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**Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS**

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Originally Issued: November 20, 2006

Reply to: Frank Farber
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# Unapproved Minutes of the November 7, 2006 Sequence III Surveillance Panel Meeting held in San Antonio, TX



The meeting was called to order at 1:00 pm by Chairman DaveGlaenzer. A membership list was circulated for members & guests to sign in. It's shown in Attachment 1.

Agenda Review

Bill Buscher is Action & Motion recorder.

Sequence III Meeting Minutes
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The Agenda was accepted as shown on Attachment 2.

Membership Changes

Joe Vujica will replace Monica Beyer for Lubrizol.

Meeting Minute Status

The June 6, 2006 meeting minutes were approved by the surveillance panel without changes or corrections.

Review of Action Items from Last Meeting

As Recorded at the Meeting by Bill Buscher

1. Action Item – Verify that all ASTM analysis methods for test fuel analysis specified by the Sequence IIIG test procedure match all ASTM analysis methods indicated on Haltermann's test fuel certificate of analysis. If discrepancies are found, then the test procedure will be modified to match Haltermann's certificate of analysis.
   **Done. Issued Information Letters 06-1 and 06-2.**

2. Action Item – Labs will solicit training for the ETW-E180 torque wrench from their local Ingersoll-Rand representative.
   **On going. Some labs complete and some labs in process.**

3. Action Item – Sid Clark will ask the GM fastener engineer if labs should continue to use oil on the threads of "used" main cap bolts during engine assembly for honing.
   **Done. Decided to continue to lightly oil as per the assembly manual.**

4. Motion – Accept all recommendations included in Pat Lang's UEB report and modify the Sequence IIIF and IIIG test procedures and engine assembly manual accordingly. These recommendations will be included in revision 7 of the engine assembly manual. Effective with the next scheduled reference test at each lab.
   Pat Lang / Sid Clark / 10 For 0 Against 1 Waive

**Done. Issued Information Letter 06-2. Labs are to review current revision of assembly manual to determine if any additional corrections are necessary.**

5. Action Item – TMC to post all UEB data and information on their website in a format as per the guidance of the surveillance panel chairman.

**Done. Currently available from the TMC website.**

6. Motion – All Sequence IIIG surveillance panel members to review the May 19, 2006 version of the Sequence IIIG test procedure and to vote for approval of the test procedure by June 16, 2006.
   Pat Lang / Bill Nahumck / Passed unanimously

**Done. Completed June 28, 2006.**

7. Action Item – Review the quantity of current Sequence IIIG reference oils that will be needed for Sequence IIIH test development and provide estimates to the oil suppliers for potential reblends. Also review the need to include any new oils in the Sequence IIIH development. Provide estimates to oil suppliers by July 1, 2006.

**Done. Revised for reference oil needs for carryover of Sequence IIIG into GF-5.**

8. Action Item – TMC to send out the format for reporting fuel analysis to the participating labs.

**Done. Issued Information**

CPD Report

The report is shown below. Camshaft supply is no longer an issue. The panel complimented the CPD on its quick action to resolve the camshaft supply issue. No lab testing was suspended because of the shortage of camshafts. OHT & GM are managing supply issues so no future shortages occur.

**1.) Rejections from 6/02/06 to 11/07/06:**

| ITEM | DESCRIPTION | REASON REJECTED | QTY | REPLACED (Y/N) |
|---|---|---|---|---|
| OHT3F-008-6 | CAMSHAFT, SPECIAL TEST, IIIF | SCRATCH ON LOBE | 2 | YES |
| OHT3F-008-6 | CAMSHAFT, SPECIAL TEST, IIIF | RUST | 1 | YES |
| OHT3F-011-2 | THRUST PLATE | CRACKED | 2 | YES |
| OHT3F-029-3 | LIFTER, TEST, ACI W/ FLAT | VISUAL DEFECTS | 1 | YES |
| OHT3F-053-1 | PISTON | DENT | 1 | YES |

