

## Sequence VH Surveillance Panel Meeting September 20<sup>th</sup>, 2022 2 PM EST, via Webex

### Roll Call:

Afton: B. Maddock, Bob Campbell  
ExxonMobil: P. Rubas  
Ford: M. Deegan, R. Zdrodowski  
General Motors: B. Cosgrove  
Haltermann: E. Hennessey, I. Mathur, W. Hairston  
  
Infineum: D. Boese, A. Ritchie (Chair)  
Intertek: A. Lopez  
Lubrizol: G. Szappanos, T. Catanese, Phil Scinto  
OHT:  
Oronite: J. Martinez, R. Stockwell  
  
SwRI: D. Engstrom, T. Kostan, P. Lang, M Lochte  
TEI: D. Lanctot  
TMC: R. Grundza  
  
Valvoline: A. Savant

### **Meeting Summary:**

- 7 VH test results (3 on 940, 2 on 931, 1 on 1011-1) on the new fuel.
- New 1011-1 test result confirmed the new fuel is mild on AES
- T. Kostan's attached presentation summarized the data.
- The current fuel batch is mild on sludge compared with the original fuel batch and the new batch appears even milder.
- SP voted to reject the fuel batch
- SP voted to instruct Haltermann to prepare a new fuel.
- Plans for evaluating the new fuel will be finalized but it is most likely that a small batch of new fuel will be prepared and evaluated with 2 931 VH tests at the San Antonio labs.
- SP Chair will start the process of communicating that the VH test will be unavailable for a period of time until a new fuel batch is approved.

Next call: Not fixed.

### **Meeting Details:**

The group met 3 days after the last call : [VMinutes20220920ConferenceCall.pdf \(astmtmc.org\)](#) with an additional result on 1011-1, making a total of 7 VH test results on the new fuel from IAR, SwRI and Afton. The attached presentation from Travis Kostan from SwRI was available to the group but not reviewed in any detail.

The VH fuel contract team had met the day before and reached the conclusion that the new fuel batch was too mild on sludge (AES) and thus wanted to advise the SP of their view to reject the fuel batch and instruct the supplier to prepare a new batch of fuel. The VH fuel contract team were of the opinion that the 7 VH results indicated that the new fuel batch could only be approved with a very large correction factor, which could be more than twice the sludge correction factor for the current fuel. The contract team felt that approving this fuel would create long term issues around calibrating the VH with the fuel and further problems with the approval of products particularly those seeking performance at the top end of the AES scale.

Questions were asked by the Haltermann representatives about exactly where the new fuel batch sludge performance should be targeted. The SP group were of the general opinion that it should target that of the original fuel batch and certainly be no milder than the current fuel batch which carries a correction factor.

2 motions were passed unanimously

**Motion 1: The Surveillance Panel rejects the new fuel batch**

Deegan/Lopez

Vote count: 9 approve/3 waives

**Motion 2: The Surveillance Panel instructs the fuel supplier to blend some new fuel.**

Campbell/Stockwell

Vote count: 8 approve/4 waives

There was a discussion about whether Haltermann should adjust the current large blend by blending up a small pilot batch or simply adjust the large batch. One advantage of adjusting the large batch is that it could be more cost efficient to approve it and a faster process, but the risk is significant that if the adjustment is too great and the new batch is so severe on sludge that it no longer discriminates between 940 and 931, the whole batch could be deemed unusable. At this point it should not be assumed that any new VH data on a pilot batch can be used for the final approval of the fuel batch. Haltermann will work with the San Antonio test labs to agree a final plan, but it seems most likely that a pilot batch will be blended and the 2 San Antonio labs would run a VH test with 931 to establish if AES became more severe from the fuel adjustment. Afton declined to participate in this study but will remain in the full VH test matrix approval exercise.

With the rejection of the new VH fuel batch, it is now certain that the VH test will become unavailable in San Antonio in the second half of October. The most realistic projection is that a new fuel batch could be approved before the end of the year. The VH Chair will contact the ASTM PCEOCP Chair, to ask that the panel convene to declare the Sequence VH commercially unavailable because of the lack of an approved fuel batch. With PCEOCP endorsement declaring the VH test unavailable, API will be advised to take the appropriate steps to allow provisional API licenses to be granted until the VH test is reinstated.

# VH New Fuel Batch Matrix Results

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# Test Matrix

There have been seven results completed as of today.

