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COMMITTEE D02 on PETROLEUM PRODUCTS, LIQUID FUELS, AND LUBRICANTS

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Unapproved Meeting Minutes of the Technical Guidance Committee Virtual Meeting

June 21, 2021

1:00 – 2:00 PM Eastern Time

Reply to: Patrick Lang

Southwest Research Institute, 6220 Culebra Road San Antonio, TX 78228

Phone: 210-522-2820, patrick.lang@swri.org

The virtual meeting was called to order at 1:00 PM Eastern Time.

Agenda:

The meeting agenda can be found as attachment #1.

Membership Review:

The attendance list was determined via the names displayed on the virtual meeting dashboard. The list can be found as attachment #2.

Review and Acceptance of Minutes:

Pat Lang requested approval of the December 16, 2020 virtual meeting minutes. Receiving no comments or changes the chairman moved for approval and a second was received by Bob Campbell. The minutes were approved with no objections.

Action Item List:

The action item list was reviewed and can be found as attachment 3. The status of each action item is listed.

Fuels Task Force Update:

Mike Lochte presented the Fuels Task Force report. The report can be found as attachment #4. A summary is as follows:

- Mike provided a table summarizing the status of all of the fuel specification reviews that have been performed. At this point all of the gasoline and diesel specification sheets have been reviewed and approved by the appropriate surveillance panel.
- The task force is caught up and currently does not have any action items.

Hind from Caterpillar asked if any changes were noticed to test results after the specification was updated for the PC-10 fuel. Mike advised that there were no changes to the specifications, just some harmonizing of different specifications that were in the various diesel procedures for the same fuel type.

Rating Task Force:

Rating task force report was given by Bob Campbell (see attachment #5). The following is a summary of his report:

1) Updated Manual 20 expected to available soon.
2) Three consecutive workshops cancelled, 2 Light Duty and 1 Heavy Duty; rater qualification was extended to cover this interim period.
3) A gear face-to-face meeting is planned for July 2021.
4) Next workshop planned for October 2021.
5) Round-robin data for the GMOD pistons is currently being reviewed.
6) TMC is working on a web-based data entry system for the workshops.

Old Business:

Summary of Viscosity grades lower than 0W-16 in GF-6 tests:

Pat Lang provided a table that summarizes the labs' experiences with running viscosity grades lower than 0W-16 in the GF-6 engine platforms (see attachment #6).

Comments:

Currently the test procedures do not caution about running these low viscosity oils.

Andy Ritchie commented that labs need to be cautious running these low viscosity grades especially in the Sequence IX tests for safety reasons. Companies scheduling tests need to consider this concern.

Mike Deegan commented that in the future we may need a special category to handle these low viscosity oils. Mike requested a copy of the summary to share with the ILSAC group. Chairman to send a copy to Mike.

New Business:

DACA II Review Task Force:

Pat Lang advised that a task force to review the DACA II document has been formed and held two virtual meetings in this reporting period. A summary of the activities can be found as attachment # 7.

Interruptions in Fuel Supply:

During this reporting period there were some fuel supply issues that impacted more than one laboratory. Bob reported that he was unable to conduct testing in one test type due to Haltermann not having sufficient fuel supply on hand.

Prasad stated that the shortage was the direct result of the supply situation that we are currently dealing with in this country.

Bob Campbell stated that delays in fuel supply will impact the labs' ability to conduct their business. The fuel supplier needs to commit to having enough fuel on hand despite the current challenges in the country or world. Bob requested that suppliers provide a monthly update on their current inventory levels so that labs/surveillance panels know if they are at risk and can plan accordingly.

Prasad from Haltermann stated that he would be glad to provide a monthly update.

Action Item:

Haltermann will provide a monthly update on the current inventory of all their fuels to the respective surveillance panel membership. Updates should include any pertinent information on the potential of a batch change and any delay in supply.

The group further discussed the fact that 2020 was tough on making usage rate predictions for fuel as a result of the COVID slow down. Prasad mentioned that there was no usage for several months and then changed quickly.

Bob Campbell suggested a spreadsheet tracking usage rates at each lab to help predict overall demand more accurately. Frank stated that we could make this a live document on the TMC website in coded format. Nothing was formally decided on this topic during the meeting.