**2.) Technical Memos Issued**

None

**3.) Batch Code Changes**

| IIIF | Batch Code | Date Introduced |
|---|---|---|
| Cam Bearing | BC 13 | 9/07/06 |
| Conn. Rod Bearing | BC 14 | 7/19/06 |
| Main Bearing | BC12 | 10/20/06 |
| Camshaft | PC 13 | 10/09/06 |
| Rocker Arms | BC 10 | 6/23/06 |

| IIIG | Batch Code | Date Introduced |
|---|---|---|
| Cam Bearing | BC 13 | 9/14/06 |
| Conn. Rod Bearing | BC 14 | 8/02/06 |
| Main Bearing | BC12 | 10/11/06 |
| Camshaft | PC 13 | 9/20/06 |
| Rocker Arms | BC 10 | 6/21/06 |

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## OHT IIIG Test Life

OHT is working with suppliers to ensure that IIIG parts are available for GF-5 testing. However, it was noted that all automotive parts suppliers are experiencing difficult times and it is in the industries best interest to start the build-out as soon as possible. The number of tests needed to estimate build-out quantities needs to be defined as soon as possible.

### Sequence IIIG Test Life

ASTM Sequence III Surveillance Panel Meeting
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Prepared by
OH Technologies, Inc.

### Background

- In August 2006 OH Technologies was asked by GM if the extension of the IIIG was possible for the duration of GF-5 (Year 2015).
- OHT responded that the test method could be supported with OHT parts contingent on the availability of all GM supplied material (GM Race Shop and GM SPO).
- ILSAC elected to include the IIIG in the GF-5 specification.

### Issues

- OHT has requested written confirmation of parts availability from GM Race Shop.
- The availability of GM SPO supplied components needs to be quantified.
- Currently, all OHT supplied components are available and are not required to be built out. However, anticipate this situation to change.

### OH Technologies: Business Position

- Upon termination of the IIIG/ILSAC GF-5, it is the objective of OHT to have zero inventory.
- OHT is requesting from vendors:
  - To be informed of any change to availability.
  - The right to execute a build out order.

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## Laboratories

- Accurate estimates reduce costs.
- Build out orders from laboratories will be requested if production of component terminated.

## GM Report

Sid Clark presented GM's build-out plan for the IIIG. Plant 36 at this point is the most critical parts supplier that could affect test part supply. The chairman will send a letter to ILSAC Oil in order to get additional information on GF-5 testing needs.
GM & OHT both noted that testing estimates are needed to begin the build-out process for the IIIG.

## Sequence IIIG

GF-5 Sequence IIIG Build-Out

Surveillance Panel Update 11/07/2006

GM Powertrain Materials Engineering

### What Propagated IIIG Inclusion Into GF-5?

The Cancellation of IIIH Development

ILSAC Official Statement

- All engine oil standards should include an engine wear test – Sequence IVA is primarily a scuffing test
- No new engine wear test is available to replace the Sequence IIIG test
- Therefore ILSAC determined that the Sequence IIIG test must be retained for GF-5
- GM Race Shop and OH Technologies are working on plans to ensure a consistent supply of IIIG test engines through the expected life of GF-5

## Why Build-Out Plan is Necessary

### Powertrain Plant 36 Shutdown

Powertrain Plant 36 is scheduled to close the end of 2008 MY production. Race Shop is currently planning to purchase build-out materials to continue IIIG testing through 2010.

Industry survey indicated ~ 1200 tests would be needed to continue IIIF / IIIG - 2010.

Race Shop plans are to minimize risk by storing engine blocks and cylinder heads in the "as received state of machining" from Plant 36 and tap this supply as needed for further processing.

Crankshafts, Connecting Rods, & Front Covers will be finish machined and packaged for long term storage.

## Build-Out Component Overview (Powertrain Plant 36)

- Engine Block
  - Pulled from line less lifter bore machining
  - Precision machined by GM contracted supplier
- Cylinder Heads
  - Pulled from line less combustion chamber & spring seat machining
  - Precision machined by GM contracted supplier
- Crankshafts
  - Finish machined at plant 36
- Connecting Rods
  - Finished part through GM contracted supplier, may require one time purchase for batch lot supply
- Front Covers
  - Finish machined at Plant 36
  - Epoxy impregnated (OHT)

## What's Required to Run Through GF-5

Looking at the current TMC Reference Charts indicates ~155 Reference Tests have been run in the IIIG for GF-4.

