMS Version 2. Bill expressed his concerns with the current system, that precision implications cause data to be excluded from charts. Bill felt that the IIIG system might be a good alternative. Rich Grundza expressed concerns about the IIIG approach, that the lack of precision criteria presents problems with identifying proper severity adjustments and that the previous mild shift which caused all the investigation into driveline issue may have been missed by the IIIG system. Ron Romano stated that his concerns went well beyond the concerns documented by the TMC, and that no one had demonstrated what the benefit to LTMS Version 2 was. Andy Buczynsky had concerns that GM had done extensive research on the proposed LTMS and identified a number of concerns which were not even responded to. Both Ford and GM expressed concerns that LTMS Version 2 should not be discussed until all the concerns expressed by all parties were addressed. The panel was queried as to any further LTMS changes and it was determined that there wasn't sufficient support within the panel to pursue other LTMS approaches.

Best Practices in Lubricant Test Development

Bill Buscher reviewed the work the TGC has been doing regarding the status of this TGC task. A copy of this document is included as attachments 6. Panel members were asked to consider items for the best practices list. TGC will be having a face to face meeting at some point; the hopes are to have something to forward to the TMB by December ASTM.

Attachment 7 is a listing of the motions and action items from this meeting.

The meeting was adjourned at 12:10 pm.

Sequence IVA Surveillance Panel

Warren, MI

GM Technical Center

June 1, 2011

9:00 a.m. - 12:00 p.m.

AGENDA

1. Chairman comments
2. Attendance sign-in sheet distribution
3. Membership changes
4. Motion and Action recorders
5. Approval of minutes for 5/12/2010 All
6. Review action items from last meeting Buscher
7. Fuel supplier report – KA24E Green Fuel Carter
8. TMC report (*Any questions?*) Grundza
9. ACC report (*Any questions?*) Clark
10. Test hardware report Buscher
11. Reference Oil Review All
 - RO 1006-2 suspension
 - RO 1007 remaining life
 - RO 1010 introduction
 - RO assignment frequency
12. LTMS Discussion All
 - Concerns/disadvantages with current LTMS
 - What improvements/advantages would a new LTMS bring
 - Why are LTMS revisions needed

- What new LTMS to consider
 - Modifying current LTMS
 - Adopting IIIG LTMS
 - Adopting LTMS 2 with revisions
- What are the negatives with LTMS 2 and what are the recommended resolutions

13. TGC Assignment # 1 All

- Best Practices in Lubricant Test Development
 - Brainstorm and discuss items for the guide

14. Review Scope & Objectives All

15. Old business





16. New business

17. Next meeting

18. Adjourn

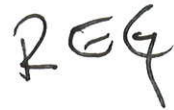


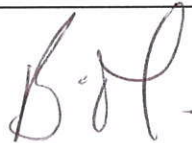



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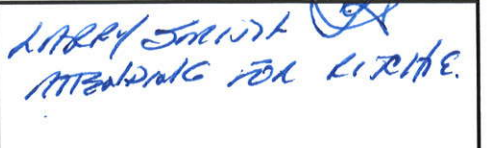
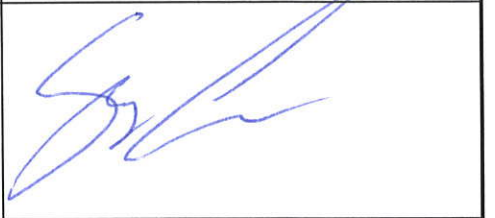
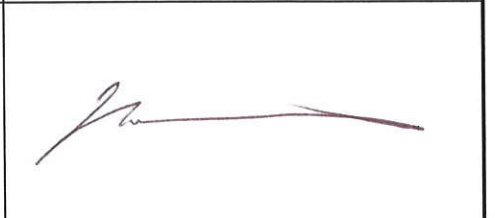
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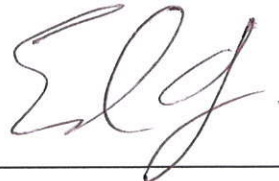
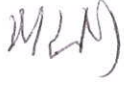

