

Sequence IVB Task Force Action Items

ID	Task Name	Start	Resource Names	Finish	Category	General Comments
1	Establish oil consumption limit for test.	Fri 5/11/18			Procedure	Introduced on 07/26/2017.
2	Make recommendation to Task Force.	Tue 5/15/18	Intertek		Procedure	
3	Compile a "lessons learned" report to the ACC regarding Precision Matrix #1.				Documentation	Introduced on 07/26/2017.
4	TBD					
5	Decide on the Metrology data that will be included in IVB Data Dictionary.				Metrology	Introduced on 08/15/2017.
6	TBD					
7	Update procedure with guidance regarding how lifter grades are to be selected based on valve clearance.	Fri 5/11/18		Tue 5/22/18	Procedure	Introduced on 08/15/2017.
8	Make recommendation to Task Force.	Fri 5/11/18	Lubrizol	Tue 5/22/18	Procedure	Final procedure is in minutes from 05-22-2018 meeting.
9	Update procedure with instructions for adding a new fuel batch over an existing fuel batch.	Fri 5/11/18		Tue 5/22/18	Procedure	Introduced on 10/03/2017.
10	Make recommendation to Task Force.	Tue 5/15/18	Southwest	Tue 5/22/18	Procedure	Details about the final recommendation can be found in the minutes from the 05-22-2018 meeting.
11	Update procedure with instructions for dealing with camshaft lobe failures.	Fri 5/11/18			Procedure	Introduced on 10/03/2017.
12	Make recommendation to Task Force regarding engine rebuild procedure.	Fri 5/11/18	Intertek		Procedure	
13	Make recommendation to Task Force regarding how to identify lobe failures.	Fri 5/11/18	Intertek		Procedure	
14	Finalize Keyence G2 software settings.				Metrology	Introduced on 07/20/2017.
15	Document the pros and cons of each setting change in the G2 software.				Metrology	
16	Develop a DOE to evaluate each setting in the G2 software using all (5) labs.				Metrology	
17	Develop a procedure to use the G2 software to screen lifters based on crown.				Metrology	
18	Determine whether the Keyence instruments should be monitored in LTMS.				Metrology	
19	Identify an insulation or coating that can be applied to the front cover and oil pan.	Fri 5/11/18	OHT		Hardware	Introduced on 08/08/2017.
20	Make recommendation to Task Force.	Fri 5/11/18	OHT		Hardware	
21	Revisit the chamfered intake camshaft lobes as a possible solution to lobe failures.				Hardware	Introduced on 08/29/2017.
22	TBD					
23	OHT to design and supply a clutch alignment tool.	Fri 5/11/18	OHT		Hardware	Introduced on 08/08/2017.
24	Supply hardware to test labs.	Fri 5/11/18	OHT	Tue 5/22/18	Hardware	
25	OHT to design and supply a timing chain wedge.	Fri 5/11/18	OHT		Hardware	Introduced on 10/03/2017.
26	Intertek to provide information on material and dimensions of current wedges.	Fri 5/11/18	Intertek		Hardware	

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27	Southwest to provide information on material and dimensions of current wedges.	Tue 5/8/18	Southwest		Hardware	
28	Lubrizol to provide information on material and dimensions of current wedges.	Tue 5/8/18	Lubrizol	Tue 5/22/18	Hardware	
29	Afton to provide information on material and dimensions of current wedges.	Tue 5/8/18	Afton		Hardware	
30	Exxon to provide information on material and dimensions of current wedges.	Tue 5/8/18	Exxon		Hardware	
31	Supply hardware to test labs.		OHT			
32	OHT to stamp coolant adaptor plates with "in" and "out".	Fri 5/11/18	OHT	Tue 5/15/18	Hardware	Introduced on 10/03/2017.
33	Supply hardware to test labs.	Fri 5/11/18	OHT	Tue 5/15/18	Hardware	
34	Explore (3) potential options to increase discrimination between REO300 and REO1012.				Operational	Introduced on 10/03/2017.
35	Evaluate harder surface finish for camshaft.				Operational	
36	Increase fuel sulfur level.				Operational	
37	Increase test length by 25HRS.				Operational	
38	Compare lifter wear vs. lifter position inside of the engine.	Tue 6/12/18			Statistics	Introduced on 10/03/2017. Is it appropriate to apply weighting to lifter severity based on position?
39	Present statistical analysis to Task Force.		Statisticians,Lubrizol		Statistics	
40	Determine whether baffle on blowby heat exchanger should be added to procedure.				Procedure	Introduced on 10/25/2017.
41	Make recommendation to Task Force.				Procedure	
42	Finalize IVB report form.		TMC,Intertek		Documentation	Introduced on 10/25/2017.
43	TBD					
44	Compile a "lessons learned" report (and corresponding data table) that summarizes the impact of procedural/operational changes on test severity.				Documentation	Introduced on 11/07/2017.
45	TBD					
46	Compile a historical timeline for the overall IVB test development effort.				Documentation	Introduced on 11/07/2017.
47	TBD					
48	Compare oil temperature curves at different labs using a histogram instead of x-y charts.		Lubrizol,Statisticians		Statistics	Introduced on 11/07/2017.
49	TBD					
50	Confirm that all (5) labs are reading the same OBD-II parameters.				Operational	Introduced on 11/07/2017.
51	Provide directory for relevant OBD-II channels.		Toyota		Operational	
52	Task Force to finalize list of mandatory OBD-II channels to be monitored by labs.		Task Force		Operational	
53	Establish procedure for cleaning blowby flow meter.	Fri 5/11/18			Procedure	Introduced on 11/07/2017.
54	Make recommendation to Task Force.	Fri 5/11/18	Intertek	Tue 5/15/18	Procedure	

