

Unapproved Minutes of the February 12, 2013
Sequence VG Surveillance Panel
Conference Call

The meeting was called to order by Chairman Andy Ritchie at 2:00 PM EST.

A list of the attendees on the call is included as Attachment 1.

Chairman Ritchie listed the agenda items he would like to cover in this call:

- 1) Review and approval of minutes from January 29, 2013 call
- 2) Status of VG fuel Batch No. AK2821NX10 matrix approval testing
- 3) Old Business.
- 4) New business

Chairman Ritchie asked if there were any corrections to the minutes from the January 29, 2013 VG Panel conference call. There being none, it was moved by Ed Altman and seconded by Jason Bowden that the minutes be approved. The motion passed unanimously. With regard to previous VG Panel minutes, Rich Grundza re-iterated that he had found an error in the APV results in the presentation he had made on Sequence VG Oil 940 results during the November 13, 2012 VG conference call. Rich indicated he posted a revised set of minutes for that meeting on January 31, and made a motion to approve the revised minutes. This motion was seconded by Jason Bowden and passed unanimously.

Chairman Ritchie then asked for reports on the 3 tests on Oil 925-3 listed for Run 1 in the third row of the matrix shown below, which it was agreed at the last VG call would be run first in the fuel approval matrix, to be certain that this oil is providing sufficient sludge with the new fuel.

Lab	A		G		D
	1	2	1	2	1
Run 1*	1009	925-3/940	925-3/940	1009	925-3/940

Run 2*	925-3/940	925-3/940	1009	1009	1009
Run 3	1006-2	1009	1006-2	925-3/940	1006-2

Raman Kirkwood went thru the SwRI (Lab A) results from their test, which was severe on sludge of the target for Oil 925-3. However, this run also experienced 11 cold stuck rings, which it was suggested might be due to a coolant leak into the intake manifold. The concentration of Na at EOT was 80 ppm, with as high as 115 ppm found mid-test, which supports this diagnosis. Al Lopez reporting on behalf of lab G indicated their test showed an AES rating of 8.08 merits, which is more than 3 standard deviations mild of the target for Oil 925-3. They did need to perform a re-gapping of the rings at 24 hr, and found Na levels up to 52 ppm mid- test (30 at EOT). Ed Altman on behalf of lab D indicated that they had not run their test, but were ready to begin immediately.

There was further discussion as to what course to follow in light of the two results obtained. With one lab severe and one mild of target on sludge for Oil 925-3, it was suggested that it would be desirable to see a result from a lab D run. It was also suggested that a repeat run on stand 2 in Lab A, which is scheduled in Row 2 of the matrix, would be desirable to assess the effect of the coolant leak experienced in their first run. In this regard, it was pointed out that coolant leaks normally produce Na results of several hundred ppm, as opposed to the lower level seen in the results for Lab A's initial result. In response to a question about whether there was sufficient Oil 925-3 to run an extensive fuel approval matrix if a reblend of the new fuel batch is required, Rich Grundza indicated that all of the existing Oil 925-3 being used in the current fuel matrix has come from retains of the oil returned to TMC from the various labs. After much discussion, it was decided to run the lab D test on Oil 925-3 first and reconvene in 2 weeks to decide on further action.

Old Business : Rich Grundza addressed the issues he had raised in the last conference call covering language to address parts modifications and other issues. He has prepared a draft VG information letter 13-1 identifying the changes proposed, as well as the editorial changes Lyle Bowman will be making to test method D 6593 regarding load. (See Attachment 2) Rich

asked if there were any objections to any of the proposed changes. There being none, Rich indicated he would issue the information letter.

New Business: None

Next Meeting: The next regularly scheduled conference call will be Tuesday, February 26, 2013, at 2:00 PM ET.