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Sequence IVA

Maintenance Procedure and Interval for Engine Mounts and Driveline

1. Each lab is to set up a driveline identification and tracking system similar to the camshaft identification system currently in place.
2. A driveline must be replaced once every 12 months or 2 reference periods, whichever one is due first.
 - a. Driveline stiffness and configuration for each test stand must be reported to the TMC at for every reference test conducted.
 - b. Driveline stiffness data may be obtained from the manufacturer that produces the driveline.
3. A detailed description of the configuration must be provided to the TMC in the reference test report. A schematic or photo of the driveline on the test stand is highly recommended, but not required.
4. If a driveline on a test stand is damaged and requires replacement before the prescribed date of replacement is reached, it may be replaced with a driveline of the same type (stiffness and configuration) without conducting a reference test. TMC must be notified of the change and note the date of change.
5. If a driveline replaced with a driveline of a different configuration and/or stiffness for any reason before the prescribed date of replacement is reached, a reference test must be conducted on the test stand immediately, and the configuration and/or stiffness must be reported to the TMC in the reference test report. TMC must be notified of the change and note the date of change.

Sequence IVA

Test Hardware Report

Prepared by:

William A. Buscher III

June 1, 2011

Warren, Michigan



Test Hardware Report

- Hardware Status:
 - No shortage of test hardware
 - Industry currently using mixture of 2003, 2007, 2008 and 2009 test kits
 - All Nissan hardware orders have been completed
 - Nissan does not plan to offer any future hardware orders
 - Test hardware secure through 2015



Sequence IVA

Calibration Oil Overview
Intertek Automotive Research
June 02, 2011

Reference Oil Status

RO	Target	SD	Status
1007	84.76	15.4	Active
1009	18.76	7.05	Active
1006-2	91.15	8.93	Removed
1010	15.08	3.99	Pending