Calculating 18 tests/qualified reference = ~2,790 Candidate Tests + 155 Reference Tests or~ (3000 tests to date).

Add in the GF-4 Build-out survey @ ~ 1200 tests plus non-qualified tests (?) and the estimate approaches ~ 5000 to 5500 tests required to carry the IIIG through GF-5.

Not knowing how many non-qualified tests were run during GF-4 preliminary testing makes the estimate somewhat questionable.

However, if GF-5 does not require the same level of initial testing as GF-4, then we would require something <5000 tests.

## What's Required to Run Through GF-5

Another way is to look at each laboratories total IIIG tests to date. That number comes to ~ 2022 around the middle of October or ~ 674 tests/year.

Assuming the same level of testing for GF-5 projected for nine more years = 6,066 tests.

Now we have estimates of:

1200 for GF-4 through 2010

With an overall number of:

5000 – 6000 ? for GF-4/5 through 2015

## Component Requirements

| | 1200 | 5000 | 5500 | 6000 |
|---|---|---|---|---|
| Blocks | 200 | 833 | 917 | 1000 |
| Crankshafts | 200 | 833 | 917 | 1000 |
| Cylinder Heads | 2400 | 10000 | 11000 | 12000 |
| Connecting Rods | 7200 | 30000 | 33000 | 36000 |
| Pistons | 7200 | 30000 | 33000 | 36000 |
| Ring Sets | 1200 | 5000 | 5500 | 6000 |
| Camshafts | 1200 | 5000 | 5500 | 6000 |
| Lifters | 14400 | 60000 | 66000 | 72000 |
| Rocker Arms | 14400 | 60000 | 66000 | 72000 |
| Pushrods | 14400 | 60000 | 66000 | 72000 |
| Bearing Sets | 1200 | 5000 | 5500 | 6000 |
| Front Covers | 200 | 833 | 917 | 1000 |
| Rear Covers | 200 | 833 | 917 | 1000 |

**Build Out Required:** Absolutely; Good Idea; Most Likely; Supplier Dependent

## Other Test Component Availability Concerns

SPO Service Parts
Will they be available for 10 more years?

- Gaskets
- Fasteners
- Valve train drive gear
- Induction system components
- Sensors
- Rocker Covers
- Balancers
- Flywheels
- Oil Filter Housings
- Oil Pans

## Additional Warehousing Concerns

- Warehousing and preservation of build-out materials
  - Blocks
  - Cylinder Heads
  - Crankshafts
  - Connecting Rods
- All unfinished castings, i.e., blocks & heads will be preserved and stored at Export Warehousing for later use.
- All finished materials, i.e., crankshafts, connecting rods, and some other build out materials like rocker arms, pushrods, maybe rings, bearings, pistons, etc. will also have to be long term preserved.

Export Corporation

**Capabilities**

Whether we are packaging and packing your product for shipment overseas or for shorter distances, and whether your product consists of service parts, multiple item packages or machinery, every job, large or small, is planned in advance of production.

Export Corporation can package industrial units, kits or sets, bulk packs and parts from large sub assemblies to items as small as a single bolt. We can manage your whole service parts program for all of your customers.

Courtesy Export Corp.

## Next Steps

- Clearly we need additional industry input
  - Users of the test, not just the testing laboratories, need to agree to concept & quantities
- GM Powertrain, GM Race Shop, SPO, and OH Technologies
  - Coordinate all test component requirements
    1. Agree on quantities
    2. Agree on short and long term inventory levels of non critical parts, as they may become critical
    3. Establish plan for build-out procurement of non-renewable parts
    4. Establish plan for procurement of renewable parts
    5. Start building inventory levels **NOW!**

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## IIIF/IIIG TMC Test Status

The complete TMC reports are posted to the TMC website.

| Sequence IIIG | | | |
|---|---|---|---|
| Parameter | Δ/s | Average Δ, in Reported Units | Direction |
| PVIS | *-1.267* | *-61.4 %* | *Mild* |
| WPD | -0.426 | -0.18 Merits | Severe |
| ALCW | *-0.720* | *-17.6 μm* | *Mild* |

| Sequence IIIF | | | |
|---|---|---|---|
| Parameter | Δ /s | Average Δ, in Reported Units | Direction |
| PVIS | 0.166 | 45.1% VI | Mild |
| APV | *1.031* | *0.25 Merits* | *Mild* |
| WPD | 0.435 | 0.05 Merits | Mild |
| PV60 | *-0.524* | *-48.7% VI* | *Mild* |

When Δ/s is in **RED Italic** the shift is significant!

