

Minutes from 8/2/2011 Sequence VG Surveillance Panel Conference Call

Attendees:

Andy Ritchie, Gordon Farnsworth, Mike McMillan – Infineum

Jo Martinez – Chevron

Rich Grundza - TMC

Bruce Matthews – GM

Ron Romano – Ford

Jim Linden - Toyota

Raham Kirkwood, Bill Buscher – SwRI

Al Lopez – Intertek

Ed Altman, Christian Porter, Bob Campbell, Todd Dvorak – Afton

Jerry Brys, George Szappanos – Lubrizol

Mark Overaker, Jim Carter, Wayne Petersen – Haltermann

Irwin Goldblatt, Timothy Miranda – BP Castrol

Timothy Caudill – Ashland

Clayton Knight – TEI

Jason Bowden, Adam Bowden, Matthew Bowden - OHT

- 1) Chairman Ritchie opened the call by stating that this call will likely be the last one required to address details of the latest approved fuel batch, and he is proposing that the Panel now convene on a monthly basis the first Tuesday of each month at 2:00 pm EST. All Panel members agreed to this

schedule. Chairman Ritchie then summarized the agenda for today's meeting. The main items to be discussed are the following:

- a. Review and approve minutes from July 29th call
- b. Standard deviation evaluations for new fuel batch
- c. New fuel batch cost (Haltermann)
- d. Old business
- e. New Business
- f. Next scheduled call

- 2) The minutes from the July 29, 2011 meeting were approved unanimously with one change: Ed Altman pointed out that in Item #5, both SwRI and Afton had used India 1 pistons in their matrix testing. Motion made by Ed Altman and seconded by Jason Bowden.
- 3) Chairman Ritchie asked Rich Grundza to go through the material he had prepared on evaluation of standard deviations. (see Attachment 1) In his analysis, Rich calculated the pooled s (RSME) based on the last 30 tests from each oil, including the data generated in the fuel approval runs. He then tested for significance, by parameter. If a significant difference in precision was found, new standard deviations for those parameters were calculated. Rich also pointed out that the pooled s (RSME) did not include data from Oil 925-3, because that oil was not near the pass limit. This is consistent with past practice in making such calculations. With the data from Oil 925-3 excluded, the AEV and APV estimates were found to be statistically significantly different at a 95% confidence level. The AES, OSCR, and RAC parameters were found not to be statistically significantly different. All Panel members agreed with Rich's analysis. Gordon Farnsworth asked what we were going to do with Oil 925-3 going forward. Rich answered that we have enough oil for about 14 tests remaining. His preference is that this oil not be assigned for references and saved for future fuel batch approvals and/or new test development, since no new failing reference oil has been made available for consideration, despite requests which have been made. Ed Altman made a motion to suspend use of Oil 925-3 until further action by the Panel. Ron Romano seconded the motion. The motion was approved unanimously by a voice vote. Ed Altman suggested that all labs send in their remaining supplies of Oil 925-3 to the TMC for homogenization. All Panel members agreed with this approach. Rich Grundza made a motion to put the following Standard Deviations into the LTMS effective July 29, 2011:
For AEV: Oil 925-3: 0.25; Oil 1006-2: 0.12; Oil 1007: 0.11; Oil 1009: 0.22.

For APV: Oil 925-3: 0.36; Oil 1006-2: 0.22; Oil 1007: 0.23; Oil 1009: 0.43.

The pooled s values for SA's will be: 0.16 for AEV and 0.31 for APV. Ed Altman seconded the motion. The motion was approved with 13 Affirmatives, 0 Negatives, and 0 Waives.