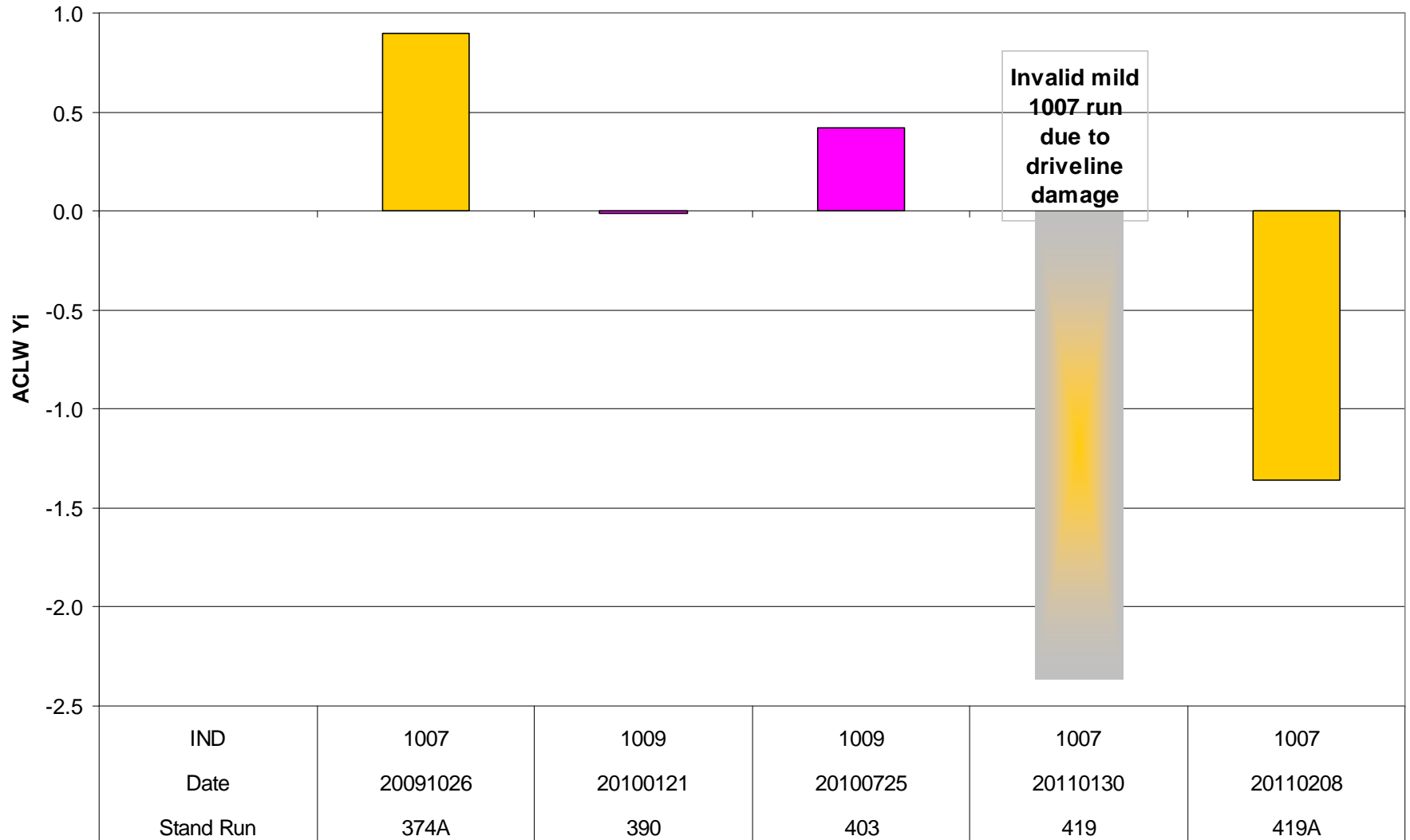
RO 1009

- Low wear oil
- Has been removed in the past when several stands shifted mild and the oil was masking the problem
- The industry discovered the root cause of the mild shift and established maintenance procedures to guard against shifting mild.
- RO 1009 was then re-introduced

TMC Data Base

- We are once again observing stands with multiple runs on 1009 that fail mild when assigned a 1007 oil
- The industry is at risk again of masking a mild shift in a stand with the oil assignment strategy that is in place

Actual 1009 Scenario



Proposed Action

- Stop consecutive assignment of low wear oil
 - Maintain higher RO inventories
- Re-evaluate RO 1006-2
 - Reset targets if necessary
- Use oil 1009 / 1010 as a discrimination oil only

Best Practices in Lubricant Test Development Task Force

Scope and Objectives

Scope

The scope of this task force is to create a template/checklist for best practices in lubricant test development, to be utilized for effective future test development. The goal is to build this template/checklist from a compilation of existing documents available within the industry and knowledge and data from previous test development.

Objectives

This document will assist future test development groups answer the following questions: What are we trying to measure (what are our objectives), how can the measured parameters be correlated to field service and/or back to previous test(s) being replaced, what impacts the parameters being measured.

Updated: January 27, 2009

Items to consider:

1. Define Need
 - a. Define parameters to measure (must have sufficient range)
 - b. Define platform
 - c. Define funding
 - d. Define participants (minimum of 2 independent labs)
2. Demonstrate test's ability to discriminate
3. Reference oil selection
 - a. Target calculation
4. Calibration period
5. LTMS version <ftp://ftp.astmtmc.cmu.edu/docs/LTMS%20v2%20Task%20Force%20Documents/>
 - a. Decide whether to chart final original units or final transformed units
6. Hardware control – ensure consistency (2 references below)
 - a. Define critical parts and handling (CPD)
 - b. Sufficient supply of quality parts in beginning and through out
 - c. Supplier system to prevent running hardware and sub-suppliers changes
7. Fuel supply – notes from fuel task force:
 - a. Incorporate fuel as a parameter and fuel suppliers as a partner in early test development.
 - b. Include in the development discussions the use of modern, relevant fuel.
 - c. Define recipe for fuel rather than finished specs.
 - d. Develop a test that is insensitive to fuel if possible.
 - e. Define ways to report identifying factors, such as fuel batch id parts batches, etc...
 - f. Define standard batch id reporting
8. Instrumentation (DACA II below)
9. Rating and measurement methods
 - a. Range of measurement large enough to correct for shifts
 - b. If merit systems used, factor in range for corrections and shifts
 - c. Determine appropriate significant digits for results
 - d. Clearly state calculation methods for calculated results
10. Research Report ftp://ftp.astmtmc.cmu.edu/docs/Research_Report_Template.pdf

ACC Code of Practice Appendix K is a good place to start.

