

MEETING MINUTES: ROBO SURVEILLANCE PANEL

Meeting: ROBO SP Meeting

Date: June 6, 2024

Location: WebEx (virtual)

Minutes by: Madeleine Dellinger – SP Chair

Meeting Outcome and Actions:

1. Removed Gabe Walkup with Evonik
2. Removed Matt Schlaff with Intertek
3. Added Adam Ramos with Southwest Research Institute
4. Added Jared Cavaliere with Southwest Research Institute
5. Next meeting tentatively scheduled for August 15, 2024

Membership and Attendance:

ASTM TMC	*John Loop, Sean Moyer
Afton	Shelia Thompson, Jeff Yang,
BG Products	*Madeleine Dellinger, *Shane Abbott
Chevron Oronite	*Robert Stockwell
Evonik Oil Additives	Justin Mills, Gabe Walkup , Jessica Marcanello
ExxonMobil	*Quanchang Li
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, *Adam Ramos, *Jared Cavaliere
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 10:06 CST on June 6, 2024
- No modifications to the agenda
- ASTM Antitrust and Recording Policy reviewed.
- Membership review and update
 - Removed Gabe Walkup with Evonik (no longer with the company).
 - Removed Matt Schlaff with Intertek (no longer with the company).
 - Added Adam Ramos with Southwest Research Institute.
 - Added Jared Cavaliere with Southwest Research Institute.
- Alan Flamberg pointed out that the date was incorrect on the February meeting minutes. This changed and the minutes went up for a vote as edited.
- Meeting minutes from February 22, 2024 meeting were accepted (Motion made by Alan Flamberg, Seconded by Mike Birke).
- Actions and outcome from the February 22, 2024 meeting were reviewed.
 - There were no outstanding actions from the previous meeting.
- ROBO Status
 - Past Semester (October 1- March 31) finished mild and precision close to target.
 - Current Semester (April 1 – Present) is running with a mild bias and precision higher than 0.2.
 - CUSUM plot is trending upward indicating that there is a mild bias.
 - Alan Flamberg commented on *how* mild the test is running (-0.97) stating that there likely aren't enough data points to be cause for concern but it should still be watched.
- LTMS Updates
 - None
- ASTM in Austin Update
 - 3 slides that will be presented in Austin, TX were reviewed with the panel.
 - Maddie stated that she has reached out to Edwards Vacuum regarding an updated lead time, but they haven't responded.
 - Reference oil 434-3 has a supply of 2 years left and will be needing a reblend eventually. This oil is shared with the TEOST. John Loop stated that the TMC is working on an overall plan to contact suppliers once oils drop below a 2-year supply. This isn't cause for concern yet but eventually the oil will have to be reblended.
 - The statistics between the dilute and concentrated were reviewed. Dilute had a pass rate of 95% last semester while Liquid had a pass rate of 90%. 436 is the only oil that is running severe on both delivery mechanisms
 - Alan Flamberg commented that when the dilute was implemented we expected it would do better, so it makes sense that the pass rate is higher. He stated that overall, the dilute NO2 is just easier to deal with.
- Additional business.
 - Maddie asked the group on average how many runs operators were getting out of their NO2 concentrated cylinders.
 - Aimee with Lubrizol stated that when running constantly, Monday, Wednesday, Friday, that a lecture bottle would last 6 months. Rachel with Intertek stated that she experienced the same.
- Next meeting tentatively scheduled for August 15nd at 10 AM CST / 11 AM EST. The date may be postponed or moved up if necessary.
- The meeting was adjourned at 10:28 AM CST.

-End report-

ASTM D7528: Bench Oxidation of Engine Oils by ROBO Apparatus

ROBO Surveillance Panel Meeting

June 6, 2024

Madeleine Dellinger

Agenda

- Welcome, ASTM statement
- Review of surveillance panel membership
- Minutes and actions from prior meeting (February 22, 2024)
- Current status of ROBO including statistics
- ASTM Austin Update
- Additional Business
- Set next meeting

ASTM Antitrust and Recording Policy

ASTM International is a not-for-profit organization and developer of voluntary consensus standards. ASTM's leadership in international standards development is driven by the contributions of its members: more than 30,000 technical experts and business professionals representing 135 countries.

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.

It is ASTM's policy, and the policy of each of its committees and subcommittees, to conduct all business and activity in full compliance with international, federal and state antitrust and competition laws. The ASTM Board of Directors has adopted an antitrust policy which is found in Section 19 of ASTM Regulations Governing Technical Committees. All members need to be aware of and compliant with this policy. The Regulations are accessible on the ASTM website (<http://www.astm.org/COMMIT/Regs.pdf>).

