



COMMITTEE D02 on PETROLEUM PRODUCTS, LIQUID FUELS, AND LUBRICANTS

CHAIRMAN: Scott Fenwick, National Biodiesel Board, PO Box 104848, Jefferson City, MO 65110-4898, United States (800) 841-5849, Fax: (537) 635-7913, e-mail: sfenwick@biodiesel.org

FIRST VICE CHAIRMAN: Gregory C Miiller, Tannas Co, 4800 James Savage Rd, Midland, MI 48642, United States (989) 496-2309, Fax: (989) 496-3438, e-mail: gmiiller@savantgroup.com

SECOND VICE CHAIRMAN: James J Simnick, Bp Global Fuels Technology, 150 Warrenville Rd, BP Technology Center Mail Stop 603-2W, Naperville, IL 60563, United States (331) 702-4071, Fax: (630) 420-4831, e-mail: simnicj@bp.com

MEMBERSHIP SECRETARY: Ian P Mylrea, Stanhope-Seta, 70 Bramley Drive, Hampshire, RG27 8ZF, United Kingdom (193) 2 5-4589, e-mail: im@stanhope-seta.co.uk

STAFF MANAGER: Alyson Fick, (610) 832-9710, e-mail: afick@astm.org

SEQUENCE IX SURVELLANCE PANEL

Date: 25 Sept 24

ATTENDANCE

SWRI	Christine Eickstead, Khaled Rais
INTERTEK	Jason Soto, Al Lopez
LUBRIZOL	George Szappanos
AFTON	Jason Lekavich
INFINEUM	Todd Dvorak, Chris Tonstad, Andy Ritchie
TMC	Rich Grundza
ORONITE	Robert Stockwell, Richard Affinito, Joe Martinez
TEI	Dan Lanctot
SHELL	
HALTERMAN SOLUTIONS	
HALTERMAN CARLESS	
GM	Khaled Zreik
FORD	Mike Deegan
TOYOTA	Venkat Deshpande
OHT	Jason Bowden
IMTS	Dave Passmore, Sid Clark
CQA	Mike Kunselman

ATTACHMENTS:

- ➔ A: Meeting Agenda
- ➔ B: George's Presentation: New Engine Calibration

MEETING:

➔ Attendance. See table above.

➔ Motion to approve minutes from last SP meeting (8 Aug 24), Khaled. Rich seconds. Approval unanimous.

➔ Fuel Supplier Report:

Khaled reads emailed update from William Hairston. In good shape for now.

➔ Rich – TMC update

LTMS status – no alarms as of now. Still bouncing around the zero line.

Review of 224-2 results:

testkey	ltmslab	val	ind	ltmsdate	AVPIE	AVPIEti	testkey	ltmslab	val	ind	ltmsdate	AVPIE	AVPIEti	
188507-IX	D	AG	224-2	20240620	1.5	1.4142	188769-IX	D	AC	224-1	20240618	2.75	1.8028	Accompanying 224-1 Test
188817-IX	G	AG	224-2	20240718	2.5	1.7321	189578-IX	G	AC	224-1	20240719	4.5	2.2361	**
188385-IX	A	AG	224-2	20240808	6.25	2.5981	187356-IX	A	AC	224-1	20240804	3.75	2.0616	**
188819-IX	G	OC	224-2	20240809	1.5	1.4142								
188508-IX	D	AC	224-2	20240813	1.25	1.3229								
188383-IX	G	AC	224-2	20240831	5	2.3452								
191147-IX	A	AC	224-2	20240912	4.75	2.2913								
				Average	1.874	0.527126	3.011876							
				Current target	2.0445	0.3775	3.67998							

Looks a bit milder, higher sigma (not uncommon with smaller population size). Rich sent data to Stats group. They would like to see more data before making a conclusion. Rich – there are three more results out there, will add those and send to Stats group again.

Will continue with 224 target for now.

221 Reblend: will need at least one more donated test from active labs; will need to be on retains from lab. Rich will take care of this when next reference request comes in.

When both reblends approved, will have plenty for next ~five years.

Hardware Taskforce, George presents (see attachment).

Motion: George

Second: Christine

MOTION 1:

Revise D8291 and the LTMS to allow the introduction of new piston hardware according to the details described in [the attached] presentation. Effective October 9, 2024.

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	■		
TEI	Dan Lanctot		■	
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.

IMTS pistons at SwRI:

Christine: effective date in motion is 9 Oct 24, can we retroactively bring in IMTS with results of 220 run and refs already run?

Rich – don't generally allow that...

Second 220-1 results were after the two-test reference sequence was conducted. Didn't specify ref order in motion? But could argue that that was the intent.

Christine – so start from scratch. Can we start now or wait for Oct 9? Rich – can start now, will issue TCR after 9th.

