

**Sequence VH Surveillance Panel Meeting
June 22nd 2023, Webex**

Roll Call:

Afton: B. Maddock, A. Stone
ExxonMobil: P. Rubas
Ford: M. Deegan, R. Zdrodkowski
GM: B. Cosgrove, K. Zreik
Haltermann: W. Hairston, I. Mathur
Infineum: T. Dvorak, A. Ritchie (Chair)
Intertek: A. Lopez
Lubrizol: T. Catanese
OHT: M. Bowden
Oronite: R. Stockwell, J. Martinez
SwRI: D. Engstrom, T. Kostan, P. Lang
TEI: D. Lanctot

Meeting Summary:

Chair comment: Meeting convened to review semi-annual report ahead (attached) of next week's semi-annual ASTM meeting. Key items from the report

- 59 registered tests from the Sep22- Mar23 VH reporting period.
- Potential need for a GF-7 category oil
- 940 remains suspended

Chair requested permission to send the final semi-annual report on behalf of the panel. Final report attached here.

New Business

- 1) Tony Catanese: Issue with the VH test procedure where a section dropped between VG and VH. Subsequent e-mail ballot motion as follows: **(Issued motion 7/5 for unanimous consent 7/5 closing 7/12).**

Recently, it was noted that the section which describes the addition of a resistor in the engine coolant circuit was not included in the VH method, D8256. This information was provided in the VG method, D6593, in section 7.6.9, which is shown below:

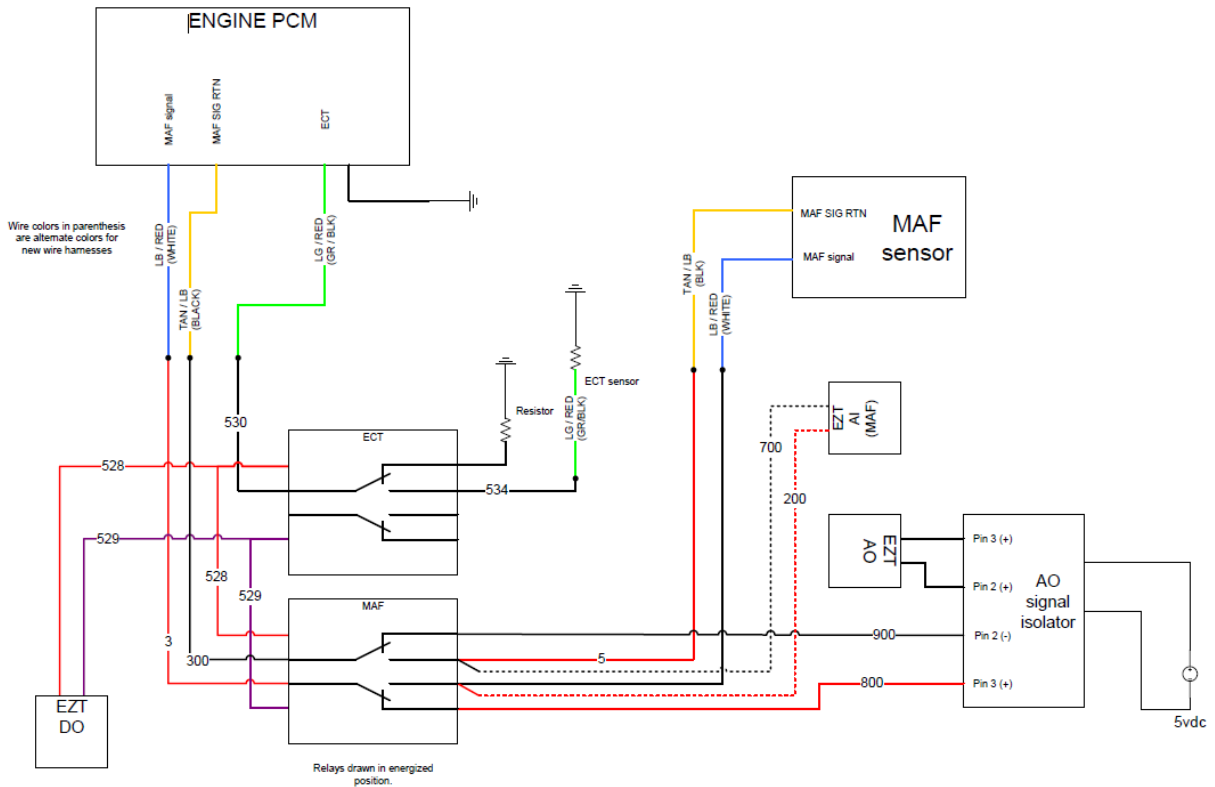
7.6.9 Engine Coolant Temperature Sensor—Modify engine coolant temperature sensor by attaching a relay and a resistor of 13 kΩ between the ECT sensor and the EEC as shown in Fig. A7.14.

