



**COMMITTEE D02 on PETROLEUM PRODUCTS, LIQUID FUELS, AND LUBRICANTS**

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## SEQUENCE IX SURVELLANCE PANEL

Date: 17 Aug 23

### ATTENDANCE

SWRI	Christine Eickstead, Khaled Rais, Pat Lang
INTERTEK	Jason Soto
LUBRIZOL	George Szappanos
AFTON	Ben Maddock, Bob Campbell, Jason Lekavich
INFINEUM	Andy Ritchie, Todd Dvorak
TMC	Rich Grundza
ORONITE	Robert Stockwell, Ricardo Affinito
SHELL	Jeff Hsu
FORD	Mike Deegan
TEI	Dan Lanctot
OHT	Jason Bowden
IMTS	Dave Passmore, Sid Clark
HCS GROUP	Izabela Gabrel
CQA	Mike Kunselman

### ATTACHMENTS:

→ A: Meeting Agenda

**MEETING:**

- 1. Attendance. See table above.
- 2. Chairman’s Comments, Khaled.
- 3. Sequence IX Aged Oil Name Change

Rich – Do we need whole new set of report forms and data dictionary? Or just rename forms and leave the back-end alone (recognizing all the work that would go into this).

George – So the directory name on the TMC site will be changed? Rich – yes.

Pat – But we can change the names on the forms, correct? Rich – yes. Pat – that should suffice, don’t need to do the data dictionary.

George – In the actual form, there is section that references the ASTM D number. Rich – will be D8291, which is the Sequence IX number, since this is a part of that procedure now.

**MOTION 1:**

To change the official name of the used oil LSPI test to “Sequence IX Aged Oil” in the Sequence IX procedure, TMC website, and all report forms.

Proposed: Khaled Rais  
Second: Mike Deegan

Discussion: None  
Questions: None

Votes: *Roll Call:*

<i>Company</i>	<i>Voter</i>	<i>Approve</i>	<i>Waive</i>	<i>Disapprove</i>
SwRI	Khaled Rais	■		
IAR	Jason Soto	■		
Lubrizol	George Szappanos	■		
Afton	Jason Lekavich	■		
Oronite	Robert Stockwell	■		
Infineum	Andy Ritchie	■		
TMC	Rich Grundza	■		
Ford	Mike Deegan	■		
OHT	Jason Bowden		■	
IMTS	Sid Clark	■		
<i>Totals:</i>		<i>9</i>	<i>1</i>	<i>0</i>

**Outcome:** The motion passes.

#### 4. Sequence IX Aged Oil Retroactive Registration Date

The question was posed to the group on what date would be appropriate for the retroactive registration data that ACC has asked the surveillance panel to provide.

George – The TCRs date to the end of the precision matrix (PM). The procedure did not significantly change after the PM. Don't think LTMS data is relevant.

Khaled – SwRI date of PM completion is different than IAR's. So would be different retroactive registration dates.

Pat – As far as ACC is concerned, we can't have two dates. We need to pick one date to apply to everyone. If we are using the end of the PM, we should use the EOT date of the last test.

Andy – Is that why we chose the May date? Christine – no, May 2, 2023, was when the LTMS was approved by the SP.

Jason – Couldn't we do the opposite? The EOT date of the first lab that finished their matrix runs?

Khaled – That would be 31 Mar 22 (lab D).

Bob – Feels clunky, nothing was officially voted on until May.

Andy – Don't forget, this has to be rubber stamped by the ACC group.

Bob – Don't disagree with George, it's just not how we've done it in the past.

George – If the procedure hasn't changed, and the TCRs would have been valid, I would like to hear an argument as to why those tests wouldn't have been good.

Bob – We just didn't have a system in place. This is just different from the way we've always done this.

Andy – So stick with May 2, 2023.

Rich – If we choose some date before that, there is no guarantee that ACC will approve that anyway.

Christine – So the question is between 31 Mar 22 or 2 May 23.

Andy – Didn't realize that there was such a gap between the dates... the earlier date will not fly with ACC.

Robert – The LTMS approval date is the cleanest path forward.

Bob – It is not level playing field if we choose the PM date for each lab. Afton will not approve any date for which the labs are not equal. We didn't know until May what stands would have been calibrated in the meantime.

Andy – ACC will want the most conservative date, which is the May date.

Christine – So we have a firm no (from Afton) on a PM-based date. Do we need any more discussion on this? George, what are your thoughts?

George – I hear what is being said about the PM-based date but shaking my head. If nothing has changed with the test since the PM, what is the concern. But to get this moving along, I will agree....

Christine – So are we ready to vote?

Andy – Wants Deegan’s vote to be included (Deegan had to leave the meeting for a bit. The group will vote when Deegan returns to the meeting.)

