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Unapproved Minutes of the May 7, 2008
Sequence VG Surveillance Panel Meeting
held in San Antonio, TX

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The meeting was called to order at 9:00 am by Chairman Andy Ritchie. 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.

The Agenda was accepted as shown on Attachment 2.

Membership Changes

No membership changes were noted.

Meeting Minute Status

The November 14, 2007 meeting minutes were approved by the surveillance panel.

Review of Action Items from Last Meeting

Motions and Action Items

As Recorded at the Meeting by Bill Buscher

1. Action Item – Surveillance panel chairman to request that the chairman of LTMS, Ben Weber, schedule a meeting to conduct a comprehensive review of the different LTMS systems utilized by the PCMO test types and their pros and cons. **Open.**
2. Action Item – Add to the scope and objective to monitor the progress of the comprehensive review of the different LTMS systems utilized by the PCMO test types and their pros and cons. **Done.**
3. Action Item – Labs to save their Ford 4.6L engine and dyno harnesses when they become unusable so that they can be repaired or the good connectors from these old harnesses can be reused. **Done.**
OHT has found a source of parts for these harnesses, so this action item is no longer required.
4. Action Item – Labs and Ford to start discussing the coordination of the next hardware order. **Done.**
Several task force conference calls have occurred and a face-to-face meeting will occur later today.
5. Motion – Update the fuel batch correction factors by replacing the current correction factors with the fixed correction factors recommended by the TMC (AES = 0.42, RCS = 0.23, AEV = 0.12, APV = 0.39). Effective for all reference tests completing on or after November 10, 2007 and for all candidate tests completing on or after November 14, 2007. **Done. Information Letter 07-1 issued on December, 12 2007.**

Rich Grundza / Dan Worcester / Passed Unanimously with 1 Waive

6. Action Item – TMC will review the procedure that the surveillance panel followed for the previous fuel batch transition and report back to the surveillance panel members. Anticipating that this process will start in mid 2008, based from current inventory levels and usage rates. Surveillance Panel will review fuel status in 3 months. **Done.**
7. Action Item – Surveillance panel chairman, test sponsor, fuel supplier and TMC will form a task force to review the process for blending a new fuel batch. **Open. To be discussed today.**
8. Action Item – Labs to survey their piston and ring needs for a final build-out of all four piston/ring sizes. The final piston and ring build-out and purchase would be to match the total quantity of pistons and rings to the total quantity of cylinder blocks in inventory at the labs. **Open. To be discussed at the task force meeting later today.**

Sequence VG Meeting Minutes

May 7, 2008

San Antonio, TX

9. Action Item – Dan Worcester to supply FCS with the specific cylinder block and cylinder head part number that the VG test uses. FCS will investigate the availability of usable cores for these cylinder blocks and cylinder heads. If these cores are available, then FCS will get the labs in touch with the core supplier. **Done. FCS has put labs in touch with Bishop. One or more labs have successfully purchased intake manifolds, front covers and cylinder head cores. One or more labs have purchased cylinder block cores, but are currently working an issue with the chain guide pins.**
10. Action Item – Form a VG hardware and operations task force, lead by Dan Worcester, to address all VG hardware issues. This task force will include, members from all labs, test sponsor and FCS. **Done.**
11. Action Item – The first issue the newly formed VG hardware and operations task force will address is Stage 3 AFR monitoring and control. **Done. Information Letter 08-2 issued on March, 5 2008.**
12. Motion – Modify section 12.4.1 of the test procedure to change the blowby validity criteria from an average at 120 hours that falls within 60-70 L/m to 60-72 L/m. **Done. Motion withdrawn.**

Dan Worcester / No second, motion fails.

13. Motion – Modify section 7.9.4 of the test procedure to allow for replacement of the valve guide on the cylinder heads that have already been remanufactured by AER for camshaft bearing inserts. If guides are worn and no longer within specification, new guides can be installed at a local machine shop (Ford Part Number F5AZ-6510-A, with the mating valve stem seal F6AZ-6571-AA). The new guides must be reamed then the valve seats, stems and guide clearances must meet the Ford Service Manual limits. **Done. It was decided that AER will continue to remanufacture cylinder heads for the Sequence VG test. AER can provide extra sets of the correct valve springs with the remanufactured cylinder heads.**

Dan Worcester / Ed Altman / Passed Unanimously with 2 Waives

14. Action Item – Ron Romano will obtain the valve guide replacement procedure from Ford's authorized engine remanufacturer and provide it for inclusion into the test procedure. **Done. It was decided that this option will no longer be pursued.**
15. Action Item – The second issue the newly formed VG hardware and operations task force will address is the camshaft baffle cleaning and conditioning procedure. **Done. Information Letter 07-1 issued on December, 12 2007.**

Test Sponsor Report

Ron Romano participated via teleconference link, while members of Ford Component Sales were in attendance. Dan Worcester continues to work with Ford Components Sales with regards to hardware coordination. A meeting was to be held later on that today to continue to resolve quantity and handling issues. Discussions centered around supplies of EEC modules and fuel injectors. There appear to be different types of injectors, based on color. One type is colored purple while the other is colored orange. There is some evidence to suggest that these injectors may flow differently, but Ford stated that both types met specifications. A question was asked as to where the flow specifications in the method came from. There was an information letter (01-1) which updated these specifications, issued in 2001 and the specifications were based on actual flow data from new injectors. Fuel pump failures were discussed and it appears the rather high failure rate has abated. Ron thanked labs sent fuel pumps for analysis.

Sequence VG Meeting Minutes
May 7, 2008
San Antonio, TX

Test Monitoring Center Report

A copy of the TMC report can be obtained from the TMC website. There were no questions or comments regarding the TMC report. Rich presented updated test data through May 5, 2008 on The TMC presentation is included as Attachment 3.

ACC Monitoring Agency Report

Frank Farber presented data from the ACC Monitoring Agency report, which can be accessed via the ACC website. Phil Scinto suggested that the pooled standard deviation of reference oil data be added to the report. Frank agreed to add this and had updated the report during the meeting. It was also suggested that using minor modification data may provide a better precision estimate, but no action was suggested at this time.

Fuel Supplier Report

Jim Carter gave a quick summary of fuel consumption and adjustments to maintain RVP in the stored fuel. Analysis of fuel in storage is included as attachment 4. Jim noted that Haltermann has not moved the fuel to Detroit. The fuel is being stored in Channelview and sent to Detroit for adjustment, prior to delivery to the purchaser. Jim was uncertain where the new fuel would be stored. Timeline for the new fuel batch was reviewed and the group instructed the fuel supplier to begin blending of the new fuel batch. The panel moved to use 2002/2003 batch pistons, rings and reused cams for the fuel approval tests. A conference call will be scheduled once the small batch is blended to discuss testing, etc.

Scope and Objectives

A review of the scope and objectives was conducted. The revised scope and objectives are included as attachment 5. Andy Ritchie also gave a brief presentation of his report to subcommittee D0.02.B0, which are also included as part of attachment 5.

