

**MEETING MINUTES OF
D02.B0.07 ON BENCH TEST MONITORING
December 3rd, 2020**

WebEx

1. CALL TO ORDER

Dennis Gaal called the meeting to order at 12:04 PM (1:04 PM EDT). The ASTM Antitrust Statement and that electronic recording of ASTM meetings is prohibited were shown on the first PowerPoint slide.

2. AGENDA

The agenda was approved as posted.

3. MEETING MINUTES

The June 18th, 2020 meeting minutes were approved and posted on the ASTM website for subcommittee D02.B0.07.

4. OVERVIEW OF BENCH TESTS UNDER B.07 JURISDICTION

Dennis Gaal reviewed a slide of bench test methods which included reapproval dates and the present operating status. **(Attachment 1)**

5. SURVEILLANCE PANEL REPORTS

**a. Jessica Hawkins with Ball Rust Test (ASTM D6557) – Attachment 2
D6557**

- This period had a total of 126 accepted calibrations, 8 total failed calibrations, and 7 runs that were operationally invalidated by lab
- Lost test causes were due to air flow control and acid pump or syringe malfunction
- Over the course of this report, AGV severity is trending slightly mild
- Precision for this period (15.52) was worse than previous period (12.78)
- All TMC oils have a healthy supply with majority having an estimated life of 5+ years
- BRT was formalized into LTMS on October 1st, 2020

b. Mike Lopez with CBT and HTCBT (ASTM D5968 & D6594) –Attachment 3

D5968

- No failed or lost tests this period (chair increased time period to reflect both semesters)
- Currently testing on Bath N coupons
- There were no calibrated runs for this period
- Both Copper and Lead concentrations are trending mild, based on previous semesters calculations
- No precision estimate is available due to low activity (chair increased time period to reflect both semesters)
- Information letter was sent out October 9th, 2019 authorizing the use of coupon hangers as well as standardization of test results calculation for precision and reporting

D6594

- Currently testing on Bath N coupons
- 8 labs reported data
- Both Copper and Lead concentrations are trending severe
- Copper pooled s is at 0.24 for the period, slightly worse than previous period
- Lead pooled s is at 7.79 for the period, slightly worse than previous period
- Chairman is currently coordinating with TMC to add HTCBT to LTMS for upcoming period

c. Amy Ross with Volatility (ASTM D6417 & D5800) –Attachment 4

D6417

- There was a 12% fail rate of operationally valid tests
- CUSUM shows overall slight severe performance with leveling to nearly on target for the last two periods
- Mild performance this period (-0.34 s)
- 7 labs reported data but 6 reported calibrated runs
- Precision this period was 0.04 versus the pooled target of 0.07
- Rig D5 lost calibration status after two mild OC and one invalidated result
- Precision for Oil 52 is much worse than target; Oils 55 and 58 are better than target
- D6417 calibration requirements are issued as LTMS document updates

D5800

- Pooled s (0.0659) is less precise than updated target (0.0465) and last period (0.0503)
- CUSUM shows continued overall severe trending
- Performance is 0.35 s severe this period, less severe than previous period
- Proc B rigs are trending 0.62 s severe while Proc D rigs are trending -0.33 s mild
- Fail rate of 8% ; 11 OC (+5) on 7 rigs at 4 labs
- 7 Ei Level 3 precision alarms (5 mild, 2 severe)
- 5 tests exceeded 3s from target, compared to 3 from previous period
- Proc B precision (0.06 s) is worse than target with severe performance (0.62 s); NCK2 has better precision (0.01) with severe performance (0.48s); while NCK25G precision was 0.06 s with severe performance (0.63 s)

-Proc D precision (0.07) is worse than target and last term (0.05) with continued mild performance (-0.33s)

d. Matt Schlaff with High Temp FOAM (ASTM D6082) – Attachment 5

- No significant lab or oil bias
- All 6 discrimination runs were successful
- No Non-zero foam stability
- Precision (8 s) is more precise than last period and target precision (19.28 s)
- Oil FOAMB18 has a mild performance of -0.95 s, having 3 consecutive periods of mild performance
- Oil FOAMB18 target (54) is currently set on 18 data points, chairman will revise limits with 30 points for next period

e. Matt Schlaff with Sulfated Ash (ASTM D874) – Attachment 5

- All labs were within + / - 1 Mean Δ/s
- All oils were within + / - 1 mean Δ/s
- Precision (0.03 s) is more precise than last period and target precision (0.07 s)
- Fail rate of 0%

f. Matt Schlaff with Scanning Brookfield (ASTM D5133) – Attachment 5

- Fail rate of 17%; historically ranging between 6% to 26%
- Round Robin for potential new oil is currently in progress with three submitted runs so far
- Precision (2.23 s) is more precise than last period and target precision (2.86 s)
- Lab V at -2.06 Mean Δ/s , Lab E1 at -1.71 Mean Δ/s , and Lab S at 0.95 Mean Δ/s
- All other labs fell within +/- 0.15 Mean Δ/s
- First period with significant reporting of new oil GIA17