Run	SwRI1	SwRI2	IAR1	IAR2	Afton
1	931	940	940	1011-1	940
2	940	1011-1	931	931	1011-1
3	1011-1	931	1011-1	940	931

Complete

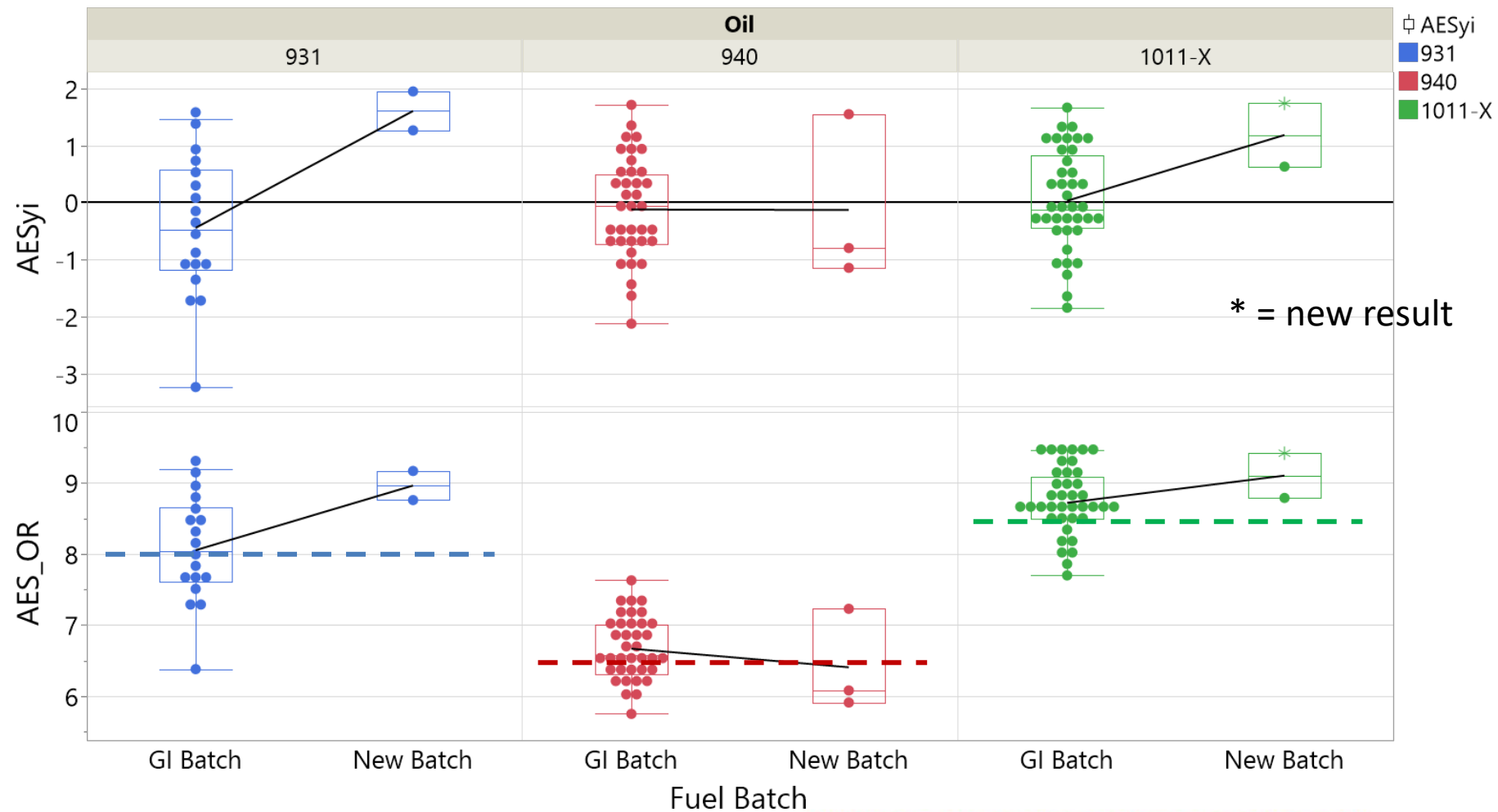
# AES

Oil	Mean	Standard Deviation
931	8.00	0.60
940	6.47	0.49
1011	8.43	0.57

Average Engine Sludge results shown in the plot comparing the current fuel batch to the new batch.

Average Sludge  $Y_i$  is 0.74.