New and Old Business

Items of New business and old business were addressed. As new business, the panel agreed to add follower pin wear and ring gap increase data to the test report, as well as removing last reference test information. An information letter and report package changes will be required.

A listing of Motions and Action items recorded during the meeting is included as attachment 6.

The meeting was adjourned at 11:50 am.

VG, May 7th 2008 Attachment 1

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Agenda
Sequence VG Surveillance Panel
May 7 2008 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 Nov 14th 2007	All
6. Review action items from last meeting.	Andy Ritchie
7. Test Sponsor report.	Ron Romano
8. TMC Report. - Questions on semi-annual report.	Rich Grundza
9. Fuel Supply Report.	James Carter
10. New Fuel Batch	All
11. Operational and Hardware Items.	All
12. VG parts supply update	Ford Component Sales
13. Review Scope and Objectives.	All
14. Old business	All
15. New business	All
16. Adjourn	

Sequence VG Update

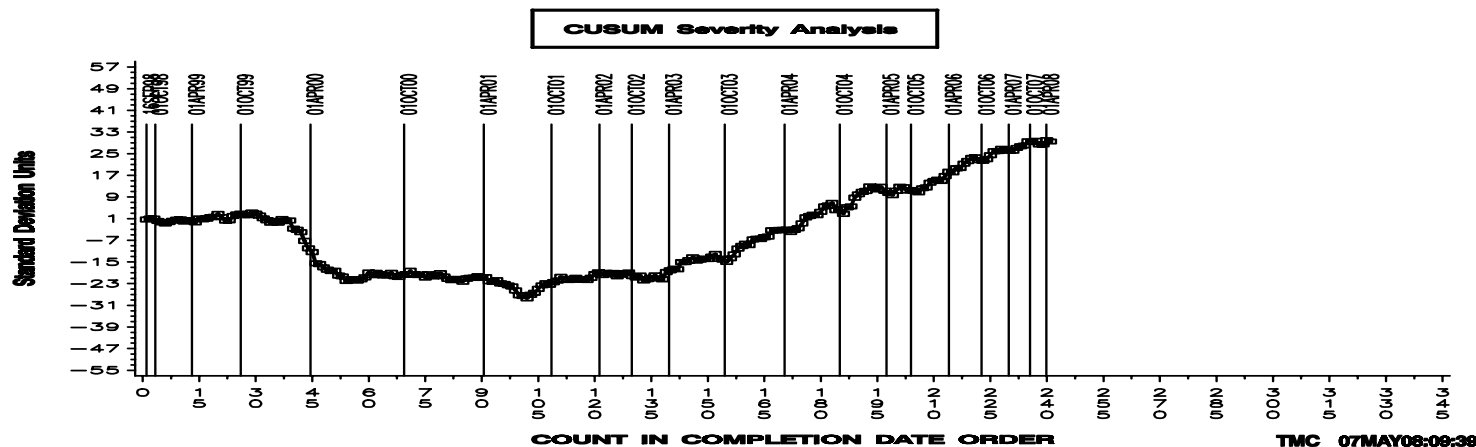
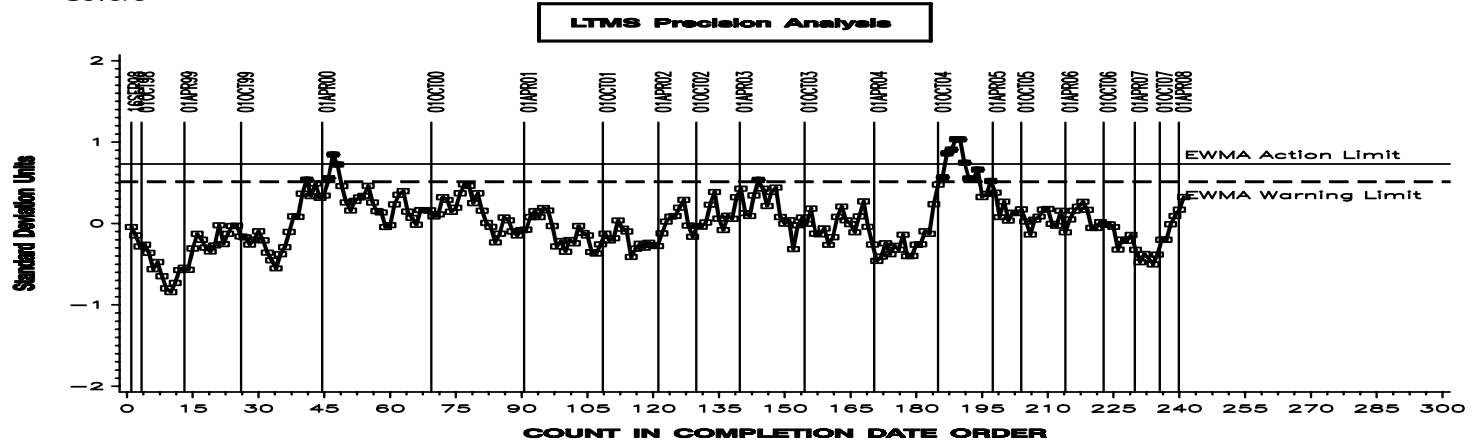
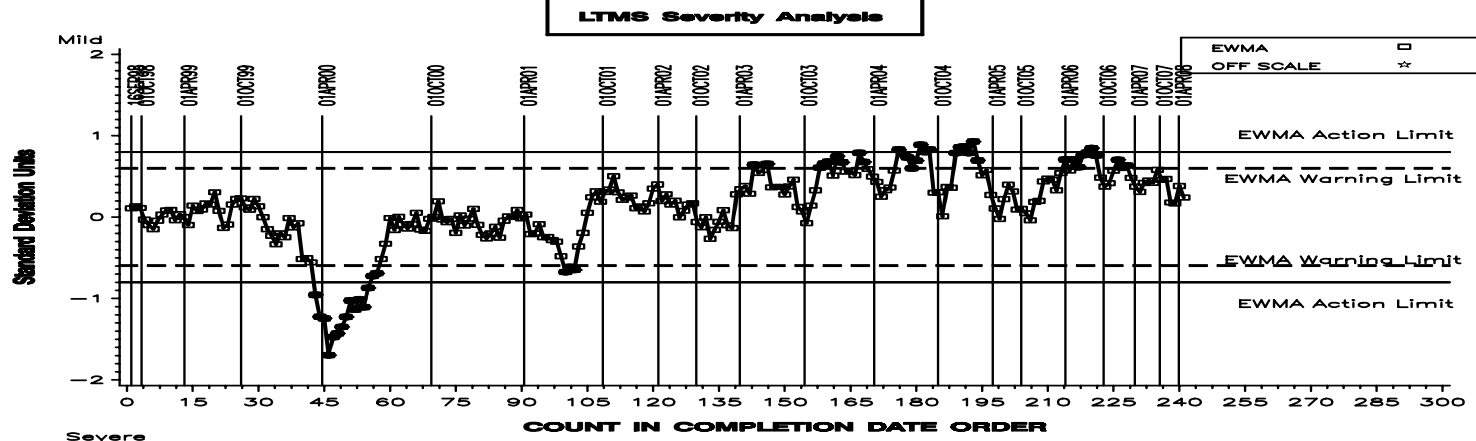
May 7, 2008

Current Trends

- Three tests reported since 4/1/2008
- All tests AC
- AES in control, on or near target.
- RAC is in mild action.
- AEV in mild warning alarm.
- APV is in mild action alarm
- OSCR in control, slightly mild.

