

MEETING MINUTES: ROBO SURVEILLANCE PANEL

Meeting: ROBO SP Meeting

Date: April 27, 2023

Location: WebEx (virtual)

Minutes by: Madeleine Dellinger – SP Chair

Meeting Outcome and Actions:

1. Maddie Dellinger to put together a list of vacuum pumps, lead times, and rebuild kits.
2. Next meeting tentatively scheduled for August 24th, 2023

Membership and Attendance:

ASTM TMC	*John Loop, Sean Moyer
Afton	Shelia Thompson, Jeff Yang,
BG Products	*Madeleine Dellinger
Chevron Oronite	*Robert Stockwell
Evonik Oil Additives	*Justin Mills, *Gabe Walkup, Justin Kontra
ExxonMobil	*Dennis Gaal
Infineum	Andy Richie
Intertek	*Joe Franklin, Matt Schlaff, *Rachel Stone
Lubrizol	*Aimee Shinhearl, Jerimiah Westbrook, *Vince Donndelinger
SwRI	*Becky Grinfield, Joe De La Cruz, Mike Birke, *Yong-Li McFarland
Valvoline	Amol Savant, *Amy Ross, Bruce Tonkel
Vanderbilt Chemicals	Al Filho, Christine Katrenya
Ace Glass	Dave Lawrence, *Tom Petrocella
Koehler Instruments	Raj Shah, Vincent Colantuini
Tannas/Savant	*Greg Miller
General Interest	*Alan Flamberg

* Denotes attendance

Summary:

- Meeting convened at 10:05 CST on April 27, 2023
- No modifications to the agenda
- ASTM Antitrust and Recording Policy reviewed.
- Membership review and update
 - Infinium – Removed Sapna Eticala
 - Valvoline – Bounce back email from Amol Sawant (had incorrect email).
 - Lubrizol – Added Vince Donndelinger
 - Koehler – Are they still active?
 - Alan Flamberg via email says he meets with them on and off and will ask what their interest is.
- Meeting minutes from January 19, 2023 SP meeting were accepted (Motion made by Justin Mills, Seconded by Becky Grinfield)
- Actions and outcome from the January 19th meeting were reviewed. Actions included:
 - Maddie Dellinger stepping up as new Surveillance Panel Chair
- ROBO Status
 - Past Semester (October 1- March 31) finished slightly severe and precision close to target.
 - Current Semester (April 1 – Present) is running mild with precision close to target.
 - Discussed what positive and negative means for severity as well as the current targets for precision. Justin Mills stated that the precision targets updates as new reference oils are introduced.
 - Justin Mills provided a CUSUM analysis, stating that it appeared the ROBO is seeing a leveling off period due to the severity going from mild to severe. This is a good thing; the test should oscillate between mild and severe. Justin also explained that low activity can impact the CUSUM chart meaning that we might not see a downward (severe) trend due to the lack of runs.
 - John Loop stated that he's working on the TMC Semi-Annual report, and we can expect it within a week to 10 days. The CUSUM plot in the presentation today was missing the trend lines but John said he would make sure they are in the Semi-Annual Report
 - Justin Mills stated they used to have statisticians interpret results to find correlations for certain trends.
 - Amy Ross stated that she has lines on her NOACK plot, and it helps her understand CUSUM better.
- LTMS Updates
 - None
- Edwards Vacuum Pump Availability
 - The Edwards RV8 pumps are on back order taking anywhere from 20 – 70 weeks.
 - Denny Gaal emailed with concerns about how this could affect the GF-7 timeline.
 - Gabe Walkup handles a large amount of Edwards RV8 vacuum pump but says he hasn't had to order one in a while. Evonik has attempted to rebuild them but has been unsuccessful. Justin Mills states maybe they should try again.
 - Maddie Dellinger stated she has been successful in rebuilding the Edwards RV8
 - Rachel Stone with Intertek states that they use US Vacuum and rebuild their vacuums.
 - Aimee Shinheartl asked Maddie how she knew when to rebuild them.
 - Maddie and Justin both answered stating they start to sound bad.
 - Joe Franklin stated that since the Edwards Pumps aren't the only pumps available that this is a non-issue for the panel.
 - Yong-Li wanted to confirm that this isn't going to cause an issue with any labs regarding delays to customer samples.