Dashed lines are the oil targets.



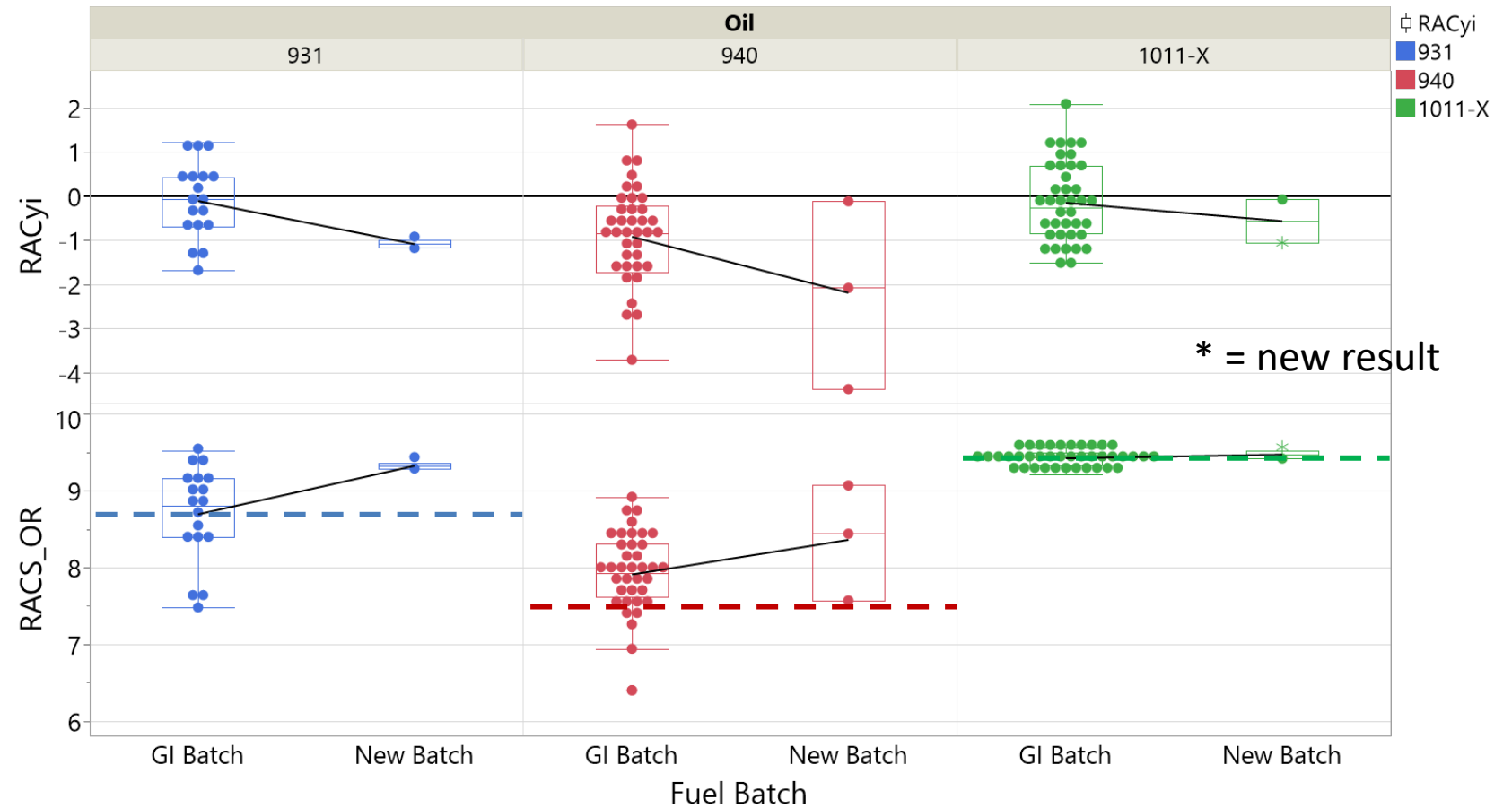
# RAC

Rocker Arm Cover Sludge results shown in the plot comparing the current fuel batch to the new batch.

Average RAC Sludge  $Y_i$  is -1.41.

Dashed lines are the oil targets.