TMC Voting Guidelines for Surveillance Panel Chair:

Frank Farber commented that we need to provide some grass roots guidance to surveillance panels for the process on handling controversial issues. There are rules that currently exist but we may need to simplify them for the surveillance panels. Things such as allowing ample time for the affected panel to take any proposals/motions back to their organizations and review prior to any voting.

Frank stated that Jeff Clark from the TMC will take the lead on this request.

YongLi McFarland request that the bench test group be included with the distribution of these voting guidelines once they are completed.

Laura Birnbaumer requested that these guidelines include the definition of a quorum.

Next Meeting:

The next meeting is planned to be held during December ASTM week in Anaheim, CA if COVID-19 restrictions don't force the meeting to virtual.

The meeting adjourned at 2:04 PM Eastern time.

Attachment #1

Agenda

June 21, 2021

AGENDA

ASTM Technical Guidance Committee Virtual Meeting (WebEx)

Patrick Lang – Chairman
Monday June 21, 2021– 1:00 PM to 2:00 PM (EDT)

1. Attendance
2. Chairman's Comments
3. Review & Acceptance of Minutes
    3.1. Acceptance of the December 16, 2020 WebEx meeting minutes.
4. Review Action Item List (Pat Lang)
5. Fuel Task Force
    5.1. Update on fuels task force activities (Mike Lochte)
6. Rating Task Force Update (Bob Campbell)
7. Old Business
    7.1. Summary of viscosity grades lower than 0W-16 that have been run in the GF-6 engines without viscosity related problems.
8. New Business
    8.1. DACA II Review Task Force (Pat Lang)
    8.2. Interruptions in fuel supply; responsibility of fuel suppliers to ensure that there is no testing stoppage as a result of a fuel not being available.
    8.3. Create set of surveillance panel voting guidelines (TMC)
9. Next Meeting: During December 2021 ASTM Meetings, date to be announced.
10. Adjournment

Attachment #2

Attendance List

June 21, 2021

TGC Attendance List, Virtual Mtg, June 21, 2021

Name	Email	Date
Alyson Fick	afick@astm.org	6/21/2021
Lisa Drennen	ldrennen@astm.org	6/21/2021
Scott Fenwick	sfenwick@biodiesel.org	6/21/2021
Ankit Chaudhry	ankit.chaudhry@swri.org	6/21/2021
Julie Hardwick	julie.hardwick@hollyfrontier.com	6/21/2021
Marcus Ortman	marcus.ortman@dla.mil	6/21/2021
Steve Marty	steven.marty@swri.org	6/21/2021
Indresh Mathur	imathur@jhaltermann.com	6/21/2021
Mike Kunselman	mkunselman@centerforqa.com	6/21/2021
Vincent Colantuoni	vcolantuoni@koehlerinstrument.com	6/21/2021
Eric Kalberer	eric.kalberer@shell.com	6/21/2021
Mike Setzer	qualityana@sbcglobal.net	6/21/2021
Izabela Gabrel	igabrel@h-c-s-group.com	6/21/2021
Laura Birnbaumer	labi@chevron.com	6/21/2021
Adrian Alfonso	adrian.alfonso@intertek.com	6/21/2021
al lopez	al.lopez@intertek.com	6/21/2021
Michael Lochte	mlochte@swri.org	6/21/2021
Joe Franklin	joe.franklin@intertek.com	6/21/2021
Bill Buscher	william.buscher@intertek.com	6/21/2021
Bill O'Ryan	william.oryan@lubrizol.com	6/21/2021
Andrew Stevens	andrew.stevens@lubrizol.com	6/21/2021
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Haiying	haiyng.tang@fcagroup.com	6/21/2021
Doyle Boese	doyle.boese@infineum.com	6/21/2021
ritchie	andrew.ritchie@infineum.com	6/21/2021
Wes Venhoff	wve@lubrizol.com	6/21/2021
james Carter	jcarter@gageproducts.com	6/21/2021
Yongli McFarland	ymcfarland@swri.org	6/21/2021
Frank Farber	fmf@astmtmc.cmu.edu	6/21/2021
Juan Vega	juan.vega@intertek.com	6/21/2021
Bob	bob.campbell@aftonchemical.com	6/21/2021
Mike Kunselman (CQA)	mekunselman@gmail.com	6/21/2021
Robert Stockwell	robert.stockwell@chevron.com	6/21/2021
Patrick Lang	patrick.lang@swri.org	6/21/2021
Jim Matasic	james.matasic@lubrizol.com	6/21/2021
Nathan Siebert	nathan.siebert@gm.com	6/21/2021
Deegan	mdeegan@ford.com	6/21/2021
David Brass	david.brass@infineum.com	6/21/2021
Jason Bowden	jhbowden@ohtech.com	6/21/2021
Dave Passmore	dpassmore@imtsind.com	6/21/2021
Sid Clark	slclark@comcast.net	6/21/2021
ptumati@jhaltermann.com	ptumati@jhaltermann.com	6/21/2021
Mark Sutherland	msutherland@tei-net.com	6/21/2021

