

100 Barr Harbor Drive ■ PO Box C700 ■ West Conshohocken, PA 19428-2959

Telephone: 610-832-9500 ■ Fax: 610-832-9555 ■ e-mail: service@astm.org ■ Website: www.astm.org

Committee DO2 on PETROLEUM PRODUCTS AND LUBRICANTS

Chairman: W. JAMES BOVER, ExxonMobil Biomedical Sciences Inc, 1545 Route 22 East, PO Box 971,

Annandale, NJ 08801-0971, (908) 730-1048, FAX: 908-730-1197, EMail: wjbover@erenj.com First Vice Chairman: KENNETH O. HENDERSON, Cannon Instrument Co, PO Box 16, State College, PA 16804,

(814) 353-8000, Ext: 0265, FAX: 814-353-8007, EMail: kenohenderson@worldnet.att.net

Second Vice Chairman: SALVATORE J. RAND, 221 Flamingo Drive, Fort Myers, FL 33908, (941) 481-4729,

FAX: 941-481-4729

Secretary: MICHAEL A. COLLIER, Petroleum Analyzer Co LP, PO Box 206, Wilmington, IL 60481,

(815) 458-0216, FAX: 815-458-0217, EMail: macvarlen@aol.com

Assistant Secretary: JANET L. LANE, ExxonMobil Research and Engineering, 600 Billingsport Rd, PO Box 480,

Paulsboro, NJ 08066-0480, (856) 224-3302, FAX: 856-224-3616, EMail: janet_l_lane@email.mobil.com

Staff Manager: DAVID R. BRADLEY, (610) 832-9681, EMail: dbradley@astm.org

November 14, 2006 Reply to: Richard E. Grundza

ASTM Test Monitoring Center

6555 Penn Avenue

Pittsburgh, PA 15206 Phone: 412-365-1031 Fax: 412-365-1047

Email: reg@astmtmc.cmu.edu

Unapproved Minutes of the November 7, 2006 Sequence VG Surveillance Panel Meeting held in San Antonio, Texas

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The meeting was called to order at 9:00 AM by Chairman Andy Ritchie. A copy of the agenda was circulated and is included as Attachment 1.

Membership Changes: A list of members present is included as attachment 2. Membership changes include: Dan Worcester replaces Bill Buscher for Southwest Research, Al Lopez replaces Dan Worcester for Intertek and George Szappanos replaces Jerry Brys for Lubrizol.

Motion and Action Item Recorder: Bill Buscher agreed to be the motion and action item recorder for the meeting.

Approval of 6/6/2006 Minutes: Minutes from the June 6, 2006 meeting were approved with no comments

Review of Motions and Action Items from 6/6/2006 Meeting:

1. Motion – Approval of Minutes for 11/09/05. Approved without changes. Andy Ritchie / Bill Buscher / Passed unanimously Done.

2. Action Item – Chairman of the LTMS, Ben Weber to investigate the pros and cons of the new IIIG LTMS system and study how well it could potentially be applied to the VG. Ben will send a request for feedback to the ACC chairman, to obtain additional feedback for this investigation. Report back to the group by the November 2006 meeting.

NOTE: Carryover from May 2005 Surveillance Panel meeting. Incomplete. Unsure of current status.

- 3. Action Item Labs to send an e-mail to Jim Carter at Haltermann indicating who should receive the analysis results for their monthly (run tanks) or bimonthly (storage tanks) fuel tank samples. All fuel tank samples analyses will also be copied to the TMC to be kept in a confidential database.

 Needs to be updated for most recent memberships changes. Labs to contact Haltermann with any updates.
- 4. Motion Add the following wording to section 7.3 "Reusable Engine Parts" of the Sequence VG test procedure: Camshafts can be used for up to 4 runs. Camshafts will be saved and stored at the labs after completing 4 runs, for potential future use for additional runs. Effective 06/06/06.

