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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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Issued: September 23, 2015
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These are the unapproved minutes of the 09.22.2015 Sequence VI Surveillance Panel call.

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The meeting was called to order at 8:00 AM Central Time by Chairman Nathan Moles.

Agenda

The Agenda is the included as **Attachment 1**.

1.0 Roll Call

The Attendance list is **Attachment 2**.

2.0 Approval of minutes

- 2.1 Approval of the minutes of the 09.15.2015 meeting.

MOTION: Approve the minutes from the 09.15.2015 conference call.

[Dan Worcester, Nathan Moles, second] Approved unanimous. There was a correction for one motion from Dave Glaenzer to Nathan moles. Corrected version is posted.

3.0 Action Item Review

- 3.1 OHT to provide update on current VIE inventory and service engine order. –OHT
There are 56 of the original order of engines remaining, and 144 service engines. There will be a survey and determination on how the remaining engines will be sorted to labs. The 144 are a -2 part number.
- 3.2 Labs reported VID engine inventory and expected depletion date of VID engines.
-Expected life of engines range from 2016 Q1 to 2018
Lab1: 2 engines
Lab2: 2 engines
Lab3: 3 engines
Lab4: 1 engines This will be an on-going effort.

4.0 Old Business

- 4.1 List of items to be reviewed after the Precision Matrix
Do we really need to run three RO tests to establish the new engine for LTMS?
Discussion of reducing the new reference requirement to two oils, then a third oil run after a defined number of candidates.
Discussion of using FEI 2 and FEI Sum for references to match candidate pass/fail criteria.
Discussion of evaluating 80/20 ratio of BL before to after for FEI 1 and 10/90 for FEI 2.
Should the acceptance bands value of 1.96 be rounded up? Due to the rounding on FEI 1 and 2 the actual pass limit is 1.91 and 1.92.
-SP chair and test sponsor to investigate what is needed to establish VID equivalent limits for VIE.
The final design of the matrix was selected. This still must be approved by the PECOCP. See Attachment 3.
- 4.2 Update from task force, to investigate alternative test procedure Sequence “VIF” that would improve 0W-16. – Dan Worcester/Satoshi Hirano A Sense Check and matrix design are approved. TMC should have reference oil 400 to labs mid-October.
- 4.3 Update from task force to investigate option to prolong usable life of the available VIE engines. –Adrian Alfonso/Bill Buscher The Task Force will move forward with building new engines from GM short blocks and heads. Labs will make a list of parts to be used moving forward from existing VID or VIE engines. The minutes are posted.

5.0 New Business

- 5.1 5W-30 Tech1 will be supplied in two batches, should we wait additional two weeks for both batches to be homogenized? –Rich Grundza TMC will wait for and blend both batches then run tests to confirm the blend. Oil 1010 has been depleted except for enough to reference remaining VID stands. VIE testing will move to 1010-1.

MOTION: Do not distribute oil 5W-30 Tech 1 until one batch has been blended and approved.
[Dave Glaenzer, Nathan Moles, second] 11 yes, 2 waive.

- 5.2 Engine/stand selections for the Precision Matrix. Afton had selected one stand that is now busy with a matrix program. They would like to use an alternate stand. Prove out work and some reference oil data is available. It ran CMIR 105709 on 06/14/2015 and CMIR 108149 on 06/24/2015.

MOTION: Afton will be allowed to change the stand for the Precision Matrix but will assume the risk should there be procedure issues.
[Dave Glaenzer, William Buscher, second] 11 yes, 2 waive.

6.0 Next Meeting.

These meeting will now occur weekly to develop and run the Precision Matrix. Each Tuesday at 9:00 AM Eastern, 8:00 AM Central times.

The meeting adjourned at 8:41 AM.

Sequence VI Surveillance Panel Conference Call Agenda September 22 @ 9:00-10:00AM EST

Call-in information is included below:

Call-in Number: 866-528-2256
Conference Code: 3744024

1.0) Roll Call

Do we have any membership changes or additions?