Attachment #3

Action Items List

June 21, 2021

Technical Guidance Committee (TGC)

Open Action Items List Status as of 6-21-21:

1. Action Item- Assess running viscosity grades lower than 0W-16 in the GF-6 test platforms.

    - ***In process-summary to be reported today***

2. Action Item – TGC to review the current document for "out of control" tests.

    - ***Open***

3. Action Item – TGC to review the current "DACA II" document.

    - ***Task force started and has met.***

4. Action Item – TGC to work on generating test procedure wording that would address the handling of testing anomalies.

    - ***Open***

Attachment #4

Fuels Task Force Update

June 21, 2021

TGC Fuels Task force Update – June 2021

Michael Lochte, Chairman

SOUTHWEST RESEARCH INSTITUTE®

Activity since last ASTM TGC meeting….

- The TGC fuels task force has not met in 2021 as our activity is pretty much wrapped up

Status of adoption of PCMO fuel specifications

Fuel Type	Specification created by TGC fuel Task Force	Specification Adopted by Surveillance panels and posted on TMC website?
PC-10	Yes	Yes
PC-9HS	Yes	Yes
Sequence VI	Yes	yes
Sequence III	Yes	Sequence X – yes Sequence III - yes Sequence IX - yes
KA24E	Yes	Sequence IV - yes Sequence VIII - yes
Sequence V	Yes	Yes

Sequence III fuel spec

TEST	METHOD	UNITS	Seq. III Specs		
			MIN	TARGET	MAX
Distillation - IBP	ASTM D86	°C	23.9		35.0
5%		°C			
10%		°C	48.9		57.2
20%		°C			
30%		°C			
40%		°C			
50%		°C	93.3		110.0
60%		°C			
70%		°C			
80%		°C			
90%		°C	151.7		162.8
95%		°C			
Distillation - EP		°C			212.8
Recovery		vol %		Report	
Residue		vol %		Report	
Loss		vol %		Report	
Gravity @ 60°F/60°F	ASTM D4052	°API	58.7		61.2
Density @ 15° C	ASTM D4052	kg/l	0.734		0.744
Dry Vapor Pressure Equivalent	ASTM D5191	kPa	60.1		63.4
Carbon	ASTM D3343	wt %		Report	
Carbon	ASTM D5291	mass %		Report	
Hydrogen	ASTM D5291	mass %		Report	
Hydrogen/Carbon ratio	ASTM D5291	mole/mole		Report	
Oxygen[1]	ASTM D4815	wt %			0.2
Oxygenates Ethanol	ASTM D4815	%		Report	
MTBE		%		Report	
ETBE		%		Report	
Methanol		%		Report	
Sulfur	ASTM D5453	mg/kg	3		15
Composition, aromatics	**ASTM D5769[2]**	**vol %**	31.0		34.0
C6 aromatics (benzene)	**ASTM D5769**	**vol %**			1.0
C7 aromatics (toluene)	**ASTM D5769**	**vol %**		Report	
C8 aromatics	**ASTM D5769**	**vol %**		Report	
C9 aromatics	**ASTM D5769**	**vol %**		Report	
C10+ aromatics	**ASTM D5769**	**vol %**		Report	
Composition, olefins	**ASTM D6550[2]**	**wt%**			2.0
Lead[1]	ASTM D3237	mg/l			2.6
Manganese[1]	ASTM D3831	g/gal			0.01
Phosphorus[1]	ASTM D3231	mg/l			1.3
Silicon[1]	ICP method	mg/kg			4
Particulate matter	ASTM D5452	mg/l			1
Oxidation Stability	ASTM D525	minutes	1000		
Copper Corrosion	ASTM D130				1
Gum content, washed	ASTM D381	mg/100mls			5.0
Gum content, unwashed	ASTM D381	mg/100mls			10.0
Research Octane Number	ASTM D2699		96.0		
Motor Octane Number	ASTM D2700			Report	
R+M/2	D2699/2700			Report	
Sensitivity			7.5		
Net Heating Value, btu/lb	ASTM D3338	btu/lb		Report	
Gross Heating Value, btu/lb	ASTM D240	btu/lb		Report	
Net Heating Value, btu/lb	ASTM D240	btu/lb		Report	
Water and Sediment	ASTM D2709	vol%			0.01
Color[1]	VISUAL	1.75 ptb		Red	