 Bill Buscher / Dan Worcester / 8 For 0 Against 3 Waive

Done. Issued Information Letter No. 06-1 on June 16, 2006.

- 5. Action Item Labs to send any available camshaft wear data to Mike Riley at Ford for review to support camshaft reuse motion.

 Done.
- 6. Action Item TMC to assign reference oil 1007 for each lab's next reference test in order to generate data with reference oil 1007 on the new fuel batch. This data will supplement existing reference oil data on the new fuel batch for potentially updating the fuel correction factors.

 In process. Pending test results from labs.

Test Sponsor Report: Mike Riley was attending the meeting via telecom and no formal Test Sponsor report was given.

Test Monitoring Center Report: A full copy of the Test Monitoring Center Report can be viewed via the following link:

ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencey/semiannualreports/vg-10-2006.pdf

Sequence VG Surveillance Panel Meeting November 7, 2006 San Antonio, TX

The current reference oil trends are shown below:

| <u>Variable</u> | Pooled s All Oils | Mean Delta/s | <u>Confidence</u> <u>Interval</u> | Based on | Delta in Reported Units |
|-----------------|-------------------|-----------------|--------------------------------------|-------------|-------------------------|
| RAC | 0.25 | 0.765 | 8.00 - 8.38 | 8.0 | 0.19 |
| AES | 0.36 | 0.658 | 7.76 - 8.32 | 7.8 | 0.24 |
| APV | 0.18 | 0.218 | 7.40 - 7.68 | 7.5 | 0.04 |
| AEV | 0.15 | -0.206 | 8.76 - 8.98 | 8.9 | -0.03 |
| OSCR | 0.564 | -0.297 | 10.1 - 26.9 | 20 | -2.3 |

There were no questions or comments on the TMC report.

RSI Report- There were no questions on the emailed report.

Note: Test activities remain on the low side.

| No. of Reference | No. of Non-Reference |
|------------------|----------------------|
| Tests | Tests |
| 10 | 40 |

Fuel Supplier Report: Approximately 400K gallons of the current fuel batch left, which is~5 years worth of fuel based on current usage. There have been no adjustments to the fuel in storage this period. A copy of the report is included as Attachment 3.

Operations and Hardware Issues: Dan Worcester made a motion to expand blowby rework limitation s out from 48 to 72 hours. Several members expressed concerns that conducting a re-ring at 72 hours may not allow sufficient test time to properly seat the rings. Dan also proposed an optional control method for stage 3 fuel control via a solenoid. After some discussion, both motions were tabled until Dan forwards additional information to panel member for further review and refinement.

Rater Calibration: Frank Farber proposed wording changes to Test Method D 6593 to remove sludge from the requirement to for a rater to generate data meeting CRC's definition of Blue, White or Red. Provisions for raters who do not meet CRC's definition of Blue, White or Red to generate additiona data were also addressed. After some discussion and rewording, the panel agreed to the procedure changes by a vote of 10 for, 0 against and 1 waive. A copy of the procedure changes is included in the listing of Motions and Action Items from this meeting (Attachment 4).

Parts Buy Out: Solicitations for the parts buy out have been received. Southwest Research's purchase order was lost by their purchasing department, but has since been located and processed. Afton Chemical representatives had questions about the pricing of storage and packaging of many of the many small parts. After some discussion, the panel agreed to assign an action item to define what inspections and repackaging will be done to these parts.

Sequence VG Surveillance Panel Meeting November 7, 2006 San Antonio, TX

Scope and Objectives: Scope and objectives were reviewed and updated. A copy of the updated Scope and Objectives is included as Attachment 5.

The meeting was adjourned at 11:20 AM.

