

Cummins Surveillance Panel Meeting Minutes

February 8, 2024 14:00-15:30 CST

Participants:

Afton –Joseph Hoehn, Bob Campbell

Chevron Oronite –Josephine Martinez, David Lee

Cummins – Phil Shelton

ExxonMobil – Steve Jetter

Infineum – Elisa Santos, David Brass, Jim Gutzwiller

Intertek – Andrew Smith (Chairman)

Lubrizol –Robert Slocum, Austin Brininger

SwRI – Joe Moore, Bob Warden, Jose Starling

TEI – Dan Lanctot

TMC – Sean Moyer

Agenda:

- ISB Block Part Number Presentation by Phil Shelton.
- New ISB hardware batch discussion and introduction.
- New ISB reference oil precision targets, introduction, and timeline.
- ISM proposed reference oil test volunteer.
- PC9-HS Fuel

ISB Block:

- ISB block part number will be changing to 5405082.
- It will be the same casting; the only differences will be some minor machining and a few parts in the assembly.
 - Same supplier as the old blocks.
 - Two high pressure ports on the cold side.
 - Two dipstick holes and two tapped mounting holes for a power takeoff.
 - Thread depth of bedplate mounting holes will change, may need new bolts.
- Date of new part number will be tracked to monitor for any severity shifts.
- Flywheel housing will change part number to 3959811.

- Only difference is the mounting plates on the side of the housing are about 11 mm smaller. It will mount to the engine the same way but may cause issues in the test cells.
- Labs are free to use old housing at their discretion.
- New part number blocks are available and in stock at Cummins. TEI can have them in stock in about 3 weeks.
- ISM blocks are also now available after some issues.
 - The Cummins facility machining the new blocks has changed. No change in part number.
 - Dan and Phil will figure out a way to distinguish blocks from the new facility from the old facility.

ISB Hardware:

- Cummins goal is to provide 450 kits (approx. 3–4-year supply)
 - Tappets have arrived, other parts still in progress. Delivery dates should be available in about 3 weeks.
 - Due to historical rejection rates and the need for a large, consistent hardware batch, the price of kits will likely increase.
- About 3 months of hardware remain at TEI
 - 49 kits of batch F tappets
 - 72 kits of batch N cams*
 - 120 kits of batch D pushrods*
 - 98 kits of batch G crossheads*
 - *Based on current rejection rates

ISB Reference oil:

- Target matrix for 8 tests over 4 stands.
- 12 of the current batch kits will be set aside for the matrix as there is a large historical dataset.
 - Will allow for more accurate CF at end of matrix.
- Timeline for starting the matrix is more dependent on oil arrival at TMC than lab availability.
 - Dan and Andrew will inform the group on an estimated timeline.
- Assuming the reference oil matrix occurs before kits run out, new hardware might be introduced as a rolling change.
 - SA to take care of possible CF shift until enough data is available to establish new CF's.
 - Once a lab runs out of old hardware, they would need to reference on new hardware.
 - Using the level 2 Ei limit would reduce stand SA and increase data for CF's.
 - If a lab fails 2 references, it would cause an industry alert, prompting a coordinated reference anyway.
 - This option maximizes lab flexibility, avoiding extended downtime for coordinated references.
- Reference oil targets will need to include the current kit batch CF's to provide the link to historical data. Once the new kit batch has sufficient data available, CF's can be set for that hardware.

- New reference oil will likely be the sole reference fluid moving forward.
- As a rule of thumb, Sean has limited reference extensions to 18 tests/18 months, pushing extensions to the next reference if needed.
 - Discussed adding this “rule” to the procedure.
- Matrix readiness requires setting a precision target for the new reference oil.
 - Andrew’s recommendation is the current targets for 831-4.

Motion: The panel recommends using the current precision targets for 831-4 as the precision target for the new reference oil in the matrix.

Andrew Smith motions, Joe Hoehn seconds.

None opposed, none waived. Motion passes.

ISM Reference Oil:

- 1 test worth of the proposed oil currently at TMC.
 - Same oil as ISB.
- A volunteer is needed to run the oil.

PC9-HS Fuel Issue:

- In the new batch 24AP9HS01, more yellow pre-dye was added and after the red dye was added, the fuel turned black.
- At least 3 month supply of the fuel, possibly 3-4 years.
 - 3-4 years may be the amount of base stock, not fuel.
- All specifications and severity factors are as expected and are similar to previous batches.
- The fuel is already at some labs.
- Severity graph provided by CPChem has the new batch in line with historical batches.
 - Austin Brininger will provide some info in the ISBV meeting tomorrow for more discussion.
- As more info is available, it will be shared with the panel.
- Further discussion will be focused in the ISBV group as it meets most frequently, and the test uses the fuel.

Next Steps:

- Andrew to draft an update to the procedure to add reference extensions limit.
- Andrew to email labs on availability to run the proposed ISM reference oil.

Next Meeting: Early to mid-March, availability poll will be sent out.