



COMMITTEE D02 on PETROLEUM PRODUCTS, LIQUID FUELS, AND LUBRICANTS

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LSPI AGING INDUSTRY CONFERENCE CALL

Date: 1 Mar 22

ATTENDANCE

SWRI	Christine Eickstead
INTERTEK	Bill Buscher
LUBRIZOL	Andrew Stevens
AFTON	Ben Maddock
ORONITE	Robert Stockwell, Jo Martinez
INFINEUM	Charlie Leverett, Andy Ritchie
TMC	Rich Grundza
EXXON	Paul Rubas
OHT	J. H. Bowden
SHELL	Jeff Hsu
VALVOLINE	Amol Savant
GAGE PRODUCTS	Jim Carter
HALTERMAN	Prasad Tumati
TEI	D. Lanctot
HCS GROUP	Izabela Gabrel

MEETING:

Rich presents the “State-of-the-Test” (attached).

MOTION 1: Rich will address “Procedural Items” on slide 4 of the presentation via. An Information Letter.		
Proposed:	Rich Grundza	
Second:	Charlie Leverett	
Discussion:	None	
Questions:	None	
Votes:	<i>Waive:</i>	0
	<i>Negative:</i>	0
	<i>Approve:</i>	Unanimous
Outcome:	Motion passes unanimously.	

Fuel rail temp (slide 5 in presentation):

MOTION 2: Change dimension from 550 to 600 mm. Starting point is bottom arrow in picture. Add diagram clarifying this to the procedure.		
Proposed:	Ben Maddock	
Second:	Rich Grundza	
Discussion:	Paul Rubas – Is there any requirement to not have the pressure drop before the thermocouple? Pressure regulator? Rich – could require labs to add the thermocouple before the fuel pressure regulator? Group agrees to add this to the Motion.	
	Revised Motion: Revised Section 6.9.5.7 to locate the thermocouple within 600 mm from the center of the fuel rail. See Figure in Annex for location of the center point. Locate the thermocouple upstream of the fuel pressure regulator.	
Questions:	None	
Votes:	<i>Waive:</i>	0
	<i>Negative:</i>	0
	<i>Approve:</i>	Unanimous
Outcome:	Motion passes unanimously. Rich will capture this in an Information Letter.	

Andrew – Presents parts spreadsheet. Need to discuss items in red with the SP group.

6.6.4.1 – Do we really need to define this pump so exactly? All it’s doing is pulling oil out of sump and routing it into the dump bucket; as long as the pump can accomplish the task within the specified time, should be good. Recommend “or equivalent, or suitable, etc.”.

Paul - Would the labs have to reprove effectiveness of pumping system if change in the middle? Pump effectiveness is proven before, might be different after change.

Charlie – We’ve been here before with this pump, and we did run into issues – agree with comment about flush effectiveness.

Andrew – If alternate is used, would flushing effectiveness need to be reestablished?

Group – good. Don’t want a problem with carryover.

Robert – Also, is there a potential shearing effect? Paul – the pump is only evacuating oil, won't affect results. The oil is dumped, it is not used in the test again.

Andrew – Recommendation: add “if alternative pump is used, flush effectiveness must be repeated and meet the requirements of ... section.”

Amol – Must be the same size pump right? Andrew – yes. The “or equivalent” specification includes the pump size.

Aleise – Include the size requirement in writing so it is clear? Rich will work that in with the new wording.

Further discussion? No.

6.6.5.9 – Very specific quick disconnect required, doesn't need to be as specific.

Rich – I know why. We were worried about different pressures – can actually tell when someone does not have the Aeroquip #10; can see the difference in the Ops data. Don't need to go into detail on this call, but this caused a lot of grief in past.

Charlie – Agrees with Rich. We looked at this years ago. Labs had different flows, different line sizes being used....

Rich – We allowed 8 and 10 throughout flying flush and scavenge systems. In some cases, the lines connected to and from oil filter which were no. 8. You could see in the reference data who was running a no. 8 because they had higher pressure.