Agenda

Sequence VG Surveillance Panel November 7th 2006 9:00–12:00 noon San Antonio

- 1. Chairman comments.
- 2. Attendance sign-in distribution.
- 3. Membership changes.
- 4. Motion and Action recorders.
- 5. Approval of minutes for June 6th 2006. All
- 6. Review action items from last meeting. Andy Ritchie
- 7. Test Sponsor report. Mike Riley
- 8. TMC Report. Questions on semi-annual report. Rich Grundza
- 9. RSI Report. Questions on semi-annual report. Bill Mahoney
- 10. Fuel Supply Report. James Carter
- 11. Operational and Hardware Items. All
- 12. Parts Buy for GF-4 and GF-5 All
- 13. Review Scope and Objectives. All
- 14. Old business All
- 15. New business All
- 16. Adjourn

Attachment 2

VG NOVEMBET 2006

MEMBERSHIP ASTM SEQUENCE VG SURVEILLANCE PANEL

| Name | Company-Address-Phone-Fax- Email | Signature | Voting Member |
|------------------------------------|---|--|------------------|
| Araiazo, Beto CLAYTON J. Knight | Test Engineering, Inc 12718 Cimarron Path San Antonio, TX 78249 Phone: 210-877-022 2 8 Fax No: 210-690-1959 | lyhant Taj-net. com | Yes |
| Bendele, Larry | Southwest Research Institute P.O Drawer 28510 San Antonio, TX 78228-0510 Phone: 210-522-2824 Fax No: 210-684-7523 Email: lbendele@swri.edu | ar w 127-res. com | No |
| Bowden, Dwight | OH Technologies, Inc. 9300 Progress Parkway P.O Box 5039 Mentor, OH 44061-5039 Phone: 440-354-7080 Email dhbowden@ohtech.com | OB | Yes |
| Brys, Jerome | The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, OH 44092 Phone: 440-347-2631 Fax: 440-347-4096 Email: jabs@lubrizol.com | Jan | Yes |
| Buck, Ron | Test Engineering, Inc 12718 Cimarron Path San Antonio, TX 78249 Phone: 210-877-0221 Fax No: 210-690-1959 Email: rbuck@tei-net.com | | No |
| Buscher, Bill A. | Buscher Consulting Services P.O. Box 112 Hopewell Junction NY 12533 Phone 845-897-8069 Fax 845-897-8069 Email: buschwa@aol.com | il de la companya de | No |
| Buscher, William A | Southwest Research Institute P.O Drawer 28510 San Antonio, TX 78228-0510 Phone: 210-522-6802 Fax No: 210-684-7523 Email: wbuscher@swri.edu | Williag L | Ves NO |
| Carter, James | Dow 2296 Hulett Road Okemo MI 48864 | Jke | Yes |

| | Phone: 517 347 3021 Fax: 517-347-1024 | | |
|-------------------------------|--|-------------------|--------|
| | Email: jecarter@dow.com | | |
| Caudill, Timothy | Valvoline | 1 | Yes |
| 53.496.0034-004-0040.000-00-0 | 22 nd and Front Streets | 1:11 | |
| | Ashland KY 41101 | 100 1111 | |
| | Phone: 606-329-1960, ext 5708 | Maskey | |
| | Fax: 606-329-2044 | 1100 | |
| | Email: tlcaudill@ashland.com | See update | |
| Clark, Sid | GM Powertrain | 1+ | Yes |
| | Man Code 480-106-160 | See update | Δ |
| | 30500 Mound Road | / | 0. () |
| | Warren, M 48090-9055 | | Sid. |
| | Phone: 586-986-1929 | | |
| | Fax: 586-9986-2094 | | |
| | Email: Sidney.l.clark@gm.com | | |
| Farber, Frank | ASTM Test Monitoring Center | | No |
| | 6555 Penn Avenue | Λ | |
| | Pittsburgh, PA 15206 | J MR | |
| | Phone: 412-365-1030 | 1 1111 | 1 |
| | Fax: 412-365-1045 | 4 | |
| | Email: fmf@astmtmc.cmu.edu | | _ |
| Farnsworth, Gordon | Infineum USA L.P. | | Yes |
| | 1900 East Linden Avenue | | No |
| | P.O. Box 735 | | |
| | Linden NJ 07036-0536 | | |
| | Phone: 908-474-3351 | | |
| | Fax: 908-474-3637 Email: | | |
| | Gordon.Farnsworth@infineum.com | | |
| Florkowski, Dennis | DaimlerChrysler Corporation | | Yes |
| (FEDIROWSKI, Delinis | CIMS 482-00-13 | | 103 |
| | 800 Chrysler Drive East | | |
| | Auburn Hills, MI 48326-2757 | | |
| | Phone: 248-576-7477 | | |
| | Fax: 248-576-7490 | | |
| | Email: fd11@daimlerchrysler.com | | |
| Glaenzer, Dave | Afton Chemical Corporation | | Yes NZ |
| | 500 Spring Street | ~ 1 | |
| | Richmond VA 23218-2158 | (1)9 | |
| | Phone: 804-788-5214 | EJ AHMAN UST. DOG | |
| | Fax: 804-788-6358 | ZIMMAN | LS 1 |
| | Email: | Ed 1 1 4 120 | member |
| | dave.glaenzer@aftonchemical.com | Volled | |
| Gomez, Redescal | Intevep S.A. | | N. T. |
| | Los Teques, Edo Miranda | | |
| | Adpo 76343 | | |
| | Caracas 1070-A | | |
| | Venezuela | | |
| | Phone: 9-011-582-9086754 | | |

