

## Unapproved Minutes of the September 9, 2014 Sequence VG Surveillance Panel Conference Call

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

Mike McMillan agreed to take the minutes of the meeting.

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

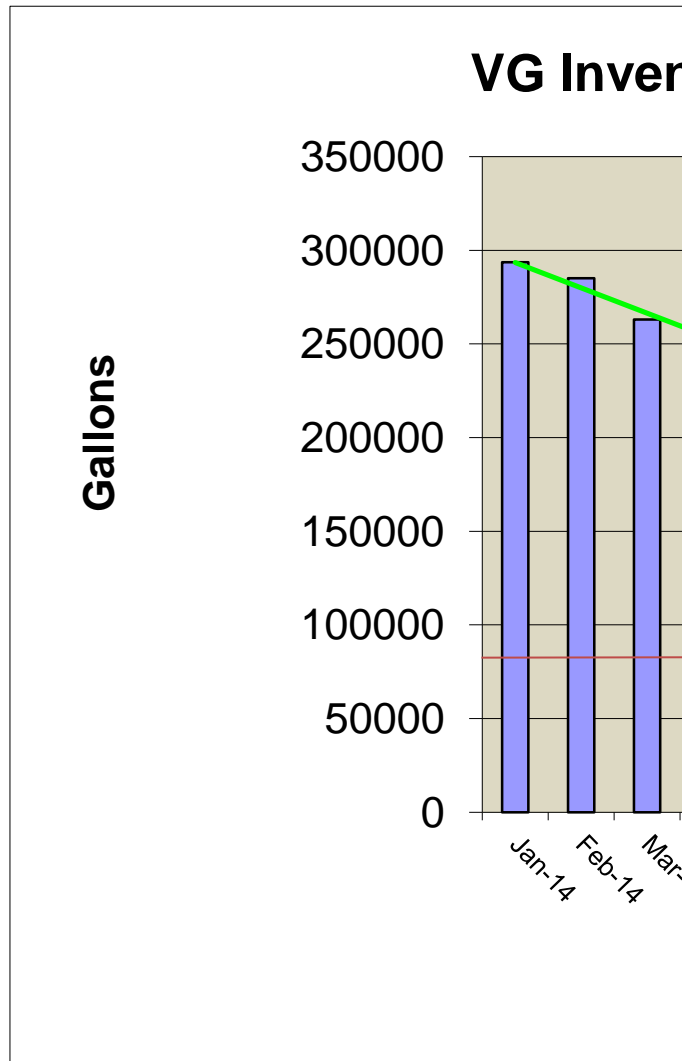
Chairman Ritchie listed the agenda items he would like to cover in this call:

- 1) Approval of the minutes from the May 6, 2014 Sequence VG Panel conference call
- 2) Confirmation of schedule for future meetings of Sequence V Panel
- 3) Report from Haltermann on status of current fuel batch
- 4) Report from Ron Romano on status of VH, Chain Wear and LSPI test developments
- 5) Additional Old Business
- 6) New Business
- 7) Next meeting/call

Chairman Ritchie asked if there were any corrections to the minutes from the June 3, 2014 VG Panel Conference call. There being none, Ed Altman moved and Jason Bowden seconded a motion to approve the minutes. The motion was approved unanimously.

