

Sequence IVB Sub Groups | MINUTES

REVISION DATE: 9/17/2018 8:11:00 AM

Relevant Test:	Sequence IVB
Note Taker:	Chris Mileti
Meeting Date:	09-04-2018
Comments:	Conference call for Sequence IVB Precision and Procedure Sub-Groups.

1. DISCUSSION:

1.1. Opening Comments from Buscher:

1.1.1. Lubrizol distributed an updated action item list for the three sub-groups (*Sequence IVB Task Force Action Item List 09-04-2018.pdf*).

1.1.2. Intertek distributed its engine history data last Friday.

1.1.2.1. Lubrizol has already started processing this data.

1.1.3. **Single-Lab Analysis of 2nd Precision Matrix Oil Samples:**

1.1.3.1. Intertek completed their analysis of all the E.O.T. oil samples from the 2nd Precision Matrix.

1.1.3.2. These repeat measurements were collected using the new calcium adjustment procedure for iron.

1.1.3.3. The data is currently being compiled and will be sent to the sub-groups shortly.

1.1.4. **Template for Supplemental Camshaft Lobe Failure Data:**

1.1.4.1. Intertek will provide the TMC with a template that can be used to collect supplemental data on camshaft lobe failures (i.e. test hours at failure, associated intake lifter position, etc.).

1.1.4.2. Comments from Lubrizol:

1.1.4.2.1. Lubrizol has an idea to simplify this process.

1.1.4.2.2. The master database/spreadsheet already has columns for the supplemental lobe failure information.

1.1.4.2.3. Lubrizol can distribute this master database to all the labs, and each lab can populate their own lobe failure data.

1.1.4.2.4. This will eliminate the extra steps of Intertek creating a template, the TMC distributing the template, and Lubrizol transferring the results into the master database.

1.1.5. **Buscher to Request Support from Statistics Group:**

1.1.5.1. Buscher will contact the Statistics Group to discuss their availability to analyze the IVB data that is being compiled.

1.1.5.2. However, the sub-groups still need to decide on the objectives for the analysis.

1.1.5.3. Iron:

1.1.5.3.1. At a minimum, the statisticians should repeat the analysis they performed on AVLI with the new iron data.

1.1.5.4. Oil Results for 2nd Precision Matrix:

1.1.5.4.1. The master database will have oil sample measurements that the original lab collected at the end of each test, repeat measurements that were

collected at a single source (Intertek), and repeat measurements that were collected by the original lab.

1.1.5.4.2. *Is there a laboratory effect on these measurements?*

1.1.5.4.3. *How repeatable are these measurements at a single lab?*

1.1.5.5. **Break-In and Aging Data:**

1.1.5.5.1. *Are there differences in the break-in and aging iron level at each lab?*

1.1.5.5.2. *Is there any correlation between the break-in/aging data and the engine's performance with during subsequent reference oil testing?*

1.1.5.6. **Engine History:**

1.1.5.6.1. *Do engine hours correlate to test severity?*

1.1.5.6.2. *Can the statisticians provide any ideas on criteria for engine life limits?*

1.1.5.7. **Camshaft Lobe Failures:**

1.1.5.7.1. *Is there a correlation between lobe failures and engine life data?*

1.1.5.8. **Conference Call:**

1.1.5.8.1. A conference call needs to be scheduled between the Statistics Group and the (5) Sequence IVB test engineers.

1.1.5.8.2. This call can be used to finalize the objectives for the statistical review of the master database.

1.1.5.8.3. Lubrizol and Afton strongly support this idea.

1.1.5.8.4. Afton stressed that the call should be scheduled as soon as possible.

1.1.5.8.5. Lubrizol suggested letting the Statistics Group review the master database for a week prior to the conference call.

1.1.5.8.5.1. This will give them time to identify any formatting changes that will facilitate their analysis.

1.1.5.8.6. The TMC stressed that the objectives need to be as explicit and specific as possible.

1.1.6. AOAP Meeting Next Week:

1.1.6.1. Buscher will issue an e-Ballot to the Surveillance Panel this week.

1.1.6.2. This e-Ballot will allow the Surveillance Panel to vote on several of the action items that were completed by the three Sequence IVB sub-teams.

1.1.6.3. Lubrizol noted that the minutes from the 08-07-2018 conference call list all the items that need to be included on the e-Ballot.

1.1.6.4. Buscher is working on the PowerPoint slides for the upcoming AOAP meeting.

1.1.6.4.1. Lubrizol offered to create a single PowerPoint slide that summarizes all the critical action items that have been completed to this point.

1.1.7. Keyence Round-Robin #4:

1.1.7.1. All five laboratories completed the start-of-test lifter measurements for the 4th round-robin.

1.1.7.2. Intertek started the donated test to evaluate the round-robin lifters.

1.1.7.3. The round-robin test will also evaluate the new batch of REO300 (REO300-1).

1.1.7.4. The test is currently at 100HRS.

2. ACTION ITEM REVIEW:

2.1. Action Item #140 – Modify New Air Filter Boxes:

2.1.1. Action Item #140 is for OHT to modify new air filter boxes with a fitting for a pressure transducer.

2.1.2. OHT stated that all new air filter boxes are being modified.

2.1.3. This action item can be closed.

2.2. Action Item #58 – Intertek to Analyze all Precision Matrix Oil Samples:

- 2.2.1. Action Items #58 through #63 are for Intertek to re-analyze all the end-of-test oil samples from the 2nd Precision Matrix.
- 2.2.2. Intertek has completed this work and will distribute the results shortly.
- 2.2.3. This action item can be closed.
- 2.2.4. Action Item #64:
 - 2.2.4.1. Lubrizol mistakenly marked this sub-task as being complete when it is not.
 - 2.2.4.2. Exxon has not yet analyzed its end-of-test oil samples from the 2nd Precision Matrix using the new calcium adjustment procedure for iron.
 - 2.2.4.3. The delay is due to their ongoing laboratory move.
 - 2.2.4.4. Exxon will send their samples to Southwest to have this work completed.