Fax: 9-011-582-9087723 Email: gomezriv@pdvsa.com Hyndman, C. W. Roh Max USA 727 Norristown Road Spring House PA 19477 Email: charles.Hyndman@degussa.com Lai, Patrick S. Imperial Oil Limited No 453 Christina Street South Sarnia, Ontario N7T 8C8 Canada Phone: 519-339-5611 Fax: 519-339-5866 Email: Patrick.k.lai@esso.ca Lopez, Al PerkinElmer Fluid Sciences 5404 Bandera Road San Antonio, TX 78238 Phone: 210-647-9465 Fax: 210-523-4661 Email: al.lopez@perkinelmer.com BP Lubricants USA Miranda, Timothy Yes 1500 Valley Road Wayne, NJ 07470 Phone: 973-305-3334 Fax: 973-686-4039 Email: timothy.miranda@bp.com Riley, Mike Ford Motor Company Yes 21500 Oakwood Boulevard POEE Building, Mail Drop #44 Dearborn, MI 48124-4091 Phone: 313 Fax: 313-845-3169 Email: mriley2@ford.com Rumford, Robert Dow No 1201 Sheldon Road P:Q box 0429 Channelview TX 77530-0429 Phone: 832-376-2213 Fax: 281-457-1469 Email: rhrumford@dow.com Sutherland, Mark Chevron Oronite Company, LLC Yes 4502 Centerview Drive Suite 210 San Antonio, TX 78228 Phone: 210-731-5621 Fax: 210-731-5699 Email: msut@chevrontexaco.com Walker, David AER Manufacturing, Inc. P.O Box 979

phone

| | 1605 Surveyor Boulevard Carrollton, TX 75006 Phone: 972-417-3182 Fax: 972-417-3165 Email: davidwalker@aermfg.com | 7-0 1-1/4/1 | |
|------------------|---|----------------|--|
| Worcester, Dan | Intertek AR SWR1 5404 Bandera Road 5220 TS San Antonio, TX 7823876328 Phone: 210-523-4659 522, 2405 Fax: 210-523-4607 Email: SWR1-5PG dan.Worcester@intertek.com- | | Yes |
| Grundza, Rich | ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206 Phone: 412-365-1031 Fax: 412-365-1045 Email: reg@astmtmc.emu.edu Mailing List | ACA | Yes |
| Oliver, Rick | CMA Monitoring Agency 2805 Beverly Drive Flower Mound, TX 75022 Phone: (972) 724-2136 Fax: 210-341-4038 Email: crickoliver@attbi.com | | Lead . |
| Goldblatt, Irwin | Technical Center 240 Centennial Avenue Piscataway, NJ 08854 3910 Phone: 732-980-3603 Fax: 973-686-4224 Email: Irwin.Goldblatt@bp.com | | THE STATE OF THE S |
| Martinez, Jo | Chevron Oronite Co, LLC 100 Chevron Way Richmond, CA 94802 Phone: 510-242-5563 Email: jogm@chevron.com | ~~) | No |