[1]no intentional addition of these elements permitted.
[2]Innospec Oil Red B4 Liquid Dye
For use D6550 for everything measured by D5769 and D6550
for any conflict between supplier and customer measurement, refer to ASTM D3244 assigning risk 50/50 between supplier and customer
supplier should choose a lab to perform analysis and refrain from moving samples lab to lab in order

Sequence VI fuel spec

Seq. VI Lube Certification Fuel

29-Oct-20

TEST	METHOD	UNITS	Seq. VI Spec MIN	TARGET	MAX
Distillation - IBP	ASTM D86	°C	23.9		35.0
5%		°C			
10%		°C	48.9		57.2
20%		°C			
30%		°C			
40%		°C			
50%		°C	93.3		110.0
60%		°C			
70%		°C			
80%		°C			
90%		°C	151.7		162.8
95%		°C			
Distillation - EP		°C			212.8
Recovery		vol%		Report	
Residue		vol%		Report	
Loss		vol%		Report	
Gravity @ 60°F/60°F	ASTM D4052	°API	58.7		**61.2**
Density @ 15° C	ASTM D4052	kg/l	0.734		0.744
Dry Vapor Pressure Equivalent	ASTM D5191	kPa	60.1		63.4
Carbon	ASTM D3343	wt%		Report	
Carbon	ASTM D5291	mass%		Report	
Hydrogen	ASTM D5291	mass%		Report	
Hydrogen/Carbon ratio	ASTM D5291	mole/mole		Report	
Oxygen[1]	ASTM D4815	wt%			0.2
Oxygenator Ethanol	ASTM D4815	%		Report	
MTBE		%		Report	
ETBE		%		Report	
Methanol		%		Report	
Sulfur	ASTM D5453	mg/kg	3		15
Composition, aromatics	**ASTM D5769**[4]	**vol%**	**31.0**		**34.0**
C6 aromatics (benzene)	**ASTM D5769**	**vol%**			**1.00**
C7 aromatics (toluene)	**ASTM D5769**	**vol%**		**Report**	
C8 aromatics	**ASTM D5769**	**vol%**		**Report**	
C9 aromatics	**ASTM D5769**	**vol%**		**Report**	
C10+ aromatics	**ASTM D5769**	**vol%**		**Report**	
Composition, olefins	**ASTM D6550**[4]	**wt%**			**2.0**
Lead[1]	ASTM D3237	mg/l			2.6
Manganese[1]	ASTM D3831	g/gal			0.01
Phosphorus[1]	ASTM D3231	mg/l			1.3
Silicon[1]	ICP method	mg/kg			4
Particulate matter	ASTM D5452	mg/l			1
Oxidation Stability	ASTM D525	minutes	1000		
Copper Corrosion	ASTM D130				1
Gum content, washed	ASTM D381	mg/100ml			5.0
Gum content, unwashed	ASTM D381	mg/100ml	7.0		20.0
Research Octane Number	ASTM D2699		96.0		
Motor Octane Number	ASTM D2700			Report	
R+M/2	D2699/2700			Report	
Sensitivity			7.5		
Net Heating Value, btu/lb	ASTM D3338	btu/lb		Report	
Gross Heating Value, btu/lb	ASTM D240	btu/lb		Report	
Net Heating Value, btu/lb	ASTM D240	btu/lb		Report	
Water and Sediment	ASTM D2709	vol%			0.01
Color[1]	VISUAL	1.75 ptb		Red	
Top Tier Additive[1]	ppm m/m	267		Report	

[1] no intentional addition of these elements

[2] Innospec Oil Red B4 Liquid Dye

[3] Lubrizol UltraZol 8219. Can be obtained from Lubrizol Sales.