2.0) Approval of minutes

2.1 Approve the minutes from the September 15, 2015 Sequence VI Surveillance Panel.

<ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencevi/minutes/VIMinutes20150915%20Conference%20callCorrected.pdf>

3.0) Action Item Review

3.1 OHT to provide update on current VIE inventory and service engine order. –OHT

3.2 Update of VID engine inventory and expected depletion date of VID engines.

-Expected life of engines range from 2016 Q1

Lab1: 2 engines

Lab2: 2 engines

Lab3: 3 engines

Lab4: 1 engines

4.) Old Business

4.1 List of items to be reviewed after the Precision Matrix

-Do we really need to run three RO tests to establish the new engine for LTMS?

-Discussion of reducing the new reference requirement to two oils, then a third oil run after a defined number of candidates.

-Discussion of using FEI 2 and FEI Sum for references to match candidate pass/fail criteria.

- Discussion of evaluating 80/20 ratio of BL before to after for FEI 1 and 10/90 for FEI 2.
- Should the acceptance bands value of 1.96 be rounded up? Due to the rounding on FEI 1 and 2 the actual pass limit is 1.91 and 1.92.
- SP chair and test sponsor to investigate what is needed to establish VID equivalent limits for VIE

4.2 Update from task force, to investigate alternative test procedure Sequence "VIF" that would improve 0W-16. – Dan Worcester/Satoshi Hirano

4.3 Update from task force to investigate option to prolong usable life of the available VIE engines. –Adrian Alfonso/Bill Buscher

5.) New Business

5.1 5W-30 Tech1 will be supplied in two batches, should we wait additional two weeks for both batches to be homogenized? –Rich Grundza

6.) Next Meeting

Next Tuesday (reoccurring weekly meeting)

7.) Meeting Adjourned

ASTM SEQUENCE VI

Name	Address	Phone/Fax/Email	Attendance
Adrian Alfonso Voting Member	Intertek Automotive Research	Phone: (210) 838-0431 adrian.alfonso@intertek.com	ATTEND
Jason Bowden Voting Member	OH Technologies	Phone: (440) 354-7007 jhbowden@ohtech.com	ATTEND
Timothy Caudill Voting Member	Ashland	Phone: (606) 329-5708 Tlcaudill@ashland.com	
Tim Cushing Voting Member	General Motors	Phone: (248) 881-3518 timothy.cushing@gm.com	ATTEND
David Glaenzer Voting Member	Afton	Phone: (804) 788-5214 Dave.Glaenzer@aftonchemical.com	ATTEND
Rich Grundza Voting Member	ASTM TMC	Phone: (412) 365-1034 reg@astmtmc.cmu.edu	ATTEND
Jeff Hsu Voting Member	Shell	Phone: (832) 419-3482 j.hsu@shell.com	
Tracey King Voting Member	Haltermann	Phone: tking@jhaltermann.com	
Teri Kowalski Voting Member	Toyota	Phone: (734) 995-4032 teri.kowalski@tema.toyota.com	
Dan Lanctot Voting Member	TEI	Phone: (210) 690-1958 dlanctot@tei-net.com	ATTEND
Brian Marks Voting Member	BP Castrol	Phone: (973) 686-3325 Brian.Marks@bp.com	
Nathaniel Moles Voting Member	Lubrizol	Phone: (440) 347-4472 Nathaniel.Moles@Lubrizol.com	ATTEND
Mark Mosher Voting Member	ExxonMobil	Phone: (856) 224-2132 mark_r_mosher@exxonmobil.com	ATTEND
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Ron Romano Voting Member	Ford Motor	Phone: (313) 845-4068 rromano@ford.com	
Kaustav Sinha Voting Member	Chevron Oronite	Phone: (713) 432-6642 LFNQ@chevron.com	ATTEND
Haiying Tang Voting Member	Chrysler	Phone: (248) 512-0593 HT146@Chrysler.com	
Dan Worcester Voting Member	Southwest Research Institute	Phone: (210) 522-2405 dan.worcester@swri.org	ATTEND

ASTM SEQUENCE VI

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Scott Rajala	srajala@ILAcorp.com	Idemitsu	