## RSI Report

Reports were previously emailed to panel members and posted to the RSI website. The Chairman reviewed the reports at the meeting. No concerns were noted. The panel will request that RSI estimate pass fail rates if limits change in ¼ standard deviation increments in order to help determine hardware needs for GF-5.

## Fuel Supplier Report

Jim Carter presented the latest fuel batch analysis summaries (Attachment 4). One fuel delivery trailer was found to be contaminated over the last six-months. The supplier feels there are no supply issues for IIIG fuel through 2015.

## O&H Sub Panel

The chairman noted that after discussions with GM, the O&H panel was going to be disbanded in lieu of ad hoc groups. The chairman as well as the entire panel thanked Pat Lang for his hard work in chairing the O&H Panel.

Connecting Rods: New conrods were introduced this report period. The new conrods do not have the oil slinger slots. GM eliminated the oil slinger slots with the introduction of piston cooling jets. The panel will monitor severity closely to see if WPD results are affected. Labs where requested to save all of their older rods in case future studies are needed.

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## Old Business

Torque Wrench: Larry Hamilton (LZ) presented information (below) concerning the use of the new torque wrench from Ingersoll Rand. Larry offered to supply other labs a Lubrizol created instruction guide to anyone who might be interested. Lubrizol's stated Ingersoll Rand training is required for the new torque wrench.

LUBRIZOL

**Ingersoll Rand Expert Wrench ETW-E180**

The ETW-E180 Torque Wrench was selected as a replacement for the Ingersoll Rand Sensor I Torque Wrench



LUBRIZOL

**Comparing the ETW-E180 to the Sensor I Torque Wrench**

ETW-E180

- Complex to use
- Training Needed
- Ratchet is an option
- Alarm has lower pitch
- Has more options, such as PC hook-up

Sensor 1

- Longer torque arm
- Easy to use
- Handle rotates to see the readout

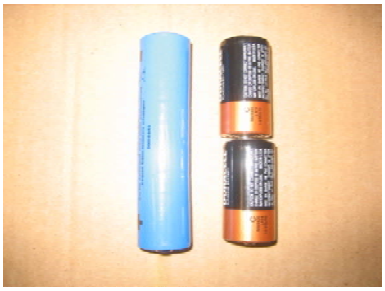
2 

When comparing the ETW-E180 to the Sensor I the E180 is much more difficult and complex to use. Training from the IR support group is necessary to understand the nuances' of the wrench and for the setup of the required general parameters. The audio alarm is a much lower pitch, and thus difficult to hear in a working room. The Sensor I's handle could rotate to see the readout during torquing, the E180 handle does not rotate so it is harder to see the readout during torquing process. Also and the ratchet is an additional option. The E180 wrench has more options than the Sensor I wrench, such as PC hook-up.

LUBRIZOL

## Ni (Re-chargeable) and Alkaline Batteries

- **Two types of batteries**
- **Ni batteries tend to allow the wrench to shut down when the wrench is being operated**
- **Alkaline battery have a longer, one time, working life**



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Two types of batteries can be used to operate the E180 wrench. Ni (Re-chargeable) and Alkaline. The Alkaline battery has a longer, one time, working life than the Ni batteries. And because the Ni batteries have different dimensions, they tend to allow the wrench to shut down when the wrench is being operated. This requires a check of the general parameters as a shut down may cause them to change.