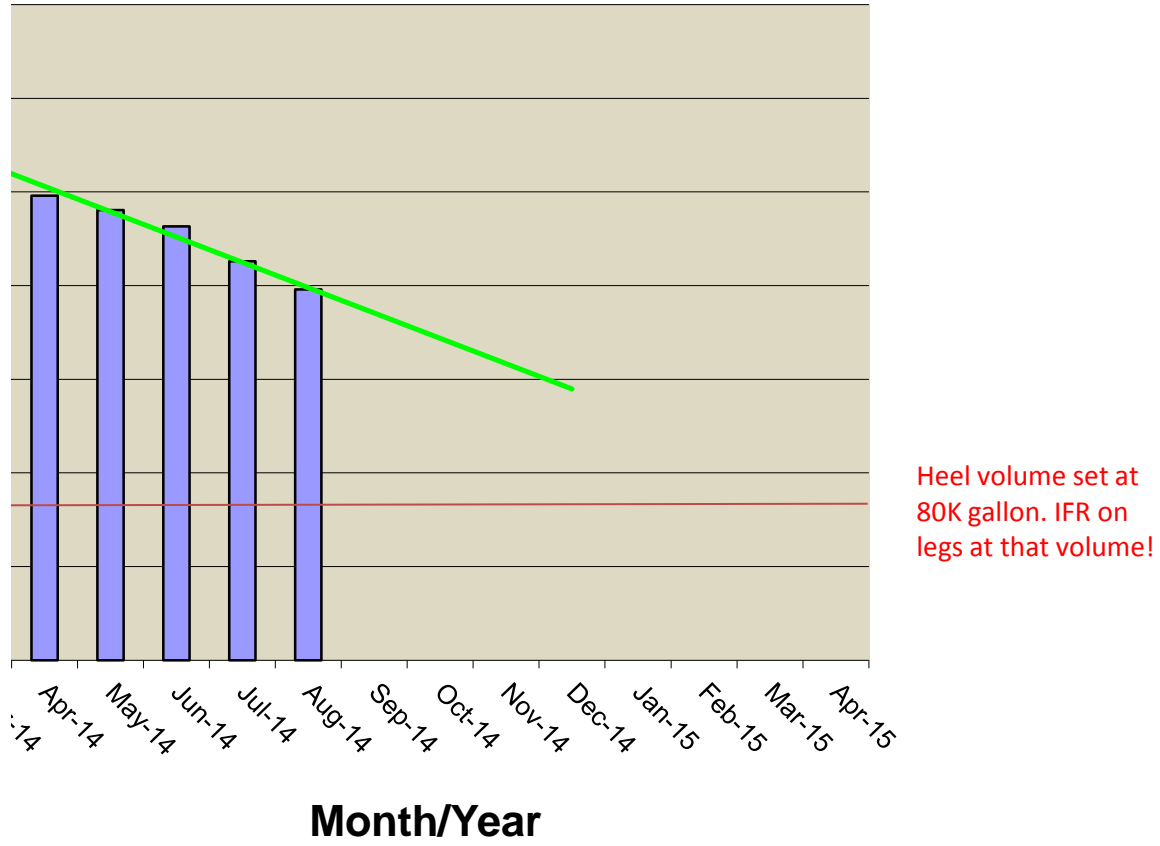
Chairman Ritchie indicated that a schedule of meetings for Fall Surveillance Panel week had been distributed by the various surveillance panel chairmen last week. The VG surveillance panel meeting is scheduled for October 22 from 8 am until 5 pm CDT. He suggested for the Sequence V meeting that it might be best to start by conducting the VG Panel meeting to address any issues with the current test first. Then, when this has been completed, adjourn the Sequence V meeting, and address the status and issues with the 3 new tests (Sequence VH, Chain Wear test and LSPI test) in a separate (or perhaps 3 separate) session(s). It was agreed that Ed Altman as chair of the ad hoc group on VH parts procurement would lead discussion of VH

Jan-14	293589
Feb-14	285000
Mar-14	263000
Apr-14	248000
May-14	240236
Jun-14	231600
Jul-14	213000
Aug-14	198000
Sep-14	
Oct-14	
Nov-14	
Dec-14	
Jan-15	
Feb-15	
Mar-15	
Apr-15	



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## Inventory - Actual Usage 2014



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development, and Chris Mileti or George Szappanos would likely lead discussion of the Chain Wear test development and associated issues.