Electronic recording of ASTM meetings is prohibited.

Membership

ASTM TMC	John Loop , Sean Moyer
Afton	Shelia Thompson, Jeff Yang
BG Products	Maddie Dellinger, Shane Abbott
Chevron Oronite	Robert Stockwell
Evonik Oil Additives	Justin Mills, Gabe Walkup , Jessica Marcanello
ExxonMobil	Quanchang Li
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, Adam Ramos , Jared Cavaliere
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. Removing Gabe Walkup with Evonik
2. Removing Matt Schlaff with Intertek
3. Added Adam Ramos with SwRI
4. Added Jared Cavaliere with SwRI

Motion to accept February 22, 2024 meeting minutes



February Minutes

MEETING MINUTES: ROBO SURVEILLANCE PANEL

Meeting: ROBO SP Meeting
 Date: February 22, 2023
 Location: WebEx (virtual)
 Minutes by: Madeleine Dellinger – SP Chair

Meeting Outcome and Actions:

- Added Shane Abbott with BG Products
- Quanchang Li replacing Denny Gaal for Exxon Mobil
- Next meeting tentatively scheduled for May 23, 2024

Membership and Attendance:

ASTM TMC	*John Loop, Sean Moyer
Afton	Shelia Thompson, Jeff Yang,
BG Products	*Madeleine Dellinger, *Shane Abbott
Chevron Cronite	*Robert Stockwell
Evonik Oil Additives	*Justin Mills, Gabe Walkup, *Jessica Marcanello
ExxonMobil	Dennis Gaal, *Quanchang Li
Infineum	Andy Richie
Intertek	*Joe Franklin, Matt Schlaif, *Rachel Stone
Lubrizol	*Aimee Shinheart, *Jerimiah Westbrook, *Vince Donndelinger
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Koehler Instruments	Raj Shah, Vincent Colantuoni
Tannas/Savant	Greg Miller
General Interest	*Alan Flamberg

* Denotes attendance

ASTM D7528 ROBO SP Meeting February 22, 2024

MEETING MINUTES: ROBO SURVEILLANCE PANEL

Summary:

- Meeting convened at 10:03 CST on February 22, 2024
- No modifications to the agenda
- ASTM Antitrust and Recording Policy reviewed.
- Membership review and update
 - Added Shane Abbott with BG Products, Inc
 - Removed Denny Gaal with Exxon Mobil
 - Added Quanchang Li with Exxon Mobil
- Meeting minutes from November 9, 2023 SP meeting were accepted (Motion made by Joe Franklin, Seconded by Jerimiah Westbrook)
- Actions and outcome from the November 9th meeting were reviewed.
 - There were no outstanding actions from the previous meeting.
- ROBO Status
 - Past Semester (April 1- September 30) finished slightly mild and precision close to target.
 - Current Semester (October 1 – Present) is running with no bias and precision close to target.
 - CUSUM plot is trending flat indicating that there is little to no bias.
- LTMS Updates
 - None
- Additional business.
 - Aimee Shinheart mentioned that when they tried to order an Edwards Vacuum Pump at the beginning of the year, VWR said it wouldn't be available until July. She said the rep mentioned that they might have a replacement. She said she would send Maddie the alternative to add to the Vacuum Pump Option Document that was sent to the panel last year.
 - Next meeting tentatively scheduled for May 23rd at 10 AM CST / 11 AM EST. The date may be postponed or moved up if necessary.
- The meeting was adjourned at 10:13 AM CST.

-End report-

ASTM D7528 ROBO SP Meeting February 22, 2024

Current status of ROBO

ROBO Industry Statistics

Period	N-size	Degrees of Freedom	Pooled s	Mean Δ/s
Current Targets	80	77	0.1551	-----
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 9/30/23	103	100	0.1990	-0.11
10/1/23 through 3/31/24	91	88	0.1741	-0.12
4/1/24 through 6/6/24	34	30	0.2223	-0.97



- Precision continues to oscillate around 0.2. Continuing the mild trend.