## 5. Machined Pistons

Khaled – As discussed in the TF meeting, SwRI is interested in getting the machined pistons approved for testing. SwRI has run the pistons three times now with good results. (Shows presentation that was shown to the TF group previously.)

Discussion? None

(Need to wait for Deegan to take a vote on this.)

## 6. IMTS Pistons Update

Sid – We have requested four sets of pistons be made, one set for each lab. We have decided to make a change to the base material from the first version with the goal of getting the piston skirt clearance closer to the procedural value. Hopefully will run in each lab and see how they come in.

Christine – What is the approximate timeline for having these pistons in hand? Sid – 12-16 weeks, will try and push them to 12. Dave – We got them to commit to 6 weeks.

Khaled – So one set will be sent to each lab. Can the labs comment on running them? Sid – Well SwRI ran the first set already, came in slightly mild on a mild engine.

Sid – We will work with independent labs to run them for us first, then have dependent labs run them.

Christine – Jason, what are your thoughts on this? On running them when available. Jason – We won’t commit to running them immediately. If have an engine that is not calibrated and can fit it in, we will, but we won’t pull an engine out specially to do this run.

Sid – Jason I Understand you position.

## 7. 224-1 Results Update

Khaled - This group has a standing action to evaluate the results of RO blend 224-1 as they come in. One run on this RO was with the machined pistons so that doesn’t really count. Any concerns from group on these results so far? Andy – looks like 224-1 is certainly recognized as his brother. Andy is a proud parent 😊

Rich – With the limited data we have at this point, we can’t say they are significantly different.

Andy – No two blends are exactly the same. These results show the blend meets the intent.

Christine – So we have no data to suggest that 224-1 is significantly different from 224, but we will keep monitoring this going forward.

(Deegan rejoins the meeting.)

Khaled – (Briefs Deegan on the retroactive date motion.) Deegan – fine with 2 May 2023 date.

**MOTION 2:****To set the date for retroactive registration to May 2<sup>nd</sup>, 2023.**

Proposed: Khaled Rais  
 Second: Robert Stockwell

Discussion: None  
 Questions: None

Votes: *Roll Call:*

<i>Company</i>	<i>Voter</i>	<i>Approve</i>	<i>Waive</i>	<i>Disapprove</i>
SwRI	Khaled Rais	■		
IAR	Jason Soto	■		
Lubrizol	George Szappanos		■	
Afton	Jason Lekavich	■		
Oronite	Robert Stockwell	■		
Infineum	Andy Ritchie	■		
TMC	Rich Grundza	■		
Shell	Jeff Hsu		■	
Ford	Mike Deegan	■		
OHT	Jason Bowden		■	
IMTS	Sid Clark	■		
TEI	Dan Lanctot		■	
<i>Totals:</i>		<i>8</i>	<i>4</i>	<i>0</i>

**Outcome: The motion passes.**

Khaled – machined pistons motion:

Discussion: Deegan – We have talked about it extensively before, all I was after was getting more data out of a different lab. Have we had any discussion about IAR running a test? That is my only comment.

Christine – Certainly more data is always preferable, especially across labs. However, given that SwRI is the only lab in need of this hardware at this time, not sure we could get the other labs’ timely participation in a matrix. Additionally, there is precedent in this test type to bring in new pistons on a reference (see the 2019 vote to bring in dealer pistons on a reference with only one lab’s prove-out data considered).

George – I agree with approach. If you can bring in factory piston with very small machining alteration and can calibrate, I will be comfortable with that approach. Would like to state, however, that I would NOT be comfortable using this approach for the IMTS pistons. Since the base material is different, we would need to proceed with additional caution.

Christine – Agreed. IMTS pistons are a different animal altogether.

Rich – Regarding the SwRI runs on the machined pistons that have been completed, we would need a discussion with the lab on which tests are chartable. Christine – Let’s finalize the vote first.

**MOTION 3:**

The Sequence IX Surveillance Panel approves the use of the 2019 BB pistons (China Pistons) that have had the contour of the piston top machined by SwRI to more closely mimic the original BB pistons. The pistons will be brought into service using the standard Sequence IX referencing protocol. After successful calibration of the engine/stand, candidate tests can be conducted. The piston batch will be identified in the test report as “MACH2019”.

Proposed: Christine Eickstead  
Second: Robert Stockwell

Discussion: None  
Questions: None

Votes: *Roll Call:*

<i>Company</i>	<i>Voter</i>	<i>Approve</i>	<i>Waive</i>	<i>Disapprove</i>
SwRI	Khaled Rais	■		
IAR	Jason Soto	■		
Lubrizol	George Szappanos	■		
Afton	Jason Lekavich	■		
Oronite	Robert Stockwell		■	
Infineum	Andy Ritchie	■		
TMC	Rich Grundza	■		
Shell	Jeff Hsu		■	
Ford	Mike Deegan	■		
OHT	Jason Bowden		■	
IMTS	Sid Clark	■		
TEI	Dan Lanctot		■	
<i>Totals:</i>		<i>8</i>	<i>4</i>	<i>0</i>

**Outcome:** The motion passes.

Chartable tests: Christine – The stands these tests were run on were all calibrated, and within a valid stand instrumentation calibration period, so the tests could all be chartable.