GF-6 VIE PRECISION MATRIX

Statisticians Task Force

Sep. 21, 2015

GF-6 PM Design Statisticians Task Force

- Doyle Boese, Infineum
- Kevin O'Malley, Lubrizol
- Todd Dvorak, Afton Chemical
- Jo Martinez, Chevron Oronite
- Ricardo Affinito, Chevron Oronite
- Arthur Andrews, Exxon Mobil
- Martin Chadwick, Intertek
- Eric Liu, SwRI
- Rich Grundza, TMC

Objective:

- Finalize run order of Design 2.5ai.
- Matrix Oils
 - 542-2; 0w20
 - 1010-1; 5w20
 - Tech 1; 5w30

Design Assumptions:

- 8 stands; 6 labs
- Funding for 52 matrix tests (Most likely 50 tests per MOA)
- Step 2 Run Order will be finalized once the health of the engines are identified after Step 1 tests

	Planned Test Stands						Stands	TEST Cost	GF-6 Precision Matrix ONLY			
	Afton	LZ	XOM	Ashland	IAR	SwRI			Total Runs	Cal Runs	Cal \$'s	Total \$'s
Chrysler Oxid. (Seq. IIIH Rep)	1	1	None	1	2	2	7	\$57,250	28	14	\$801,500	\$1,603,000
Sequence IVB (Toyota)	None	1	None	None	2	2	5	\$49,250	20	10	\$492,500	\$985,000
Sequence V-V8	1	1	None	1	2	2	7	\$63,000	28	14	\$882,000	\$1,764,000
LSPI (Ford)	None	1	None	None	2	2	5	\$14,250	20	10	\$142,500	\$285,000
Chain Wear Test (Ford)	1	None	None	1	2	2	6	\$45,750	24	12	\$549,000	\$1,098,000
Sequence VIE	1	1	1	1	2	2	8	\$32,750	53	24	\$786,000	\$1,735,750
											\$3,653,500	\$7,470,750

IAR and SwRI have 2 Stands for Each Test

Seq. IIIH, Seq. IVB, Seq. V, LSPI, Chain Wear are 4 Tests per Stand

Seq. VIE, 7 tests per stand for the first stand + 4 test per stand for the second.

Seq. IIIH, Seq. IVB, Seq. V, LSPI, Chain Wear have 2 Calibration Tests/Stand

Seq. VIE has 3 Calibration Tests/Stand

Test Funding - Total	\$7,470,750
Donated Tests - Total	\$3,653,500
Industry Funding MOA - Total	\$3,817,500
Actual Matrix Cost	\$3,817,250
Extra Funding	\$250

VIE Approach 2.5ai

- 3 engines run longer; 5 end earlier
- Maximum engine hours: 2150 (2350 if additional funding is available)
- Average engine hours: 1000

Step 2 Run Order can be re-ordered once health of engine is determined after Step 1:

Step	Run Order	SW1	SW2	IAR1	IAR2	LZ	Afton	Ashland	XOM	
	SOT Engine Hours	150	150	150	150	150	150	150	150	Engine Hrs
1	1	5w30T1	1010-1	542-2	5w30T1	542-2	542-2	5w30T1	1010-1	350
	2	5w30T1	1010-1	1010-1	542-2	5w30T1	542-2	1010-1	5w30T1	550
	3	542-2	542-2	1010-1	1010-1	1010-1	5w30T1	542-2	5w30T1	750
	4	1010-1	5w30T1	5w30T1	1010-1	5w30T1	1010-1	542-2	542-2	950
2	5		5w30T1		542-2	5w30T1				1150
	6		1010-1		542-2	542-2				1350
	7		5w30T1		5w30T1	542-2				1550
	8		542-2		5w30T1	1010-1				1750
	9		542-2		1010-1	1010-1				1950
	10		1010-1		5w30T1	542-2				2150
	11		1010-1		542-2					2350
	EOT Engine Hours	950	2350	950	2350	2150	950	950	950	Total Runs
	Runs/Engine	4	11	4	11	10	4	4	4	52

Guidelines on Running the PM

1. If engine fails before the matrix finishes, move remaining tests to another matrix engine.
2. After all labs run the first 5-6 tests, reassess engine “health” at the labs to determine the engines that will run additional tests to reach higher engine hours.