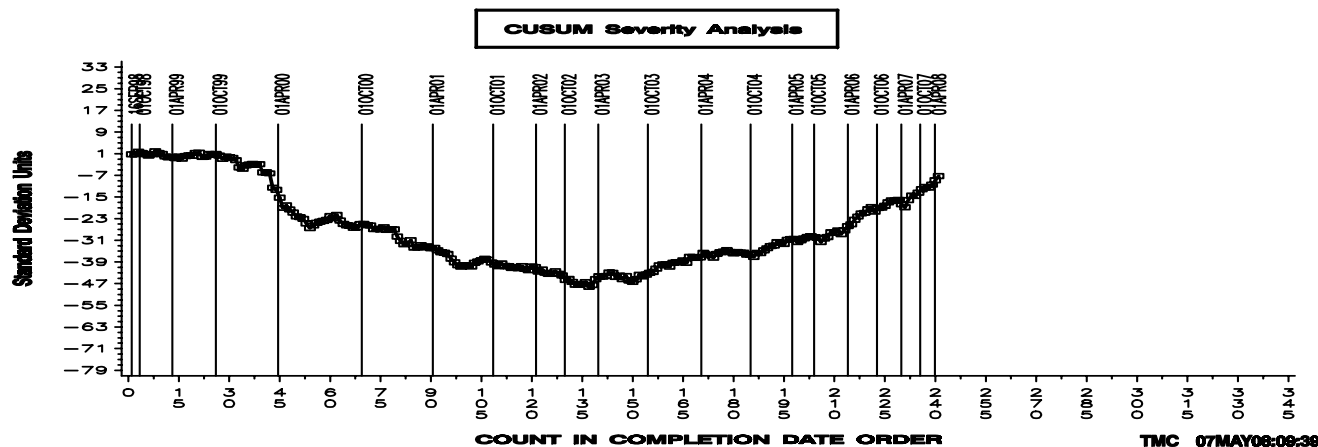
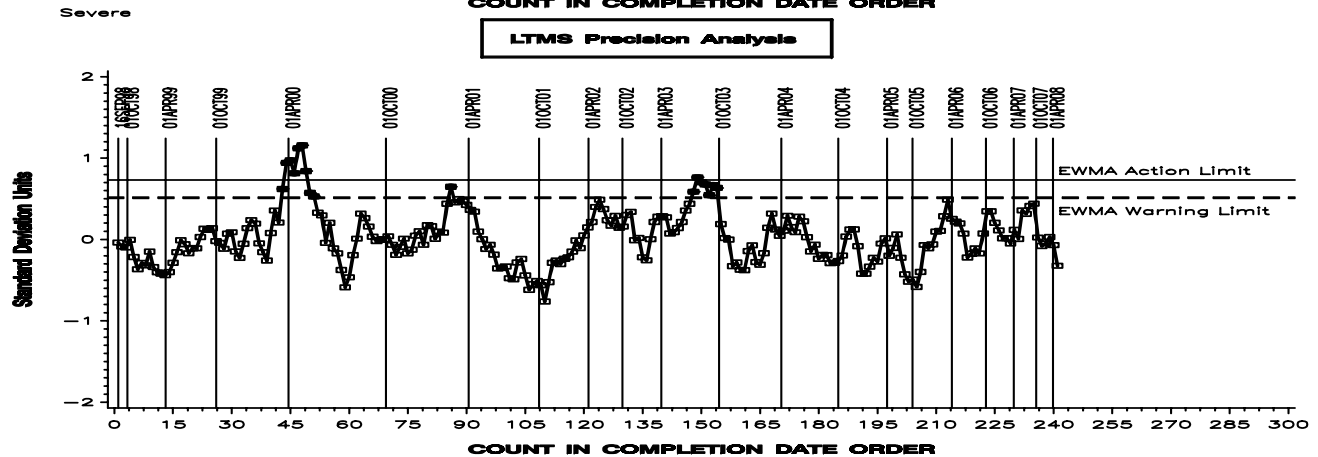
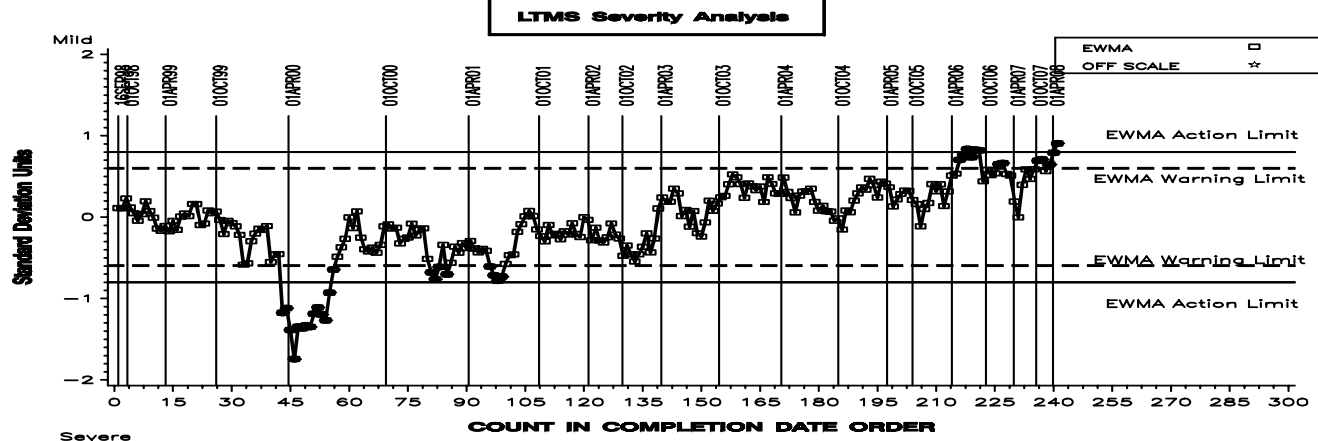
SEQUENCE VG INDUSTRY OPERATIONALLY VALID DATA