Andrew – This speaks to ID. Why not specify the ID instead of the part itself?

Charlie – Differences in flow were noted.

Andrew – Okay, if there is a good reason for being so specific, we will leave it as is.

A17.4.20 – Sound deadener required. Some labs install it, some don't. Doesn't seem to be doing anything - no effect on the test. Remove requirement to install?

Andrew – we don't even have it. We would have to source it, etc. If the part isn't doing anything, just remove wording and figure?

Rich – Fine.

Paul - Should we say optional? Andrew – Not opposed to that.

Jeffrey – Does this part have an impact on vibration dampening?

Bill – In the beginning, GM had issues with noise and chain stretch. They found a problem with their supplier, fixed it, and eliminated the sound deadener.

Jeff – So it *is* to control secondary vibration. Then it can't be optional in the procedure – needs to be either installed or not installed.

Charlie – The Malibu engine doesn't even have the bolt holes for it. Can someone verify that?

Christian – None of the labs use this, let's just remove it.

Paul – [Returning from his Build-Up lab] We do not use the deadener. The Build-Up lab says there is no way to attach it.

A17.6.3 – Intake manifold brace to engine front cover and intake manifold - connects throttle body to intake manifold. We've never had one, never installed one. Everyone okay with removing that requirement? Make optional. Group – make optional. Rich: “can be installed at discretion of lab” or something to that effect.

A17.8.2 – Specifies particular tool to use. Remove specification? Group - Sure.

A17.1 – Procedure lists two names. Charlie – Use top name. Group – good.

X1.3 – “Test engine available from...”

OHT part number is old number. Change to “use the short block described in Table A17.1.”

Actually, OHT is not the supplier. Rich will reference whatever GM entity is correct.

Andrew – Obviously we didn't go over every item in this call. Some were addressed in the smaller group that met previously.

Jason – There are a couple items I would like clarification on. X1.26 for example - don't see where the redundancy is.

Andrew – The redundancy is OHT's address. The part numbers are called out in the procedure body, but in section X, each PN has OHT's address.

X1.34 – This paragraph covers all parts ordered from OHT.

Rich – Include one footnote, then reference that in all other places. Jason – good.

Jason - 6.14.2.7 – PN should be -2 instead of -1.

Jason Bowden – As I mentioned at the TGC in CA, I am not a fan of removing part numbers from the procedures in general.

Once part numbers are pulled out of procedure, there no oversight for them from ASTM. The correct way to handle this is to form a Task Force, review the details, and present the recommendations to Surveillance Panel as you did. OHT feels the part numbers should remain in procedures. Once we pull out the fuel specs and hardware, this will no longer be an ASTM procedure. What might seem trivial today, might not have been in the past or might not be in the future. A lot of work and experience and knowledge went into the procedures. Losing a lot of that in this process.

Rich – I think we can accomplish both goals.

Andrew – We will include this as part of the discussion for the next call, as we are out of time today. Please look through details of spreadsheet before next call. We will vote on this next time. We will focus on the discussion started today with the concerns raised by Jason Bowden.

Meeting time up, meeting adjourned.



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TMC Update to Sequence VI Panel

March 1, 2022

Reference Oil Status

- ▶ Awaiting a reblend of RO 1010-1 (1 drum 8-9 tests remaining at TMC)
- ▶ Reblends available for 542-4 and 543 (70 gallons of 543 and 58 gallons of 542-4 remaining at TMC)
- ▶ 1011-1 currently being introduced in VIF.
- ▶ VIEBL6 has been blended, awaiting analytical results. Questions about usage of previous batches. Some labs have found older batches of FO and BL in inventory and would like to use them.

