

January 26, 2018

## Caterpillar Surveillance Panel Teleconference Minutes

Conference Attendees:

Jim Gutzwiller (Chairman) – Infineum

Jim Carroll (Secretary), Jim McCord, Jose Starling - SwRI

Mark Jarrett, Hind Abi-Akar – Caterpillar

Tim Griffin– Intertek

Sean Moyer - TMC

Mark Cooper – Chevron-Oronite

Christian Porter - Afton

Demetrius Lytle – Lubrizol

### AGENDA

#### COAT Enclosure Heater

Tim: The current fan heater cuts out at 82C.

Checked manufacturer and PN of Lubrizol's fan/heater against Tim's and both are HBL 031114.9 . (Photo 1)

Lubrizol uses two heaters and has no problem getting to 90C.

Carroll asked if Tim could put two of them in the box and see if it works.

McCord asked what kind of delay would there be to put another heater in.

Tim: I have more rebranded heaters with the same model numbers.

McCord: Is this 50-90C calibration a one-time calibration or for every reference?

Gutzwiller: I have not looked back thru minutes to see if we decided. Not sure.

Tim: I thought we were doing it for new systems.

Gutzwiller: Or changed systems or installations.

McCord: From Emerson they recommended that there was no harm doing it but it was not needed. Are we just verifying or are we adjusting slope and offset, in essence calibrating?

Tim: I will run the power supply to the other fan and not cut the insulation yet to mount it and see if I can get to 90C, If that does not work I will put a heat blanket and temporary fan and run the 70-90C profile.

Carroll: Lubrizol and SwRI will need documentation of heater, fan, and locations so that we can do the same.

McCord: Does Lubrizol run both fans at 50C?

Lytle: Yes.

Jim Gutzwiller showed photos on Skype of the box as built by Tim.

Tim: I will be insulating the Micromotion for the 'reference' tests to get the delta T low. (Photo 2)

Tim: The cross at the block connection to the engine had to be slightly changed to allow clocking the cross and keep it vertical. There is a flare fitting to allow clocking of the cross. (Photo 3)

Tim: At the ball valve (within the box) there was a 1" extension to get the valve handle away from the insulation. (Photo 4) On the other side of the assembly there is also an extension to the bulkhead fitting on the box walls. (Photo 5). During testing these extensions do not have flow, they are used for calibrating the pressure transducers.

Mark asked about the Teflon tape shown in the photos and Tim noted that the tape is not laid out to the tip of the fittings and no liquids are used for sealing.

Jose: Are you building these all at the same time?

Tim: Two are built, and one is under construction.

Jose: I have the part numbers. Before you insulate the last one I would like to come over.

I'll come over next week.

McCord: Which temperatures are we going to use to check the density measured by D4052 against?

Tim: The average of  $T_{in}$  and  $T_{out}$ . Currently  $T_{in}$  is 70.9  $T_{out}$  is 70.95 and the RTD is 70.86C.

McCord: Should we use the reported density from the Micromotion?

Mark: It's what we've been doing all along.

McCord: Once we do these runs, it would be nice to know what success is.

Gutzwiller: We'll have to look at what Emerson states in their literature.

Tim: The goal of this call was to move forward for me to test. I can get done by the end of next week if I can get to 90C.

Gutzwiller: Have the labs modified the filter holders to block relief valve?

Intertek yes, pressed in plug.

SwRI's is being fabricated. (Incorrectly stated during the conference that it uses a pressed in plug) SwRI uses a drilled and tapped plug.

Gutzwiller: Are all the labs running harness with "electronic technician" lights to show up as problems?

Tim: No.

McCord: If we get a light, then we connect to find the code. We log data from the CAN on other C13 stands, but not this stand. Standard protocols are usually easy to grab from a CAN but trouble codes are OEM specific and we need support for those.

Tim: What would the codes tell you?

Gutzwiller: Intake valve actuator code, coolant code can put the engine into another mode.

McCord: At idle you may not see an operational change. Having the light come on if there is a code would tell us to take a look.

McCord: Do you want me to send out PIN locations for the alarm lights.

Gutzwiller: Yes.

Hind: We are under time crunch. We are also being asked about backwards compatibility work by CLOG (Category Life Oversight Group).