

Issued: April 12, 2012
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These are the unapproved minutes of the 03.27.2012 Sequence VI Task Force meeting.

The meeting was called to order at 10:00 AM by Chairman Dave Glaenzer.

Agenda

The Agenda is included as **Attachment 1**.

1.0 Roll Call

The Attendance list **Attachment 2**. Note this is from the VID SP meeting and may not reflect attendance at this meeting. Motions and Actions will be **Attachment 3**.

2.0) Approval of minutes

2.1 Approval of the minutes of the 03.13.2012 Conference Call.

**Motion – Accept the minutes of the 03.17.2012 VID SP CC. Unanimous.
Charlie Leverett, Dave Glaenzer, second.**

3.0) Action Item Review

- 3.1 Intertek to evaluate VID data for a particular stage to use to monitor engine stabilization during break-in.
- 3.2 Afton to run a VIA type of break-in on their MY2012 LY7 engine that was donated by GM.
- 3.3 SwRI to run their MY2012 LY7 through BLB1 and BLB2 as normal, then change stabilization times from 60 to 90 minutes, and re-run BLB1 and BLB2, with 1 minute data logging during stabilization and 1 second snapshot data logging during BSFCs.

- 3.4 TMC to evaluate VID operational data from two recent engines, and five reference tests on each engine, in each lab for oil pressure trends on BLB2 for all stages.
- 3.5 Intertek to share data they generated on different coolant mixtures with this task force. Data to be evaluated and used for consideration of a switch from 100% ethylene glycol to a water/glycol mixture.
- 3.6 TMC to conduct an engine coolant flow rate calibration round robin using a common turbine meter (loaned by Afton).
- 3.7 Oberg filter to be included along with line size and fittings when evaluating standardization improvements to the external oil system.
- 3.8 Lubrizol to run a flush effectiveness experiment by adding a second BL double flush prior to running BLA stages to help eliminate CA carryover from FO to BLA and potentially improve/reduce the baseline shift. Lubrizol will obtain oil samples for analysis at the end of each BL flush, at the beginning of BLA stages and at the end of BLA stages (six samples total).
- 3.9 ExxonMobil to generate a list of ECM data that would be desirable to monitor and record.

3.) **Old Business**

- 3.1 None

4.) **New Business**

- 4.1 Concerns for this group are break in, coolant mixture, oil external plumbing and oil pressure, Racor filter system, and flush oil carry over.
- 4.2 For the VIA style break in, Charlie will define optimum stage(s) for comparison.
- 4.3 The application of Quality Index {QI} was discussed for this test. The current test does monitor coefficient of variation for BSFC, and Lubrizol does calculate QI for parameters. No further action at this time.
- 4.4 There was discussion on how stable the control points are in the current test. SwRI will run a BLB Delta with one hour stabilization, then again with 90 minute stabilization and report one second snap shot data for the Official readings, and one minute snap shot for stabilization.

- 4.5 Lab appears to have different oil line sizes. GM provided typical oil pressures for most stages. The concern is that fitting angles and sizes have a significant effect on engine oil pressure. Lubrizol recommended an oil pressure target rather than define line and fitting sizes. TMC will review data on the 2012 engines.

GM Oil Pressure Data on a similar green engine with 5W-30 oil

Stage	Pressure [kPa]
1	270
2	430
3	220
4	140
5	Na
6	140

- 4.6 Intertek has data on 100, 60 and 50% coolant mixtures and will supply some data. Related to this, there are lab differences in coolant flow calibration methods. ExxonMobil will supply a calibrated turbine meter that TMC will carry to each lab and compare results during lab visits.
- 4.7 There are lab differences on Racor oil filters on springs, tell-tales, and line size. This will be reviewed. SwRI recommended using the same filter size as the VG.
- 4.8 Afton presented data on high calcium levels in BLA after the candidate oil has been flushed out. See [Attachment 4](#). SwRI had data that agreed with this but was not presented. Lubrizol agreed to modify the flush procedure per the above Action Item and report. This would require a procedure change and more Flush Oil in inventory.
- 4.9 ExxonMobil wanted to know what data the ECU reviews during test operations. They will recommend a data collection table.

6.) Next Meeting

At the call of the chairman.

7.) Meeting Adjourned

The meeting adjourned at 1:42 PM.

Dave Glaenger, Charlie Leverett, second. Unanimous.

Attachment 1

Sequence VID Test Quality TF

March 27, 2012

14:00 CDT

Corpus Christi, TX

Call-in Number: 866-817-9787

Conference Code: 2158089

Non-Toll Free: 203-320-3489

Agenda

1) Attendance

2) Approval of minutes

2.1) Approve the minutes from March 13, 2012

3) Scope and Objectives

1. Examine ASTM D7589 for ambiguities in and opportunities for improvement to stand set-up and operation of the procedure.
2. Define experiments where necessary to understand optimum conditions for potential changes.
3. Conduct experiments to verify potential changes are producing desired output.
4. Report to Surveillance Panel monthly with final report due before November, 2012.

4) Review of Areas of Concern

1. Break-In Procedure.
2. Stabilization of Process prior to and during BSFC measurement.
3. External Oil System plumbing.
4. Engine Coolant
5. Engine Oil Filter
6. Flushing Oil Carry-Over to BLA

5) New or Additional Areas of Concern

6) Prioritization/Assignment of Tasks

7) Next Meeting

Teleconference on XX/XX/2012

8) Meeting Adjourned

Sequence VID Test Quality TF

Attachment 2

March 27, 2012

14:00 CDT

Corpus Christi, TX

Call-in Number: 866-817-9787

Conference Code: 2158089

Non-Toll Free: 203-320-3489

Attendance

NAME	AFFILIATION	EMAIL ADDRESS
<i>Bill Buscher</i> BILL BUSCHER	Afton SWRI	Wbuscher@swri.edu
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Charlie Leverett	Intertek	charlie.leverett@Intertek.com

Sequence VID Test Quality Improvement Task Force
March 27, 2012
2:00PM – 5:00PM
Omni Corpus Christi Hotel, Bayfront Tower
Corpus Christi, TX

Motions and Action Items

As Recorded at the Meeting by Bill Buscher

1. Action Item – Intertek to evaluate VID data for a particular stage to use to monitor engine stabilization during break-in.
2. Action Item – Afton to run a VIA type of break-in on their MY2012 LY7 engine that was donated by GM.
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6. Action Item – TMC to conduct an engine coolant flow rate calibration round robin using a common turbine meter (loaned by Afton).
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each BL flush, at the beginning of BLA stages and at the end of BLA stages (six samples total).

9. Action Item – ExxonMobil to generate a list of ECM data that would be desirable to monitor and record.