Chairman Ritchie provided a summary of a report he had asked Haltermann to prepare on the status of the current VG fuel batch. (see Attachment 2) There is currently approximately 198,000 gallons in storage. Assuming a usage rate of ~20,000 gal/month, work should begin on building the next fuel batch about March or April next year. Ed Altman indicated that we are currently using only about 12-15,000 gal/month, but Al Lopez pointed out that this is low because controllers are not available to set up additional VH stands, as well as other hardware issues. Chairman Ritchie asked the labs how many stands they were planning to have set up in the next few months. Afton responded that they will have 1 VG stand that will be converted over to a VH stand when parts become available; Lubrizol will have 1 VG and 1 VH stand; Ashland will also have 1 of each; Intertek will have 2 VG stands and 3 VH stands; SwRI intends to have 4 VG stands and 4 VH stands. Thus, it is clear that fuel usage will increase substantially in the coming months. Chairman Ritchie commented that one of the reasons he had asked Haltermann to prepare the status report is that he has been asked several times whether fuel from the current fuel batch will be available to conduct the Precision and BOI/VGRA Matrix on the VH test. After some discussion, the group concluded that ~40,000 gallons of the current fuel batch should be reserved for the Matrix work, so the VH development and Matrix data can be compared with VG test data to establish equivalence or the relationship between data obtained from the VG test and the new VH test.

Chairman asked Ron Romano to give an update on VH test development. One of the main issues is the need for programmable PCMs which aren't available yet. The test development group have been varying test conditions to try to control fuel dilution better. That effort has been successful, but in doing so, the test appears to be running mild. Some data obtained at Intertek seem to be more severe – they are trying to repeat that test. An AES result of 6.41 on Oil 941 was obtained at Intertek, but running the same oil at the same conditions at SwRI resulted in 7.41 for AES. Similar differences in severity were obtained on Oil 1009 at the two labs. Testing has been limited by the lack of availability of programmable PCMs. An RSPEC control unit developed by SwRI is currently being used as this allows for programing control during test development. There are only three of these units – two at SwRI and one at IAR. SwRI is currently developing an ETAS for future use

once final calibration configuration is established. SwRI has modified a dyno wiring harness so that the ETAS unit can be used. Ron indicated that, if things go well in the next couple of months, we might be able to start matrix testing in 1Q2015. Al Lopez offered a final comment that the marine manifolds being used currently are not very durable and suggested that the manifold Jason Bowden has been working on would be better for the VH test.

With regard to the Chain Wear test under development, Ron indicated they are using 24 hr oil changes to eliminate soot and other contaminants that might be causing chain wear, and comparing tests under these conditions to tests without an oil change on the same oil. Tests out to 216 hr show good separation on one GF-5 oil that has been tested. They are also looking again at the CJ-4 oil that had been tested earlier. A second test using a chain made of a single material fell in just above the anticipated pass/fail line. The previous run on this oil had been on a chain consisting of two materials. The test on the single material chain is being repeated.

Work on the LSPI test development has been focused on trying to improve the durability of the pressure transducers. Peak pressures during LSPI events are quite high in this engine. They are currently running a DOE to see if they can identify conditions which can reduce the rate of peak pressure rise during LSPI events and still separate good and bad oils.

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

**New Business:** No New Business was brought forward.

**Next Meeting:** The next VG Panel meeting has been scheduled for Wednesday, October 22, 2014 at SwRI in San Antonio from 8:00am until 5:00pm CDT. No conference call was scheduled at this time.

## **Attachment 1**

### **Sequence VG Attendance for 9/9/14 Call**

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

<b>Ashland</b>	Tim Caudell
<b>BP Castrol:</b>	Timothy Miranda
<b>Ford:</b>	Ron Romano
<b>GM :</b>	Robert Stockwell
<b>SwRI :</b>	Dan Worcester
<b>Intertek:</b>	Al Lopez, Bill Buscher
<b>Afton:</b>	Ed Altman
<b>TMC:</b>	Jeff Clark
<b>Lubrizol:</b>	Jerry Brys, Mike Conrad
<b>OHT:</b>	Jason Bowden
<b>Oronite:</b>	Jo Martinez, Kaustav Sinha