Oil	Mean [Original Units]	Standard Deviation
931	0.2283 [8.74]	0.5715
940	0.9155 [7.50]	0.2260
1011	-0.5294 [9.41]	0.1924

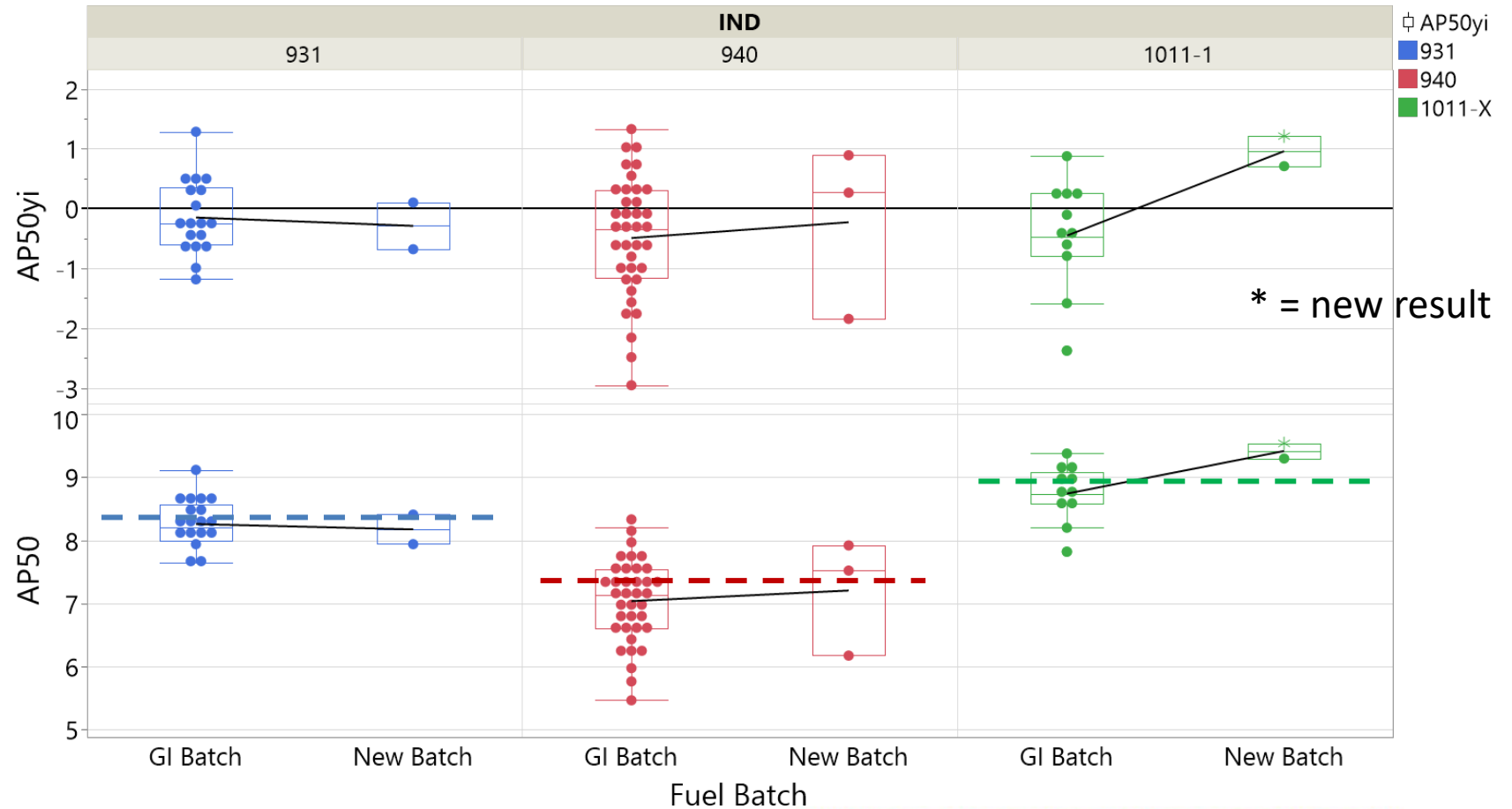


# AP50

Average Piston Varnish results shown in the plot comparing the current fuel batch to the new batch.

Average AP50 Yi is 0.09.

Oil	Mean	Standard Deviation
931	8.35	0.60
940	7.35	0.64
1011	8.67	0.48
1011-1	8.96	0.48



Dashed lines are the oil targets.