2.3. Action Item #65 – Re-Evaluate Quality Index Limits:

- 2.3.1. Action Item #65 is for the Statistics Group to re-evaluate all the quality index limits.
- 2.3.2. Lubrizol does not consider this to be one of the “critical” action items.
- 2.3.3. Intertek noted that this action item still needs to be completed soon.

2.3.4. Statistics Group:

- 2.3.4.1. Southwest asked if the Statistics Group is aware that they are responsible for Action Item #65.
- 2.3.4.2. Kevin O'Malley and Rich Grundza replied that they do not believe so.
- 2.3.4.3. Kevin O'Malley will review this action item with the Statistics Group at their next meeting.

2.4. Rebuilding an Engine and Cleaning a Test Stand after a Lobe Failure:

- 2.4.1. Intertek already issued draft procedures for rebuilding an engine and cleaning a test stand after a camshaft lobe failure.
 - 2.4.1.1. Intertek is still receiving feedback on these two documents.
- 2.4.2. Intertek will be issuing an update to both documents very soon.

2.5. Action Item #87 – Replace REO300:

- 2.5.1. Action Item #87 is to solicit and obtain a IVB “high-wear” oil to replace REO300.
- 2.5.2. The TMC already has inventory of the newest batch of REO300 (REO300-1).
- 2.5.3. Intertek is evaluating REO300-1 as part of the Keyence round-robin test.
- 2.5.4. Lubrizol has already closed this action item.

2.6. Action Item #116 – BOI/VGRA Matrix:

- 2.6.1. Action Item #116 is to finalize the plan for the BOI/VGRA matrix.
- 2.6.2. The group agreed that this is not the responsibility of the Surveillance Panel.
- 2.6.3. Lubrizol will remove this action item from the list.

2.7. Master Database:

- 2.7.1. Intertek reminded all the labs that they need to send any new test data to Lubrizol as soon as possible.
 - 2.7.1.1. The labs have been asked to review and update the master database by 09-12-2018.
- 2.7.2. Afton suggested scheduling a conference call with the Statistics Group during the week of September 17th.
- 2.7.3. Buscher plans to review the statistical analysis of the master database at the October AOAP meeting.

2.8. Procedure Review:

2.8.1. Comments from Southwest:

- 2.8.1.1. Southwest wants to create a new action item to review the entire Sequence IVB procedure.
- 2.8.1.2. This review also needs to confirm that the document is in the correct ASTM format.

2.8.2. Comments from Intertek:

- 2.8.2.1. All the new procedural documentation needs to be given to Hap Thompson.
 - 2.8.2.2. Thompson also needs to be given instructions regarding where the new documentation needs to be inserted into the main procedure.
 - 2.8.2.3. Thompson will be responsible for converting the document into an ASTM format.
- 2.8.3. Southwest will begin working on the procedure review this week.

2.9. Action Item #77 – Complete Appendix K:

- 2.9.1. Southwest asked if there are any major items in Appendix K that still need to be completed.
- 2.9.2. Intertek will review Appendix K and report back to the sub-group.
 - 2.9.2.1. The AOAP will want an update on Appendix K.

2.10. AOAP, ACC and BOI/VGRA Chairperson:

- 2.10.1. Lubrizol stressed that this sub-group needs to confirm that the completed action items satisfy what the ACC, AOAP and BOI/VGRA chairperson wanted done.
- 2.10.2. Intertek will review this.
 - 2.10.2.1. Buscher will contact the Chair of the BOI/VGRA Task Force to see if they have any new requirements for the Sequence IV Surveillance Panel.

2.11. Next Face-to-Face Surveillance Panel Meeting:

- 2.11.1. Intertek would like to have a face-to-face Surveillance Panel meeting in late September or early October.

2.11.2. Comments from Lubrizol:

- 2.11.2.1. Scheduling the meeting for October will give the Statistics Group more time to complete their analysis.
- 2.11.2.2. Kevin O'Malley asked about the agenda for the face-to-face meeting.
 - 2.11.2.2.1. The statisticians will need time to prepare the results of their analysis.

2.11.3. Comments from Affon:

- 2.11.3.1. Affon reiterated that this sub-group needs to be clear about what it wants the Statistics Group to do prior to the face-to-face meeting.
- 2.11.3.2. Should the Surveillance Panel convene more than one face-to-face meeting?
 - 2.11.3.2.1. One meeting could be scheduled to review the Statistics Group analysis.
 - 2.11.3.2.2. Another meeting could be scheduled to review the IVB procedure.

2.11.4. Comments from Intertek:

- 2.11.4.1. A conference call will be scheduled with the Statistics Group to outline the objectives of their analysis.
- 2.11.4.2. They can provide an estimate for how long it will take.
- 2.11.4.3. The face-to-face meeting will be scheduled after talking to the Statistics Group.
- 2.11.4.4. They agree that multiple face-to-face meetings are needed.

Action Items	Person responsible	Completion Date

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Follow-up Notes/Updates	Initials	Date Added

Attendees	Organization	Contact Information