Al – what's point of 9 Oct? Rich – LTMS change requires two week waiting period.

Stockwell, fewer concerns with Sub B the fewer deviations from procedure. Best to wait the two weeks

Rich – okay so wait to EOT references on or after 9 Oct.

Christine – can we report second 220 result? Rich - No, just rerun from scratch – 220 break-n, two reference oil runs

➔ Meeting adjourned.

Rich – moves

Christine – seconds.

AGENDA

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

Wednesday, September 25, 2024 – 10:00 AM to 11:30 PM (EST)

1. Attendance
2. Chairman's Comments
3. Approval of Minutes from Last Meeting
4. Review of action items from last meeting (Khaled Rais)
 - 4.1. Task Force call for calculations follow-up
5. Fuel Supplier Report (Haltermann)
6. TMC Report
 - 6.1. LTMS Update (Rich Grundza)
 - 6.2. Oil Introduction Update
7. Hardware Task Force Update
 - 7.1. Oil 220 Engine Introduction Criteria
 - 7.2. New Piston Approval Procedure (IMTS)
8. New Business and Discussion
 - 8.1. Other Items from the Panel
9. Next Meeting: Will be at the call of the chairman.

Proposal for revision to D8291 (LSPI) for new engine calibration

Presentation to Surveillance Panel

9/25/2024

Proposal objectives:

- Ensure that test engines will respond appropriately to very good-performing oils
- Facilitate the introduction of new piston hardware with a defined protocol for establishing suitability for testing

Proposed motion would include revision to D8291, and to LTMS for introducing new engine hardware.

D8291 procedure revisions

Existing procedure:

7.2.1 Use short blocks with installed pistons stamped with BB on the piston crown. Where BB stamped pistons are not installed, use pistons, part number AG9Z-6108-D¹⁴, stamped AA1 and AB1. Machined 2019 Grade BB pistons (MACH2019) may also be used, where BB pistons have not been installed.

Suggested revision:

7.2.1 A new engine must successfully demonstrate performance pursuant to LTMS new-engine calibration requirements. Pistons that have been found to be suitable include those stamped with BB on the piston crown, as well as AA1 and AB1. Machined 2019 Grade BB¹⁵ pistons (MACH2019) may also be used. Refer to table/figure (xxx) for compatibility between rings and pistons.

Piston / ring table

Piston Batch	Piston Part Number(s)	Acceptable Ring Part Numbers	Rings Description (<u>info only</u>)
BB	AG9Z-6108-	AG9E-6148-AA AG9Z-6148-AFC AG9Z-6148-D AG9E-6148-AB	All rings: dark coatings on all sides, dots present
AA1 and AB1 (Dealer Pistons)	AG9Z-6108-D	AG9E-6148-AA AG9Z-6148-AFC AG9Z-6148-D AG9E-6148-AB	All rings: dark coatings on all sides, dots present
MACH2019	N/A	AG9E-6148-AA AG9Z-6148-AFC AG9Z-6148-D AG9E-6148-AB	All rings: dark coatings on all sides, dots present
IMTS	IMTS-IX-LSPI-AC2-01	AG9E-6148-AA AG9Z-6148-AFC AG9Z-6148-D AG9E-6148-AB	All rings: dark coatings on all sides, dots present
BC	AG9Z-6108-Q GM5E-6110-AA	EJ7Z-6148-A EJ7E-6148-AA	Top Ring: not coated, stamped with "N1" Other: dark coatings on all sides, stamped with "N2"

LTMS modifications (new engine calibration)

A. Acceptance Criteria

1. New Test Stand/Engines

The results of tests using non-BB pistons shall meet the criteria of less than AVPIE of 2.12 for four consecutive valid iterations on RO220. The results of this test are not chartable and are meant to demonstrate discrimination only.

Motion:

Revise D8291 and the LTMS to allow the introduction of new piston hardware according to the details described in this presentation. Effective October 9, 2024

appendix

LTMS limit calculation:

Average Number of Preignitions (AVPIE)
Unit of Measure: Square Root (AVPIE+0.5)

Reference Oil	Mean	Standard Deviation
220	0.9626	
221	3.3819	0.3775
224	2.0445	0.3775

$$\begin{aligned}RO\ mean &= (\sqrt{AVPIE + 0.5}) \\RO220\ UL &= mean + (level\ 2\ limit * std\ dev) \\RO220\ UL &= (\sqrt{AVPIE + 0.5}) + (1.734 * 0.3775) \\RO220\ UL &= 0.9626 + (1.734 * 0.3775) \\RO220\ UL &= 1.6172 \\RO220\ UL &= (\sqrt{AVPIE + 0.5}) \\1.6172 &= (\sqrt{AVPIE + 0.5}) \\AVPIE &= 2.12\end{aligned}$$