AVERAGE ENGINE SLUDGE



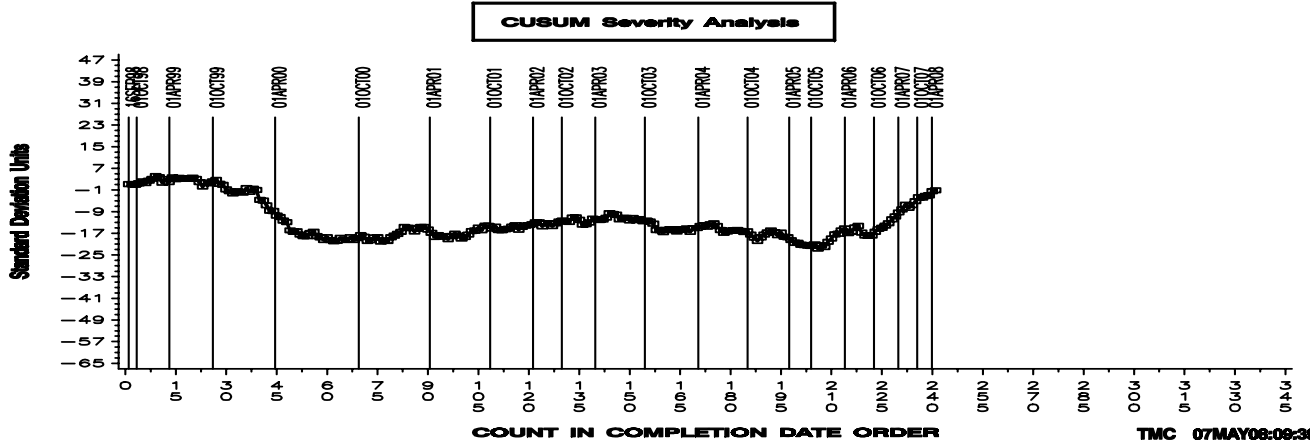
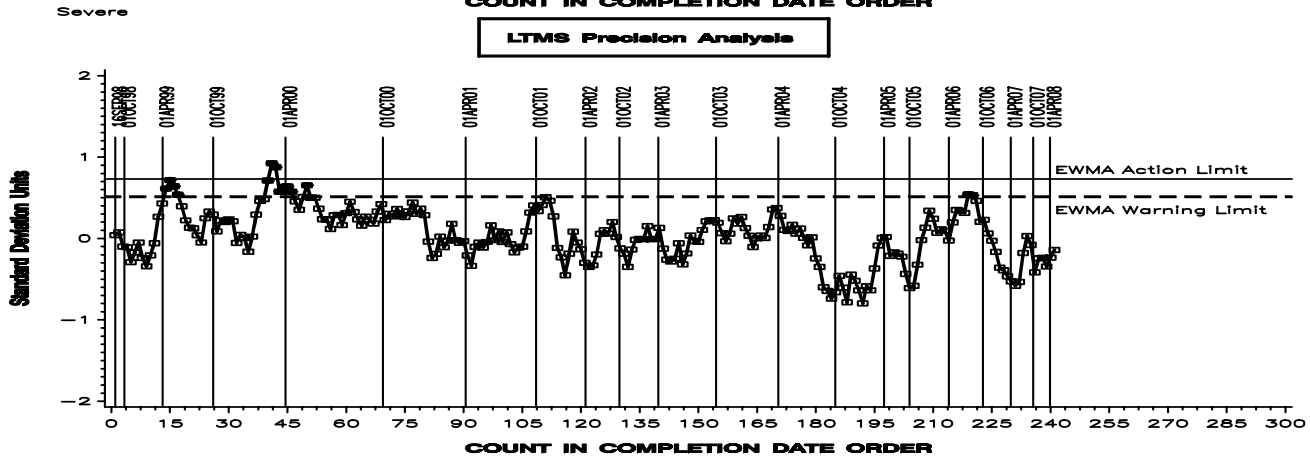
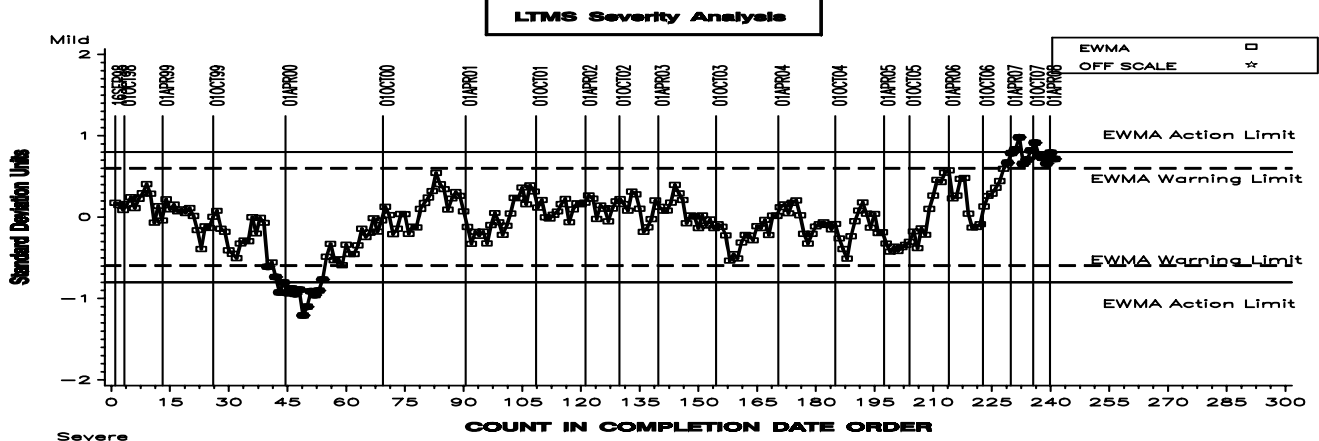
SEQUENCE VG INDUSTRY OPERATIONALLY VALID DATA

AVERAGE ROCKER COVER SLUDGE



SEQUENCE VG INDUSTRY OPERATIONALLY VALID DATA

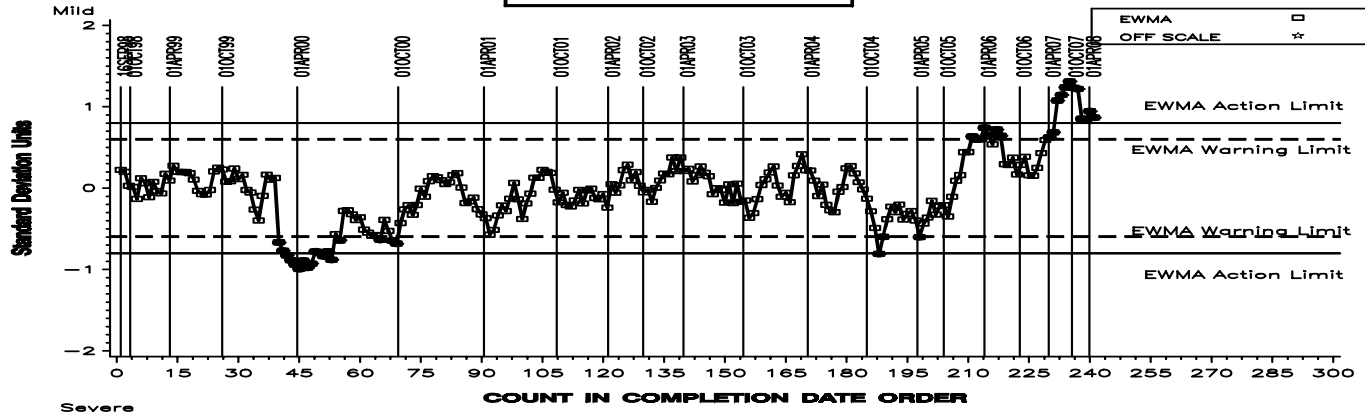
AVG. ENG. VARN. 3-PART FINAL RESULT APV + BAFFLES