[ftp://ftp.astmtmc.cmu.edu/docs/Technical_Guidance_Committee/Meeting_Minutes/BestPractices/ACCAp
pendixK.pdf](ftp://ftp.astmtmc.cmu.edu/docs/Technical_Guidance_Committee/Meeting_Minutes/BestPractices/ACCAp
pendixK.pdf)

Other documents and guidelines that have already been developed:

TMB Rules and Regulations

ftp://ftp.astmtmc.cmu.edu/docs/test_monitoring_board/TMB%20Rules%20and%20Regulations.pdf

Information Letter Task Force Report

ftp://ftp.astmtmc.cmu.edu/docs/test_monitoring_board/minutes/information_letter_task_force_report.pdf

DACA II

[ftp://ftp.astmtmc.cmu.edu/docs/quality_index_and_data_acquisition/daca_II_report_and_system_time_res
ponse.pdf](ftp://ftp.astmtmc.cmu.edu/docs/quality_index_and_data_acquisition/daca_II_report_and_system_time_res
ponse.pdf)

Test Hardware Control

ftp://ftp.astmtmc.cmu.edu/docs/Technical_Guidance_Committee/Meeting_Minutes/TestHardwareControl/Test%20Hardware%20Control.pdf

Sequence IID and IIIE Information Letter 60

ftp://ftp.astmtmc.cmu.edu/docs/Technical_Guidance_Committee/Meeting_Minutes/TestHardwareControl/IL60.pdf

PC-10 Lessons Learned

ftp://ftp.astmtmc.cmu.edu/docs/Technical_Guidance_Committee/Meeting_Minutes/BestPractices/HDECP20071204att3.pdf

Form and Style for ASTM Standards http://www.astm.org/COMMIT/Blue_Book.pdf

Other ASTM Committee work (relevance varies)

<http://www.astm.org/COMMIT/SUBCOMMIT/D0294.htm>

<http://www.astm.org/COMMIT/SUBCOMMIT/E1120.htm>

Sequence IVA Surveillance Panel

June 1, 2011

9: 00AM – 12:00PM

GM Technical Center

Warren, MI

Motions and Action Items

As Recorded at the Meeting by Bill Buscher

6. Action Item – Labs to report engine mount and driveline configuration, including photos, and harmonic balancer information for each test stand to the TMC by 7/1/11.
7. Action Item – Schedule a conference call between the test labs and the TMC in early July to review and discuss the maintenance procedure and interval for engine mounts and driveline.
8. Action Item – Labs to finalize a maintenance procedure and interval for engine mounts and driveline. Submit a recommendation to the surveillance panel for eballot by 8/1/11.
9. Motion – Reintroduce RO 1006-2 for calibration purposes in the Sequence IVA, treating it as a new reference oil for setting targets. Surveillance panel to review and set initial targets with 5 donated tests; 1 conducted at Lubrizol and 2 conducted at SwRI and Intertek each on different calibrated test stands within each lab. Tests will be started after completion of Action Items # 1-3.

Bill Buscher / Al Lopez / Passed 12-0-0

10. Motion – Suspend RO 1009 for calibration purposes in the Sequence IVA and re-evaluate its appropriateness for use after RO 1006-2 is successfully back into use for calibration purposes.

Al Lopez / Greg Seman / Passed 12-0-0

11. Motion – RO 1010 will not be used for calibration purposes in the Sequence IVA, due to its high performance level.

Dwight Bowden / Andy Ritchie / Passed 11-0-1

12. Action Item – Surveillance panel members to provide input for the TGC Best Practices in Lubricant Test Development document by 8/1/11 to the panel chairman and the TMC. The chairman will distribute material as it comes in to the panel members for review. A face-to-face meeting for all interested will be scheduled prior to the next panel meeting and input for the document will be compiled for review at the next panel meeting.