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55	Update Golden Stands to automatically control coolant pressure.				Operational	Introduced on 11/07/2017.
56	TBD					
57	All labs to provide 200HR E.O.T. oil samples to Intertek for analysis.	Fri 5/11/18			Operational	
58	Southwest to provide 200HR E.O.T. samples from Precision Matrix #2.	Fri 5/11/18	Southwest	Fri 5/11/18	Operational	
59	Lubrizol to provide 200HR E.O.T. samples from Precision Matrix #2.	Fri 5/11/18	Lubrizol	Fri 5/11/18	Operational	
60	Exxon to provide 200HR E.O.T. samples from Precision Matrix #2.	Fri 5/11/18	Exxon	Fri 5/11/18	Operational	
61	Afton to provide 200HR E.O.T. samples from prove-out testing.	Fri 5/11/18	Afton	Fri 5/11/18	Operational	
62	Intertek to conduct analysis on all E.O.T. samples to eliminate laboratory bias, with an emphasis on analyzing the proposed iron adjustment procedure.	Tue 5/29/18	Intertek		Operational	
63	Re-evaluate QI's for all controlled parameters.	Tue 6/12/18	Statisticians		Operational	
64	Use three 1HR data files from each Precision Matrix test.	Tue 6/12/18	Statisticians			
65	TMC to work with labs to complete Precision Matrix #2 test reports.	Fri 5/11/18	TMC	Tue 6/12/18	Documentation	
66	Southwest to complete test reports.		Southwest	Tue 6/12/18	Documentation	
67	Intertek to complete test reports.		Intertek	Tue 6/12/18	Documentation	
68	Lubrizol to complete test reports.		Lubrizol	Tue 6/12/18	Documentation	
69	Exxon to complete test reports.		Exxon	Tue 6/12/18	Documentation	
70	Compare 200HR operational data plots for Precision Matrix #2 tests.	Tue 6/12/18	Task Force		Operational	This will be done at the next face-to-face Surveillance Panel meeting.
71	Analysis will focus on exhaust gas temperature, crankcase pressure/blowby flow, intake manifold pressure and AFR.					
72	Compile all notes from January 2018 IVB Engine Build Workshop into a single document.	Tue 6/12/18	Lubrizol		Documentation	
73	All labs to send notes/photographs from Workshop to Lubrizol.	Tue 6/12/18	Afton,Exxon,Intertek,S			
74	Complete Appendix K.		Task Force		Appendix K	
75	Perform an initial review of Appendix K.	Tue 5/15/18	5/15/2018		Appendix K	
76	TMC to issue an information letter that summarizes all procedural and process changes that accompany new LTMS system.	Tue 6/12/18	TMC	Tue 6/12/18	Documentation	
77	Issue information letter.	Tue 6/12/18	TMC	Tue 6/12/18	Documentation	This was communicated as an LTMS manual update and not an information letter.
78	Create an engine "health" checklist that is to be used to inspect hardware between tests.	Tue 5/29/18	Lubrizol		Hardware	

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79	Intertek, Southwest, Afton and Exxon to provide Lubrizol with their suggestions regarding this "health" checklist.	Tue 5/29/18	Afton,Exxon,Intertek,S			
80	Assess the impact of camshaft lobe failures (and the subsequent rebuild) on engine severity.				Operational	
81	Determine whether the IVB test report should identify when a candidate test follows a lobe failure.				Documentation	
82	TBD					
83	Solicit and obtain a IVB "high wear" oil to replace REO300.				Operational	The inventory of REO300 is low, although a reblend is
84	TBD					
85	Investigate why coolant pressure becomes noisier as the Intertek stands enter Stage 2 conditions.		Intertek		Operational	
86	TBD					
87	Measure time constants of all Golden Stands.				Operational	
88	Intertek to measure and supply time constants.		Intertek		Operational	
89	Southwest to measure and supply time constants.		Southwest		Operational	
90	Lubrizol to measure and supply time constants.		Lubrizol		Operational	
91	Exxon to measure and supply time constants.		Exxon		Operational	
92	Afton to measure and supply time constants.		Afton		Operational	
93	Standardize the fuel dilution measurement technique at all labs.				Operational	
94	TBD					
95	Develop a standardized test stand audit checklist.	Fri 5/11/18	Lubrizol	Tue 5/15/18	Documentation	
96	Make a recommendation to the Task Force.	Fri 5/11/18	Lubrizol	Tue 5/15/18	Documentation	
97	Update procedure with instructions for dealing with extended periods of downtime.	Fri 5/11/18	Southwest		Procedure	
98	Make a recommendation to the Task Force.	Fri 5/11/18	Southwest	Tue 5/15/18	Procedure	
99	Update Southwest's proposed procedural changes with instructions to pull purge oil from the pan.	Tue 5/15/18	Intertek			
100	Develop a procedure for applying a calcium (or other detergent) adjustment to iron.	Tue 5/15/18	TMC		Procedure	
101	Provide a draft procedure for review.	Tue 5/15/18	TMC	Tue 5/29/18		
102	Issue an updated version of TMC draft procedure to the full sub-group for review.	Tue 5/29/18	Intertek			
103	Clarify instructions for changing cylinder heads and running the break-in/aging cycle.	Fri 5/11/18	Southwest	Tue 5/15/18	Procedure	
104	Make a recommendation to the Task Force.	Fri 5/11/18	Southwest	Tue 5/15/18	Procedure	
105	Identify the minimum number of acceptable data points in a test file.	Fri 5/11/18	Southwest	Tue 5/15/18	Procedure	
106	Make a recommendation to the Task Force.	Fri 5/11/18	Southwest	Tue 5/15/18	Procedure	
107	Determine whether candidate data from the Tech Demo period will be used in a future analysis of iron parameter.				Statistics	Introduced on 04/26/2018.
108	The Surveillance Panel should compile a list of parameters to be captured from these candidate tests.				Statistics	