Andy Ritche

Infinein and New . Ritchio Clippinous com

Charlie Leverett Intertet

Charlie. Leverett @ Intertet.com

210-647-942

Jo Martinez

Oronite jogin@chevron.com

No

- El Altman Afton Chemical

Yes

Phil Scinto Lebrizol 29400 hateland Blud. Wichlifte OH 44092 440-974-2975 PRSELUBRIZOL.COM

Melissa Lovesky Lubrizol 29400 Lakeland Blvd Wickliffe OH 44092 440-347-4263 melv Olubrizol.com

JASON H. Bouden
OH TECHNOIOGIES. Inc.
9300 Progress Phay.
P.O. Box 5039
Mento, OH 44001-5039
440-354-7007
jhbouden@ohtuh.com

Sid Clark

GM PewerTrain

mail lade 483-730-322

823 Joslyn Rd.

Pentiac, MI. 48340-2920

Sidneyo L. Clark @ GM. Cam

George Szappanos Lubrizol 29400 Lakeland Blvd, Wickliffe, OH 44092 440-347-2352 GSZ@ Lubrizol.com

HOUNDER

Doyle Roese

Intineum
1900 E. Linden Ave,
Linden, NJ 07034
1908) 474-3176
Doyle, Buese @ Infineum, com

PRODUCT: SVGM2

Quarterly COA

 $\textbf{Batch No.:} \ TF2221LS20 \ TF2221LS20 \ TF2221LS20$

 Tank No.:
 74
 74
 74

 Analysis
 8/8/2006
 4/1/2006
 1/9/2006

Date:

PRODUCT CODE: <u>HF295</u>

| TEST | METHOD | UNITS | RESULTS | RESULTS | RESULTS |
|----------------------|------------|-----------|---------|---------|---------|
| | | | | | |
| Distillation - IBP | ASTM D86 | °F | 85 | 84 | 86 |
| 5% | | °F | 110 | 108 | 111 |
| 10% | | °F | 124 | 123 | 125 |
| 20% | | °F | 147 | 146 | 146 |
| 30% | | °F | 175 | 175 | 175 |
| 40% | | °F | 228 | 209 | 208 |
| 50% | | °F | 228 | 227 | 226 |
| 60% | | °F | 239 | 239 | 238 |
| 70% | | °F | 254 | 253 | 252 |
| 80% | | °F | 289 | 290 | 287 |
| 90% | | °F | 342 | 343 | 341 |
| 95% | | °F | 360 | 362 | 358 |
| Distillation - EP | | °F | 415 | 417 | 402 |
| Recovery | | vol % | 97.0 | 97.2 | 97.7 |
| Residue | | vol % | 1.0 | 1.0 | 1.0 |
| Loss | | vol % | 2.0 | 1.8 | 1.3 |
| Gravity | ASTM D4052 | °API | 56.8 | 57.3 | 57.3 |
| Specific Gravity | ASTM D4052 | - | 0.752 | 0.850 | 0.749 |
| Reid Vapor Pressure | ASTM D323 | psi | 8.8 | 9.0 | 9.0 |
| Existent gum, washed | ASTM D381 | mg/100mls | <1 | 1 | 1 |

Sequence VG Surveillance Panel November 7, 2006 9:00AM – 12:00PM SwRI, Building 209, Conference Room 103 San Antonio, TX

Motions and Action Items
As Recorded at the Meeting by Bill Buscher

- 7. Motion Approval of Minutes for 06/06/06. Approved without changes. Jerry Brys / Bill Buscher / Passed unanimously
- 8. Action Item Chairman of the LTMS, Ben Weber to investigate the pros and cons of the new IIIG LTMS system and study how well it could potentially be applied to the VG. Ben will send a request for feedback to the ACC chairman, to obtain additional feedback for this investigation. Report back to the group by the May 2007 meeting.