Also, figure A7.14 in the VG method is now Figure A7.41 in the VH method. This figure, in both methods, does not clearly identify the resistor in the engine coolant circuit.

As result, I'd like to make a motion for unanimous consent to add the following section to Test Method D8256 and to update figure A7.41 of test method D8256 as shown below:

7.6.12 **Engine Coolant Temperature Sensor**—Modify engine coolant temperature sensor by attaching a relay and a resistor of 13 kΩ between the ECT sensor and the EEC as shown in Fig. A7.41.

VG MAF and ECT circuits



- 2) Amol Savant: Raised item from last year. In development phase, lost use of optional heater in parallel in process water circuit. Needs to be added. Have trouble controlling certain oils in PH1. Got audited by Rich and one of the issues that got flagged was oil temp not keeping up. Using heater for that, looked up verbiage in procedure. Had planned on adding it a while ago. separate issues

ACTION: Rich to work with Amol on getting heater introduced into the procedure.

- 3) Lopez/IAR reported a recent 931 result with AES of 6.19 ,the lowest performance seen on this oil. IAR Is noticing high fuel dilution issues in past few months. Going back to fuel matrix, fuel dilution ran around 13-15%, repeating what we've seen in the past with the previous fuel batches. Fuel dilution remained normal up until end of last year but now with new fuel batch, we are starting to see very elevated fuel dilution numbers. One test gave 18% fuel dilution, on the stand which was also used in the fuel matrix and gave around 13% fuel dilution. Seeing this

trend in fuel dilution in 3 labs to date (SwRI, IAR and LZ). Strangely the shift in fuel dilution appears to occur in the middle of the test. Hard to believe it is a measurement error

William Hairston/Haltermann Fuel has been adjusted 5 times for RVP by adding butane. Believe this is due to the elevated temperatures of the tank in the early summer Texas weather. Checked specific gravity and not seeing a shift so puzzled by this. Growing concern is that weather could remain or get even hotter in Texas in the next few months. Haltermann will consider moving some of the fuel from the tank into large rail cars to mitigate some of the heat issue.

Question from Amol. Can change in fuel be connected to an increase in the fuel flow or lower power?

Answer from Al: Nothing alarming in fuel rates reported, quickly eyeballing don't see an issue

Al: In the past 20 yrs. running the test, haven't seen a stand combination effect move the fuel

Question from Indresh. Do you see this happening in summer months or is this random?

Travis: Plotting fuel dilution by date see a spattering of data in 15-20% range – all were acceptable references with exception of one. Month-wise, October 2019 to April 2020 showed the highest fuel dilution period. Doesn't seem to be a seasonal/summer effect.

Andy: Note also that the Cleveland tanks have not been exposed to baking sun the way the San Antonio tanks have.

Tony: Test from Q1 gave fuel dilution in the 18%_s

Rich: Apart from Al's last test, industry control chart for AES has been on target.

Al: Seen a low AES result before with much lower fuel dilution.

Dan: Have seen these fuel dilution numbers historically but haven't seen correlation of fuel dilution with VH sludge test results. Doesn't mean we shouldn't investigate this though

Indresh. Specific gravity is a good measure, but C10 gives best indication of the loss of light ends.

Andy: Where are we with upcoming calibration tests?

IAR: 2 coming up. SwRI: 2 in July. Afton: 1 late July

Andy: Group should reconvene a call after July 4th, to further discuss the fuel dilution concerns raised at this session.

NEXT CALL: July 19th 10 AM Eastern Webex



Sequence VH SP
report to B - June 202