[4] Use D6839 for everything measured by D5769 and D6550

for any conflict between supplier and customer measurement, refer to ASTM D3244 assigning risk

50/50 between supplier and customer

supplier should choose a lab to perform analysis and refrain from moving sample lab to lab in order to obtain "in spec" results

KA24E fuel spec (green fuel)

KA24E Green Fuel

Rev. Date: 11/18/2013

TEST	METHOD	UNITS	SPECIFICATIONS			RESULTS
			MIN	TARGET	MAX	
Distillation, % Evap - IBP	ASTM D86	°F	75		95	
5%		°F				
10%		°F	120		135	
20%		°F				
30%		°F				
40%		°F				
50%		°F	200		230	
60%		°F				
70%		°F				
80%		°F				
90%		°F	300		325	
95%		°F				
Distillation - EP		°F	385		415	
Recovery		vol %		Report		
Residue		vol %		Report		
Loss		vol %		Report		
Gravity @ 60°F	ASTM D4052	°API	58.7		61.2	
Density @ 15°C	ASTM D4052	kg/l	0.734		0.744	
Reid Vapor Pressure	ASTM D5191	psi	8.8		9.2	
Carbon	ASTM D5291	wt fraction	0.8580		0.867	
Carbon	ASTM D3343	wt fraction		Report		
Sulfur	ASTM D2622	wt %	0.0120		0.0140	
Lead	ASTM D3237	g/gal			0.05	
Oxygen	ASTM D4815	wt %			0.2	
Composition, aromatics	ASTM D5769	vol %	28.5		34.5	
Composition, olefins	ASTM D6550	vol %	5.0		10.0	
Composition, saturates	Calc	vol %		Report		
Oxidation Stability	ASTM D525	minutes	1440			
Copper Corrosion, 3 hr @ 50°C	ASTM D130	Class			1	
Gum content, washed	ASTM D381	mg/100ml			5	
Gum content, unwashed	ASTM D381	mg/100ml			10	
Research Octane Number	ASTM D2699	Rating	96.0		97.5	
Motor Octane Number	ASTM D2700	Rating		Report		
R+M/2	D2699/2700	---		Report		
Sensitivity	D2699/2700	---	7.5			
Net Heating of Combustion	ASTM D240	btu/lb		Report		
Color	Visual			Green		

A4-6

Attachment # 5

Rater Task Force Update to TGC

June 21, 2021

Rater Task Force Update to TGC

6/21/2021

Manual 20 Update

- **Released to printer**
  - Should be available soon

Workshop Status

- **Spring workshop cancelled for obvious reasons**
  - 3 consecutive workshops cancelled
    - 2 LD, 1 HD
- **TMS Issue Resolution Summary (Ref. # 2020-05, 2020-10) extending currently calibrated LD/HD raters until next workshop issued by TMC**
  - Annual workshop req'd by Seq III and Seq V procedures
  - Attendance of Fall workshop required by several HD procedures
- **Path Forward**
  - Combined workshop scheduled for week of 10/24

Results Trial Round Robin

Process

- 3 Seq IIIH pistons sent between 6 labs and rated
  - Pistons chosen near 3.9, 4.3, 4.6
- Initiating lab re-rated parts upon return
  - Determination of deposit persistence or change

Data

- Data look surprising good
- Indicates viable option

	TWD, merits	TWD, merits	TWD, merits
Lab 1	4.34	3.86	4.57
Lab 2	4.20	3.82	4.52
Lab 3	4.51	3.92	4.93
Lab 4	4.37	3.91	4.65
Lab 5	4.54	4.07	4.74
Lab 6	4.15	3.81	4.46
Lab 1 - Rerate	4.36	3.88	4.71
Average	**4.34**	**3.94**	**4.68**
Std. Dev.	0.14	0.14	0.16

