ROBO SP Meeting Minutes

March 7, 2018

**Actions:**

* Justin Mills to revisit minutes from last ROBO Workshop and determine if thermocouple positioning was addressed or if there was any consensus
* Justin Mills to update membership list - **complete**
* Justin Mills and Alan Flamberg to recalculate statistical limits for TMC 434-2 and distribute to SP for review
* Justin Mills to schedule next SP meeting for Thursday, April 26 - **complete**
* Justin Mills to send approved charter for Statistical Task Group to Tom Schofield - **complete**
* Tom Schofield to determine path forward for seeking Stats Group support from ASTM **- complete**

**Membership and Attendees:**

|  |  |
| --- | --- |
| Ace Glass | \*Dave Lawrence |
| Afton | \*Shelia Thompson, Jeff Yang |
| ASTM TMC | \*Tom Schofield |
| BASF | Mary Dery, Bridgett Rakestraw |
| Chevron Oronite | Man Hon Tsang, Robert Stockwell |
| ExxonMobil | \*Dennis Gaal |
| Infineum | Andy Richie, Sapna Eticala |
| Intertek | \*Joe Franklin, \*Matt Schlaff |
| Kuwait Petroleum | Leen Poot |
| Lubrizol | \*Mike Faile, \*Aimee Shinhearl, Rick Hartman |
| PetroChina | Li Shaohui , Sun Ruihua, Peng Wang, Xiaogang Li, Xu Li |
| Evonik Oil Additives | \*Alan Flamberg, \*Justin Mills, \*Bruce Zweitzig, Joan Souchik, \*John Maxwell, \*Andre Dawson |
| RT Vanderbilt | Al Filho, Ron Hiza, Simon Tung |
| SwRI | Becky Grinfield, Joe De La Cruz, \*Mike Birke, Young-Li McFarland |
| Valvoline | \*Amol Savant, Kevin Figgatt, Steve Lazzara |
| Koehler Instruments | Raj Shah, Vincent Colantuini |
| Tannas/Savant | \*Greg Miiller, Ted Selby |

**\* Denotes attendance**

**Summary:**

* Meeting began at 10:05EST on March 7, 2018
* Agenda accepted by panel
* ASTM Antitrust and Recording Policy reviewed
* Membership review and update
	+ ACE Glass removed John Ross and added Dave Lawrence
	+ Evonik Oil Additives added John Maxwell
	+ Chevron Oronite removed Kaustav Sinha and added Man Hon Tsang
* ASTM D7528-017a approved. Changes included:
	+ Introduction section revised.
		- ASTM TMC monitoring is necessary/mandatory for ASTM D7528: ROBO. The SP believes it is critical to calibrate ROBO stands using TMC reference oils
	+ Subsection 5.4 added, clarifying test validity requirements.
	+ Subsection 6.6, corrected length of steel rod from 30 mm to 300 mm.
	+ Subsection 7.7 revised, deleting specific numbered reference oils.
	+ Section 9, Test Stand Calibration, completely revised; the existing section replaced with new wording.
	+ New Annex A1 – Annex A4 added, explaining role of the Test Monitoring Center.
* Update on NO2 concentrate supply – any issues from the SP?
	+ Sigma-Aldrich has once again discontinued NO2
	+ Known alternative suppliers include Electronic Fluorocarbons and SpecGas
		- According to Bruce Zweitzig, shipping from Electronic Fluorocarbons is ~$2,500 per order
	+ Current supply/stock of NO2
		- Evonik estimates they have 1-2year supply
		- Lubrizol estimates they have a 1 year supply
		- SWRI estimates they have a 1 year supply
* Test Oil Status
	+ 434-2 implemented in 2017. It has 24.3 gallons allocated to ROBO – 6+ year supply
	+ 435-1 has 435 gallons allocated to ROBO – 36 year supply
	+ 438 has 5 gallons allocated to ROBO – 1.25 year supply, but additional 25 gallons may be available from IIIG allocation. There is also the option to use a reblend.
		- Tom Schofield is able to get 5 gallon allotments of 438 for ROBO from Sequence IIIG’s allocation.
		- Based on Evonik’s observations, TMC 438-1 is comparable to TMC 438.
* TMC 434-2 limits – setting permanent limits
	+ Temporary limits set in July 2017 were reviewed. The temporary limits used the current average of TMC 434-2 and added a bias correction (see slide #8 for further detail)
	+ Several proposals for setting final limits were reviewed
		- There was some debate over whether or not we should continue to add a bias correction or just use the data as-is
		- No clear resolution was reached
		- Agreed to keep as an agenda item for next SP meeting
* ROBO data dictionary
	+ A motion was made to expand the ROBO data dictionary field CCSVEOT (CCS result on oxidized oil) to 10 characters
		- Motion made by Matt Schlaff – seconded by Alan Flamberg – no additional discussion
* Update on NO2 in air alternative and path forward
	+ Dilute NO2 workgroup met in September 2017
	+ Evonik has completed 4 runs with dilute NO2 – no change in severity with dilute NO2 was observed
		- Work at Evonik temporarily placed on hold due to demand from API SN Plus
	+ More work is needed to develop dilute NO2 method, but timeline is unclear due to high ROBO utilization related to API SN Plus
	+ For development work, labs can use decoded TMC oils. Tom Schofield asks that labs use TMC 435-1 because TMC has a large volume of this test oil.
* Capacity Concerns – Is there enough ROBO capacity for API SN Plus?
	+ Labs are experiencing a backlog of samples (likely due to API SN Plus).
	+ To address capacity concerns, some labs are adding additional ROBO capacity.
* Bias review – what we need to do next
	+ Within the ROBO SP, there was an outstanding action to develop a project charter so that we may get support from ASTM stats group
	+ The following Statistical Group Charter was accepted by the SP (motion to accept the charter was made by Matt Schlaff – seconded by Mike Faile – no further discussion)
		- Scope:
			* Use TMC ROBO reference results to investigate alternative or additional statistical applications for TMC test monitoring of the ROBO test given the overall and persistent mild industry performance of the test, and prior periods of high imprecision compared to target performance.
		- Objectives:
			* Analyze whether a log transform of the MRV results still applicable.
			* Analyze test results overall, by lab and by instrument and by oil to determine the most critical level of bias, and how that bias changes over time.
			* Propose a statistically justified correction of the bias where operational corrections cannot be achieved, with a focus on either an industry-wide correction factor, or severity adjustments at the lab or rig levels, as is most appropriate.
			* Evaluate whether exclusion of exceptionally biased and/or imprecise labs or rigs is justified, and propose a statistical mechanism for doing so.
* Next meeting
	+ Next meeting will be April 26, 2018