LUBRIZOL

## Observations:

- When using the E-180 for torque to angle, if chatter occurs the wrench is unable to deliver the proper angle. This happens on the Main Cap Bolts and Rocker Arm Bolts.
- The E-180 has a reset time between torquing sequences. This causes the torquing sequence to be slower and thus a higher level of concentration is required, if not errors can occur.
- The IR support groups seems to be learning about the wrench as problems are communicated back to them. Typical of a new wrench to the market.
- Check that software matches work instructions. The current software is 102-B-1.05

4 

LUBRIZOL

## Recommendations

Use the ETW-E180 Torque Wrench for:

- Rear Seal Support Plate Angle
- Main Cap Side Bolts Angle
- Head Bolts Yield

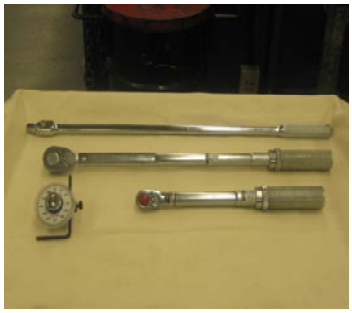
5 

LUBRIZOL

**Recommendations**

Use Angle Gauge with Breaker Bar
(Snap-On TA-360 or equitant) for:

- Main Cap Bolts
- Rocker Bolts



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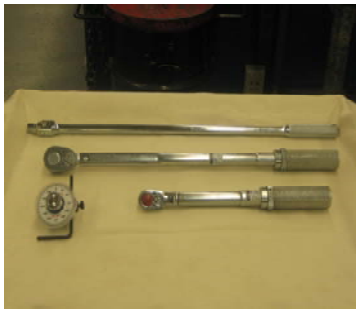
LUBRIZOL

**Recommendations**

Use Ratcheting Torque Wrench
(Snap-On or equitant) for:

- All Torques



7 

Laboratories are to review the Lubrizol torque wrench recommendations for approval at a later date. Charlie Leverett, Sid Clark and any interested test labs are to work together on conducting an experiment to determine torque plus angle values as replacements for current torque to yield requirements for any applicable fasteners in a Sequence IIIF/G build. Charlie will create and distribute a form to collect torque data.

IIIG Standard Status: Pat Lang reported that D 7320 is the new IIIG standard number and that the ballot will close in a couple weeks.

New Business

Rater Calibration: Frank Farber presented revised wording for the IIIF and IIIG test procedures to address assessment of rater performance outside the CRC workshop. See motions and action items. Bill Buscher requested that raters be allowed to generate additional data at the workshop, after groupings are determined, if the rater results are yellow. It was pointed out that sufficient time or parts are not available at the workshop to allow this. The panel felt that the 45 day grace period that was stated in the motion allowed for raters to get back in the system in a reasonable time. The motions passed 11(for)-0(against)-1(waive).

Used oil MRV Issue: The chairman reported that he was queried regarding the allowance of a different lab running MRV analysis other than the lab actually running the IIIGA test. The chairman noted that this requested was stimulated after a failing MRV result from the IIIGA test lab. The panel discussed the issue and felt that getting a failing result was not justification for allowing a second MRV analysis and was not in keeping with the spirit of the test procedure. The panel did note, that only one MRV result is allowed and that it is to come from the lab that ran the test, unless for some reason their MRV unit(s) is out of operation.

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Scope & Objectives

# SCOPE

**The Sequence III Surveillance Panel is responsible for the surveillance and continual improvement of the Sequence IIIF and IIIFHD tests documented in ASTM Standard D6984-05 as update by the Information Letter System. The Sequence III Surveillance Panel is also responsible for the surveillance and continual improvement of the Sequence IIIG and IIIGA tests documented in ASTM Standard D7320 as updated by the Information Letter System. Data on test precision will be solicited and evaluated at least every six (6) months for Sequence III test procedures. The Surveillance Panel is to provide continual improvement of rating techniques, test operation, test monitoring and test validation through communication with the Test Sponsor, ASTM Test Monitoring Center, the Central Parts Distributor, Fuel Supplier, ASTM B0.01 Passenger Car Engine Oil Classification Panel, ASTM Committee B0.01, ACC Monitoring Agency and CRC Motor Rating Methods Group. Actions to improve the process will be recommended when appropriate based on input to the Surveillance Panel from one or more of the previously stated groups. This process will provide the best possible Sequence III Type Test Procedure for evaluating engine oil performance with respect to it's ability to prevent oil thickening, varnish formation, oil consumption and engine wear.**

| **OBJECTIVES** | **TARGET DATE** |
|---|---|
| **1. Develop a plan to secure test components for Sequence IIIF/IIIG thru GF-5 (2015)** | **June 2007** |

The meeting was adjourned at 4:15 pm.