NOTE: Carryover from May 2005 Surveillance Panel meeting.

9. Action Item – Due to recent Surveillance Panel membership charges, labs to send an update to Jim Carter at Haltermann indicating who should receive the analysis results for their monthly (run tanks) or bi-monthly (storage tanks) fuel tank samples. All fuel tank samples analyses will also be copied to the TMC to be kept in a confidential database.

NOTE: Carryover from June 2006 Surveillance Panel meeting.

10.Action Item – TMC to assign reference oil 1007 for each lab's next reference test in order to generate data with reference oil 1007 on the new fuel batch. This data will supplement existing reference oil data on the new fuel batch for potentially updating the fuel correction factors.

NOTE: Carryover from June 2006 Surveillance Panel meeting. Pending test results from labs.

11.Motion – Recommend to the Surveillance Panel to widen the time limits on rering/re-gaps. Revise Section 12.4.1 of the Sequence VG test procedure, by changing 48 hours to 72 hours.

Dan Worcester / no second / tabled for review of additional data

- 12.Action Item Surveillance Panel to review lost test data from semi-annual RSI report before voting on motion listed above.
- 13.Motion Recommend to the surveillance panel to include an optional control method to replace the adjustable pot during Stage 3 conditions with the resistor active in the coolant sensor harness, and an alternate source for the Lambda meter.

Section X2.1 to include: Innovate Technology, Inc. 5 Jenner, Suite 100 Irvine, CA 92618 949.502.8400

www.innovatemotorsports.com.

Dan Worcester / no second / tabled for review of additional data

- 14. Action Item Dan Worcester to obtain and supply additional data for Stage 3 closed loop control. Surveillance Panel to review data before voting on motion listed above.
- 15.Motion Revise Sequence VG test procedure as follows:
 - 13.1.5 All raters of Sequence VG engine pistons shall attend a CRC Light Duty Rating Workshop every twelve months \pm 30 days and produce data that meets CRC's definition of Blue, Red or White for piston deposits and engine varnish. If a rater is unable to meet this requirement for reasons beyond the rater's control, the rater may follow the steps stated in 13.1.6. Note, the results from the most current workshop are effective 45 days from the completion of the workshop unless a re-test proceeds the 45 days.
 - 13.1.6 At any time (excluding one week after the most current CRC workshop and between re-tests) a rater who at the most recent CRC Light Duty Rating Workshop produced data falling in CRC's Yellow group may visit the TMC offices to attempt to generate data on Light Duty workshop hardware to assess their performance compared to workshop-produced data. The TMC will provide rating booths and lights for this purpose. The TMC will select a minimum of 6 pistons from a collection of workshop parts for the rater to rate; if he chooses, the rater may rate more than 6 parts if prior arrangement is made with the TMC. Provision of all rating aids necessary to rating the parts shall be the responsibility of the rater. The TMC will analyze the data in the same way as workshop data and determine which CRC color group definition it meets. If the data meets the CRC Blue, Red, or White requirements, ratings produced by the

rater may be used for testing. Results from a raters first or second re-test are effective immediately and void the 45 day grace period stated in Section 13.1.5.

Additional requests to use this procedure are permitted only after the rater receives training from experienced industry raters. After two attempts to complete this procedure, the rater shall attend a CRC Light Duty workshop before making another request.

Frank Farber / Dwight Bowden / 10 For 0 Against 1 Waive

16.Action Item – Clayton Knight to provide a thorough definition of what TEI is providing as the handling service for the industry FCS parts order.