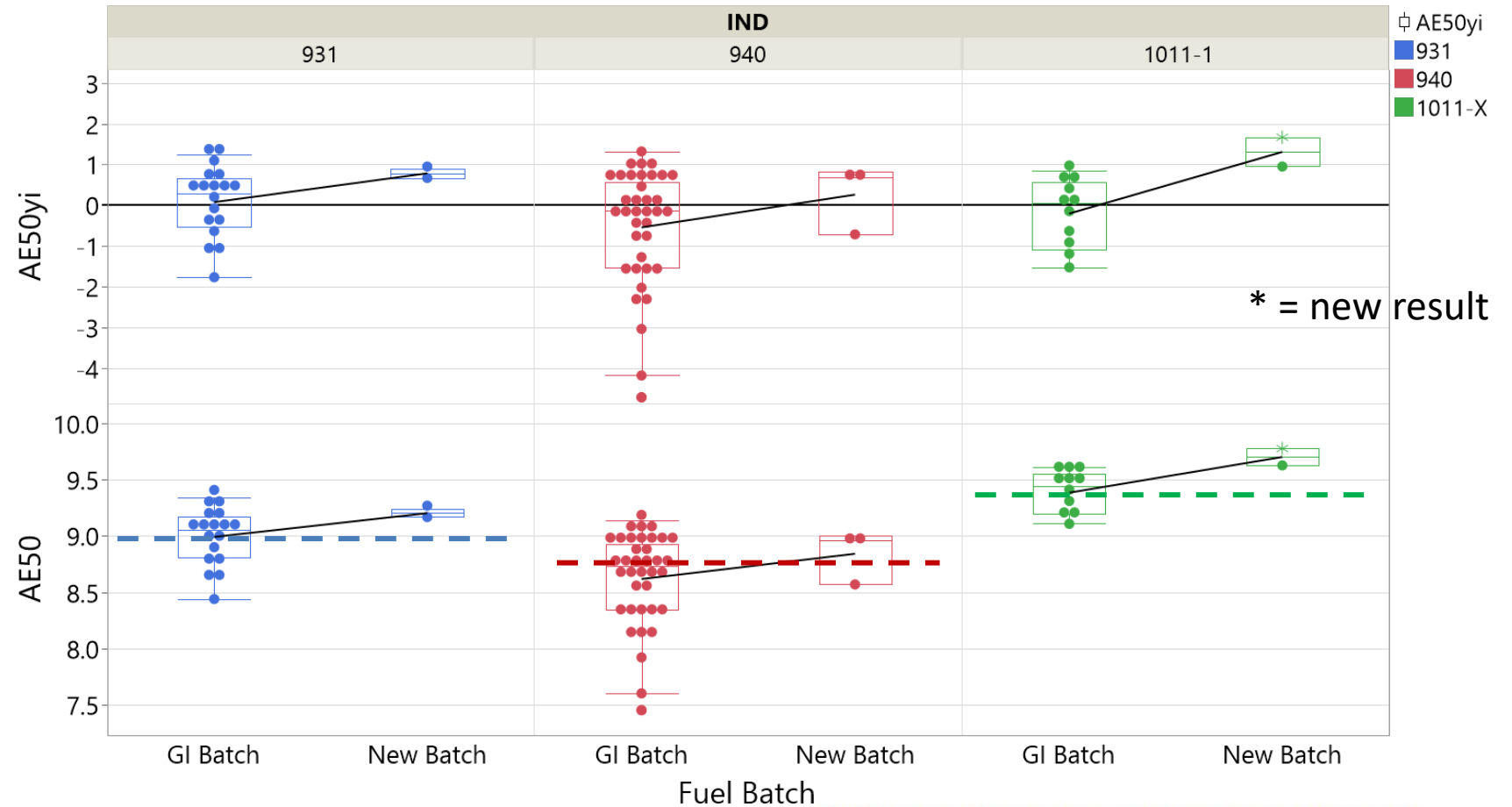
# AE50

Average Engine Varnish results shown in the plot comparing the current fuel batch to the new batch.

Average AE50 Yi is 0.71.

Dashed lines are the oil targets.

Oil	Mean	Standard Deviation
931	8.97	0.30
940	8.77	0.28
1011	9.26	0.21
1011-1	9.43	0.21





# Summary

The table and plot given here summarize the distance from target of current fuel matrix results on the new fuel batch.

Parameter	Average Yi
AES	0.74
RAC	-1.41
AP50	0.09
AE50	0.71