Second Round Robin

- **Hardware chosen**
  - 3 GMOD, 8 VH, 2 1N, 2 C13 pistons, 6 C13 rings
    - No IIIH's in round 2 as the initial RR seemed sufficient
- **Final dataset in completed but not fully analyzed**
  - Intent two-fold
    - Where are we now?
    - What deposits persist making this a viable path in future

Attachment #6

Low Viscosity Oils Run in GF-6 Engine Platforms

June 21, 2021

Summary of Laboratory Experiences with Running Low Viscosity Oil in the GF-6 Engine Platforms				
Test Type	**Visc**	**Run w/this visc (Y/N)**	**Comments/issues**	**Final Recommendation**
IIIH	0W-8	Y	No mechanical issues observed but oil temperature may be a problem if ambient conditions are cold	Okay
	0W-12	Y	No mechanical issues observed but oil temperature may be a problem if ambient conditions are cold	Okay
	0W-16	Y	No issues or concerns	Okay
IVB	0W-8	Y	No issues or concerns	Proceed with caution
	0W-12	Y	No issues or concerns but one lab quoted a higher lobe failure rate on this viscosity	Okay
	0W-16	Y	No issues or concerns	Okay
VH	0W-8	Y	No issues or concerns	Okay
	0W-12	Y	No issues or concerns	Okay
	0W-16	Y	No issues or concerns	Okay
VI	0W-8	Y	Experience at one lab; observed valve train noise, engine inspection did not identify any problems visually	Not Recommended
	0W-12	Y	Experience at one lab; observed valve train noise, engine inspection did not identify any problems visually	Not Recommended
	0W-16	Y	No issues or concerns	Okay
VIII	0W-8	Y	Experience at one lab with no issues/High potential on not getting to oil pressure due this being a very old engine.	Not Recommended
	0W-12	Y	Experience at two labs with no issues/ High potential on not getting to oil pressure due this being a very old engine.	Proceed with Caution
	0W-16	Y	No issues or concerns	Okay
IX	0W-8	N	No experence at labs at this point based on this survey	Not Recommended
	0W-12	Y	No issues or concerns	Proceed with caution
	0W-16	y	No issues or concerns	Okay
X	0W-8	Y	No issues or concerns	Okay
	0W-12	Y	No issues or concerns	Okay
	0W-16	Y	No issues or concerns	Okay

Summary created through the Technical Guidance Committee; point of contact is Pat Lang. 6-21-21

Attachment #7

DACA II Review Task Force Report

June 21, 2021

DACA II Review Task Force

SOUTHWEST RESEARCH INSTITUTE®

Prepared By: Patrick Lang

June 2021

DACA III Review Task Force Activities

- Task force formed with Pat Lang as the chairman
- Two meetings held:
  1) Conference call #1 on 5-11-21
  2) Conference call #2 on 6-16-21
- Approach will be to perform a topic-by-topic review of the document with input from task force participants.
  - Started with "System Time Response"
- Monthly meetings are planned; this review will take some time.

Membership List

Attendance List for DACA II Document Review Task Force		
Name	**Company**	**Present 6-16-21**
		X= present
Amol Savant	Valvoline	x
Al Lopez	Intertek	x
Bill Buscher		x
Andrew Stevens	Lubrizol	x
George Szappanos		x
David Doerr		x
Jim Matasic		
Randy Harmon	Southwest	x
John White		x
Ron Barthold		x
Khaled Rais		x
Bob Warden		x
Mike Lochte		
Ankit Chaudhry		x
Tom Wirries		x
Chris DesRuieeeau		x
Bob Campbell	Afton	x
Tim Cushing	General Motors	x
Jim Gutzwiller	Infineum	x
Andy Ritchie		x
Michael Tucker	Exxon Mobil	x
Rohit Rao		x
Jason Griffin		x
Robert Stockwell	Oronite	x
Jeff Clark	Test Monitoring Center	
Rich Grundza		
Sean Moyer		x

Questions?