Rich – There was more than a year between first two runs and the third, can we chart together? Think would work out okay, and all should meet calibration criteria. Christine – they do – the stand would be calibrated according to the LTMS.

Rich – Will have to generate an Information Letter. Christine – we can help with that.

**8. New Business**

George – For this test type, two stands are used to calibrate – we could make argument that that combination of stands used to calibrate should be used for candidate testing. Don’t know for how much variation there is in aging between stands... but shouldn’t they be joined together from referencing through candidate testing?

Christine – Only concern here is that the reference periods are so different – we might have an LSPI stand with 3-4 different SAs for one aging calibration period. We could have a whole new engine on the LSPI stand during a IXA calibration period.

Rich – Could have labs with primary IX stands and IXA stands.

George – No strong feeling on this, can let this one go.

George – Second item: Seems loose on the shelf life between the Aging and LSPI tests.

Andy – What is the limit right now? Christine – There is none.

Line in the sand – What was the longest time between aging and LSPI in matrix? Andy – can someone put that together? The data from the matrix?

Christine – Since this is arbitrary any way, can we just pick 6 months?

Ben – Can we take the LTMS guideline, and just say 2 reference periods? So one year? Or leave it unrestricted – then the risk is on the ADCO. Rich – Unless time makes the oil milder.

Christine – So let’s pick 1 year. If goal is to just keep it from being a ridiculous years-long period between aging and LSPI, let’s just just pick a time limit and evaluate it if needed later.

Robert – Is this any different from no limit? Christine – Yes, in that, to George’s point, this ties up a loose end in the procedure, just in case it is ever needed.

<b>MOTION 4:</b>					
<b>To restrict the time between the Aging run EOT and the LSPI run SOT of the Sequence IX Aged Oil Test to one year.</b>					
Proposed:	Christine Eickstead				
Second:	Robert Stockwell				
Discussion:	None				
Questions:	None				
Votes:	<i>Roll Call:</i>				
	<i>Company</i>	<i>Voter</i>	<i>Approve</i>	<i>Waive</i>	<i>Disapprove</i>
	SwRI	Khaled Rais	■		
	IAR	Jason Soto	■		
	Lubrizol	George Szappanos	■		
	Afton	Jason Lekavich	■		
	Oronite	Robert Stockwell	■		
	Infineum	Andy Ritchie	■		
	TMC	Rich Grundza	■		
	Shell	Jeff Hsu	■		
	Ford	Mike Deegan	■		
	OHT	Jason Bowden		■	
	IMTS	Sid Clark		■	
	TEI	Dan Lanctot		■	
	<i>Totals:</i>		<i>9</i>	<i>3</i>	<i>0</i>
<b>Outcome:</b>	<b>The motion passes.</b>				

Rich – Couple new items:

Form 20A, the Additional Downtime form, missed the downtime occurrence counter name, need to fix in data dictionary and forms.

Next – Travis' issue. See email from Travis to Rich below:

Hi Rich,

Just wanted to bring something to your attention that I just noticed for aged oil LSPI. It looks like the steps we are following are causing inappropriate changes to the final transformed LSPI result. Here the order the steps are happening in:

- 1) Lab calculates an AvPIE result.
- 2) Lab transforms AvPIE result by  $\text{SQRT}(\text{AvPIE} + 0.5)$ .
- 3) Lab adds the LSPI engine-stand severity adjustment to the transformed result to get the final result with severity adjustment.
- 4) Lab back-transforms final severity adjusted result back to original units and reports this to 2 decimal places.

Now it looks like TMC is taking the reported result in step #4 and going back into transformed space. However, due to the truncation that happens in step #4, this no longer match the value in step #3. Therefore, the value TMC is evaluating against the targets is off around the 3<sup>rd</sup> decimal place from what should be the official value that was calculated in step #3 above.

Rich – will make this change. Not seeking approval at this point, will just go ahead and make the change. But wanted to let everyone know and explain why everyone will get corrected TCRs.

***Meeting adjourned.***



## **AGENDA**

### **ASTM D8291 Sequence IX Surveillance Panel (SwRI / Teams)** Khaled Rais – Chairman

Thursday, August 17, 2023– 2:00 PM to 3:30 PM (CST)

[Click here to join the meeting](#)

1. Attendance
2. Chairman's Comments
3. Sequence IX Aged Oil Name Change
4. Seq. IX Aged Oil Retroactive Date
5. Machined Pistons
6. IMTS Pistons Update
7. 224-1 Results Update
8. New Business and Discussion (George)
9. Next Meeting: Will be at the call of the chairman.