- 4) Mark Overaker went through his presentation on the rationale for establishing pricing for the new fuel batch, citing storage costs, raw material costs, shipping costs, analyses costs, tank cleaning and oil disposal costs, mixing costs, and matrix testing costs as factors involved in the calculation of the cost of the new fuel batch. (see Attachment 2) Al Lopez questioned whether there had been 23 or 26 matrix tests. Mark indicated that there had been 14 tests in the original batch which was ultimately rejected, plus 12 tests to approve the new batch. Rich Grundza went through his records and confirmed this. Chairman Ritchie asked how the raw material costs compared between the old and new batches. Mark responded that the raw material costs had increased by 20-30% from when the old batch had been made. Bob Campbell asked whether the industry should have to pay for all of the matrix tests conducted, or whether Haltermann as the supplier should bear some of the burden based on their responsibility to provide a fuel that met the requirements requested by the VG Panel. Following considerable additional discussion, Chairman Ritchie suggested that Haltermann explore making the recipe for developing the final approved fuel batch available to TMC, so it can be retrieved in the future, if necessary. He also asked Haltermann to go back and look at whether the fuel cost should be reduced by omitting the rate of return on the matrix testing costs. Haltermann agreed to do so. Wayne Peterson also indicated that the rate of usage of the fuel impacts the fuel cost calculation, and if the new fuel batch is used up in 2 years rather than 3 years as was assumed in the cost calculations, the cost would be reduced. Mark agreed to make those revised costs available to the VG Panel members. Ron Romano suggested looking at the 2 fuel batches that had identical C of A's (the XC and YJ batches) to investigate why they yielded different sludge values in VG testing. Bob Campbell amplified on this by asking if there were any bench tests that might be used to predict sludge formation. Mark Overaker answered that they had conducted some bench testing in their "crash" program, and plan to continue to investigate differences in the various fuel batches. Wayne indicated that Haltermann would be willing to share at least the non-proprietary part of this work with the Panel. Ron asked whether a task force could be assembled to investigate the possibility of developing a fuel specification for the next

Sequence V test (VH). Haltermann stated they would be willing to take part in such a task force. Ron suggested that Mark Overaker chair such a task force, and Mark agreed. Ron Romano, Ed Altman and Andy Ritchie indicated they would be members of the task force. Chairman Ritchie indicated that other members could be added going forward. A copy of Wayne's presentation, which was circulated prior to the call, is included as attachment 2

- 5) Chairman Ritchie asked if there was any further old or new business. No additional items were brought forward.
- 6) The next VG conference call will be Tuesday, September 6, at 2:00 pm EDT.



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Test Monitoring Center

<http://astmtmc.cmu.edu>

Standard Deviation Evaluation

August 1, 2011

Process for Evaluation

- Calculate pooled s (RMSE) based on last 30 tests from each oil, including fuel approval data.
- Test for significance, by parameter. If significant difference in precision, calculate new standard deviations for those parameters.

Methodology for Calculation

- F statistics were calculated to determine significance.
- Pooled s, or RMSE used for comparison did not include reference oil 925-3. See precision statement in D6593. This is also the severity adjustment RMSE.
- 925-3 was not included because it was not at the pass limit and to ensure SA's were appropriate, only oils around the pass limit were used.

Results of Analysis

- With 925-3 data excluded, for proper comparison to established precision measures for VG parameters, AEV and APV precision estimates were significantly different a 95% confidence, AES and OSCR were not and RAC close, but not significant.
- Based on these results, standard deviations are as follows:

- AEV

925-3 0.25

1006-2 0.12

1007 0.11

1009 0.22

APV

925-3 0.36

1006-2 0.22

1007 0.23

1009 0.43

Pooled s values

- The pooled s values for SA's will be: 0.16 for AEV and 0.31 for APV.
- The choice in using oils 1006-2, 1007 and 1009 was based on the published RMSE from the method and allowed for proper comparisons and matches the values used for severity adjustments.



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SVGM2 Pricing

Haltermann Solutions
2 August 2011

Cost Elements

Heel value

- All costs included, IRR margin removed

ISO storage costs

- Rent on two ISO's (original solvent used in XC batch)

1st Bulk raw material addition

- 49 Raw Material Shipments in Nov. '10
- Mixing and sample deliveries

Constituents for small batch adjustments

- 2 Pilot Blends
- 2 Shipments of VG base fuel to MI for pilot fuel blends
- 2 Shipments of additional raw materials to MI (to enhance sludge)

Cost Elements

Large Batch top-off 05/11

- 14 Raw Material deliveries
- Mixing and sample deliveries

Constituents to adjust large batch 05/11

- Two Rail Car movements
- Three trans-loads of identified constituents
- Two tank trucks of identified constituents to Nixon
- Two cleaning and disposal charges

Cost Elements

Material Movements – Freight for:

- 4 loads VG to Labs for matrix testing 11/10
- 4 loads of VG to Labs from pilot blend ZC early 04/11
- 4 loads of VG to Labs from Pilot blend ZD late 04/11
- 4 loads of VG to Labs for 925-3 tests 06/11

Cost Elements

Matrix testing and analytical costs

- 26 matrix tests
- 6 Detailed Hydrocarbon Analysis (XC compared to YJ)
- 4 CofA slates on finished product (2 pilot blends, original blend, and adjusted blend)

Price Calculation

All costs included

3 Year consumption rate assumed

IRR identical to previous batch

- Competition for working capital remains. Threshold level of IRR expected for project.
IRR No more, no less than last batch.

Price calculation for new adjusted big batch at \$ 19.20 / gal.