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109	The Surveillance Panel will need to approve whether retroactive ACC registration can be granted to candidate tests that used Batch-C and Batch-D camshafts.	Tue 6/12/18	Surveillance Panel	Tue 6/12/18	Registration	Introduced on 05/08/2018.
110	Vote on motion.	Tue 6/12/18	Surveillance Panel	Tue 6/12/18		Motion passed with no negatives.
111	The Surveillance Panel needs to finalize the BOI/VGRA matrix.				BOI/VGRA	Introduced on 05/08/2018.
112	TBD					
113	Determine whether NOX is a useful parameter to introduce with the IVB test.	Fri 5/11/18			Operational	Introduced on 05/08/2018.
114	Intertek to report on their NOX trial on IAR165.	Fri 5/11/18				
115	Analyze blowby gas using GC/MS.				Operational	Introduced on 05/08/2018.
116	Determine how to sample this material.					
117	Determine if the gas and/or liquid will be analyzed.					
118	Investigate whether silicone is leaching from new spark plug tube seals installed in the OHT rocker arm cover.				Hardware	Introduced on 05/08/2018.
119	TBD					
120	Develop cumulative iron curves for each engine over its full life cycle.	Tue 5/22/18			Hardware	Introduced on 05/08/2018.
121	Intertek to provide a template that can be used to report engine information.	Tue 5/22/18	Intertek	Tue 5/22/18	Hardware	
122	Intertek to provide a template that can be used to report break-in and aging data.	Tue 5/22/18	Intertek	Tue 5/29/18	Hardware	
123	Intertek to report data for all engines used during and after the Precision Matrix.	Tue 5/22/18	Intertek		Hardware	
124	Southwest to report data for all engines used during and after the Precision Matrix.	Tue 5/22/18	Southwest		Hardware	
125	Lubrizol to report data for all engines used during and after the Precision Matrix.	Tue 5/22/18	Lubrizol		Hardware	
126	Exxon to report data for all engines used during and after the Precision Matrix.	Tue 5/22/18	Exxon		Hardware	
127	Afton to report data for all engines that they have used.	Tue 5/22/18	Afton		Hardware	
128	TBD					
129	Include the iron parameter in MAD Survey.	Tue 5/15/18	Task Force		Appendix K	
130	TBD					
131	Identify a GF-6 reference oil to satisfy Section D of Appendix K.	Tue 5/15/18	Task Force		Appendix K	
132	TBD					
133	Modify new air filter boxes with a fitting for a pressure transducer.	Tue 5/22/18	OHT		Hardware	
134	Provide dimensions to OHT for the location of the fitting.	Tue 5/22/18	Intertek		Hardware	
135	Review oxidation and nitration technique specified in IVB procedure.				Procedure	
136	TBD					

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137	Determine whether the S.O.T. or E.O.T. compression and leak-down measurements can be eliminated.					
138	TBD				Procedure	
139	Introduce REO300-1 as a Sequence IVB reference oil.				Procedure	
140	TBD					
141	Determine if REO1011 can be re-blended.		TMC		Procedure	
142	TBD					
143	Confirm that critical parts are explicitly identified in the procedure.				Procedure	
144	TBD					
145	Establish a maximum iron validity criteria for the first test run after a "post lobe failure" engine flush.	Tue 5/29/18			Procedure	
146	TBD					
147	Document a procedure for flushing an engine after a camshaft lobe failure.	Tue 5/29/18			Procedure	
148	Provide a draft procedure for review.	Tue 5/29/18	Exxon		Procedure	
149	Surveillance Panel or Sub-Group needs to follow-up with Statistics Group regarding lifter weighting and outlier screening.	Tue 6/12/18	Surveillance Panel		Procedure	
150	TBD					