

Notes from 1/10/11 Sequence VG Surveillance Panel Conference Call

Attendees:

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

Jo Martinez, Mark Sutherland – Chevron

Ron Romano – Ford

Bruce Matthews - GM

Raham Kirkwood, Bill Buscher – SwRI

Al Lopez – Intertek

Ed Altman, Dave Glaenzer – Afton

Rich Grundza – TMC

Jerry Brys, Alison Rajakumar, George Szappanos, Chris Castinean – Lubrizol

Mark Overaker, Wayne Petersen, Jim Carter – Halterman

Timothy Caudill – Ashland

Irwin Goldblatt – Castrol

Adam Bowden, Jason Bowden, Matthew Bowden – OHT

Zack Bishop - TEI

- 1) Minutes from January 4, 2011 conference call were approved without comment.
- 2) Review of Action item from January 4 call:
 1. Halterman to put together a plan on what is required to make an adjustment to fuel, the time required to do it, the impact on the fuel cost, etc. – To be discussed later

- 3) Afton summarized their data from their Row 3 run. Ed Altman stated that Afton believes their run is operationally valid and should be included in the Matrix data. Doyle summarized his LSMEANS analysis which is shown in the attached. The Oil 925-3 AES LSMEAN results appear to be furthest from the target with a delta of 1.04 merits. Jo went through her summary analysis (also attached). Jo stated that there appears to be a slight discrimination between Oil 925-3 and 1006, but none between the other oils. There does appear to be discrimination between the oils on the other parameters. Ed Altman indicated his analysis of the data confirmed these findings. Rich Grundza went through his preliminary attempt to establish correction factors based on the data from Rows 1-3 of the Fuel Matrix, if this is the path the SP wants to take. The correction factor equation seems to correct data on good or borderline oils reasonably well, but under corrects the AES data on the poor performing oil (925-3). As a result, the corrected data on Oil 925-3 might still enable that oil to pass the GF-5 AES sludge limit.
- 4) Chairman Ritchie asked if it would be worthwhile to put a group together to do a more thorough analysis of the data. Further discussion indicated that the consensus was that doing so would likely still not correct all of the parameters properly.
- 5) The Halterman representatives went through their presentation (see attached). Analyses of the data indicate that the new fuel batch mirrors closely the current fuel batch. Halterman indicated they don't currently have any lever they can turn to modify the oil formulation to achieve the performance desired by the SP. Developing a strategy to do so would likely take at least another 6 months. Halterman indicated they plan to undertake such a strategy anyway, no matter what the SP decision is, but doing so in a "crash" fashion rather than in a deliberate manner is much more risky. Halterman recommends approving the current fuel batch (at least conditionally), while pursuing on parallel path developing measures to modify the fuel batch to achieve more severe AES results. Halterman also recommends that the Statistical Group analyze the data in hand and provide an opinion as to whether running Row 4 of the Matrix might be beneficial in determining whether the existing fuel batch is usable. Halterman went through what program elements would have to be followed in developing a new fuel batch, indicating that such a course of action would probably take at least 6 months, with no assurance of success. The question was raised as to whether a sludge simulator exists to possibly

accelerate testing. The possibility of using a sludge or VG screener test was also raised, but further discussion highlighted the fact that sludge usually forms towards the end of any test. It was pointed out that insolubles analysis also might be helpful. Ron Romano suggested bringing other fuel experts in to offer suggestions/advice on how to modify the formulation to increase sludge severity. After much discussion, Chairman Ritchie offered that the following 3 options appear to be those which should be considered:

6) Options

- 1) Complete Row 4 of the Matrix, with Lab A running Oil 1009 and Lab G running Oil 925-3.
 - 2) Reject the new fuel batch. By doing this, the VG Test would likely have to be declared unavailable by about March 1 of this year.
 - 3) Accept the current fuel batch with a nonlinear correction factor and reduced calibration periods going forward.
- 7) All 3 options include the development program described by Halterman, either the crash program or a more deliberate one. Chairman Ritchie asked for the best projections as to when the various labs will not be able to run VG tests with the current batch of fuel. Those projections are: SwRI - 2 months from now; Intertek – the end of March; Afton – sometime into April; Lubrizol – the end of March. Ed Altman suggested not running Oil 925-3 in Row 4, since we already know it is mild. Ron Romano countered by saying his biggest concern is making sure an oil like Oil 925-3 doesn't pass as a GF-5 oil, so he would prefer obtaining as much data on this oil as possible.
- 8) Chairman Ritchie proposed that we wait for the Statistical Group to look at possible options for applying nonlinear correction factors to achieve the objective of not having poor oils pass the sludge requirement in GF-5. Rich Grundza suggested possibly considering a dual correction factor approach - one based on Oil 1009 and Oil 925-3 data, and no correction factor for AES values above about 8.3 merits.
- 9) Ron Romano proposed that the SP follow Option 1. Jason Bowden concurred but also suggested the SP convene again no later than January 24, when The Row 4 data are completed. A motion made to run Row 4 as proposed in Option 1. A Roll Call vote approved this motion unanimously.
- 10) A motion was then made by Jason Bowden to have the Statistical Group consider possible correction approaches based on data obtained in

the Fuel Approval Matrix on Oils 925-3, 1006, and 1009, and to make recommendations back to the Surveillance Panel by January 26th, at the latest. The motion was approved unanimously.

11) Action items:

- 1) A subgroup of the SP will convene Friday, January 14, at 2:30 EST to develop an approach to be used by Halterman in modifying the fuel batch to increase sludge severity.
- 2) The full SP group will convene again sometime between January 24-26 to review recommendations from the Statistical Group and to consider what to do next.