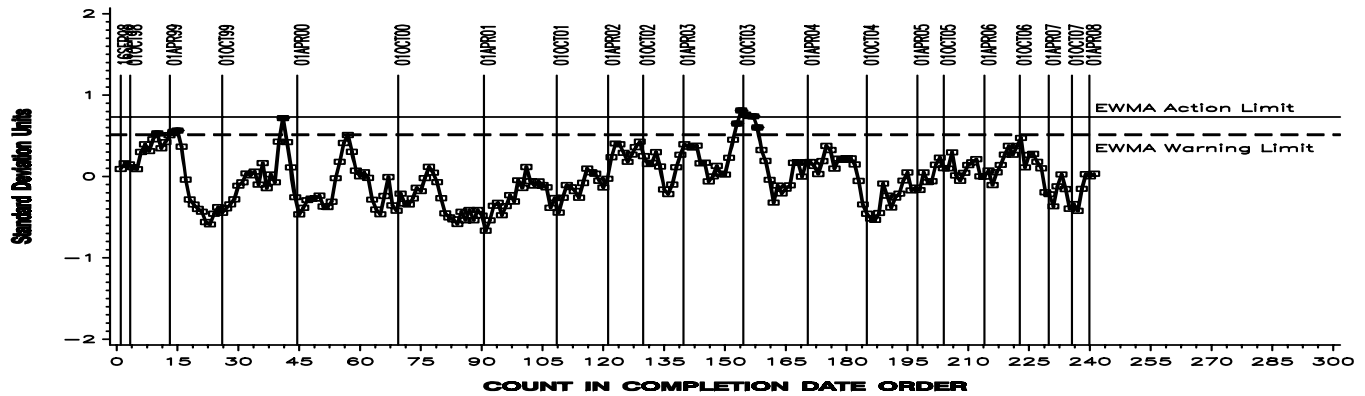
SEQUENCE VG INDUSTRY OPERATIONALLY VALID DATA