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

1. Action Item – Test labs will solicit training for the ETW-E180 torque wrench from their local Ingersoll-Rand representative.
NOTE: Carryover from June 2006 Surveillance Panel meeting.

2. Action Item – Test labs to review current revision of the Sequence IIIF/G assembly manual to determine if any additional corrections are necessary.

3. Action Item – In order for hardware suppliers to initiate hardware procurement for GF-4/5 testing through 2015, test labs and test users need to make an initial estimate of Sequence IIIG testing needs through the life of GF-5. Chairman to develop and distribute a survey form for this estimate. Chairman to also issue a letter to ILSAC/OIL asking for potential GF-5 test limits for the Sequence IIIG test, to assist in this estimate. Estimate to be completed by January 1, 2007.

4. Action Item – Chairman to ask RSI to perform a "what-if" analysis on their current Sequence IIIG candidate database for different pass limits, tightened in ¼ of a standard deviation increments up to 1 standard deviation. Analysis should also be broken down by viscosity grade.

5. Action Item – Charlie Leverett, Sid Clark and any interested test labs to work together on conducting an experiment to determine torque plus angle values as replacements for current torque to yield requirements for any applicable fasteners in a Sequence IIIF/G build.

6. Motion – Revise the Sequence IIIF and Sequence IIIG procedures as follows:

13.4.3.4 All raters of Sequence IIIG engine pistons shall attend a CRC Light Duty Rating Workshop every twelve months ± 30 days and produce data that meets CRC's definition of Blue, Red or White for piston deposits. If a rater is unable to meet this requirement for reasons beyond the rater's control, the rater may follow the steps stated in 13.4.3.5. Note, the results from the most current workshop are effective 45 days from the completion of the workshop.

13.4.3.5 At any time (excluding one week after the most current CRC workshop and between re-tests) a rater may visit the TMC offices to attempt to generate data on Light Duty workshop hardware to assess his 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 Sequence IIIG test results. Results from a raters first or second re-test are effective immediately and void the 45 day grace period stated in Section 13.4.3.4.

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.

NOTE: Sections numbers and test references will be different for the Sequence IIIF procedure.

Frank Farber / Sid Clark / 11 For 0 Against 0 Waive

7.Action Item – OHT to supply a specification sheet for the replacement air starter.