Results on RO 1011-1 To Date

Testkey	ltmslab	val	ind	ltmsdate	FEISUM	FEI2	FEI1	FEI1yi	FEI2yi	com1	com2	com3	com4
160877-VIF	D	AC	1011-1	20210113	2.78	1.34	1.44	-0.07143	-0.17949	1STTEST		GMSHORT	BLOCK
160582-VIF	G	AC	1011-1	20210326	3.22	1.52	1.7	1.785714	0.282051	1STTEST		GMSHORT	BLOCK
160583-VIF	G	AC	1011-1	20210410	3.54	1.73	1.81	2.571429	0.820513	2NDOF2		GMSHORT	BLOCK
162988-VIF	G	OC	1011-1	20210531	2.82	1.37	1.45	0	-0.10256	WIALARM	VIALARM	GMSHORT	BLOCK
160878-VIF	D	AC	1011-1	20210605	2.9	1.45	1.45	0	0.102564	2NDOF2	NEWENG	GMSHORT	BLOCK
165000-VIF	G	AC	1011-1	20210703	3.24	1.56	1.68	1.642857	0.384615	1STOF2		GMSHORT	BLOCK
164902-VIF	F1	XC	1011-1	20210901	0	0	0	.	.	DOWNTIME	EXCEEDED	GMSHORT	BLOCK
160152-VIF	A	MC	1011-1	20210908	1.63	0.35	1.28	-1.21429	-2.71795	ABANDON	ENGINE	GMSHORT	BLOCK
164888-VIF	G	MC	1011-1	20210914	3.73	1.71	2.02	4.071429	0.769231	2NDTEST	FEI1MILD	GMSHORT	BLOCK
164903-VIF	F1	OC	1011-1	20211002	3.94	1.95	1.99	3.857143	1.384615	1STOF2	FEI1MILD	GMSHORT	BLOCK
164889-VIF	G	AC	1011-1	20211016	3.5	1.82	1.68	1.642857	1.051282	2NDTEST	NEWENG		
165001-VIF	G	MC	1011-1	20211126	3.69	1.72	1.97	3.714286	0.794872	FEI1MIL	ABANDON	GMSHORT	BLOCK
160153-VIF	A	AC	1011-1	20211229	3.09	1.42	1.67	1.571429	0.025641	2NDOF2		GMSHORT	BLOCK
166493-VIF	G	MC	1011-1	20211231	4.19	2.01	2.18	5.214286	1.538462	ABANDON	FEI1MILD	GMSHORT	BLOCK

Procedural Items

- 1) Sections 6.6.5.11 and 6.13.5 both reference the OHT oil pan. Since 6.6.5.11 deals with how to configure the oil system, this section 6.13.5 appears to be duplicated and can be deleted
- 2) A similar situation has been noted in sections 6.5.10 and 6.13.6, in that both call out an OHT water pump adapter. Since 6.5.10 is contained in the engine coolant system configuration, it appears that 6.13.6 is redundant and can be removed.
- 3) In the coolant section, section 6.5.8 reads as follows:
 - ▶ 6.5.8 A control valve (FCV-103 in **Fig. A5.1** to **Fig. A5.3**) is required for controlling the coolant flow rate to $80.0 \text{ L/min} \pm 4 \text{ L/min}$. A Badger Meter Model No. 9003GCW36SV3A19L36,13 2-way globe, 2 in., air-to-close valve is the specified valve. A VFD device (P-1 in **Fig. A17.9**) would require this valve. This appears to be an error in that the VFD (variable frequency drive) is designed to control the flow rate as specified and appears to negate the use of this valve for flow control. It appears that the last sentence should read a VFD device would **not require this valve**.
- 1) Section 10.2.2 states that the calibrations listed in table 6 be performed every three months, but table 6 lists these calibrations to be performed with each engine installation. Table 6 should be corrected to list every 3 months as opposed to every engine.

Procedural Items (con't)

A discrepancy was noted during a lab visit. Section 6.9.5.7 states *Fuel to Engine Fuel Rail*—Insert the thermocouple into the center of a tee or cross fitting and locate it within 550 mm from the center point of the fuel rail inlet.

Where lab says to measure



Where we agreed to measure (VID and VIE lab visitations)



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