AVG PISTON SKIRT RATING

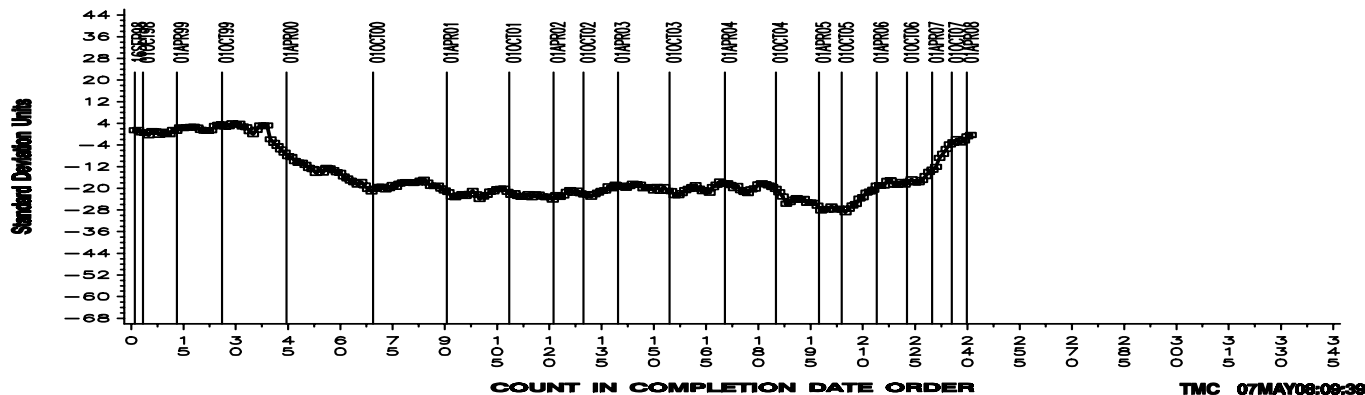
LTMS Severity Analysis



LTMS Precision Analysis



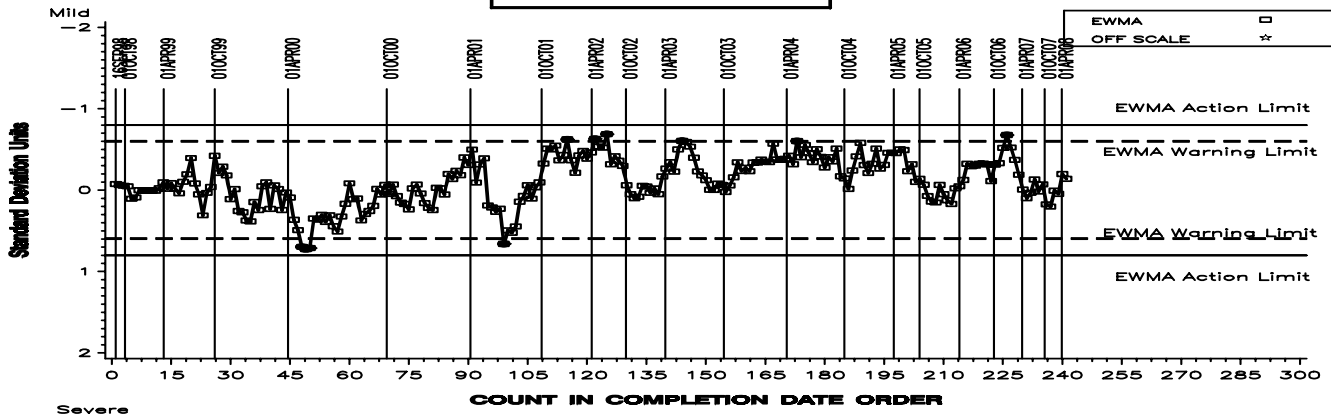
CUSUM Severity Analysis



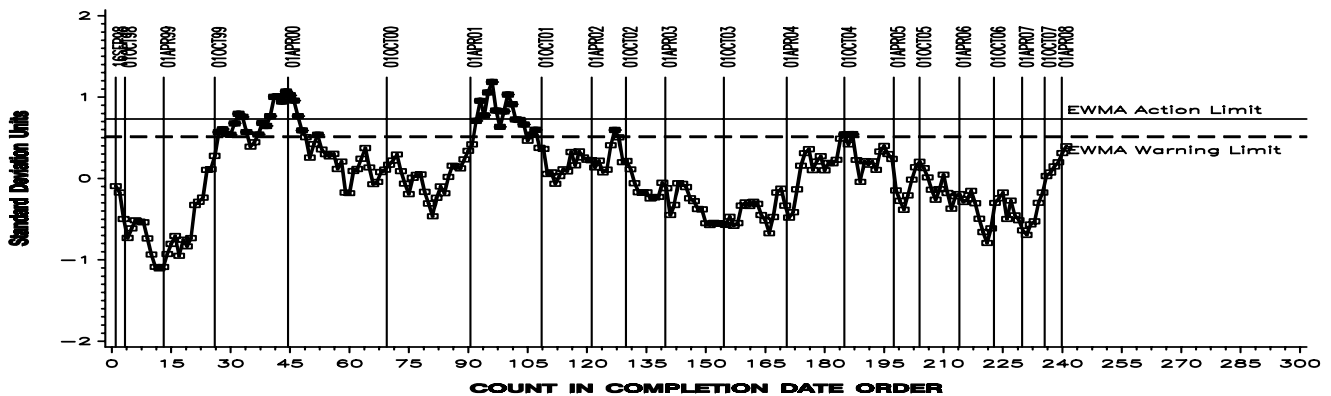
SEQUENCE VG INDUSTRY OPERATIONALLY VALID DATA

OIL SCREEN SLUDGE

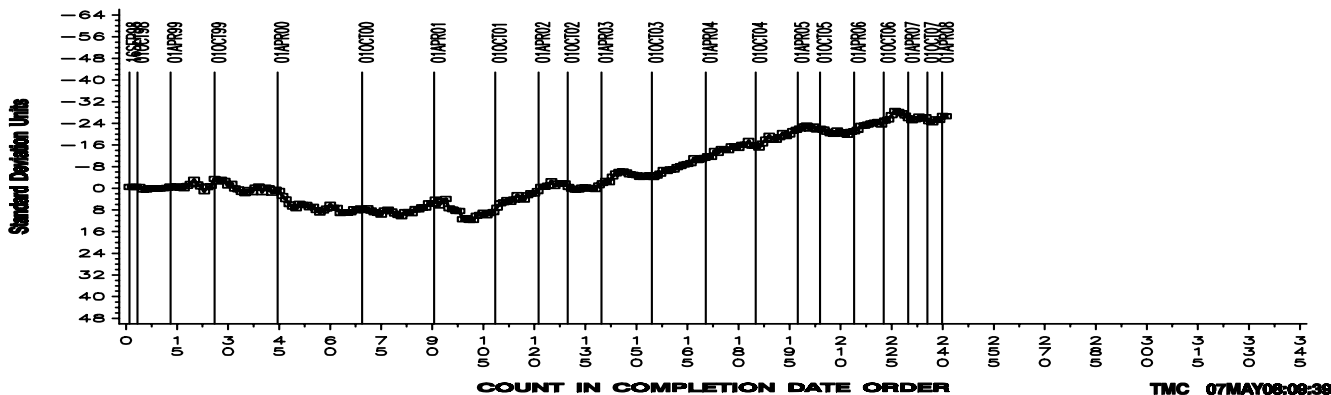
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

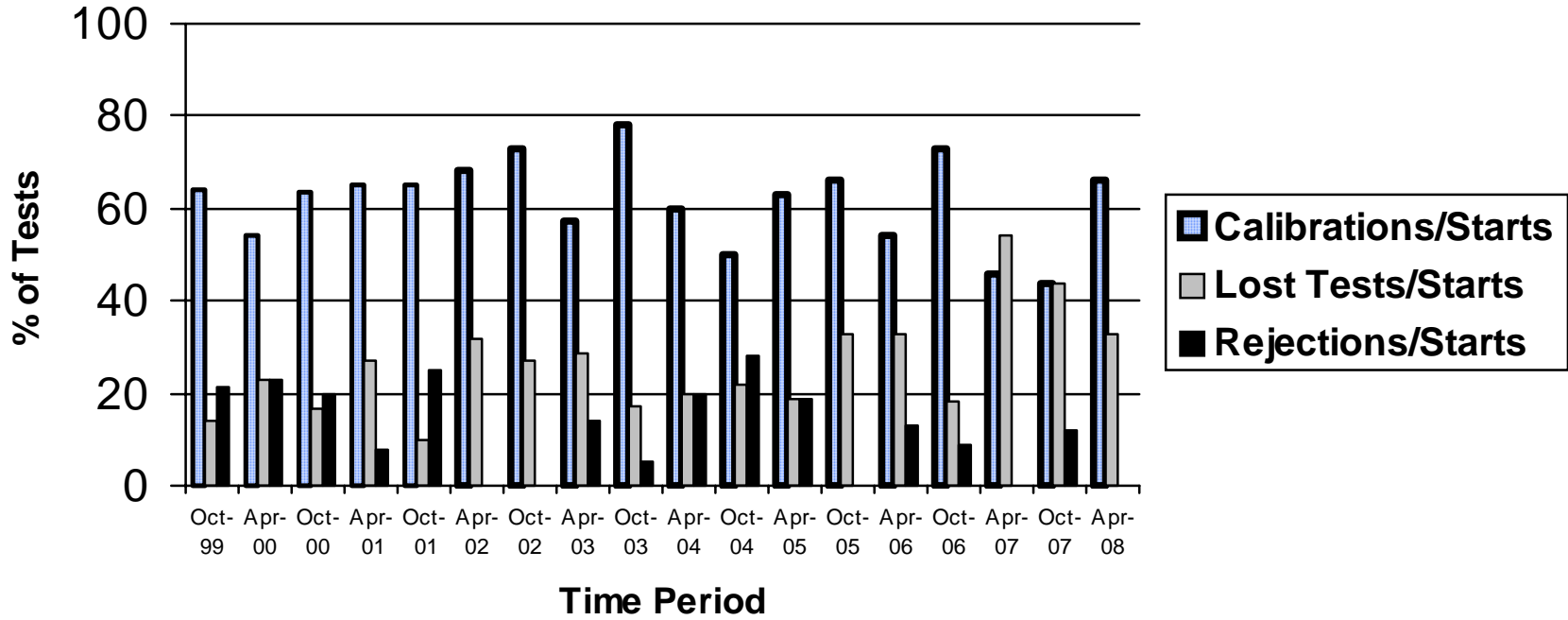


Sequence VG Update

- Four stands at three labs calibrated
- Two additional tests running
- Calibration per start compares well with historical rates. Lost test rate somewhat high. There were no rejected tests
- Pooled precision estimates all compare well with historical rates.
- Three info letters issued (see timeline)

