

March 16, 2018

Caterpillar Surveillance Panel Teleconference Minutes

Conference Attendees:

Mark Jarrett, Hind Abi-Akar – Caterpillar

Jim Gutzwiller (Chairman) Elisa Santos, Bob Salgueiro, Gan Hu – Infineum

Garrett White, Josh Ward, Jim Moritz – Intertek

Greg Shank - Volvo

Bill larch - Lubrizol

Jim Carroll (Secretary), Jim McCord, Travis Costan - SwRI

Abaigeal Ritzenthaler, Christian Porter, Bob Campbell - Afton

Dan Lanctot – TEI

Sean Moyer – TMC

AGENDA

C13 Deposit Test - Review results from two reference oil tests run with the “new” batch of cylinder liners.

Elisa Santos discussed two C13 tests with new liners compared to earlier tests. (see attached presentation)

It appears that both test’s TLC results were centrally located within the range of results from previous tests and low of the TLC target. But this seems to be a long term trend. Mark asked if there may be need to make an adjustment to the target.

It appears that both test’s R2T results were centrally located within the range of results from previous tests and close to the R2T target.

It appears that both test’s OC results were centrally located within the range of results from previous tests and close to the OC target.

There seemed to be a consensus by all that the data so far was very promising.

Bill Larch: We just started our test.

McCord: Ours is over 200 hours. OC is at 11 which is about normal for this point. Did you have any outliers on the TGC data?

Answer: None from the other two labs so far.

**McCord: I make a motion that the two tests reported are acceptable as references.
No discussion.**

Seconded

None opposed

Sean: Calibration will be effective today.

No waives

Motion carried.

McCord: Do we need to meet again for SwRI and Lubrizol to get approved calibrations?

Hind: Elisa will be receiving the data from the tests when they are done.

Moritz: But Lab A will have to wait for Lab b at this point.

Hind: We could have an email ballot.

Sean: Didn't the motion approve the liners and wouldn't the LTMS then be the judge? If SwRI and Lubrizol results are different then we can meet to discuss it.

Resolved: When the labs complete their tests they will now submit their data to TMC per normal procedure.

Regarding Top Groove Offsets per Cylinder

Travis: The data set I reviewed had oils 831-2 and 831-3. There was a tendency for cylinder 1 to be lower but there does not seem to be much of a bias anymore.

McCord: It was a handful of tests 15 years ago

Moritz: It had other oils too.

McCord: The data I've seen looks more random.

Travis: In general can anyone comment on how often a cylinder is thrown out.

McCord: It doesn't happen very often. 1 out of 5 or 6 tests. For top groove fill. My question was, is this still the case?

Moritz: It's circular if the offsets change then the counts of what you throw out change.

McCord: You only address the offsets when you look at outlier screened, then you use 1/6 of the amount from the cylinder thrown out.

Gutzwiller: We could have the statisticians look at it

McCord: Using candidates would give us a bigger data set

Moritz: What impact would it have?

McCord: Could bring labs closer together but it may not.

Moritz: We have to be careful how it affects candidates.

McCord: It could give us a truer number.

Travis: Cylinders 2-6 did not have a pattern. Cyl. 1 tended to be lower than the average. That is different than what is written in the procedure.

TGC offsets in the procedure are

P1 5.38

P2 -0.39

P3 -0.71

P4 -3.15

P5 -1.43

P6 0.30

Travis shared graphs on the screen of R2TC and TLC from SwRI references.

R2TC Cyl 6 may show a bit of bias

TGC did not show a bias

TLPC Cyl 1 was a bit low

Sean offered to add these data to the TMC website.

TGC, TLHC, R2TC data will be uploaded.

Travis: Elisa, or Kevin, do either of you know how the offsets were calculated?

Elisa and Kevin could not recall.

Elisa: Do I have an action item?

Gutzwiller: Sean, I will have the data in the LTMS file by the end of the day. Please check on Monday.

Hind: Now you are concerned with TGC Relative profile?

Gutzwiller: Yes.

McCord: I was just very curious if the matrix data still holds true.

???: It will be interesting to see if the data is still there and has the other oils used in coming up with the offsets.

Hind: Where are we on the COAT references?

McCord: The airless density on the shakedown test is matching the D4052. We will be starting our calibration testing.

Hind: You will be running a reference test next week?

McCord: Yes, we reconvene after all the first references are done.

Gutzwiller: Lubrizol was targeting to start the week of the 26th.

Bill: Probably by then.

Hind: Need to expedite it and have it done by the ASTM meeting.

Bill: I believe the instrument shop is working thru the weekend to get the cabinet setup to get started.

Hind: I want to emphasize we have to move fast.

McCord: The only way to get it done faster is to run tests back to back but there is a risk there.

Moritz: Have the labs inform Gutzwiller when they start their test and schedule the next meeting.

Gutzwiller: I can work on that

Bill: I will send a note to Demetrius to inform Jim G. when he gets his oil and starts.