Attachment 1

Attendees during 2/12/2013 Sequence VG Surveillance Panel Call

Afton – Ed Altman, Dave Glaenzer

Ford - Ron Romano

GM –Bruce Mathews

Haltermann – Mark Overaker

Infineum – Andy Ritchie, Mike McMillan, Gordon Farnsworth, Doyle Boese

Intertek – Al Lopez

Lubrizol – Jerome Brys, Chris Mileti, Jessica Buchanan

OHT – Matthew Bowden, Jason Bowden, Adam Bowden

Oronite– Jo Martinez

SwRI – Raham Kirkwood, Bill Buscher

TEI – Clayton Knight

TMC – Rich Grundza

Toyota – Jim Linden

Rich Grundza

From: Rich Grundza
Sent: Wednesday, January 30, 2013 10:04 AM
To: Rich Grundza; 'Overaker, Mark'; 'Ritchie, Andrew'; 'Brys, Jerome'; 'Martinez, Jo G. (jogm)'; 'Romano, Ron (R.)'; 'Boese, Doyle'; 'Glaenzer, Dave'; 'Ben Weber'; 'NON-LZ LEVERETT CHARLIE'; 'NON-LZ DECKMAN DOUG'; 'Evans, Joan'; 'Dwight Bowden'; 'Ed Altman'; 'Frank Farber'; 'Farnsworth, Gordon'; 'Irwin Goldblatt'; 'Raham Kirkwood'; 'Jason Bowden'; 'De La Zerda, Johnny (Intertek)'; 'Mark Mosher'; 'Sutherland, Mark (msut)'; 'NON-LZ CHADWICK MARTIN'; 'NON-LZ LANG PATRICK'; 'Scinto, Phil'; 'Thom Smith'; 'Timothy Caudill'; 'Timothy Miranda'; 'Zach Bishop'; 'mmcmillan123@comcast.net'; 'NON-LZ LOPEZ AL'; 'Carter, James'; 'JONESRO@cpchem.com'; 'WINGFTM@cpchem.com'; 'NUGENBR@cpchem.com'; 'McMillan'; 'NON-LZ BUSCHER WILLIAM'; 'bruce.matthews@gm.com'; 'Berman, David L'; 'Petersen, Wayne (JHL)'; 'NON-LZ MORITZ JIM'; 'Jim Linden'; 'Rajakumar, Allison'; 'Castanien, Chris'; 'Raham Kirkwood'; 'Colucci, Bill'; 'Clayton Knight'; 'smruti.a.dance@exxonmobil.com'; 'Porter, Christian'; 'Salgueiro, Bob'; 'sidney.clark@swri.org'; Jeff Clark; 'Buchanan, Jessica'; 'ht146@chrysler.com'; 'Mileti, Christopher'
Cc: Frank Farber
Subject: Draft of Information letter regarding Hardware and rating references
Attachments: il13-01-vg.docx

Attached, please find a copy of draft VG information letter 13-1 identifying the changes discussed during yesterdays Sequence V conference call. Also, below are the editorial changes Lyle Bowman will be making to test method D 6593 regarding load.

Lyle Bowman has been conducting reviews of various test methods to ensure proper use of SI units.

He has identified that the VG procedure, D6593, does not have a proper SI units for power.

The procedure references load a number of times, for which there is no SI unit.

Upon further review, it appears that the proper terminology should be torque.

This (use of torque) is consistent with the III, IV and VI test methods.

Lyle has proposed the following changes to the method to better address this.

9.5 Speed and Torque:

9.5.1 Required Capabilities-The dynamometer speed and torque control systems shall be capable of maintaining the limits specified in Table 2 and meet the ramping requirements specified in Table 4. These limits require control within $\pm 0.9\%$ for operation during Stages I and II. Because the dynamometer and driveline frictional losses may approach the power produced by the engine during Stage III, manage the control input and system response during Stage III carefully to maintain engine operation within the specified tolerances. These tolerances are necessary to maintain a stable air-fuel ratio during Stage III. Hydraulic dynamometers have slow control response at low speeds and are not suitable for operation during Stage III.

9.5.2 Suitable Systems-Utilize a full closed-loop system using a dry gap dynamometer. A typical closed-loop system maintains engine speed by varying the electrical current to the dynamometer and maintains engine power by varying the engine throttle position. The total driveline inertia through to the dynamometer, excluding the engine flywheel, shall be $(0.8 \pm 0.1) \text{ kg}\cdot\text{m}^2$.

9.5.3 Calibration-Calibrate the load cell transducer and readout system with deadweights at least once per test. Calibration of the zero scale readout is recommended once per day during the oil level soak period. Calibrate the speed measurement system prior to a reference oil test.



Test Monitoring Center

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Sequence VG Information Letter 13-1
Sequence No. 36
February , 2013

ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: Sequence VG Mailing List

SUBJECT: 1) Modifications to Test Hardware
2) Correct References to Rating Manuals and Workshops

- 1) During the February 12, 2013 Sequence V Conference Call, the Panel approved a motion to document that modifications to test parts is not to be performed unless approved by the Surveillance Panel. Section 7.2 has been revised to add this statement and to remove the reference for cylinder heads and polished cams.
- 2) Also during the February 12, 2013 Sequence V Conference Call, the panel agreed to update the references to Rating Manuals and rating workshop. Under ASTM Documents, TMC MNL20 has been added, Sections 7.6.3.2, 7.6.4, 13.1.5, 13.1.6, 13.1.8, 13.2.1, 13.2.2.1 (5) and (6), 13.3.1 and 13.3.2.2 have been updated to reflect the proper manuals and or workshop designation. Footnote 12 has been deleted and footnotes 13 through 23 will be renumbered. Also, Section 13.1.4 has been corrected to read "no red, white or blue rater available at the lab".