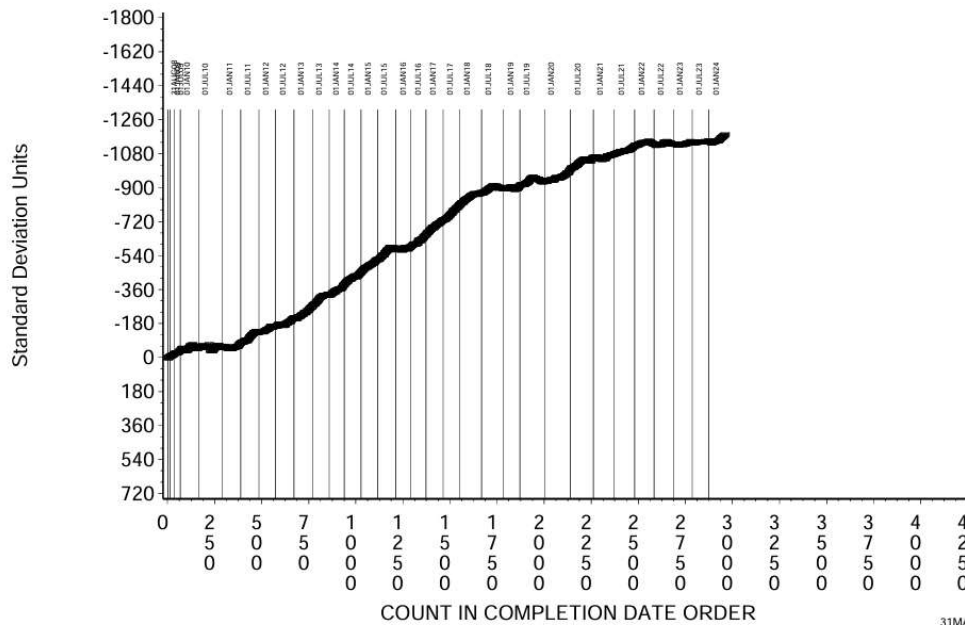
Source <https://www.astmtmc.org/ftp/refdata/bench/robo/data/statistics.txt> (June 5, 2024)

CUSUM severity analysis

ROBO TEST INDUSTRY OPERATIONALLY VALID DATA
AGED OIL MRV APPARENT VISCOSITY



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> (June 5, 2024)

LTMS updates






- No updates to report.

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

ASTM in Austin

ASTM D7528: ROBO

Summary for D02.B0.07 – June 17, 2024

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▪ Vacuum Pump lead time has decreased to 11-16 weeks for multiple labs.
	Reference Oils	All current reference oils are in good supply at TMC: multiyear supply of each oil <ul style="list-style-type: none">▪ Sample 434-3 has 2 years left (TEOST/ROBO)
	Test Availability	Test is available with no significant queues to report. <ul style="list-style-type: none">▪ Activity is steady
	Severity and Precision	In last semester (October 2023 – March 2024) precision is consistently staying between 0.15 - 0.20 and test ran with a slight mild bias: <ul style="list-style-type: none">▪ N = 91, Pooled s = 0.1741 and Mean Δ/s = -0.12

D7528: Oxidation by ROBO

NO ₂ Delivery Mechanism	Number of Total Tests	Number Of AC Tests	Pass Rate (%)	Number of Labs	Number of Rigs	LAB ID's
Dilute	40	38	95.0	2	13	G,AM
Liquid	51	46	90.2	4	14	A,AQ,BC,G
BOTH (Totals)	91	84	92.3	5*	27	A, AM, AQ, BC, G

*One lab is conducting tests with both NO₂ delivery methods.
 Fail Rate of Operationally Valid Tests: 7.7% (down from 11.6% last semester)

D7528: Oxidation by ROBO

Precision, Performance (Mean Δ/s) by Lab and NO₂ Delivery Mechanism

NO ₂ Delivery		Reference Oil 434-3	Reference Oil 435-1	Reference Oil 436	TOTAL
Dilute	No. of Runs	10	19	11	40
	Mean	10.7426	11.0329	10.3614	10.7756
	Pooled s	0.1529	0.1744	0.1462	0.16201
	Mean Δ/s	-0.54	-0.04	0.23	-0.09
Liquid	No. of Runs	11	26	14	51
	Mean	10.6894	11.0387	10.3591	10.7768
	Pooled s	0.1894	0.2170	0.1048	0.1871
	Mean Δ/s	-0.92	-0.01	0.21	-0.15
BOTH	No. of Runs	21	45	25	91
	Mean	10.7174	11.0362	10.3601	10.7763
	Pooled s	0.1709	0.1980	0.1219	0.1741
	Mean Δ/s	-0.74	-0.03	0.22	-0.12

Any Additional Topics?

Next Meeting

Next meeting???

- Suggest ROBO SP meeting in April
- Thursday August 15th 10 AM CST / 11 AM EST