g. Justin Mills with ROBO (ASTM D7528) – Attachment 6

- Information letter issued in August 2020 pertaining to calibration requirements
- Expected revision in 2021 to include updated calibration requirements and dilute NO2
- Interim limits set for 434-3; likely to set final limits in 2021 when $n > 20$
- Currently screening 436 as alternative reference oil
- API invoked provisional licensing April 1, 2020 through August 1, 2020 for ROBO in response to long backlogs at independent test labs
- ROBO test is available at two independent labs and three dependent labs (19 stands)
- Precision was slightly worse than target and tests ran with a mild bias (pooled $s = 0.2264$ and Mean $\Delta/s = -0.76$)

**h. Mike Burke with Elastomers EOEC and LDEOC (ASTM D7216) – Attachment 7
EOEC**

- Total of 323 acceptable calibration tests, 7 failed tests, and 5 aborted tests
- Lost tests causes included unspecified bath failure and bath temperature off-spec
- No information letters were issued this period
- SL107 currently has an inventory of 3348 gallons with an estimated life of 5+ years

LDEOC

- This period at a total of 329 accepted calibration tests, 11 failed tests, and 6 aborted tests
- Lost test caused included heating time being exceeded, unspecified bath failure, bath temperature off-spec, corrupted data, irretrievable tests results, and sample loss
- No information letters were issued this period
- Polyacrylate (ACM1) test severity parameters (volume change, points hardness change, and tensile strength change) are trending mild

i. Mike Faile with TEOST 33C and MHT-4 (ASTM D6335 & D7097) – Attachment 8

D6335

- TEOST -33C is currently using Rod Batch M
- 435-2 and 75-1 reference oils are in good supply at TMC, oil 75-1 was approved with temporary limits on April 4th, 2019
- Precision is significantly worse than last period (10.10 vs 6.08); target (5.73)
- This period had 13 failed calibrations at a 39% fail rate
- Overall test ran on target (0.02 s) for performance this period versus previous period (0.28)
- TEOST -33C is available at 7+ labs (7 labs reported this period versus 8 from previous)

D7097

- TEOST-MHT is currently using Rod Batch M
- Multiple catalyst batches are in use -18AB (n=5) and 19BA (n=67)
- Oils 432 and 434-3 are currently in good supply at TMC, oil 434-3 was approved with temporary limits on November 21st, 2019
- TEOST-MHT is available at 10+ labs (10 labs reported this period vs 11 prior period)
- Precision is significantly better than last period (4.87 vs 7.02) and better than target (5.63)
- This period had zero failed calibrations
- Overall test ran slightly mild (-0.22 s) for performance this period
- Overall severity on catalyst batch 19BA is -0.25 s mild (n=247)

j. Young-Li Mc Farland with EOFT and EOWTT (ASTM D6795 & D6794) – Attachment 9

D6795

- 5 labs calibrated (down from 6 labs last period)
- Improved 1.4 % fail rate of operationally valid tests
- Severity by CUSUM plotting is on target
- Precision by pooled s has improved to 5.67 versus 8.49 from previous period
- There is currently 1 reference oil (Oil 79), a reblend of oil 78-2
- EOFT was added to LTMS on September 1st, 2020

D6794

- 5 total labs are calibrated for this period
- There was an improved fail rate (1.36%) of operationally valid tests
- Severity by CUSUM plotting was severe for all treat rates

- Precision by pooled s is slightly worse than previous period, but comparable to historical values
- There are two current reference oils in use (Oil 79 and Oil 77-3)
- EOWTT was added to LTMS on September 1st, 2020

6. OLD BUSINESS – Attachment 10

Yong-Li McFarland presented slides on the emulsion aqueous definition for D7563. There is an observation of an aqueous “layer” or aqueous “blob” at the bottom of the cylinders during testing (photos were provided). The “blob” is transparent but not well defined, and there is a question on whether the blob would be considered an aqueous layer. Yong-Li contacted the method RR author to which they provided insight that the “blob” could be water emulsed/demusled into the oil. Since the measurement is taken after 24 hours and the emulsions creation is a kinetic process, the author suggested not to count it as a separated water phase. Yong-Li would like to have more volunteers and discussion for insight, but due to time constraints it was suggested that individuals could contact her for information.

7. NEW BUSINESS

No new business was addressed during this meeting due to time constraints but will be encouraged at the next section meeting.

8. NEXT MEETING

D02.B0.07 next scheduled meeting will be held on June 21st, 2021–
Westin/Crown Center, Kansas City, MO (hopefully).

9. ADJOURNMENT

The meeting was adjourned at 1:17 PM (2:17 PM EDT).

Respectfully,

Jessica Hawkins