	Reporting Data	Calibrated as of 3/31/08
Number of Laboratories	4	3
Number of Stands	6	4

Calibration Attempt Summary



PRODUCT
INFORMATION

Haltermann

PRODUCTS

T (281) 457-2768

F (281) 457-1469

SVG2

Batch No.: TF2221LS20 TF2221LS20 TF2221LS20

HF295

Tank No.: 206 74 74
Analysis Date: 12/20/2007 9/5/2007 1/6/2007

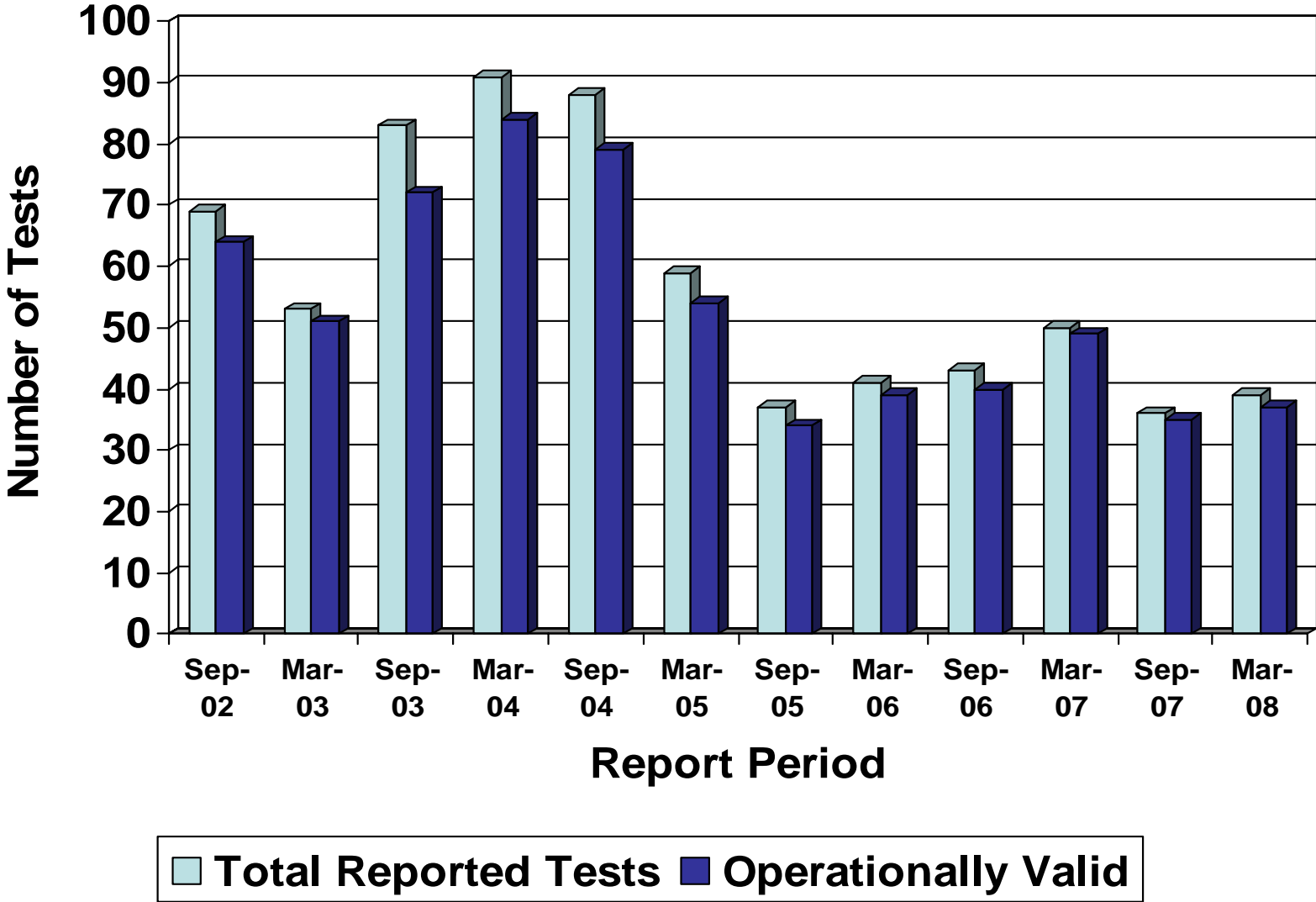
METHOD	UNITS	SPECIFICATIONS			RESULTS	RESULTS	RESULTS
		MIN	TARGET	MAX			
ASTM D86	°F	75		95	86	86	79
	°F				116	113	109
	°F	120		135	130	127	122
	°F				160	151	145
	°F				185	180	175
	°F				214	212	210
	°F	210		240	230	230	227
	°F				242	240	239
	°F				258	255	252
	°F				297	292	289
	°F	325		350	346	344	341
	°F				366	361	359
	°F	385		415	415	415	406
	vol %		Report		97.8	97.6	97.0
	vol %			2.0	1.4	1.0	1.0
	vol %		Report		0.8	1.4	1.3
ASTM D4052	°API		Report		56.6	57.1	57.2
ASTM D4052	-		Report		0.7523	0.750	0.750
ASTM D323	psi	8.8		9.2	9.11	9.2	9.0
ASTM E191	wt fraction	0.8580		0.8690	0.8607	0.8607	0.8607
ASTM D3343	wt fraction		Report		0.0000	0.0000	0.0000
ASTM D4815	wt %			0.05	<0.01	<0.01	<0.01
ASTM D4294	wt %			0.02	<0.02	<0.02	<0.02
ASTM D3237	g/gal			0.01	<0.01	<0.01	<0.01
ASTM D3231	g/gal			0.005	<0.0008	<0.0008	<0.0008
ASTM D1319	vol %			35.0	34.6	34.4	32.3
ASTM D1319	vol %	5.0		10.0	6.4	6.2	6.6
ASTM D1319	vol %		Report		59.0	59.4	61.1
ASTM D525	minutes	1440			>1440	>1440	>1440
ASTM D130				1	1	1	1
ASTM D381	mg/100mls			3	0.5	0.5	1
ASTM D2699		96.0		98.0	98.0	98.0	98.0
ASTM D2700			Report		88.2	87.2	87.7
D2699/2700			Report		93.1	92.6	92.9
D2699/2700		7.5			9.8	10.8	10.3
ASTM D240	Btu/lb		Report		18379	18379	18379
calculated	ptb		Report		5	5	5

**Sequence VG S.P.
Presentation to Subcommittee
D02.B**

Prepared By: Andrew Ritchie, S.P. Chairman
May 2008

Sequence VG S.P. Report

Candidate Test Activity



Sequence VG S.P. Report

Reference Oil Update

- **There is ample supply (3 years or more) of all active VG reference oils:**
 - **925-3** *SAE 5W30 failing reference*
 - **1006-2** *SAE 5W30 passing reference*
 - **1007** *SAE 5W30 passing reference oil*
 - **1009** *SAE 5W30 borderline passing reference oil*

