

Notes from 12/20/2010 Sequence VG Surveillance Panel Call

Attendees:

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

Jo Martinez – Chevron

Ron Romano – Ford

Raham Kirkwood, Bill Buscher – SwRI

Al Lopez – Intertek

Ed Altman – Afton

Rich Grundza – TMC

Jerry Brys, Alison Rajakumar, George Szappanos – Lubrizol

Mark Overaker, Wayne Petersen – Halterman

Timothy Caudill – Ashland

Timothy Miranda, Irwin Goldblatt – Castrol

Dwight Bowden – OHT

Zack Bishop - TEI

- 1) Minutes from December 6, 2010 meeting were approved.
- 2) Action items from December 6 meeting:
 - i) All four labs to start and complete second row of testing by end of next week (Dec 17). Completed
 - ii) Halterman to determine what changes can be made in the fuel batch, if necessary, to increase its severity. Discussed in item 4 below

- 3) Ed Altman went through the summary of the results from rows 1 and 2 which he had prepared and distributed just prior to the call (see attached). Doyle commented that some of the results on different oils looked like they overlapped each other. The Deltas on the 1006 and 1009 oil averages were similar to the targets, but this was not the case for oil 925-3. Jo Martinez went through her plots of the results (see attached), which she said indicated no discrimination between any of the 3 oils. The P values on all parameters were generally about 0.1. The greatest discrimination was with RACS with a P value about 0.05, but the values were higher for AES, AEV, APV and OSC. The standard deviations (actually RMSE's) are larger than would be expected with a small, homogeneous set of data like the one we have. The data on oil 925-3 are also much milder than expected. (Note: It was later stated that the average of the AES results for 925-3 with the previous fuel batch was 6.6, compared with 7.7 with the current batch.)
- 4) Chairman Ritchie summarized the options which appear to exist: (i) complete row 3 of the matrix to obtain additional data, (ii) declare the fuel unfit for use based on the data obtained thus far, (iii) declare the fuel fit for purpose based on the data obtained thus far, (iv) modify the fuel batch and start the approval process over again. Mark Overaker suggested that we continue on and complete row 3. He also commented that he wouldn't know what to do to increase the fuel severity. Ron Romano commented that he believes the data on all 3 oils are too mild compared to the targets. He is concerned that this new fuel will not allow us to discriminate between good and borderline performing oils.
- 5) Ron asked Mark again whether Halterman knows how to make the fuel more severe. Wayne Petersen answered that Halterman doesn't know which component or components would be best to adjust, and what exactly the effect of making an adjustment would be. He indicated he is not sure that all parameters would even be affected in the same direction by an adjustment, or what percentage change in the results would occur after making an adjustment. Halterman also expressed concern about the time and money associated with making and verifying such changes with additional engine testing.
- 6) The general consensus seemed to be that the results from the first two rows of the matrix indicate that the new fuel batch produces results which are milder than those produced with the current fuel batch. When asked again what they might be able to do to increase fuel severity, Halterman

indicated they might be able consult with fuel experts to determine and perhaps recommend what might be done to increase severity. When pressed further, Halterman clarified that this would likely be a very long and expensive path to follow, with no guarantee of success.

- 7) Chairman Ritchie asked for a straw poll of the Panel members on what path to take. Most agreed that running 4 more tests is ~~about~~ **the** only real option we have **at this time**, although some felt this was very unlikely to change the conclusions we have at this point. When no other alternative was offered, it was decided to proceed with Row 3 testing.
- 8) Action item: Run Row 3 (4 more tests) of the fuel approval matrix.
- 9) Next call will be Tuesday, January 4, 2011 at 2:00 pm EST to review Row 3 results and decide on the next course of action.