The attached revised sections of Test Method D6593 are effective February 12, 2013.

Ron Romano
FCSD, Service Product Development, SEO
Ford Motor Company

Frank M. Farber
Administrator
ASTM Test Monitoring Center

Attachment

c: ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencev/procedure_and_ils/vgil13-1-36.pdf

Distribution: Email

(Revises Test Method D6593-10, as amended by information letters 10-01 and 12-01)

TMCMNL20

ASTM Deposit Rating Manual 20 (Formerly CRC Manual 20)

7.2 Required New Engine Parts—Use the parts listed in the engine kit (see A5.1). Use a new gasket kit for each test. Do not modify or alter test parts without the approval of the Sequence V Surveillance Panel

7.6.3.2 Submerge the RAC in agitated organic solvent (see 7.7.2) until clean (approximately 1 h). Rinse the parts thoroughly with hot water (> 60 °C). Rinse the RAC with degreasing solvent (7.7.1) and allow to air-dry. Inspect the appearance of the inside of the RAC. If the before test rating is less than ten on the ASTM varnish rating scale (TMCMNL 20), polish the RAC with Scotch Brite General Purpose Hand Pad #74479,13 to achieve a dull finish. Rinse with degreasing solvent (7.7.1) and allow to air-dry before use.

7.6.4 *Camshaft Baffle*—Submerge the camshaft baffles in agitated organic solvent (see 7.7.2) until clean (approximately 1 h). Rinse the parts thoroughly with hot water (> 60 °C). Rinse the camshaft baffles with degreasing solvent (7.7.1) and allow to air-dry. Inspect the appearance of the top surface of the camshaft baffle. If the before test rating is less than ten on the ASTM varnish rating scale (TMCMNL 20), polish the camshaft baffle with Scotch Brite General Purpose Hand Pad #74479,¹³ to achieve a dull finish. Rinse with degreasing solvent (7.7.1) and allow to air-dry before use.

13.1.4 If multiple ratings are deemed necessary of a given part or parts, consensus rating may be used according to the following: The raters shall be from the same laboratory or from an outside rater if required (no Red, White or Blue rater available at the lab). Report only one rating value, and this value shall be agreed to by the original rater involved. Document any consensus rating in the comment section of the test report.

13.1.5 All raters of Sequence VG engine parts shall attend an ASTM Light Duty Deposit Rating Workshop every 12 months ± 30 days and produce data that meets the SAE definitions of Blue, Red, or White for varnish. If a rater is unable to meet this requirement, the rater can continue to rate Sequence VG parts during a grace period of 45 days after the completion of the workshop and can follow the procedure described in 13.1.6 to generate data that meet the ASTM definitions of Blue, Red, or White.

13.1.6 A rater who is unable to meet the requirement in 13.1.5 can schedule a visit to the TMC to generate data on ASTM Light Duty Deposit Rating Workshop parts and receive an assessment of rating performance compared to data collected at recent workshops. Visits to the TMC will be scheduled based on availability of parts.

13.1.8 A second attempt to generate rating data at the TMC is permitted only after the rater receives training from an experienced industry rater. The experienced industry rater shall verify to the TMC, in writing, that the rater training has taken place. No more than two attempts are permitted between ASTM Light Duty Deposit Rating Workshops.

13.2.2.1 To determine the sludge rating merit for each part, use the self-weighting procedure as follows:

(5) Convert the percent covered by the rated sludge depth at each location to a volume factor using the procedure shown in TMCMNL 20.

(6) Add the volume factors on each line to determine the total volume factor. Use TMCMNL20 to convert the total volume factor to the sludge merit rating.

13.3.2.2 Determine original varnish ratings of all parts by comparison of the deposit on the rating location using the ASTM Rust/Varnish/Lacquer Rating Scale for non-rubbing parts from TMCMNL 20. If the test was run using Haltermann fuel, Batch TF2221LS20, use fixed industry correction factors of 0.39 for APV

and 0.12 for AEV. For both APV and AEV, add the original results, the industry correction factors, and lab severity adjustments to obtain the final results.

Footnote 12 Deleted Renumber existing footnotes 13 through 23 as 12 through 22

DRAFT

We will be discussing this during the February 12, 2013 conference call.
If you have any questions, feel free to contact me.
Best regards,

Richard E. Grundza
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