Sequence VG S.P. Report

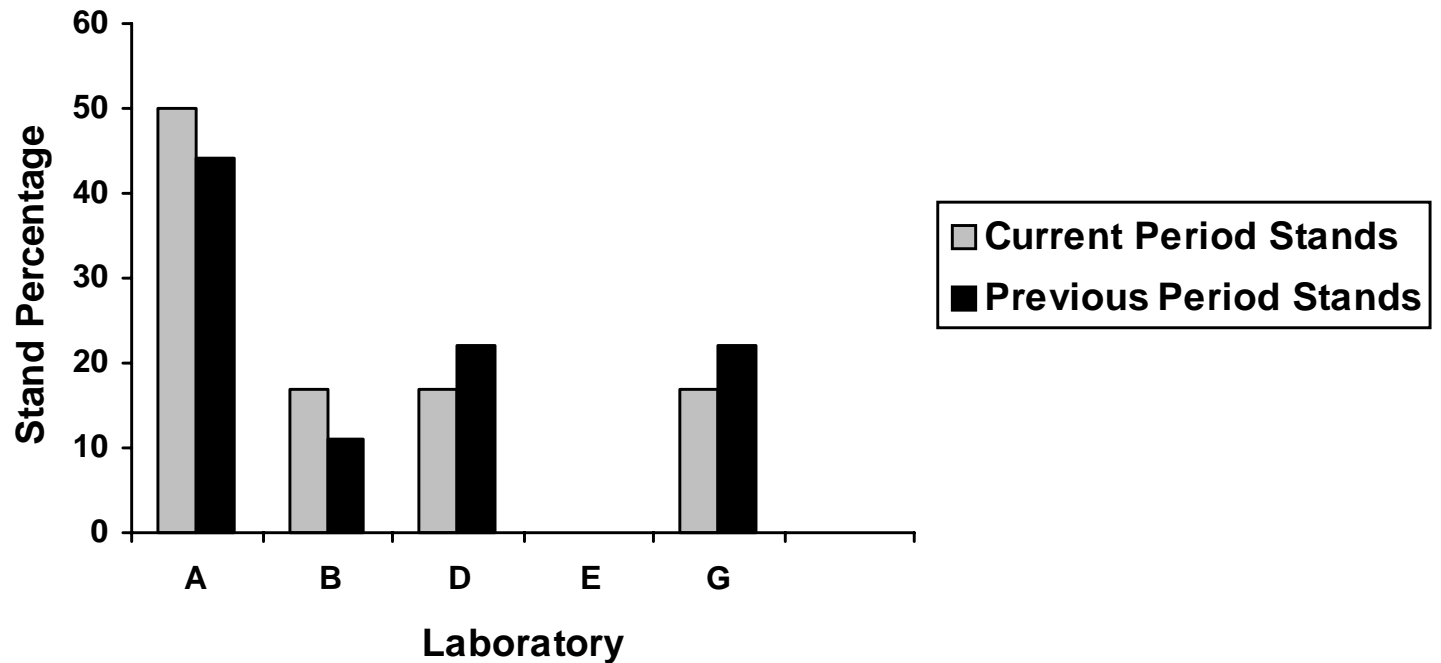
Panel Activity

- **The VG Surveillance panel met May 7, 2008.**
 - **The Surveillance panel will likely meet 2H 2008.**

Sequence VG S.P. Report

LTMS Laboratory/Stand Distribution

Laboratory/Stand Distribution



Sequence VG S.P. Report

Industry Reference Severity Summary

6 month time frame

<u>Variable</u>	<u>Pooled s All Oils</u>	<u>Mean Delta/s</u>	<u>Based on</u>	<u>Delta in Reported Units</u>
RAC	0.02	0.735	8.0	0.02
AES	0.13	-0.268	7.8	-0.03
APV	0.01	0.362	7.5	0.04
AEV	0.09	0.536	8.9	0.05
OSCR	0.95	0.272	20	5.2

Sequence VG S.P. Report

Sequence VG S.P. Scope

The Sequence V Surveillance Panel is responsible for the surveillance and continued improvement of the Sequence VG test documented in ASTM Standard D6593 as updated by the Information Letter System. Data on test precision and laboratory versus field correlation will be solicited and evaluated at least every six months. Improvements in rating technique, test operation, test monitoring and test validation will be accomplished through continual communication with the Test Sponsor, ASTM Test Monitoring Center, ASTM B0.01, Passenger Car Engine Oil Classification Panel, ASTM Light Duty Rating Task Force, ASTM Committee B0.01, ACC Monitoring Agency and CRC Motor Rating Methods Group. Actions to improve the process will be recommended when deemed appropriate based on input from the preceding. Industry transition to new engine hardware batches will be monitored and redistribution of existing hardware facilitated to accomplish uniform industry implementation. Development and correlation of updated test procedures with previous test procedures will be reviewed by the panel. This process will provide the best possible test procedure for evaluating automotive lubricant performance with respect to the lubricant's ability to prevent engine sludge, engine varnish, oil screen plugging, oil ring clogging and ring sticking.

Sequence VG S.P. Report

Sequence VG S.P. Objectives

Objectives

1. Ensure a secure supply of Ford 4.6L hardware is available to accommodate testing through GF-5.
2. Ensure a secure supply of SVGGM2 fuel is available to accommodate testing through GF-5, anticipating the need for one or more additional batch of SVGGM2 fuel to be blended.

Target Date

November 2008

On-going

Sequence VG S.P. Report

Action Items for Subcommittee B/B01

- *None*

Sequence VG Surveillance Panel
May 7, 2008
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

1. Action Item – Surveillance panel chairman to request that the chairman of LTMS, Ben Weber, schedule a meeting to conduct a comprehensive review of the different LTMS systems utilized by the PCMO test types and their pros and cons.
2. Action Item – Ed Altman will contact AER and instruct them to include 3 sets of the correct valve springs with each cylinder head for all labs participating in the current AER cylinder head purchase.
3. Action Item – Haltermann will start blending the first small fuel batch for the new fuel batch approval process.
4. Motion – Testing for the first small fuel batch will be conducted on 2002/2003 pistons and rings and used camshafts.

Rich Grundza / Dan Worcester / Passed Unanimously

5. Action Item – A task force conference call will be scheduled once the small fuel batch has been blended and prior to testing.
6. Motion – Resume roller follower pin wear (Cylinder # 8 intake and exhaust) and top ring gap increase (Cylinder # 1 and 8) measurements. Sequence VG test report forms and data dictionary will be modified accordingly.

Dan Worcester / Ron Romano / Passed Unanimously

7. Motion – Remove “Last Reference Oil Test Calibrating Stand Information” table from Form 4 of the Sequence VG test report and associated data from the Sequence VG data dictionary. Note that this data is still available from other data sources.

Dwight Bowden / Dan Worcester / Passed Unanimously