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- Maddie said she would put together a list of alternative vacuum pumps to the Edwards RV8.
- TMC Semi-Annual Report
 - John Loop to differentiate between dilute and concentrated NO₂ on the TMC Semi-Annual Report.
- ASTM in Denver
 - Reviewed summary slide.
- Next meeting tentatively scheduled for August 24th, 2023 at 10 AM CST. Date may be postponed or moved up if necessary.
- The meeting was adjourned at 10:40 AM CST.

-End report-

ASTM D7528: Bench Oxidation of Engine Oils by ROBO Apparatus

ROBO Surveillance Panel Meeting

April 27, 2023

Madeleine Dellinger

Agenda

- Welcome, ASTM statement
- Review of surveillance panel membership
- Minutes and actions from prior meeting (January 19, 2023)
- New Chairperson!
- Current status of ROBO including statistics
- Vacuum Pump Availability
- ASTM in Denver Update
- Additional Business
- Set next meeting

ASTM Antitrust and Recording Policy

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The purpose of antitrust laws is to preserve economic competition in the marketplace by prohibiting, among other things, unreasonable restraints of trade. In ASTM activities, it is important to recognize that participants often represent competitive interests. Antitrust laws require that all competition be open and unrestricted.

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Electronic recording of ASTM meetings is prohibited.

Membership

ASTM TMC	John Loop , Sean Moyer
Afton	Shelia Thompson, Jeff Yang
BG Products	Maddie Dellinger
Chevron Oronite	Robert Stockwell
Evonik Oil Additives	Justin Mills, Gabe Walkup , Justin Kontra
ExxonMobil	Dennis Gaal
Infineum	Andy Richie, Sapna Eticala
Intertek	Joe Franklin , Matt Schlaff, Rachel Stone
Lubrizol	Aimee Shinhearl , Jeremiah Westbrook, Vince Donndelinger
SwRI	Becky Grinfield , Joe De La Cruz, Mike Birke, Yong-Li McFarland
Valvoline	Amol Sawant, Amy Ross , Bruce Tonkel
Vanderbilt Chemicals	Al Filho, Christine Katrenya
Ace Glass	Dave Lawrence, Tom Petrocella
Koehler Instruments	Raj Shah, Vincent Colantuini
Tannas/Savant	Greg Miller
General Interest	Alan Flamberg
Guests	

Summary of changes:

1. Removed Sapna Eticala (as requested at Dec 2022 D02 meeting).
2. Bounce back email from Amol Sawant? (even with new email)
3. Vince Donndelinger added to Lubrizol
4. Last time Koehler Instruments contributed?



Motion to accept January 19, 2023 meeting minutes

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Meeting: ROBO SP Meeting
Date: January 19, 2023
Location: MS Teams (virtual)
Minutes by: Justin Mills – SP Chair

Meeting Outcome and Actions:

- Justin Mills to turn over surveillance panel to Maddie Dellinger.
- John Loop to differentiate between dilute and liquid NO2 in TMC semi-annual report.
- Next meeting tentatively scheduled for April 27.

Membership and Attendance:

ASTM TMC	*John Loop, Sean Moyer
Afton	*Shelia Thompson, Jeff Yang,
BG Products	*Madeleine Dellinger
Chevron Oronite	*Robert Stockwell
Evonik Oil Additives	*Justin Mills, *Gabe Walkup, Justin Kontra
ExxonMobil	*Dennis Gaal
Infineum	Andy Richie, Sapna Eticala
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Tannas/Savant	*Greg Miller
General Interest	*Alan Flamberg

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MEETING MINUTES: ROBO SURVEILLANCE PANEL

Summary:

