

## Unapproved Minutes of the September 15, 2015 Sequence VG Surveillance Panel Conference Call

The meeting was called to order by Chairman Andy Ritchie at 2:00 PM EDT.

Mike McMillan agreed to take the minutes of the meeting.

A list of the attendees on the call is included as Attachment 1.

Chairman Ritchie listed the agenda items he would like to cover in this call:

- 1) Attendance
- 2) Approval of minutes from July 28<sup>th</sup> 2015 call
- 3) Inventories of AK28 fuel batch and projections for batch depletion
- 4) New fuel batch update (Haltermann)
- 5) VP Racing fuel testing update
- 6) Timing and planning for new VG fuel test approval matrix
- 6) VG hardware items
- 7) VH status
- 8) Old business
- 9) New business
- 10) Schedule for future V calls and semi-annual V meeting

Chairman Ritchie asked if there were any additions or corrections to the minutes from the July 28, 2015 VG Panel conference call. There being none, Jason Bowden moved and Ron Romano seconded a motion to approve the minutes. The motion was approved unanimously.

Chairman Ritchie asked Mark Overaker from Haltermann to provide an update on the current inventory of the AK28 fuel batch, currently being used for VG testing. Mark indicated Haltermann had 4 isototes of the fuel remaining. Chairman Ritchie then polled the labs as to their supply of the fuel, from which it was determined that there is approximately 110,000 gallons remaining in total. With 750 gallons required for a VG test, this means there is enough fuel remaining to conduct about 150 VG tests. At the current rate of VG testing, this is about a 6-month supply, meaning the fuel supply should be depleted around the end of 1Q2016.

Chairman Ritchie then asked Mark to provide an update on the blending of a new fuel batch which is under way. Mark indicated that the blending should be completed by the beginning of October, and that the labs should have supplies of the new fuel batch on hand by mid-October.

Chairman Ritchie asked Chris Taylor from VP Racing Fuels for an update on their work. Chris indicated they had made a small batch of fuel for testing in a VH engine run on a VG test schedule. Chris indicated that after 48 hours, analysis showed that the fuel dilution in the oil was about 4 times greater than normal, so the test was stopped. They are currently preparing a new small batch which they believe will be less severe. In reply to a question as to why they decided on a VH test, Chris replied that there were no VG stands available at the time of their testing.

Discussion then turned to the fuel approval matrix of the Haltermann fuel, which should be ready to start in the second half of October. Chairman Ritchie indicated he wanted to engage the Statistical Group now, so the design of the matrix will be in place when the fuel batch is ready and supplies are at the labs. Chris Mileti suggested that pistons (plated versus unplated) should be included as a variable in the matrix, since the labs have both types of pistons on hand. Al Lopez agreed with this suggestion, expressing concern about the effect of the different pistons on sludge formation. Dan Worcester offered that the plated pistons could have different heat transfer characteristics than unplated pistons, although Ron Romano indicated that, in discussions he has had with the piston manufacturer, they did not think there would be much difference. Ron also indicated that the new unplated pistons could be plated, providing a supplier could be found to do it, since the piston manufacturer has no facilities to do so. Concern was also expressed that with the unplated pistons having a rougher surface, varnish might not stick to the surface as well as with the plated pistons. It was also noted that the new ring batch to be introduced could affect the test.

Chairman Ritchie suggested that, with all the uncertainty about piston effects, he would like to suggest that the Statistical Group come up with two matrix designs – one including the effect of piston design and a second matrix design assuming all pistons are alike. The Panel could then consider both designs during its next call or meeting. As far as the matrix itself, Lubrizol indicated they would have 1 stand, SwRI 2 stands, and Intertek 2 stands in

the matrix. It was agreed that we should start the matrix as we did previously, with 2 tests on Oil 940, 1 each at the two San Antonio labs. If those test results look good, we would proceed with the remainder of Row 1 testing of Oil 940 in the remaining 3 stands.

Moving on to other agenda items, Ron reported there has been no activity on VH development. Chairman Ritchie indicated he intended to convene future calls when there was something that needed attention, rather than having monthly calls on a fixed schedule. He also indicated that it was likely that the Fall Surveillance Panel week will be the week of October 19<sup>th</sup>. Ron indicated that might not be a good time for him, and that travel for him was difficult to get approved. Bill Buscher said he also needed to get in touch with Toyota in Japan to confirm that the week of October 19<sup>th</sup> was good for them. He also indicated it was not necessary that the meetings be held in San Antonio, that they could just as easily be held in Detroit, particularly if one of the Detroit-based OEMs would host the meetings,

Al Lopez then led the discussion of VG hardware availability. It was indicated that camshafts are or will soon be available through dealers. Al said they have been using salvaged blocks but can't seem to get more than 1 or 2 runs from them. Al indicated he was going to try to build up a VH block with VG parts. Ed Altman asked if we could continue to use the VG test for all of GF-6, since the VH was seemingly not going to be ready in time. Ron indicated that the biggest problem with that suggestion was that he can't get pcms for the VG test anymore. Ed said then that the baseline for the VH should be tests run according to the VG procedure, using VG parts and VG fuel. Then we can see if a different engine configuration gives the same answers. Al, Ron and others agreed with this. As for the fuel approval matrix, most of the labs have sufficient VG parts to complete it, although depending on the number of tests in the design, it may be necessary for some labs to do some trading of parts. Chairman Ritchie suggested that the smaller engine group get together to make sure that is the case.

**Old Business:** There was no further Old Business brought before the Panel.

**New Business:** There was no New Business brought before the Panel.

**Next Meeting:** The next VG Panel conference call is at the call of the Chairman.

The conference call was adjourned at 3:00 PM EDT.

**Attachment 1**

**Attendance for 7/28/15 Sequence VG Call**

**Infineum:** Andrew Ritchie, Mike McMillan, Gordon Farnsworth, Mike Warholic, Doyle Boese

**Ashland:** Amol Savant, Tim Caudell

**VP Racing Fuels:** Chris Taylor

**GM:** Bruce Matthews

**Ford:** Ron Romano

**Haltermann :** Mark Overaker, Tracey King

**SwRI :** Dan Worcester, Cole Hudson, Pat Lang

**Intertek:** Al Lopez, Bill Buscher

**Afton:** Ed Altman

**Lubrizol:** Jerry Brys, Chris Mileti

**Oronite:** Jo Martinez, Robert Stockwell

**OHT:** Jason Bowden

**TEI:** Dan Lanctot

**Neste:** Chris Castanien

**Shell:** Jeff Hsu

**BP:** David Tsu

**TMC:** Rich Grundza