ASTM Sequence III Surveillance Panel November 7, 2006

| Name/Address | Phone/Fax/Email | | Signature |
|---|---|---|---|
| Ed Altman<br>Afton Chemical Corporation<br>P.O. Box 2158<br>Richmond, VA 23218-2158<br>USA | 804-788-5279<br>804-788-6358<br>ed.altman@aftonchemical.com | ☑ Seq. III Surv. Panel<br>☑ Seq. III Mailing List<br>☐ O&H Subpanel<br>☑ O&H Mailing List | Present |
| Jason Bowden<br>OH Technologies, Inc.<br>9300 Progress Parkway<br>P.O. Box 5039<br>Mentor, OH 44061-5039<br>USA | 440-354-7007<br>440-354-7080<br>jhbowden@ohtech.com | ☐ Seq. III Surv. Panel<br>☐ Seq. III Mailing List<br>☐ O&H Subpanel<br>☐ O&H Mailing List | Present |
| Dwight H. Bowden<br>OH Technologies, Inc.<br>9300 Progress Parkway<br>P.O. Box 5039<br>Mentor, OH 44061-5039<br>USA | 440-354-7007<br>440-354-7080<br>dhbowden@ohtech.com | ☐ Seq. III Surv. Panel<br>☐ Seq. III Mailing List<br>☐ O&H Subpanel<br>☐ O&H Mailing List | Present |
| Donald Bryant<br>The Lubrizol Corporation<br>28400 Lakeland Boulevard<br>Wickliffe, OH 44092<br>USA | 440-347-2159<br>440-943-9004<br>debr@lubrizol.com | ☐ Seq. III Surv. Panel<br>☐ Seq. III Mailing List<br>☐ O&H Subpanel<br>☐ O&H Mailing List | Present |
| Don Burnett<br>ChevronPhillips Chemical Company<br>Chevron Tower<br>1301 McKinney Street<br>Suite 2130<br>Houston, TX 77010-3030<br>USA | 713-289-4859<br>713-289-4865<br>burnede@cpchem.com | ☐ Seq. III Surv. Panel<br>☐ Seq. III Mailing List<br>☐ O&H Subpanel<br>☐ O&H Mailing List | Present |
| James Carter<br>Haltermann Products<br>3520 Okemos Rd.<br>Suite #6-176<br>Okemos, MI<br>USA | 517-347-3021<br>517-347-1024<br>JECarter@dow.com | ☑ Seq. III Surv. Panel<br>☑ Seq. III Mailing List<br>☐ O&H Subpanel<br>☐ O&H Mailing List | Present |
| Timothy L. Caudill<br>Ashland Oil Inc.<br>22nd & Front Streets<br>Ashland, KY 41101<br>USA | 606-329-1960 x5708<br>606-329-2044<br>tlcaudill@ashland.com | ☑ Seq. III Surv. Panel<br>☑ Seq. III Mailing List<br>☑ O&H Subpanel<br>☑ O&H Mailing List | Present |

ASTM Sequence III Surveillance Panel November 7, 2006

| Name/Address | Phone/Fax/Email | | Signature |
|---|---|---|---|
| Sid Clark<br>GM Powertrain<br>General Motors Corporation<br>MC - 483-730-322<br>823 Joslyn Rd.<br>Pontiac, MI 48340-2920<br>USA | 248-857-9959<br><br>sidney.l.clark@gm.com<br><br>Test Sponsor Rep | ☐ Seq. III Surv. Panel<br>☐ Seq. III Mailing List<br>☐ O&H Subpanel<br>☐ O&H Mailing List | Present Sid |
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ASTM Sequence III Surveillance Panel November 7, 2006

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ASTM Sequence III Surveillance Panel November 7, 2006

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**Attachment 2**

# AGENDA
# SEQUENCE III SURVEILLANCE PANEL MEETING

**Southwest Research Institute, San Antonio, Texas**
**November 7, 2006**
**1:00 PM to 5:00 PM**

1. **APPOINTMENT OF RECORDER OF ACTIONS/MOTIONS**
2. **AGENDA REVIEW**
3. **MEMBERSHIP CHANGES**
4. **APPROVAL OF THE MINUTES FROM THE JUNE 2006 MEETING**
5. **REVIEW OF ACTION ITEMS FROM THE LAST MEETING**

**SEQUENCE III CPD SUPPLIER REPORTS**

1. OHT - Camshaft supply interruption/resolution
2. GM - Build-out plans for life of GF-5 (2015)

ASTM-TMC SEMIANNUAL REPORT HIGHLIGHTS – Rich Grundza

D6984 - SEQUENCE IIIF

SEQUENCE IIIG

**Quarterly fuel storage tank analyses**

SEQUENCE IIIGA

RSI SEMIANNUAL REPORT– Bill Mahoney

1. **D6984 - SEQUENCE IIIF**
2. **SEQUENCE IIIG/IIIGA**

**SEQUENCE III FUEL SUPPLIER REPORT – James Carter**

**SEQUENCE III O&H**

**SEQUENCE IIIG ISSUES**

1. **Connecting rod change**
2. **Current Severity concerns**

**OLD BUSINESS**

1. **Torque wrench experience – Larry Hamilton**
2. **Status of IIIG Standard – Pat Lang/Ben Weber**

**NEW BUSINESS**

1. **Rater Calibration – Frank Farber**
2. **Used oil MRV analysis at lab different than lab running engine test**

**REVIEW OF SCOPE & OBJECTIVES – David Glaenzer**
**ADJOURNMENT**