- Meeting convened at 11:02EST on January 19, 2023.
- No modifications to agenda
- ASTM Antitrust and Recording Policy reviewed
- Membership review and update
 - TMC – Dylan Beck and Jeff Clark removed.
 - Afton – Todd Dvorak removed.
 - PetroChina – Removed due to inactivity
- Meeting minutes from December 1st SP meeting were accepted (Motion made by Joe Franklin, Seconded by Alan Flamberg)
- Actions and outcome from the December 1st meeting were reviewed. Actions included:
 - Justin Mills to prepare comparison of precision and bias between concentrated (liquid) nitrogen dioxide and dilute nitrogen dioxide. Comparison to be shared at next meeting.
 - Seeking nominations at the January meeting for new SP chair.
- ROBO Status
 - Current semester (October 1 – March 31) is running slightly severe and precision close to target.
- Dilute NO2
 - Comparison between dilute and liquid NO2 on TMC reference oils was shared.
 - 2 out of 6 labs are using dilute NO2.
 - Slightly higher calibration pass rate with dilute NO2 in last 6 months.
 - Did not perceive a significant bias between liquid and dilute NO2, noting only 2 labs are reporting dilute NO2 results, one with no bias (0.04) and other severe (0.75)
 - No perceived differences in reference oil bias
 - Denny requested that the semi-annual TMC report differentiate between liquid and dilute NO2. John Loop agreed.
- Surveillance Panel Chair
 - Justin Mills to step down as SP chair due to role change. Justin Mills nominated Maddie Dellinger. No other nominations received. A voice vote was taken and there were none opposed. Congratulations to Maddie, our new ROBO SP chair.
- Next meeting tentatively scheduled on for April 27, 2023. Date may be postponed if necessary.
- Meeting adjourned at 11:36EST.

-End report-

Actions from December 1, 2022 meeting

- Madeleine (Maddie) Dellinger has taken over as ROBO Surveillance Panel Chair.
 - Has worked for BG Products for 4 years as a Research and Development Chemist, mainly focused on the ROBO.
 - BG Products manufactures and distributes high quality professional use additives, cleaners, specialty lubricants, and the precision tools and equipment used to service vehicles in countries around the world.
 - TMC Surveillance Panel list needs to be updated.

Current status of ROBO

ROBO Industry Statistics

Period	N-size	Degrees of Freedom	Pooled s	Mean Δ/s
Current Targets	80	77	0.1551	-----
4/1/19 through 9/30/19	95	91	0.2492	-0.32
10/1/19 through 3/31/20	158	153	0.2723	-0.10
4/1/20 through 9/30/20	119	113	0.2264	-0.76
10/1/20 through 3/31/21	113	108	0.3188	-0.11
4/1/21 through 9/30/21	116	110	0.1992	-0.37
10/1/21 through 3/31/22	106	102	0.2103	-0.35
4/1/22 through 9/30/22	105	101	0.1868	-0.06
10/1/22 through 3/31/23	94	91	0.2000	0.11
4/1/2023 through 4/25/23	11	8	0.2242	-0.56

**Mean Δ/s
(Severity)**

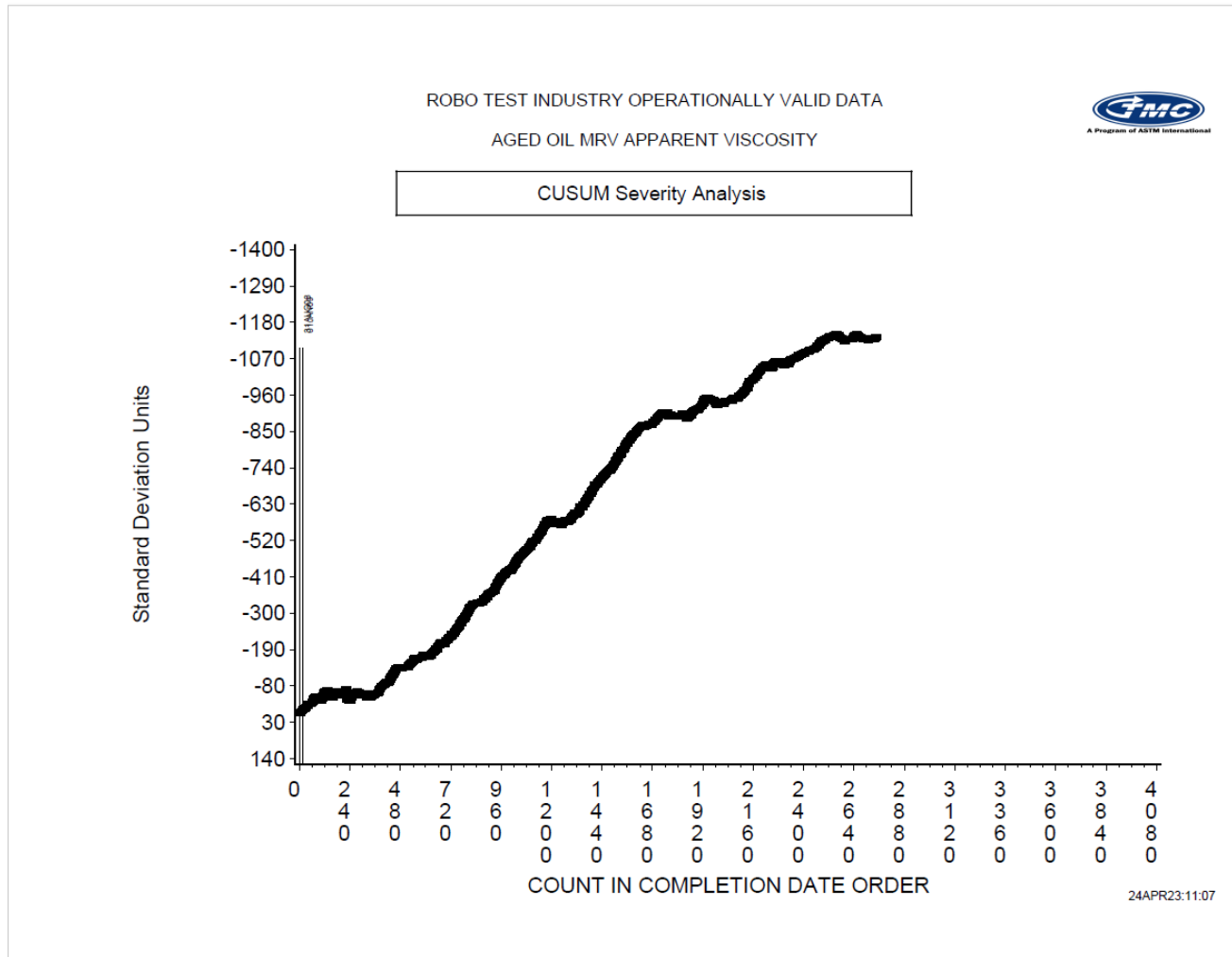
+ Severe

- Mild

Finished last semester with a slightly severe bias. Precision remains about the same as previous semester.

Source <https://www.astmtmc.org/ftp/refdata/bench/robo/data/statistics.txt> (April 25, 2023)

CUSUM severity analysis



Graph Trend	Meaning
Flat	No bias
Upward	Mild Bias
Downward	Severe Bias

Source: <https://www.astmtmc.org/ftp/refdata/bench/robo/plots/mrv%20INDUSTRY.pdf> (April 25, 2023)

LTMS updates

- No updates to report since our last meeting.

<https://www.astmtmc.org/ftp/docs/ltms/ltms.pdf>

Edwards Vacuum Pump Availability

Edwards Vacuum Pump






- 20 – 70 week lead time on Edwards RV8 Vacuum Pump (until 2025)
 - According to Vacuum One, a Chicago based Edwards Vacuum Distributor
- Normal lead time is 6-8 weeks
- Rebuild kits are in stock

Dilute vs Concentrated NO₂ TMC Semi-Annual Report

ASTM in Denver

ASTM D7528: ROBO

Summary for D02.B0.07 – June 26, 2023

Status	Test Aspect	Comments
	Method	Test method is in good standing. <ul style="list-style-type: none">▪ Dilute NO₂ alternative officially added to D7528-22 in April 2022. During the last semester, 2 out of 5 labs reporting dilute data.
	Parts Availability	All ROBO hardware and test materials are available <ul style="list-style-type: none">▪ Nitrogen dioxide, the primary catalyst for ROBO, is available from multiple suppliers▪ Alternative procedure with dilute nitrogen dioxide effective December 1, 2021.
	Reference Oils	All current reference oils are in good supply at TMC: multiyear supply of each oil <ul style="list-style-type: none">▪ Surveillance panel replaced 438-2 with 436 in 2021
	Test Availability	Test is available with no significant queues to report. <ul style="list-style-type: none">▪ Less activity than prior semesters
	Severity and Precision	In last semester (Oct 2022 – March 2023) precision was on target and test ran with a slight severe bias: <ul style="list-style-type: none">▪ N = 94, Pooled s = 0.2000 and Mean Δ/s = 0.11

Any Additional Topics?

Next Meeting

Next meeting???

- Suggest ROBO SP meeting in October/November prior to ASTM.
- Thursday August 24th 10 AM CST / 11 AM EST
- Thursday November 2nd 10 AM CST / 11 AM EST